

School of Medicine Catalog Vanderbilt University 2020/2021

Containing general information and courses of study for the 2020/2021 session corrected to August 2020 Nashville

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School of Medicine Calendar

FALL SEMESTER 2020*

Classes begin for 2nd, 3rd, and4th-year M.D. students / Monday 8 June

First day of online instruction for 2nd-year M.D. students /Monday 8 June

Orientation/Registration for 1st-year M.D. students / Wednesday 15 July-Friday 17 July

Classes begin for 1st-year M.D. Students/ Monday 20 July

Last day of online instruction for 2nd-year M.D. students /Friday 24 July

First day of in-person instruction for M.G.C. students/ Wednesday 12 August

First day of online instruction for M.S.C.I students/ Monday 17 August

First day of in-person instruction for 2nd-year M.D. students /Monday 24 August

First day of in-person instruction for Au.D., M.D.E., and M.S. - S.L.P. students Wednesday 26 August

First day of in-person instruction for D.M.P., and M.S.M.P. students/ Wednesday 26 August

First day of online instruction for M.P.H. students/ Wednesday 26 August

Orientation/Registration (in-person) for M.S. - A.C.I. students/ Thursday 27 August-Friday 28 August

First day of online instruction for M.S. – A.C.I. students/ Thursday 3 September

Labor Day—No M.D. classes or clinical activities / Monday 7 September

Last day of in-person classes for Au.D., M.D.E., and M.S. - S.L.P. student / Friday 20 November

Last day of in-person classes for 1st-year M.G.C. students/Friday 22 November

Thanksgiving holiday for VUSM master's and doctoral programs (other than M.D.) / Saturday 21 November—Sunday 29 November

Thanksgiving holiday for all M.D. students / Thursday 26 November – Sunday 29 November

First day of online instruction for Au.D., M.D.E., and M.S. - S.L.P. stu ents/ Monday 30 November

First day of online instruction for 1st-year M.G.C. students/Monday 30 November

Last day of classes for Au.D., M.D.E., and M.S. - S.L.H. student Thursday 10 December

Last day of classes for M.S.C.I. students/ Thursday 10 December

Last day of classes for D.M.P., and M.S.M.P. students/ Friday 11 December

Last day of classes for M.G.C. students/Friday 11 December

Last day of classes for M.P.H. students (Friday 11 December

Examinations and reading days for D.M.R., and M.S.M.P. students/Friday 11 December – Saturday 19 December

Last day of classes for M.S. – A.C.I students/ Thursday 17 December

Fall semester ends for all M.D. swacnts / Friday 18 December

Holiday break for all M.D. students / Satu day 19 December–Sunday 3 January, 2021

Holiday break for all VUSM master's and doctoral programs (other than M.D.) / Sunday 20 December–Sunday 10 January, 2021

SPRING SEMESTER 2021

To be announced

SUMMER SESSION 2021

To be announced

^{*}The dates presented here are subject to change. More information is available at: https://registrar.vanderbilt.edu/calendars/2020-21-graduate.php .

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MARK T. WALLACE, Ph.D., Pean of the Graduate School

School of Medicine Administration

Contact Information

Office of the Dean

Jeffrey R. Balser, M.D., Ph.D.
Dean, Vanderbilt University School of Medicine
D-3300 Medical Center North
Nashville, Tennessee 37232-2104
(615) 936-3030

Office of the Dean, Basic Science of SOM

Lawrence J. Marnett, Ph.D.
Dean of Basic Sciences, Vanderbilt School of Medicine
U1200 MRB3
Nashville, Tennessee 37240-7914
(615) 322-0907

Office of Health Sciences Education

Donald W. Brady, M.D.
Senior Associate Dean for Health Sciences Education
430 Eskind Family Biomedical Library and Learning Center*
Nashville, Tennessee 37240-0002
(615) 322-7221

Faculty Affairs

(615) 343-4611

David S. Raiford, M.D. Senior Associate Dean for Faculty Affairs 320 Rudolph A. Light Hall Nashville, Tennessee 37232-0260 (615) 875-8721

Biomedical Research, Education and Training

Roger Chalkley, D. Phil.
Senior Associate Dean for Biomedical Research, Education at Training
340 Rudolph A. Light Hall
Nashville, Tennessee 37232-0301

Graduate Medical Education

Kyla P. Terhune, M.D. Associate Dean for Graduate Medica Februarion 303 Rudolph A. Light Hall Nashville, Tennessee 37232-0685 (615) 322-6035

Diversity in Medical Education

André L. Churchwell, M.D.
Senior Associate Dean for Diversity Affairs
Kimberly N. Vinson, M.D.
Associate Dean for Diversity Affairs
305 Rudolph A. Light Hall
Nashville, Tennessee 37232-0260
(615) 322-7497

Office of Enrollment Services

Admissions

Jennifer S. Kimble, M.Ed. Director of Admissions 224 Eskind Family Biomedical Library and Learning Center* Nashville, Tennessee 37240-0002 (615) 322-2145

Scholarships and Financial Aid

Heather Boutell, M.Ed.
Director, School of Medicine Financial Aid
226 Eskind Family Biomedical Library and Learning Center*
Nashville, Tennessee 37240-0002
(615) 322-1792

Student Records

Arna banerjee, M.D.

Logar W. Ley, M.Ed.
Associate University Registrar; Director, Medical Student
Records
225 Eskind Vamily Biomedical Library and Learning Center*
Nashville, Tynne see 37240-0002
(615) 343-6310

Center for Experiential Learning and Assessment (CELA)

Director 1450 Medical Research Building IV Nashville, Tennessee 37232-0432 (615) 936-8801

Continuing Medical Education/Maintenance of Certification

Donald E. Moore, Jr., Ph.D. Educational Director Office of Continuing Professional Development 333 Rudolph A. Light Hall Nashville, Tennessee 37232-0685 (615) 936-1761

Education Design and Informatics

W. Anderson Spickard III, M.D.
Assistant Dean for Education Design and Informatics
408 Eskind Family Biomedical Library and Learning Center*
Nashville, Tennessee 37240-0002
(615) 936-2187

Alumni Affairs

Ann H. Price, M.D. Associate Dean for Alumni Affairs D-8212 Medical Center North Nashville, Tennessee 37232-2106 (615) 343-6337

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Additional information about the Vanderbilt University School of Medicine faculty, staff, and programs may be found on the web at *medschool.vanderbilt.edu*.

Professional Degree Programs

Doctor of Medicine

Medical Student Affairs

Amy E. Fleming, M.D., M.H.P.E. Associate Dean for Medical Student Affairs 428 Eskind Family Biomedical Library and Learning Center* Nashville, Tennessee 37240-0002 (615) 322-5007

Undergraduate Medical Education

William B. Cutrer, M.D., M.Ed. Associate Dean for Undergraduate Medical Education 429 Eskind Family Biomedical Library and Learning Center* Nashville, Tennessee 37240-0002 (615) 875-7700

Medical Innovators Development Program

Reed Omary, M.D., M.S. Program Director Fourth Floor, Eskind Family Biomedical Library and Learning Center* Nashville, Tennessee 37240-0002 (615) 875-9219

Medical Scientist Training Program

Christopher S. Williams, M.D., Ph.D. Associate Dean for Physician-Scientist Education and Training 222 Eskind Family Biomedical Library and Learning Center* Archived 2!
School of Mel Nashville, Tennessee 37240-

(615) 875-1340

Hearing and Speech Sciences

Todd Ricketts, Ph.D. Vice Chair Graduate Studies 8310 MCE South Tower 1215 21st Avenue South Nashville, Tennessee 37232 (615) 936-5104

Mary Sue Fino-Szumski, Ph.D. Director of Clinical Education 8310 MCE South Tower 1215 21st Avenue South Nashville, Tennessee 37232 (615) 936-5104

Master of Science in Medical Physics

Michael J. Price, Ph.D. Acting Program Director B-1003 TVC 2220 Pierce Ave. Nashville, TN 37232 (615) 322-2555

Doctor of Medical Physics

David Pickens III, Ph.D. Program Director R-1307 MCN 1161 21st Avenue South Nashville, Tennessee 37232-2675 (615) 322-3190

Master of Genetic Counseling

Martha Dudek, M.S., L.C.G.C. Program Director Vanderbilt (jei etics Institute 510 Light Hall 2215 G riand Avenue Nashvil 6, Tennessee 77,32-0700 (615) 343-1910

Master of Tublic Health

Christianne L. Roumie, M.D., M.P.H. Program Director 1506 21st Avenue South, Suite 2100 Nashville, Tennessee 37212 (615) 343-6338

Master of Science (Applied Clinical Informatics)

Scott D. Nelson, Pharm.D., M.S. Program Director 2525 West End Ave - 14th Floor Suite 1475 Nashville, Tennessee 37203 (615) 875-9347

Master of Science in Clinical Investigation

Eric Austin, M.D., M.S.C.I. Program Director 11215 Doctor's Office Tower 2200 Children's Way Nashville, Tennessee 37232-9500 (615) 322-3480

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Graduate Certificate Programs

Graduate Certificate in Biomedical Ethics

Keith G. Meador, M.D. Program Director 2525 West End Ave. Suite 400 Nashville, TN 37203 (615) 936-2686

Graduate Certificate in Health Equity

Consuelo H. Wilkins, M.D. Program Director 529 Light Hall 2215 Garland Avenue Nashville, TN 37232-0147 (615)-322-3200

Graduate Certificate in Global Health

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School of Medicine

School of Medicine Marie H. Martin, Ph.D., M.Ed. Elizabeth S. Rose, M.Ed., M.P.H. Program Co-Directors 2525 West End Avenue Suite 725 Nashville, TN 37203-1738 (615) 322-9374

Graduate Certificate in Lesbian, Gay, Bisexual, Transgender, and Queer (LGBTQ) Health

Eli E. Zimmerman, M.D. Program Director A-0118 Medical Center North Nashville, TN 37232-2551 (615) 936-0060

Graduate Certificate in Neurodevelopmental Disabilities

Rachel H. Goode, M.D. Program Director 2141 Blakemore Ave Nashville, TN 37212 (615) 936-0249

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HEATHER BOUTELL, M.Ed., Director, School of Medicine Financial Aid.

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SARAH C. WOODALL, Administrative Director, Office for Medical Student Affairs

LOURDES ESTRADA, Ph.D., Associate Director, Academics and Operations, Medical Scientist Training Program SALLY YORK, M.D., Ph.D., Associate Director for Clinical Education, Medical Scientist Training Program

Vanderbilt University School of Medicine Standing Committees

Executive Faculty of the Vanderbilt University School of Medicine

The Executive Faculty reviews, on a regular basis, the work of the VUSM Undergraduate Medical Education Accreditation Standards Committee, in order to monitor School of Medicine compliance with all LCME standards and elements. The Executive Faculty also provides advice and counsel on the for nulation of major policies that pertain to LCME compliance.

The Executive Faculty meets monthly during the academic year. The Executive Faculty may additionally meet whenever requested by the dean of the School of Medicine or a majority of the Executive Faculty.

The Executive Faculty of the School of Medicine consists of the dean of the School of Medicine, the chairs of all VUSM clinical and basic sciences departments (except those in the Section of Surgical Sciences), and those center directors in the School of Medicine who report directly to the dean. Voting members from the Section of Surgical Sciences are the chair of the Section and the chair of one of its departments. Ex officio members without voting rights include School of Medicine senior associate deans, associate deans, and Vanderbila diversity Medical Center (VUMC) hospital directors. At the discretion of the dean, other non-voting individuals may be invited to attend Executive Faculty meetings when the agenda makes such attendance appropriate.

The dean of the School of Medicine presides at the meetings of the Executive Faculty. In the dean's absence a member of the Executive Faculty who is designated by the dean presides.

Jeffrey R. Balser, Chair. Zeena Al dulahad, Ponald Alvarez, Gordon Bernard, Donald Brady, Melinda Buntin, Richard Caprioli, Nancy Carrasco, Roger Chalkley Walter Chazin, Dane Chetkovich, Meg Chren, André Churchwell, Jeff Conn, Alice Coggan, William (Bill) Cooper, Nancy Cox, James Crowe, Bill Cutrer, Robert Dittus, Marilyn Dubree, Ron Eavey, Amy Fleming, Maureen Gannon, John Gore, Kathy Gould, Kathie Hartmann, Alyssa Hasty, Stephan Heckers, Julie Hudson, Keyin Johnson, Seth Karp, Ege Kavalali, David Kennedy, Ian Macara, Mark Magnuson, John Manning, Lawrence Marnett, Keith Meador, Steve Meranze, Lisa Monteggia, Cecelia Moore, Jeff Neul, Linda Norman, Reed Omary, John Penn, David Penson, Jennifer Pietenpol, Wright Pinson, Al Powers, Ann Price, David Raiford, Jeff Rathmell, Kim Rathmell, Dan Roden, Russell Rothman, Margaret Rush, Warren Sandberg, Chuck Sanders, Linda, Sealy, Eric Shinohara, Yu Shyr, Eric Skaar, Corey Slovis, Bill Stead, Paul Sternberg, Kyla Terhune, Anne Marie Tharpe, Ed Trevathan, Jeanne Wallace, Steve Webber, Matthew Weinger, Consuelo Wilkins, Chris Williams, Rick Wright, John York, Wei Zheng, Mary Zutter.

Executive Committee of the Executive Faculty

The dean appoints an Executive Committee of the Executive Faculty (ECEF) to facilitate the work of the Executive Faculty and to advise on matters requiring decisions. The ECEF possesses the full powers of the Executive Faculty and may act in its stead with full authority. The ECEF may initiate new policies or change previous policies established by the Executive Faculty in matters related to curriculum. Such decisions can be nullified or reversed by a two-thirds majority vote of the Executive Faculty.

The ECEF's roles include:

• The vetting and endorsement of School of Medicine faculty appointments and promotions to the senior ranks (associate professor and professor).

- Evaluation of appeals by department chairs following negative decisions by the Appointments and Promotions Committees of the School of Medicine,
- Evaluation of nominations for promotion of faculty to emeritus status, and
- Evaluation of proposals to transition faculty off of the tenure track.

In addition, the ECEF:

- Reviews the list of School of Medicine students who have met degree requirements and recommends them for degree conferral,
- Evaluates appeals of students who have been dismissed by degree-specific promotions and progress committees,
- Provides input on other matters related to academic policies of importance to the School of Medicine and Vanderbilt University Medical Center, and which require review and action outside the standing meetings of the Executive Faculty. The ECEF is advisory to the dean.

Melinda J. Buntin, Nancy Carrasco, Dane M. Chetkovich, David J. Kennedy, Keith G. Meador, Jeffrey C. Rathmell, Yu Shyr, Steven A. Webber, Consuelo H. Wilkins.

Faculty Appointments and Promotion Committee (FAPC) and Clinical Practice Appointment and Promotion Committee (CPAPC)

These committees, appointed by the dean, are responsible for consideration of faculty promotion in the School of Medicine and for examination of credentials of candidates for appointment to faculty positions.

FAPC: Mark E. Frisse, Chair. Lori A. Deitte, Peter D. Denofijo, C. Gaciya Garrett, Deborah P. Jones, Ethan Lee, Pratik P. Pandharipande, Russell L. Rothman, Richard Si nerly, Lary L. Swift. Ex officio: Alyssa H. Hasty, John S. Penn, David S. Raiford.

CPAPC: Neal R. Patel, Chair. Rony A. Adam, Robert J. Deegan Robert F. Miller, William M. Petrie, Kris P. Rehm. Ex officio: John S. Penn, David S. Raiford.

Global Health Education Committee

The Global Health Education Committee (GHEC) supports the vision of the School of Medicine and the Vanderbilt University Medical Center to provice an array of global health education and training opportunities for VUSM and VUMC trainees while simultane pushy enhancing the capacity of our partners in a collaborative effort to address global health challenges.

Donald Brady, Quentin Eichbaum, Nat. sha Halasa, Julie Lankford, Marie Martin, and Melinda New.

When Commodore Cornelius Vanderbilt gave a million dollars to build and endow Vanderbilt University in 1873, he did so with the wish that it "contribute to strengthening the ties which should exist between all sections of our common country."

A little more than a hundred years later, the Vanderbilt Board of Trust adopted the following mission statement: "We reaffirm our belief in the unique and special contributions that Vanderbilt can make toward meeting the nation's requirements for scholarly teaching, training, investigation, and service, and we reaffirm our conviction that to fulfill its inherited responsibilities, Vanderbilt must relentlessly pursue a lasting future and seek highest quality in its educational undertakings."

Today as Vanderbilt pursues its mission, the university more than fulfills the Commodore's hope. It is one of a few independent universities with both a quality undergraduate program and a full range of graduate and professional programs. It has a strong faculty of more than 2,000 full-time members and a diverse student body of about 10,000. Students from many regions, backgrounds, and disciplines come together for multidisciplinary study and research. To that end, the university is the fortunate recipient of continued support from the Vanderbilt family and other private citizens.

The 334-acre campus is about one and one-half miles from the downtown business district of the city, combining the advantages of an urban location with a peaceful, park-like setting of broad lawns, shaded paths, and quiet plazas.

Off-campus facilities include the Arthur J. Dyer Observatory, situated on 1,131-foot hills x miles south.

The schools of the university offer the following degrees:

College of Arts and Science. Bachelor of Arts.

Blair School of Music. Bachelor of Music, Bachelor of Musical Arts.

Divinity School. Master of Divinity, Master of Theological Studies, Waster of Theology, Doctor of Ministry. School of Engineering. Bachelor of Engineering, Pecchelor of Science, Master of Engineering.

Graduate School. Master of Arts, Master of Fine Arts, Master of Liberal Arts and Science, Master of Science, Doctor of Philosophy.

Law School. Master of Laws, Doctor of Jurispredence.

School of Medicine. Master of Education of the Deaf, Master of Genetic Counseling, Master of Public Health, Master of Science in Clinical Investigation, Master of Laboratory Investigation, Master of Science in Medical Physics, Master of Science (Applied Clinical Informatics, Speech-Language Pathology), Doctor of Audiology, Doctor of Medical Physics, Doctor of Medicine

School of Nursing. Master of Science in Nursing, Doctor of Nursing Practice.

Owen Graduate School of Management. Master of Accountancy, Master of Business Administration, Master of Management in Health Care, Master of Marketing, Master of Science in Finance.

Peabody College. Bachelor of Science, Master of Education, Master of Public Policy, Doctor of Education.

No honorary degrees are conferred.

Mission, Goals, and Values

Vanderbilt University is a center for scholarly research, informed and creative teaching, and service to the community and society at large. Vanderbilt will uphold the highest standards and be a leader in the

- quest for new knowledge through scholarship,
- · dissemination of knowledge through teaching and outreach,
- creative experimentation of ideas and concepts.

In pursuit of these goals, Vanderbilt values most highly

- intellectual freedom that supports open inquiry,
- equality, compassion, and excellence in all endeavors.

Accreditation

Vanderbilt University is accredited by the Southern Association of Colleges and Schools Commission on Colleges to award bachelor's, master's, professional, and doctoral degrees. Contact the Commission on Colleges at 1866 Southern Lane, Decatur, Georgia 30033-4097, call (404) 679-4500, or visit <u>sacscoc.org</u> for questions about the accreditation of Vanderbilt University.

Please contact the commission only in relation to Vanderbilt's noncompliance with accreditation requirements. Normal inquiries about admission requirements, educational programs, and financial aid should be directed to the university.

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Life at Vanderbilt

VANDERBILT provides a full complement of auxiliary services to meet the personal needs of students, to make life on the campus comfortable and enjoyable, and to provide the proper setting for academic endeavor.

Vanderbilt University Student Resources

Student Care Network

The Student Care Network is a holistic network of services and resources pertaining to health and wellness available to all Vanderbilt University students. Primary offices include the Office of Student Care Coordination, the University Counseling Center, the Student Health Center, and the Center for Student Wellbeing. Students also have access to a wide range of additional on-campus, virtual, and community resources through the Student Care Network—from the Vanderbilt Recreation and Wellness Center to the Project Safe Center to a variety of community providers. To facilitate finding resources, students may refer to the Student Care Network website, or contact the Office of Student Care Coordination, <code>vanderbilt.edu/studentcarenetwork</code>.

Medical Notification Policy

Vanderbilt University expects students to be honest with their instructors about their ability to attend class and/or complete course work, and asks instructors to work with students on these issues. Therefore, the primary offices of the Student Care Network (office of Student Care Coordination, University Counseling Center, Student Health Center, and Center for Student Wellbeing) do not provide notes for minor illnesses or routine appointments that may let do missed classes and/or a delay in completion of assignments. Instead, the primary offices provide students with cards focumenting visits to their office, which students may use in discussion with their instrutors regarding observes and/or missed work to demonstrate that they sought care for medical issues. The reason for the visit and any details of minor illnesses or routine appointments are not provided on the card. A student's right to privacy, particularly as it relates to redical information, is one of the important issues that guides this policy. In addition, since there is great variability it each student's response to minor illnesses, the primary offices cannot always predict which students will raise assignments and/or classes in response to such ailments. Honest communication between students and their instructors can be terraddress these situations.

In cases of more serious illness, injury, or crisis, execially those that may require prolonged bed rest or hospitalization, the primary offices or the Office of Housing and Kesidential Experience will notify a student's academic dean so instructors may be formally informed through a dean's notification that the student may need short-term consideration related to absences and/or course work as a result of such illness, injury, or crisis. It is the student's responsibility to follow-up with their instructors to establish a plan for any make-up work.

It is the instructor's prerogative to determine what, if any, alterations to course work are appropriate in either of the situations outlined above.

Office of Student Care Coordination

The Office of Student Care Coordination is committed to supporting undergraduate, graduate, and professional students in successfully navigating life events related to academic stress and/or medical, mental health, and/or other personal concerns that may interfere with a student's ability to achieve their academic and personal goals. This team of Student Care Coordinators is the central and first point of contact for students to help identify needs and determine the most appropriate resources in Vanderbilt's Student Care Network and in the Nashville community to address concerns. Student Care Coordinators collaborate with students to develop a student success plan, share education about and facilitate connections to appropriate on and off-campus resources, and provide accountability through supportive follow up meetings. Student Care Coordinators work closely with campus partners, including the Center for Student Wellbeing, the University Counseling Center, the Student Health Center, the Office of Housing and Residential Experience, and faculty and staff to help maintain the safety and health of Vanderbilt students. In addition, the Office of Student Care Coordination supports the Campus Assessment, Response, and Evaluation (CARE) Team and Welfare Panel and coordinates support for students returning from medical leaves of absence.

The Office of Student Care Coordination's goal is for students to have the right support, in the right place, at the right time.

Information about scheduling an appointment with the office of Student Care Coordination is available at https://cm.maxient.com/reportingform.php?VanderbiltUniv&layout_id=20www.vanderbilt.edu/studentcarenetwork.

Confidentiality

Though staff typically have a background in mental health services, it is important to understand that work with a Student

Care Coordinator is not counseling or therapy. The services of the Office of Student Care Coordination fall under the Family Educational Rights and Privacy Act (FERPA). This means the content of meetings with a Student Care Coordinator will be kept private to the extent possible; however, information may be shared on a need-to-know basis with appropriate personnel within Vanderbilt University in order to coordinate and provide you with the best care. If it is necessary to share information with off-campus providers or others, you will be asked to sign a written release.

Student Health Center

The Student Health Center provides primary care and some specialty services for students. Services include routine medical care, chronic disease management, office-based gynecology, travel medicine, nutrition services, and sports medicine. The Student Health Center also has a lab and can perform some office-based tests and can also send samples to the Vanderbilt Medical Center laboratory as needed.

The Student Health Center's hours of operation are posted on the center's website: https://www.vumc.org/student-health/about-center. Students seeking treatment should call ahead at 615-322-2427 to schedule appointments. Online appointments are available for most types of appointments: https://www.vumc.org/student-health/online-appointments. Telemedicine appointments are also available for some types of visits.

Students with urgent issues will be seen on a "same-day" basis, and if no appointment time is available, will be worked in on a "first-come, first-served" basis, and triaged according to severity of illness.

Emergency on-call consultation services are available at 615-322-2427, 24 hours a day, seven days a week. More detailed information about services and health related topics may be found at the Student Health Center website: https://www.vumc.org/student-health/

Immunization Requirements

The State of Tennessee requires certain immunizations and tuberculosis screening for all tridents (undergraduate, graduate, and professional). Students not in compliance with these man leted immure ations and tuberculosis screening will NOT be allowed to register for classes. Waivers for required varcines may be granted for religious or medical reasons. Waiver requests are reviewed by the Student Health Center and the Title IX Office or Student Access Services. Instructions for providing waiver request documentation can be found on the immunizations requirements website: https://www.vumc.org/student-health/immunization-requirements-newsendents.

Immunization requirements include:

- Meningococcal meningitis vaccine (or e injection after age 16) for all incoming students living in on-campus housing.
- Measles, mumps, and rubella (2 injections) for all incoming students.
- Varicella vaccine (two injections) for all students who have not had documented chickenpox.
- **Tuberculosis screening,** which includes on on-line risk assessment followed by blood testing or skin testing when indicated

All incoming students must upload a Studen Health Center Immunization and Tuberculosis Screening Requirements form. Instructions and further information are located on the immunizations requirements website: https://www.vumc.org/student-health/ in unization-requirements-new-students. The completed Immunization and Tuberculosis Screening Requirements form must be uploaded to the Student Health Center immunization portal by May 15, 2020. The form also collect. Important health history information that enables the Student Health Center staff to better serve individual student needs.

Charges

There are no office-visit co-pays for routine visits, but students will incur small charges for medications or supplies dispensed. There are small co-pays associated with some office procedures or specialty visits (such as wart removal and colposcopy). Medication and supplies ordered by Student Health physicians and nurse practitioners can usually be provided to students at a price below typical pharmacy co-pays or charges. Credit cards and the Commodore Card may be used to pay for any charges incurred at the Student Health Center. The Student Health Center has no relationship with any insurance company and cannot bill insurance for charges incurred at the Center.

Any lab tests not performed at the Student Health Center are sent to the Vanderbilt University Medical Center and are billed to the student's health insurance company by the Medical Center. In addition, when a student is referred to a specialist outside of the Student Health Center, charges incurred are billed by that clinic to the student's health insurance company. Any amount remaining after health insurance has paid its share is the student's responsibility. If a student has an Emergency Department visit after-hours because of a serious illness or injury, the Medical Center will bill the student and his/her/their insurance company.

Confidentiality

Care provided at the Student Health Center is confidential in compliance with the Health Insurance Portability & Accountability Act (HIPAA) regulations. It is only with explicit written consent from the student that the Student Health Center may communicate with Deans, parents, professors, or other health care professionals.

HIPAA does have a clause that allows notification of families in the event that the student is in an emergency or life-threatening situation.

Vanderbilt University Medical Center personnel will ask treated students in the Emergency Department about notification of staff in Housing and Residential Experience and the Student Health Center. Except in cases of a life-threatening emergency, notification requires the student's permission and is strongly encouraged. This practice enables the University to provide support and assistance to students and their families.

Quarantine

Vanderbilt University must enforce public health mandates as required by public health authorities, and may also follow Medical Center and Student Health Center recommendations when the University determines them to be in the best interest of the Vanderbilt community and the public. Based on the aforementioned mandates and/or recommendations, the University may issue directives to students regarding isolation and/or quarantine. As a result, among other needed interventions, students in campus housing, or students traveling as part of Vanderbilt programs or activities, may be required to relocate so that appropriate isolation and/or quarantine can be accomplished. Failure to comply with University directives may result in corrective action through the University's accountability process.

The University Counseling Center

The University Counseling Center (UCC) provides mental health assessment, support, and treatment for students. The team of clinical professionals includes psychologists, licensed counselors including substance use specialists, psychology interns, practicum students, and psychiatric medical providers

Services include short-term individual therapy, a variety of group therapy options, and psychiatric screening and assessment. Students may work with a trained biofeedback counselor as another means of addressing anxiety or stress and pain among other symptoms. The UCC provides psychological assessment to screen for ADHD and learning disabilities.

Students with urgent issues may visit the UCC without appointment to meet with the Urgent Care Counseling clinician. If there are multiple students seeking Urgent Care Counseling services, the students will be seen on a "first-come, first-served" basis. Flexibility is maintained to address student needs according to level of acuity.

The UCC staff is available to consult with students, faculty, and staff who are concerned about a student's mental health. Consultations are available through the UCC's Urgent Care Counseling, or by phone.

The UCC is open according to the cented on the center's website: www.vanderbilt.edu/ucc. Students seeking to schedule an appointment should visit the Office of Student Care Coordination's website at www.vanderbilt.edu/carecoordination or call \$15-343-WELL (9355)

Students may seek brief support for discussing situations and may take advantage of UCC's drop-in services on campus at various locations as detailed on the UCC's website: https://www.vanderbilt.edu/ucc/services/drop-in-consultation/. This program enables students to have aprid access to a counselor for support.

The UCC collaborates with the Center for Student Wellbeing to provide outreach, prevention, and education, with one specific focus being suicide prevention through MAPS (Mental health Awareness & Prevention of Suicide) training for students, faculty, and staff. These resources are provided to facilitate stress management in order to minimize or prevent mental health concerns. In addition, the UCC offers workshops about academic support and ADHD in collaboration with the Center for Student Wellbeing.

More details about services may be found at the UCC website: www.vanderbilt.edu/ucc.

Charges

The UCC does not charge for routine services, but does charge for psychological testing, both for a screening and for a full test and for specific disability assessments when indicated. The student is expected to pay for the testing prior to its being scheduled. The UCC has no relationship with any insurance company and cannot bill third parties for these charges.

Students requiring laboratory testing are referred to the Student Health Center. Charges for these tests are made in accordance with Student Health Center policies.

Confidentiality

The UCC is a confidential setting under the Family Educational Rights and Privacy Act (FERPA). To the extent permitted by law, the UCC does not share information about students or anything discussed in session, with the exception of safety concerns, which may override the confidentiality policy. For example, limits of confidentiality include situations that involve imminent risk to a client or another individual, and situations involving elder or child abuse. The UCC encourages students to sign a written release of information form if they would like for the UCC to share information with members of the student's family or others. The UCC may share attendance and additional minimally necessary information with the other primary Student Care Network offices, including the Office of Student Care Coordination, Student Health Center, and Center for Student Wellbeing for the purposes of care coordination.

Center for Student Wellbeing

The Center for Student Wellbeing cultivates engagement in lifelong well-being practices and endeavors to create a culture that supports students' personal development and academic success through a holistic and integrative framework. The Center's areas of focus include, for example, alcohol and other drug education and recovery support, self-care and personal growth, strengthening physical and emotional health, and support for supporting students in distress. The Center provides prevention programming, individual coaching, skill building workshops, substance use screenings, meditation and yoga, and referrals to campus resources.

New appointments for Center for Student Wellbeing services may be scheduled through the Office of Student Care Coordination. Information is available at https://www.vanderbilt.edu/healthy.lores

Student Health Insurance Plan (SHIP)

Eligibility: All degree-seeking students (with the exception of those in the Division of Inclassified Studies) registered for four or more credits or who are actively enrolled in research courses (including but not limited to dissertation or thesis courses) at Vanderbilt are automatically enrolled in—and will be blied for—a University-endorsed health insurance plan underwritten by UnitedHealthcare through Vanderbilt's broken Callagher Student Health & Special Risk, unless they complete the online waiver process. Information about the plan is available online at

<u>www.gallagherstudent.com/vanderbilt</u>. In addition, a) insurance replesentative has an office at the Student Health Center and can be reached at 615-343-4688.

Cost: The annual premium, which is approved each year by the Board of Trust, is billed to students through their student account. The premium is a separate charge from uition

Coverage Period: Coverage for students begins August 12 and extends through August 11 the following calendar year, if the student remains in school for 31 days beginning August 12. After 31 days, the coverage remains in effect whether the student is in school or is away from the University, and there is no pro rata refund for this coverage. If a student disenrolls from coursework within the first 31 days of classes so that they no longer meet the above eligibility standards, their insurance coverage will be terminated.

Coverage Benefits: SHIP provides hespital, surgical, and major medical benefits. A brochure explaining the limits, exclusions, and benefits of the plan is a vailable online at www.gallagherstudent.com/vanderbilt, at registration, in the Office of Student Accounts, at the Student Health Center, or on the Student Care Network website. The plan requires that the Student Health Center be the student's primary care provider in Nashville, but will provide coverage for referrals to specialists when a written referral is made by a Student Health Center provider.

Waiver of Insurance Plan: A student who does not wish to subscribe to the insurance plan offered through the University must notify the University of comparable coverage under another policy. Waiver of the student insurance plan does not affect eligibility for services at the Student Health Center. The online waiver process may be found online at www.gallagherstudent.com/vanderbilt. The insurance charge will not be waived if the online process is not completed by August 1 for the fall semester, or by January 6 for students who are newly enrolled for the spring semester. The waiver process must be completed each academic year. Newly enrolled eligible summer session students planning to take full-time coursework in the fall must complete both a summer and a fall waiver form by August 1. Additional information about the waiver process may be found on the Student Care Network website.

Family Coverage: An additional premium is charged for family insurance coverage. An eligible student who wishes to provide coverage for his/her/their spouse and/or children, may do so at <u>www.gallagherstudent.com/vanderbilt</u>. It is the student's responsibility to enroll their eligible dependents each year. **Dependents are not automatically enrolled.**

International Student Coverage

International students are automatically enrolled in, and billed for, the Gallagher plan, in compliance with federal regulations relations to J-1 visa status, which requires international students and their dependents to maintain adequate insurance coverage. Coverage through the Gallagher plan is mandatory; however, new waiver requirements have been instituted to support international students studying remotely for the 2020-2021 academic year. These policies are outlined at www.vanderbilt.edu/studentcarenetwork/waive/.

Qualifying Events for Students and Dependents

Students who initially waive coverage can submit a Petition to Add if they lose coverage under the plan they used to waive (for example, due to no longer being covered as a dependent). This is called a "qualifying event." The premium will be pro-rated based on the date coverage begins. The applicable premium will be charged to the student account.

Eligible dependents may also be added if the student experiences one of the following qualifying events: (a) marriage, (b) birth of a child, (c) divorce, (d) the dependent entering the country for the first time, or (e) the dependent losing coverage under another insurance plan.

Links to the Petition to Add and the Dependent Petition to Add forms can be found at www.gallagherstudent.com/vanderbilt. The Petition to Add or Dependent Petition to Add form and supporting documentation (i.e., proof of a qualifying event) must be received by Gallagher Student Health & Special Risk within 31 days of the qualifying event. Forms received more than 31 days after the qualifying event will not be processed.

Services for Students with Disabilities

Vanderbilt is committed to the provisions of the Rehabilitation Act of 1973 and American; with Disabilities Act as it strives to be an inclusive community for students with disabilities. Students seeking accommodations for any type of disability are encouraged to contact Student Access Services. Services in clude, but are not limited to, extended time for testing, assistance with locating sign language interpreters, audio tex books, physical adaptations, notetakers, reading services, and reasonable accommodations for housing and dining. Accommodations are tailored to meet the needs of each student with a documented disability. Specific concerns pertanding to services for people with disabilities or any disability issue should be directed to the Disability Program Director. Student Access Services. Mailing address: PMB 407726, 2301 Vanderbilt Place, Nashville, Tennessee 37240-7726. Walk in address: 108 Baker Building. Phone (615) 343-9727; fax (615) 343-0671; yanderbilt.edu/student-access.

Nondiscrimination, Anti-Harassment, and Anti-Revaliation

The Title IX Office (<u>vanderbilt.edu/title-i.</u>) and/or the Equal Opportunity and Access Office (<u>vanderbilt.edu/eoa</u>) investigate allegations of prohibited dis frimmation, horassment, and retaliation involving members of the Vanderbilt community. This includes allegations of sexual misconduct and other forms of power-based personal violence. Director of Title IX Stephanie Roth is Vanderbilt's Title IX coordinator.

If you believe that a member of the Vanderbit community has engaged in prohibited discrimination, harassment, or retaliation, please contact the Title IX Office and/or the Equal Opportunity and Access Office. If the offense is criminal in nature, you may file a report with Vanderbit University Police Department.

The Title IX Office also facilitates interim accommodations for students impacted by sexual misconduct and power-based personal violence. Some examples of interim accommodations include no contact orders, adjusted course schedules, and housing changes.

Specific concerns pertaining to prohibited discrimination, harassment, or retaliation, including allegations of sexual misconduct and other forms of power-based personal violence, should be directed to the Title IX Office at (615) 343-9004.

Equity, Diversity, and Inclusion

Excellence at Vanderbilt is inextricably tied to the university's commitment to fostering an inclusive community where people of all identities, backgrounds, and perspectives can thrive. The vice provost for strategic initiatives and the vice chancellor for equity, diversity, and inclusion and chief diversity officer work in partnership with students, faculty, and staff to identify and implement best practices that advance equity, diversity, and inclusion across campus in pursuit of building and supporting an inclusive community enriched by a broad variety of experiences and knowledge. Visit vanderbilt.edw/diversity for more information.

Inclusive Excellence

Diversity, inclusion, and community engagement are essential cornerstones of Vanderbilt's commitment to equity and trans-institutional discovery and learning. The Office for Inclusive Excellence has as its mission to work in partnership

with members of the Office of the Provost and Vanderbilt colleges and schools to ensure that we advance the success and affirmation of all students and faculty. The Office for Inclusive Excellence oversees and establishes strategic initiatives to promote academic success, professional and cultural education, and inclusivity and belonging. Visit vanderbilt.edu/inclusive-excellence for more information.

Project Safe Center

The Project Safe Center partners with students, faculty, and staff to create a campus culture that rejects sexual violence and serves as a resource for all members of the Vanderbilt community. The Project Safe Center provides support to survivors of intimate partner violence and engages the campus community in prevention of sexual assault, dating violence and domestic violence, and stalking.

Bystander intervention training, an online education module addressing sexual violence, and a variety of programs and presentations on consent, healthy relationships, and violence prevention are available through the Project Safe Center. A 24-hour support hotline answered by Project Safe's victim resource specialists is available at (615) 322-SAFE (7233).

The Project Safe Center located at 304 West Side Row is open Monday through Friday, 8:00 a.m. to 5:00 p.m. For more information, please call (615) 875-0660 or visit *yanderbilt.edw/projectsafe*.

Barnes & Noble at Vanderbilt

Barnes & Noble at Vanderbilt, the campus bookstore located at 2525 West End Avenue, offers textbooks (new, used, digital, and rental), computers, supplies, dorm accessories, licensed Vanderbilt merchandise, and best-selling books. The bookstore features extended hours of operation and hosts regular special events. Visitors to the cookstore café can enjoy Starbucks coffees, sandwiches, and desserts while studying. Free customer parting is available in the 2525 garage directly behind the bookstore. For more information, visit www.ubookstore.com, follow winter.com (BN Vanderbilt, find the bookstore on Facebook at facebook.com/VanderbiltBooks, or call (615) 343-2665.

The Commodore Card

The Commodore Card is the Vanderbilt student ID card. It can be used to access debit spending accounts, VU meal plans, and campus buildings such as residence halls, libraries, acalemic buildings, and the David Williams II Student Recreation and Wellness Center.

ID cards are issued at the Commodore Card Office, 184 Sarract Student Center, Monday through Friday from 8:30 a.m. to 4:00 p.m. For more information, go to <u>vanderbilizedu/cardservices</u>.

Eating on Campus

Vanderbilt Campus Dining operates several restaurants, cafés, and markets throughout campus that provide a variety of food. The two largest dining facilities are Rand Dining Center in Rand Hall (connected to Sarratt Student Center) and The Ingram Commons dining hall. E. L. onson Ingram College offers all-you-care-to-eat dining and is open to all Vanderbilt University students. Five convenience stores on campus offer grab-and-go meals, snacks, beverages, and groceries. The convenience stores located at Kissam Certer and Highland Munchie offer hot and cold food bars which are open for breakfast, lunch, and dinner. All units accept the Commodore Card and meal plans. Graduate student meal plans are offered at a discount. For more information about meal plans, hours, and menus, please visit campusdining vanderbilt.edu.

Housing

To support the housing needs of new and continuing graduate and professional students, the Office of Housing and Residential Education provides a web-based off-campus referral service (offcampushousing.vanderbilt.edu). The referral service lists information about housing accommodations off campus. Cost, furnishings, and conditions vary greatly. For best choices, students seeking off-campus housing should consult the website as early as possible. The website includes listings by landlords looking specifically for Vanderbilt-affiliated tenants. Listings are searchable by cost, distance from campus, number of bedrooms, and other parameters. Students may also complete a profile to assist in finding a roommate. Oncampus university housing for graduate or professional students is not available.

Change of Address

Students who change either their local or permanent mailing address are expected to notify the Office of the University Registrar immediately. Candidates for degrees who are not in residence should keep the school and the Office of the University Registrar informed of current mailing addresses. To change or update addresses, visit registrar.vanderbilt.edu/academic-records/change-of-address.php.

International Student and Scholar Services

ISSS provides immigration advising and services, including the processing of immigration paperwork, to more than 1,952 international students and scholars. The office works with admission units, schools, and departments to generate documentation needed to bring nonimmigrant students and scholars to the U.S. Further, ISSS keeps abreast of the regulations pertaining to international students and scholars in accordance with the Departments of Homeland Security and State. ISSS advising staff are available to support students' and scholars' requests through email, phone calls, daily drop-in hours (1:30–3:30 p.m., Monday–Friday), and private appointments. ISSS puts a strong emphasis on providing employment workshops to inform international students about professional development and employment options while enrolled and after graduation. ISSS conducts regular workshops on Curricular Practical Training (CPT), Optional Practical Training (OPT), and Academic Training (AT). ISSS also supports more than 300 alumni international students who have already graduated and are either on OPT or AT work permission. For additional information on ISSS services, visit *vanderbilt.edu/isss*.

The Center for Teaching

The mission of the Center for Teaching is to promote university teaching that leads to meaningful student learning. The services of the center are available to all graduate students, including those teaching at Vanderbilt as teaching assistants (TAs) and instructors of record, as well as those who anticipate that teaching will be a part of their future careers.

Fall TA Orientation (TAO) introduces participants to teaching at Vanderbilt, focusing on the information and skills necessary to take on TA roles in the classroom. Workshops and practice teaching sessions are led by experienced graduate student teaching assistants.

The Certificate in College Teaching has been designed to assist graduate stidents who wish to develop and refine their teaching skills. The certificate focuses on the research on how people learn and best teaching practices, and supports the university's pursuit of excellence in teaching and learning. The certificate is ideal for graduate students whose goals are to become more effective educators and who want to prepare for future careers in higher education teaching.

The Blended and Online Learning Design (BOLD) Fellows Triggan helps graduate students partner with faculty members to design and develop online modules for integration into a course. The teams implement these modules in existing classes and investigate their impact on student learning.

The Certificate in Humanities Teaching & Learning is a program for humanities graduate students that comprises a sequential seminar and practicum in which participant, explore humanistic pedagogies and teaching historically underrepresented populations.

The Graduate Teaching Fellows and Teaching Afiliates Program provides graduate students the opportunity to work at the center, facilitating the programs offered to graduate students, consulting with TAs, and collaborating on teaching-related projects.

For more information and other services, please vivit the Center for Teaching website at <u>cft.vanderbilt.edu</u> or call (615) 322-7290.

The Writing Studio

The Writing Studio offers graduate studies personal writing consultations, fifty-minute interactive discussions about writing. Trained writing consultants can act as sounding boards and guides for the development of arguments and the clarification of ideas. The focus of a consultation varies according to the individual writer and project. In addition to the standard fifty-minute consultations, the Writing Studio also offers dissertation writers the possibility of having extended appointments with the same consultant on an ongoing basis. Fifty-minute appointments can be scheduled online at writing.studio@writing.studio@wanderbilt.edu and are available on a first-come, first-served basis. Information about other programs for graduate students, such as the journal article writing workshop and the annual dissertation writer's retreat, can also be found at writing.studio@writing.studiowriting.studiowriting.studiowriting.studiowriting.studiowriting.studiowriting.studiowriting.studiowriting.studiowriting.studiowriting.studiowriting.studiowriting.studiowriting.studiowriting.studiowriting.studiowri

Information Technology

Vanderbilt University Information Technology (VUIT) offers voice, video, data, computing, and conferencing services to Vanderbilt students, faculty, and staff. VUIT provides free antivirus downloads and malware prevention in many campus areas.

VUIT maintains and supports VUnet, the campuswide data network that provides access to the internet, and AccessVU, the authentication service that enables Vanderbilt users to securely identify themselves to many services on VUnet. Those services include YES (Your Enrollment Services), Brightspace, and Vmail, the university's email system for faculty, staff, and graduate students.

VUIT also partners with Sprint, Verizon, and AT&T to offer discounts for cellular phone service. For discount information see <u>it.vanderbilt.edu/cellphone</u>.

It is important to note that many wireless consumer electronic devices interfere with VUnet, and in worst-case circumstances, could even cause degradation to network service. These devices are prohibited and include, but are not limited to, routers, access points (APs), or AirPorts manufactured by companies such as Apple, Belkin, D-Link, and Linksys. Additionally, settings for smartphone hotspots and wireless connectivity for printers and other devices must be disabled to prevent interference with university wireless APs.

Vanderbilt offers all students low-cost and free-of-charge software, including Microsoft Office and Microsoft Windows. See <u>softwarestore.vanderbilt.edu</u> for a complete product catalog and more information.

Furthermore, VUIT provides various conferencing and collaboration services for students, including audio and video conferencing via a desktop or a Polycom bridge. Vanderbilt's blog service offers WordPress Blogs at my.vanderbilt.edu. See it.vanderbilt.edu/services/collaboration for more information.

The Tech Hub is the help desk at Vanderbilt that provides information to students, faculty, and staff about VUnet and VUnet services. Its locations, hours, contacts, and other information can be found at it.vanderbilt.edu/techhub.
For more information on IT services and computing at Vanderbilt, go to it.vanderbilt.edu.

The Jean and Alexander Heard Libraries

The Jean and Alexander Heard Libraries system at Vanderbilt University houses nearly five million items and provides access to millions more resources through its nine campus libraries: Central Library (A&S); Peabody Library; Annette and Irwin Eskind Family Biomedical Library and Learning Center; Walker Management Library; Wilson Music Library; Massey Law Library; Stevenson Science and Engineering Library; the Divinity Library; and the Special Collections Library. These libraries share an online presence that provides access to an integrated catalog of or at and e-resources, as well as information about library services, workshops, programs, exhibitions, research guidel, and ilbrarian subject specialists.

Library staff teach students to be information literate and help them, develop research delibrary in an increasingly complex information environment. Students can connect with a librarian in person or ask questions through the library website. Library spaces across campus offer quiet individual study spaces, group study, and instructional rooms, as well as learning commons and cafes. Faculty- and student-curated exhibitions in pughout the libraries offer intellectual and creative insights that encourage students to think critically and see their own work is now ways. Students, faculty, and staff come to the library to read in a cozy nook, meet friends for group study, grab a quick meal, or attend an author's talk. Even if you are off campus, digital library resources are at your fir gertips via your phone, laptop, or computer.

The oldest items in the library date from ca. 2500 BCE, and new prolications are being added every day. Among the collection strengths are: Latin American history, politics, and culture; the History of Medicine Collections; the W. T. Bandy Center for Baudelaire and Modern French Stadies; the Southern Literature and Culture Collections; the United States Playing Card Collection; and the Vanderbit Television. News Archive, the world's most extensive archive of television news covering 1968 to present. The libraries are also involved in digital scholarship, publishing and partnering with faculty on the *Revised Common Lectionary*, one of the first published web-based resources of scriptural readings for the liturgical year, *Ecclesiastical and Secular Source for Slave Societies*, a digital preservation program for endangered documents related to slave societies, the *Global Music Archive*, a multimedia archive for traditional and popular song, music, and dance of Africa and the Americas, and *Syriaca*, a digital project for the study of Syriac literature, culture, and history.

Get to know your libraries and your librarians early in your career at Vanderbilt. They have the information you need—and can help you transform that information into knowledge, creativity, and success.

Bishop Joseph Johnson Black Cultural Center

The Bishop Joseph Johnson Black Cultural Center provides educational and cultural programming designed to highlight the history and cultural experiences of African Americans. The center was established in 1984 and named in honor of the first African American student admitted to Vanderbilt University in 1953, Bishop Joseph Johnson (B.D. '54, Ph.D. '58). The BCC activities focus on providing student support and development, campus enrichment, and community engagement.

Student Support and Development (Inclusion)

One of the major aims of the BCC is student support and development. To accomplish this objective, the BCC offers student-driven programming, mentoring initiatives, organizational meeting spaces, service opportunities, and leadership skills training. The BCC also serves as a haven for students, with opportunities for informal fellowship with other students of all levels and backgrounds as well as with faculty and staff.

Campus Enrichment (Diversity)

With campus programming focused on Africans and African Americans, the BCC enriches the overall campus environment by promoting intercultural competence. Specifically, the BCC works with numerous campus partners to

sponsor lectures, musical performances, art exhibitions, films, and discussions on African and African American history and culture.

Community Engagement (Equity)

Additionally, the BCC engages in community outreach and service by working with various civic and cultural groups in the Nashville area. Through community programs and by supporting students as they tutor and mentor young people from underserved areas in the city, the BCC advocates for social justice and equity on campus and in the larger community.

The BCC is located in the center of campus directly behind Buttrick Hall and across from the main campus mailroom. For more information, please call (615) 322-2524 or visit *yanderbilt.edu/bcc*.

Margaret Cuninggim Women's Center

The Margaret Cuninggim Women's Center leads co-curricular campus initiatives related to women's and gender issues. The center partners with many departments, programs, and individuals across campus to raise awareness about the ways in which gender shapes and is shaped by our lived experiences. Because its aim is to make the Vanderbilt community more inclusive and equitable, the center encourages all members of the Vanderbilt community to take part in its events and resources.

The Women's Center celebrates women and their accomplishments and fosters empowerment for people of all identities. The center offers individual support and advocacy around a variety of issues, including gender stereotyping, gender equity, leadership, parenting, body image, disordered eating, pregnancy and reproduction, sexual health, and more. The Women's Center is open Monday through Friday, 9:00 a.m. to 5:00 p.m. and is located at 316 West Side Row. For more information, please call (615) 322-4843 or visit *vanderbilt.edu/womenscenter*.

Office of LGBTQI Life

The Lesbian, Gay, Bisexual, Transgender, Queer, and Intersex Life office is a welcoming space for individuals of all identities and a resource for information and support about gender and sexuality. LGL QI Life serves the entire Vanderbilt community through education, research, programming, support, and social events. The office also serves as a comfortable study and socializing space, as well as a connection point to the greater Nashville LGBTQL community. In addition, LGBTQI Life conducts tailored trainings and consultations for the campus and community. The Office of LGBTQI Life is located in the K. C. Potter Center, Euclid House, 312 West Side Row. For the emformation, please visit <u>vanderbilt.edw/lgbtqi</u>.

Office of the University Chaplain and Religious Life

The Office of the University Chaplain and Religious Life propages opportunities to explore and practice religion, faith, and spirituality and to more deeply understand one's personal varies and social responsibility via educational programming, encounters with various faith perspectives, and engagement with religious and spiritual communities. The office welcomes and serves all students, faculty, and staff and provides an intellectual home and ethical resource for anyone in the Vanderbilt community seeking to clarify, explore, and deepen un lerstanding of their lives and/or faith.

Recognizing the importance of exploring one's faith in community, the office facilitates opportunities for individuals of a shared faith to worship/practice their particular religious tradition. Whether guided by one of our affiliated chaplains or a student-run religious organization, these groups foster a sense of community and common values. For a complete listing of campus religious groups, resources, services, and programming opportunities, visit <u>vanderbilt.edu/religiouslife</u>.

Schulman Center for Jewish Life

The 10,000-square-foot Ben Schulman Center for Jewish Life is the home of Vanderbilt Hillel. The goal of the center is to provide a welcoming community for Jewish students at Vanderbilt and to further religious learning, cultural awareness, and social engagement. Vanderbilt Hillel is committed to enriching lives and enhancing Jewish identity. It provides a home away from home, where Jews of all denominations come together, united by a shared purpose. The Schulman Center is also home to Grin's Cafe, Nashville's only kosher and vegetarian restaurant. For further information about the Schulman Center, please call (615) 322-8376 or email *mailto:hillel@vanderbilt.edu*.

Vanderbilt Child and Family Center

Vanderbilt Child and Family Center provides support and resources to the community of Vanderbilt families across the spectrum of life. As reflected in our provision of new parent support, early childhood education, family life resources, and elder care support, VCFC values the university's commitment to the education of the whole person and cultivation of lifelong learning. Visit *yanderbilt.edu/child-family-center*.

Parking, Vehicle Registration, and Alternative Transportation

Parking space on campus is limited. Motor vehicles operated on campus at any time by students, faculty, or staff must be

registered with VUPS Parking Services located at 2800 Vanderbilt Place. A fee is charged. Parking regulations are published annually and are strictly enforced. More information is available at *vanderbilt.edw/parking*.

Bicycles must be registered with Vanderbilt University Public Safety.

All graduate and professional students can ride to and from the Vanderbilt campus free of charge on Nashville's Metropolitan Transit Authority buses. To use this service, a valid student ID card is required for boarding the bus.

University Courses

By tackling pressing real-world problems and addressing big questions, University Courses educate the whole student and promote lifelong learning. The courses leverage the natural synergies across Vanderbilt's ten schools and colleges, giving students the opportunity to reach beyond their area of study and interact with faculty at the intersection of disciplines. Each course promotes transinstitutional learning while providing opportunities to embrace diverse perspectives. For more information, visit *cft.vanderbilt.edu/university-courses*.

Official University Communications

Certain federal statutes require that information be delivered to each student. Vanderbilt delivers much of this information via email. Official electronic notifications, including those required by statutes, those required by university policy, and instructions from university officials, will be sent to students' Vanderbilt email addresses: *user.name@vanderbilt.edu*. Students are required to be familiar with the contents of official university notifications, and to respond to instructions and other official correspondence requiring a response. Some messages will include links to the YES Communications Tool, which is a secure channel for official communication of a confidential nature.

The university makes every effort to avoid inundating students with noness ential email (often called "spam"), and maintains separate lists from which students may unsubscribe for announcements of general interest.

Prior Degrees

It is the policy of Vanderbilt University to verify prior education a credentials for all admitted students who intend to matriculate. All matriculated students must provide official copies of transcripts and any other required supporting documentation to Vanderbilt University as part of the prior degree verification process. The Office of the University Registrar will review transcripts and other supporting documentation for authenticity and to confirm degrees earned prior to matriculation at Vanderbilt. Offers of admission are contingent on a student's providing the required documentation. Admitted students are required to provide official documentation of the baccalaureate degree prior to matriculation to all VUSM degree programs.

Vanderbilt University Police Department

The Vanderbilt University Police Department, (615) 322-2745, is a professional law enforcement agency dedicated to the protection and security of Vanderbilt University and its diverse community (*police.vanderbilt.edu*).

The Vanderbilt University Police Department comes under the charge of the Office of the Vice Chancellor for Administration. As one of Tennessee's larger law enforcement agencies, the Vanderbilt University Police Department provides comprehensive law enforcement and security services to all components of Vanderbilt University including the academic campus, Vanderbilt University Medical Center, Vanderbilt Health at One Hundred Oaks, and a variety of university-owned facilities throughout the Davidson County area.

The Police Department includes a staff of more than one hundred people, organized into three divisions under the Office of the Associate Vice Chancellor and Chief of Police: Operations Division (Main Campus, Medical Center, and 100 Oaks Precincts), Administrative Division, and Auxiliary Services Division. All of Vanderbilt's commissioned police officers have completed officer training at a state-certified police academy and are required to complete on-the-job training as well as attend annual in-service training. Vanderbilt police officers hold Special Police Commissions and have the same authority as that of a municipal law enforcement officer, while on property owned by Vanderbilt, on adjacent public streets and sidewalks, and in nearby neighborhoods. When a Vanderbilt student is involved in an off-campus offense, police officers may assist with the investigation in cooperation with local, state, or federal law enforcement. The department also employs non-academy-trained officers called community service officers (commonly referred to as CSOs) who lend assistance 24/7 to the Vanderbilt community through services that include providing walking escorts, providing jump starts, and unlocking cars. For non-emergency assistance from a community service officer, dial (615) 322-2745 (2-2745 from an on-campus extension).

The Vanderbilt University Police Department provides several services and programs to members of the Vanderbilt community:

Vandy Ride—The Vanderbilt University Police Department administers the Vandy Ride service at Vanderbilt University. The Vandy Ride service provides vehicular escorts to designated locations on campus. The service consists of vans that operate from 6:00 p.m. to 3:30 a.m. GPS technology allows students to track Vandy Vans on their route via

computer or mobile phone using the VandySafe app, setting up text message alerts to let them know when a van will be arriving at their stop. Please visit *police.vanderbilt.edu/services/vandysafe.php* to download the app.

Stop locations were chosen based on location, the accessibility of a secure waiting area, and student input. Signs, freestanding or located on existing structures, identify each stop. A walking escort can be requested to walk a student from his/her stop to the final destination. A van is also accessible to students with mobility impairments. For complete information about the Vandy Ride service, including routes, stops, and times, please visit <u>vandyvan.doublemap.com</u> or call (615) 322-2554.

As a supplement to the Vandy Ride van service, walking escorts are available for students walking to and from any location on campus during nighttime hours. Walking escorts are provided by VUPD officers. The telephone number to call for a walking escort is either (615) 322-2745 (2-2745 from a campus phone) or (615) 421-8888 (1-8888 from a campus phone), after which a representative from VUPD will be dispatched to the caller's location, or to a designated meeting point to accompany the caller to his or her destination.

Emergency Phones—Emergency telephones (Blue Light Phones) are located throughout the university campus, Medical Center, and 100 Oaks.

Each phone has an emergency button that when pressed automatically dials the VUPD Communications Center. An open line on any emergency phone will activate a priority response from an officer. An officer will be sent to check on the user of the phone, even if nothing is communicated to the dispatcher. Cooperation is essential to help us maintain the integrity of the emergency phone system. These phones should be used only for actual or perceived emergency situations.

An emergency response can also be activated by dialing 911 from any campus phone. Cellphone users can dial (615) 421-1911 to summon an emergency response on campus. Cellphone users should dial 911 for off-campus emergencies. Callers should be prepared to state the location from which they are calling.

Exchange Area—The Vanderbilt University Police Department has designated the lobby of the Police building located at 2800 Vanderbilt Place as an "Exchange Area." The Exchange Area is for Vanderbilt University students, faculty, and staff to trade legal items bought and sold online on various secondhand applications in a safe environment. The building/lobby is located next to the Vandy Van stop in lot 72C near Vanderbilt Stadium. Either the scaler or buyer stust be Vanderbilt affiliated (student, faculty, or staff). The affiliated person must complete the online registration form at police.vanderbilt.edu/safedeal prior to the actual trade.

Security Notices—In compliance with the U.S. Department of Higher Education and the Jeanne Clery Act, Security Notices are issued to provide timely warning information concerning a potentially dangerous situation on or near Vanderbilt University. This information is provided to empower our students and employees with the information necessary to make decisions or take appropriate actions concerning their own personal safety. Security Notices are distributed throughout Vanderbilt to make community members aware of significant crimes that occur at the university. They are distributed through Vanderbilt email his and through the department's webpage, police.vanderbilt.edu/crimeinfo/securityn lices.php.

Educational and Assistance Programs—The Crane Prevention Unit of Vanderbilt University Police Department offers programs addressing issues such as sexual assault, con estic violence, workplace violence, personal safety, RAD (Rape Aggression Defense) classes, and voum assistance. VUPD provides additional services including property registration (for bikes, laptops, etc.), lost and found, weapons tackeeping, and Submit a Crime Tip. For further information on available programs and services, call (615) 322-7845 or visit police.vanderbilt.edu/services.

Additional information on security ne. sures and crime statistics for Vanderbilt is available from the Vanderbilt University Police Department, 111 28th Avenue South, Nashville, Tennessee 37212. Information is also available at *police.vanderbilt.edu*.

Annual Security Report—The Vanderbilt University Annual Security Report is published each year to provide you with information on security-related services offered by the university and campus crime statistics in compliance with the Jeanne Clery Disclosure of Campus Security Policy and Campus Crime Statistics Act and the Tennessee College and University Security Information Act.

This booklet is prepared with information provided by the Nashville Metropolitan Police Department, the Department of Student Athletics, Office of the Dean of Students, the Office of Housing and Residential Education, and the Vanderbilt University Police Department. It summarizes university programs, policies, and procedures designed to enhance personal safety for everyone at Vanderbilt.

A copy of this report may be obtained by writing or calling the Vanderbilt University Police Department, 111 28th Avenue South, Nashville, Tennessee 37212, or (615) 875-9157 (telephone). A PDF copy of this report may also be obtained on the website at *police.vanderbilt.edu/pdfs/annual-security-report.pdf*.

Obtaining Information About the University

Notice to current and prospective students: In compliance with applicable state and federal law, the following information about Vanderbilt University is available:

Institutional information about Vanderbilt University, including accreditation, academic programs, faculty, tuition, and other costs, is available in the catalogs of the colleges and schools on the Vanderbilt University website at *vanderbilt.edu/catalogs*.

Information about financial aid for students at Vanderbilt University, including federal and other forms of financial aid for students, is available from the Office of Student Financial Aid and Scholarships on the Vanderbilt University website at *vanderbilt.edu/financialaid*. The Office of Student Financial Aid and Scholarships is located at 2309 West End Avenue, Nashville, Tennessee 37240-7810, (615) 322-3591 or (800) 288-0204.

Information about graduation rates for students at Vanderbilt University is available on the Vanderbilt University website at www.vanderbilt.edu/pie/student/ Select "Retention/Graduation Rates." Paper copies of information about graduation rates may be obtained by writing the Planning and Institutional Effectiveness Office at 110 21st Avenue South, Suite 805 Nashville, TN 37240 or calling 615.343.3282.

The *Vanderbilt University Annual Security Report* on university-wide security and safety, including related policies, procedures, and crime statistics, is available from the Vanderbilt University Police Department on the university website at *police.vanderbilt.edw/pdfs/annual-security-report.pdf* A paper copy of the report may be obtained by writing the Vanderbilt University Police Department, 2800 Vanderbilt Place, Nashville, Tennessee 37212 or by calling (615) 343-9750. For more information, see "Vanderbilt University Police Department" in the following section of this catalog.

A copy of the annual *Equity in Athletics Disclosure Act Report* on the Vanderbilt University athletic program participation rates and financial support data may be obtained by writing the Vanderbilt University Office of Athletic Compliance, 2601 Jess Neely Drive, P.O. Box 120158, Nashville, Tennessee 37212 or by calling (615) 322-7992.

Information about your rights with respect to the privacy of your educational records under the Family Educational Rights and Privacy Act is available from the Office of the University Registrar on the Vande out oriversity website at *registrar.vanderbilt.edw/ferpa*. Paper copies of this information about educational records may be obtained by writing the Office of the University Registrar, Vanderbilt University, PMB 407701, 110 21st Avegue South, Suite 110, Nashville, Tennessee 37240-7701 or by calling (615) 322-7701. For more information, see "Confidentiality of Student Records" in the following section of this catalog.

Student Records (Family Educational Rights and Privacy Act)

Vanderbilt University is subject to the provisions of fed ral law known as the Family Educational Rights and Privacy Act (also referred to as FERPA). This act affords matriculated students certain rights with respect to their educational records. These rights include:

- 1. The right to inspect and review their education record within 45 day to the day the University receives a request for access. Students should submit to the Office of the University Registrar writen request that identify the record(s) they wish to inspect. The Office of the University Registrar will make arrangements for access and notify the student of the time and place where the records may be inspected. If the Office of the University Registrar does not maintain the records, the student will be directed to the University official to whom the request should be addressed.
- 2. The right to request the amendment of any part or their education records that a student believes is inaccurate or misleading. Students who wish to request an amendment to their educational record should write the University official responsible for the record, clearly identify the part of the record they want changed, and specify who it is inaccurate or misleading. If the University decides not to amend the record as requested by the student, the student will be notified of the decision and advised of his or her right to a hearing.
- 3. The right to consent to disclosure of personally identifiable information contained in the student's education records to third parties, except in situations that FERPA allows disclosure without the student's consent. These exceptions include:
- Disclosure to school officials with legitimate educational interests. A "school official" is a person employed by the University in an administrative, supervisory, academic or research, or support-staff position (including University law enforcement personnel and health staff); contractors, consultants, and other outside service providers with whom the University has contracted; a member of the Board of Trust; or a student serving on an official University committee, such as the Honor Council, Student Conduct Council, or a grievance committee, or assisting another school official in performing his or her tasks. A school official has a legitimate educational interest if the official needs to review an education record in order to fulfill his or her professional responsibility.
- · Disclosure to parents if the student is a dependent for tax purposes.
- Disclosure to appropriate individuals (e.g., parents/guardians, spouses, housing staff, health care personnel, police, etc.) where disclosure is in
 connection with a health or safety emergency and knowledge of such information is necessary to protect the health or safety of the student or
 other individuals
- Disclosure to a parent or legal guardian of a student, information regarding the student's violation of any federal, state, or local law, or of any
 rule or policy of the institution, governing the use or possession of alcohol or a controlled substance if the University has determined that the
 student has committed a disciplinary violation with respect to the use or possession and the student is under the age of 21 at the time of the
 disclosure to the parent/guardian.
- Disclosure to various authorized representatives of government entities (such as, compliance with Student and Exchange Visitors Information System [SEVIS], Solomon Amendment, etc.).

FERPA provides the university the ability to designate certain student information as "directory information." Directory information may be made available to any person without the student's consent unless the student gives notice as provided for, below. Vanderbilt has designated the following as directory information: the student's name, address, telephone number, email address, student ID photos, major field of study, school, classification, participation in officially recognized activities and sports, weights and heights of members of athletic teams, dates of attendance, degrees and awards received, the most recent previous educational agency or institution attended by the student, and other information that would not generally be considered harmful or an invasion of privacy if disclosed. Any student who does not wish disclosure of directory information should notify the Office of the University Registrar in writing. No element of directory information as defined above is released for students who request nondisclosure except as required by statute.

The request for nondisclosure does not apply to class rosters in online class management applications, or to residential rosters—or rosters of groups a student may join voluntarily—in online, co-curricular engagement applications, or rosters of other information on the websites of student organizations that a student may join. Neither class rosters in online class management applications, nor residential rosters in online co-curricular engagement applications, are available to the public.

As of January 3, 2012, the U.S. Department of Education's FERPA regulations expand the circumstances under which students' education records and personally identifiable information (PII) contained in such records—including Social Security Numbers, grades, or other private information—may be accessed without consent. First, the U.S. Comptroller General, the U.S. Attorney General, the U.S. Secretary of Education, or state and local education authorities ("Federal and State Authorities") may allow access to student records and PII without consent to any third party designated by a Federal or State Authority to evaluate a federal- or state-supported education program. The evaluation may relate to any program that is "principally engaged in the provision of education," such as early childhood education and job training, as well as any program that is administered by an education agency or institution.

Second, Federal and State Authorities may allow access to education records and PU vithout consent, to researchers performing certain types of studies, in certain cases even when the University objects to or does not request such research. Federal and State Authorities must obtain certain use-restriction and data security promises from the third parties that they authorize to receive PII, but the Authorities need not maintain direct control over the third parties.

In addition, in connection with Statewide Longitudinal Data Systems, Save Authorities may collect, compile, permanently retain, and share without student consent, PU ron education records, and may track student participation in education and other programs by linking such PII to other personal information that they obtain from other Federal or State data sources, including workforce development, unemployment in surance, child welfare, juvenile justice, military service, and migrant student records systems.

If a student believes the university has failed to onply with PERPA, he or she may file a complaint using the Student Complaint and Grievance Procedures as outlined in the *Student Handbook*. If dissatisfied with the outcome of this procedure, students may file a written complaint with the Family Poncy Compliance Office, U.S. Department of Education, 400 Maryland Avenue SW, Washington, DC 20202-5920.

Questions about the application of the provisions of the Family Educational Rights and Privacy Act should be directed to the Office of the University Registrar or to the Office of General Counsel.

Vanderbilt Directory

Individual listings in the online People Finder Directory consist of the student's full name, Vanderbilt email address, and campus mailing address (if available). Students may elect to add additional contact information to their listings, including school, academic classification, local phone number, local address, permanent address, cellphone, pager, and fax numbers. Student listings in the People Finder Directory are available to the Vanderbilt community via logon ID and e-password. Students may choose to make their online People Finder listings available to the general public (i.e., viewable by anyone with access to the internet), or to block individual directory items. Students who have placed a directory hold with the Office of the University Registrar will not be listed in the online directory.

Directory information should be kept current. Students may report address changes, emergency contact information, and missing person contact information via the web by logging in to YES (Your Enrollment Services) https://yes.vanderbilt.edu and clicking on the Personal Information link.

Limits of Confidentiality

Imminent Harm/Sexual Misconduct

Imminent Harm to Self or Others: Consistent with Federal Law and Vanderbilt University policy, VUSM may release student information normally considered confidential to appropriate individuals (e.g., health care personnel, police, etc.) if such information is necessary to protect the health or safety of the student or other individuals.

VU Policy on Sexual Misconduct: The Vanderbilt University Student Handbook includes a Sexual Misconduct and Other Forms of Power-Based Personal Violence policy (vanderbilt.edu/student_handbook/sexual-misconduct/). Students

who experience violations of this policy are encouraged to report such incidents. It should be noted that all VUSM faculty members, including those in the VUSM advising system, as well as all VUSM administrators, are not confidential resources (they are known as "mandatory reporters"). As outlined in the policy, mandatory reporters are required to report possible violations of this policy to the Title IX Coordinator so that the university can take steps to address the matter promptly and resolve it fairly.

Extracurricular Activities

Student Centers

A variety of facilities, programs, and activities are provided in six separate student center locations—Alumni Hall, The Commons Center, E. Bronson Ingram College, Kissam Center, Sarratt Student Center|Rand Hall, and the Student Life Center.

Sarratt Student Center|Rand Hall is the main student center hub, housing a 300-seat cinema, art gallery, art studios, multicultural space, rehearsal rooms, large lounge spaces, large and small meeting spaces, and a courtyard. The facility is also home to Vanderbilt Student Communications, radio station, TV station, Local Java, and the Pub at Overcup Oak restaurant. Rand Hall houses the Rand Dining Center, campus store, a multipurpose venue, meeting and seminar rooms, plus large, open lounge space. Some of the offices located in Sarratt Student Center|Rand Hall include the Dean of Students, Greek Life, Student Leadership, Arts and Campus Events, Student Organizations and Governance, Student Care Coordination, Student Accountability, Community Standards and Academic Integrity, and the Student Center for Social Justice and Identity. Also included in this facility is a United States Postal Service office.

The Vanderbilt Student Life Center is the university's large event space. It is both the fulfillment of students' vision to have a large social space on campus and a wonderful complement to Sarratt Student Center Pand Hall. The Student Life Center has more than 18,000 square feet of event and meeting space, including the 9,000 square-foot Commodore Ballroom, which is one of the most popular spaces to have events on campus. The center is also home to the Career Center, Global Education Office, Office of Immersion Resources, and Office of Active Citiz Inship and Service.

The Commons Center is the community crossroads of The In gram Commons Irving and learning community. It has it all: the Dining Hall and great food; a living room with a concent-grade grant plano, and the occasional live musical performance; a small rec room with cardio equipment, free weights, and weight machines; meeting and study rooms; and academic support services like the Writing Studio, the Carrer Center, and the CASPAR premajor advising center. The third floor of The Commons Center is the home of the Department of Political Science.

Alumni Hall was the original student center of campus when the building opened in 1925. Re-opened in fall 2013 after a yearlong renovation that transformed every space in the 'ac'ity', Alumni Hall has returned to its role as a student center after serving other purposes over the years. In the renovated Alumni Hall, students have access to an exercise room as well as several new meeting and event spaces. The Vandarbill Graduate School calls Alumni Hall home, and lounge space on the first floor serves as a robust hub for student life, within the Graduate School community.

Opened in fall 2014 and fall 2016, respectively, Kissam Center and E. Bronson Ingram College are both part of the Vanderbilt residential college system. Kissam Center is home to meeting and event spaces, the Kissam Market, and Kissam Kitchen. E. Bronson Ingram College offers a diving facility, including the award-winning Bamboo Bistro pho concept.

Recreation and Sports

More than two-thirds of Vande bill. University students participate in club sports, intramurals, group fitness classes, or other programs offered at the David Williams II Student Recreation and Wellness Center, known by students as "the Rec." The large variety of programs available for meeting students' diverse interests include: more than thirty club sports teams; more than thirty intramural sports (softball, flag football, basketball, table tennis, and soccer); and an aquatics program offering swim lessons for all ages and abilities. Red Cross lifeguarding and CPR classes are also available. If being outside is more your style, you can choose from one of the many adventure trips offered each semester or create your own adventure trip with tips and gear from the Outdoor Recreation staff. There are more than sixty group fitness classes a week and a variety of wellness offerings from "learn to box" to healthy eating through Vandy Cooks in the Teaching Kitchen, Personalized Nutrition Coaching, and Nutrition Minute grab-and-go information on a variety of nutrition topics.

The Rec is a 289,000-square-foot facility that houses a 25-yard, 15-lane swimming pool; four courts for basketball, volleyball, and badminton; five racquetball and two squash courts; a four-lane bowling alley; five group fitness classrooms, more than 14,000 square feet of weight/fitness room space; rock-climbing wall; seven multipurpose rooms; locker rooms; and a 120-yard turf field surrounded by a 300-meter track in the indoor field house. The Rec's exterior spaces include more than seven acres of field space including three natural grass fields and one turf field.

All students pay mandatory student service fees which support the facilities, fields, and programs (see the chapter on Financial Information). Spouses must also pay a fee to use the facilities. For additional information, please visit *vanderbilt.edu/recreationandwellnesscenter*.

Education at the School of Medicine

THE Vanderbilt University School of Medicine administers degree and graduate certificate programs that provide students with the knowledge, skills, and attitudes they need to practice safe, effective, ethical, evidence-based, and patient-centered health care in the twenty-first century, and to contribute to the knowledge base supporting it.

About the School

The school's mission includes the education of physicians at all levels of their professional experience: medical school; postgraduate education, including basic science and clinical training; and continuing education and professional development for the practicing physician. In addition several master's level and two additional doctoral degrees in health care professions are offered.

Faculty members teach the practice of exemplary patient care at all levels; model programs of health care delivery, at primary, secondary, and tertiary levels; and fulfill the school's responsibility for community service.

In addition to teaching, members of the medical school faculty have a complementary responsibility to generate new knowledge through research. At Vanderbilt, research encompasses basic scientific questions, issues in clinical care, questions related to the health care system, and scholarship in the medical education process itself. Vanderbilt is recognized as one of the leaders in research among medical schools in the United States.

Vision and Mission of the School

The vision of Vanderbilt University School of Medicine is to shape a future is which all persons reach their full health potential.

The core values of Vanderbilt University School of Mencine are integrity, inclusion, humility, mutual respect, and excellence.

The mission of Vanderbilt University School of Medicine is to catalyze the advancement of impactful discovery, servant leadership, and lifelong learning.

In order to carry out this mission, we make these strategic commitments:

- To nurture the growth of clinicians, scientists, and executors who will serve and lead their local, national and global communities.
- To create, implement, and disseminate new knowledge that expands understanding of health, disease, and health care systems.
- To teach, learn, and provide compassionate, personalized caring of the highest quality for every patient who seeks our service and to strive to achieve health equity in the populations we serve.
- To embrace a culture of lifelong learning, critical thinking, and innovation so that we continuously improve in all we do.
- To build a diverse community of faculty, staff, and students that expands the richness of our learning environment and enhances excellence in all of our endeavors.

History of the School

The first diplomas issued by Vanderbilt University were to sixty-one doctors of medicine in February of 1875, thanks to an arrangement that recognized the University of Nashville's medical school as serving both institutions. Thus, Vanderbilt embraced a fully-organized and functioning medical school even before its own campus was ready for classes in October of that year.

The arrangement continued for twenty more years, until the school was reorganized under control of the Board of Trust. In the early days, the School of Medicine was owned and operated as a private property of the practicing physicians who composed the faculty and received the fees paid by students—a system typical of medical education in the United States at the time. Vanderbilt made no financial contribution to the school's support and exercised no control over admission requirements, the curriculum, or standards for graduation. After reorganization under the Vanderbilt Board in 1895, admission requirements were raised, the course was lengthened, and the system of instruction was changed to include laboratory work in the basic sciences.

The famous report of Abraham Flexner, published by the Carnegie Foundation in 1910 and afterward credited

with revolutionizing medical education in America, singled out Vanderbilt as "the institution to which the responsibility for medical education in Tennessee should just now be left." Large grants from Andrew Carnegie and his foundation, and from the Rockefeller-financed General Education Board, enabled Vanderbilt to carry out the recommendations of the Flexner Report. (These two philanthropies, with the addition of the Ford Foundation in recent years, have contributed altogether more than \$20,000,000 to the School of Medicine since 1911.) The reorganized school drew upon the best-trained scientists and teachers in the nation for its faculty. The full benefits of reorganization were realized in 1925 when the school moved from the old South Campus across town to the main campus, thus integrating instruction in the medical sciences with the rest of the university. The school's new quarters were called "the best arranged combination school and hospital to be found in the United States."

In 1977, the School of Medicine moved to the newly completed Rudolph A. Light Hall, which served as the home for School of Medicine educational and administrative activities for 41 years. The seven-story structure, with its 209,000 square feet of space, offered the latest in laboratory equipment, audio-visual, and multi-purpose classroom space. Thousands of VUSM students, faculty and staff have considered Light Hall the home of the School of Medicine, given that it has served as such for the longest single period of the school's history.

Beginning in 1996, several new degree programs became a part of the School of Medicine. These programs span a wide array of health-related fields, including public health (1996), clinical investigation (2000), audiology (2002), medical physics (2002), laboratory investigation (2004), education of the deaf (2006), speech-language pathology (2007), health professions education (2010), applied clinical informatics (2015), and genetic counseling (2017).

Until April 2016, Vanderbilt University owned and operated several hospitals and clinics collectively known as Vanderbilt University Medical Center, including Vanderbilt University Hospital. Vanderbilt Psychiatric Hospital, and Monroe Carell Jr. Children's Hospital at Vanderbilt, and their associated clinics. Effective April 30, 2016, Vanderbilt University conveyed the clinical assets used in the operation of Vanderbilt University Aedical Center to a newly formed, not-for-profit, tax-exempt corporation, which is similarly named Vanderbilt University Medical Center. Vanderbilt University Medical Center now operates independently of Vanderbilt University. It is clinically and academically affiliated with Vanderbilt University.

In summer 2018, the primary location for Vanderbilt University School of Medicine administrative offices—as well as the classrooms, student lounge, and first-year student lockers for me M.D. program—moved from Light Hall to the Annette and Irwin Eskind Family Biomedical Library and Learning Center (EBL). This new home for the School of Medicine, occupying the second, third, and fourth Foots of the EBL, provides a state-of-the-art learning environment, with versatile physical spaces and innovative technology; comfortable, modern gathering spaces for both formal and informal activities for students in the M.D. program; and a bright, airy working environment for School of Medicine faculty and staff. At the same time Light Hall remains an important venue for learning and co-curricular activities for multiple VUSM Legree and certificate programs.

School of Medicine Program Accreditations

Doctor of Medicine—Liaison Committee on Medical Education

American Medical Association 330 North Wabash Avenue Suite 39300 Chicago, IL 60611-5885 Phone: 312-464-4933

LCME.org

LCME Secretariat (AAMC) Association of American Medical Colleges 655 K Street NW Suite 100 Washington, DC 20001-2399 Phone: 202-828-0596

LCME.org

Master of Public Health—Council on Education for Public Health

CEPH 1010 Wayne Avenue, Suite 220 Silver Spring, MD 20910 Phone: 202-789-1050 Fax: 202-789-1895 CEPH.org

Doctor of Audiology and Master of Science in Speech-Language Pathology—Council on Academic Accreditation (CAA) in Audiology and Speech-Language Pathology

American Speech-Language-Hearing Association (ASHA) 220 Research Boulevard, #310 Rockville, MD 20850 Phone 800-498-2071 caa.asha.org

Master of Education of the Deaf—Council for the Accreditation of Educator Preparation (CAEP)

CAEP 1140 19th Street NW, Suite 400 Washington DC, 20036 (202) 223-0077 <u>caepnet.org</u>

Doctor of Medical Physics and Master of Science in Vedical Physics—Committee on Accreditation of Medical Physics Education Programs

CAMPEP, Inc.
1631 Prince Street
Alexandria, VA 22314
Phone: 571-298-1239
Fax: 571-298-1301
campep_admin@campep.org
campep.org

Master of Genetic Counseling Program—Accreditation Council for Genetic Counseling

The Vanderbilt University Master of Genetic Counseling Program has been granted accreditation as a New Program by the Accreditation Council for Genetic Counseling (ACGC) effective January 31, 2019. Additional information may be found on the ACGC website at <u>gceducation.org</u> and on the VUSM website, at <u>medschool.vanderbilt.edu/mgc</u>.

ACGC 7918 Jones Branch Drive Suite 300 McLean, VA 22102 USA (703) 506-7667 gceducation.org

Principal Clinical Education Affiliates

Vanderbilt University Medical Center

Facilities

Vanderbilt University Hospital

Vanderbilt University Hospital (VUH) opened in 1980, with the major addition of the Critical Care Tower in 2009. The hospital is dynamic, growing, and dedicated to meeting the most critical and complex needs of our region, continuing Vanderbilt's more than century-old tradition of offering the best in patient care.

Many patients seen in the hospitals are from states other than Tennessee, with the majority coming from Kentucky, Alabama, and Mississippi.

Adjacent and attached to VUH is Medical Center East, primarily an outpatient services building, but also housing some operating rooms, patient rooms for Labor and Delivery, the Vanderbilt Bill Wilkerson Center and the Vanderbilt Orthopaedics Institute.

The Monroe Carell Jr. Children's Hospital at Vanderbilt

The Monroe Carell Jr. Children's Hospital at Vanderbilt opened as a stand-alone facility in 2(04 and is a place of hope and healing for pediatric patients and their families. Recognized as one of the premier children's hospitals in the nation by *U.S. News and World Report* for twelve years running, Children's Hospital cares for the sickest patients in the region and beyond.

Children's Hospital is the most comprehensive pediatric facility in Tennessee, providing services including neurosurgery, cancer treatment, trauma care, transplant, and much more. Clildren's Hospital operates the region's only Level I pediatric trauma unit and a neonatal intensive care unit with the mighest designated level of care.

The facility is filled with state-of-the-art equipment and information systems to provide the best treatment for patients. It offers a variety of family accommodations to help fulfill its mission of patient-and family-centered care. In addition, Children's Hospital is a top-ranked teaching and research facility. As a nonprofit organization, the hospital cares for children of Tennessee and surrounding states regardless of their ability to pay.

Vanderbilt Psychiatric Hospital

Vanderbilt Psychiatric Hospital, which opened in 1985, provides inpatient and partial hospitalization services to children, adolescents, and adults with psychiatric and substance abuse problems. Services include 24-hour crisis assessment and a year-round accredited school for children and adolescents.

vanderbilthealth.com/psychiarrichospital

The Vanderbilt Clinic

The Vanderbilt Clinic (TVC) a comprehensive outpatient facility, opened in 1988 and houses more than 100 medical specialty practice areas, the clinical laboratories, a center for comprehensive cancer treatment, and a day surgery center.

Vanderbilt Stallworth Rehabilitation Hospital

Vanderbilt Stallworth provides comprehensive inpatient and outpatient rehabilitation services for adult and pediatric patients with neurological, orthopaedic, and other injuries, as well as chronic conditions and disabilities. The hospital specializes in treating stroke, brain, and spinal cord injury; multiple traumas; amputations; hip fracture; and other diagnoses. Stallworth is a designated Stroke Center of Excellence and repeatedly exceeds the national benchmarks for patient satisfaction and functional outcomes. This hospital is a joint venture with HealthSouth Corporation.

vanderbiltstallworthrehab.com

Vanderbilt-Ingram Cancer Center

Vanderbilt-Ingram Cancer Center (VICC) is Tennessee's only National Cancer Institute (NCI)-designated Comprehensive Cancer Center providing treatment for both adult and pediatric cancer patients. It is also a member of

the National Comprehensive Cancer Network, a nonprofit alliance of twenty-six of the world's elite cancer centers collaborating to improve cancer care for patients everywhere. The Cancer Center unites physicians and scientists in research programs in key areas. VICC is ranked in the top 10 in competitively-awarded NCI grant support.

VICC is one of the few centers in the country with a comprehensive program for cancer survivors regardless of age, type of cancer, or where they received their oncology treatment. The center's clinical trials program includes robust work in Phase I drug development and designation by the NCI for Phase I and Phase II clinical trials.

The center also boasts several donor-supported research initiatives, including the Frances Williams Preston Laboratories established by the T. J. Martell Foundation, the A. B. Hancock Jr. Memorial Laboratory for Cancer Research, and the Robert J. Kleberg, Jr., and Helen C. Kleberg Center for Personalized Cancer Medicine. *vicc.org*

Vanderbilt Kennedy Center for Research on Human Development

The Vanderbilt Kennedy Center strives to improve life for people with disorders of thinking, learning, perception, communication, mood, and emotion caused by disruption of typical development. Its core values include the pursuit of scientific knowledge with creativity and purpose; the education of scientists, practitioners, families, and community leaders; the facilitation of discovery by Kennedy Center scientists; and the translation of knowledge into practice. The center is one of fourteen National Institutes of Health research centers on mental retardation and other developmental disabilities. It has also been named a University Center for Excellence on Developmental Disabilities Education, Research, and Service by the federal Administration on Developmental Disabilities. The center is an interdisciplinary research, training, diagnostic, and treatment institute, embracing faculty and resources available through Vanderbilt University Medical Center, the College of Arts and Science, and Peabody College.

vkc.mc.vanderbilt.edu/vkc/

Vanderbilt Diabetes Center

The Vanderbilt Diabetes Center provides a comprehensive approach to trabetes for patients of all ages that includes all aspects of health related to diabetes. It also offers programs to eatip the next generation of caregivers and scholars. Other programs support the diabetes-related research of VVMC faculty members.

vanderbilthealth.com/diabetesandendocrinology/

Center for Experiential Learning and Assessment (CELA)

The Center for Experiential Learning and Assessment (CELA) provides an educationally rich simulation environment for training our students and other health care professionals to practice the highest quality clinical care. Simulation technology has now become a standard for medical education, surgical training, and health care team training. Such programs have resulted in improved performance, quicker response time, and less deviation from practice standards. Healthcare simulators increase trainee confidence and competence, improve patient safety, and can also yield cost and process efficiencies. Our work is grounded in theory-based research and informed by the best educational practices for competent clinical practice. CELA is also instrumental in conducting rigorous research that extends our knowledge and practice of experiential learning and assessment by simulations. The center consists of three programs: the Program in Human Simulations, the Simulation Technologies Program, and the Programs in Surgical and Anatomical Simulation. The Program in Human Simulations brings the traditional standardized patient methods toward a broader use of simulations involving all aspects of human interaction in medicine. The Simulation Technologies Program emphasizes the sophisticated use of computers, task trainers, virtual reality and mannequin-based technologies to simulate clinical challenges. The Program in Surgical and Anatomical Simulation is possible thanks to cadaveric gifts made through the Anatomical Donations Program. All programs provide both unique and integrated approaches to training our medical students in a safe and effective educational environment.

Rudolph A. Light Hall

Light Hall provides classroom and laboratory space for students in the School of Medicine. It houses the Department of Biochemistry, the Department of Molecular Physics and Biophysics, and the Howard Hughes Medical Institute.

Ann and Roscoe Robinson Medical Research Building

Laboratories and academic space for pharmacology, biochemistry, and molecular physiology and biophysics are housed in the Ann and Roscoe Robinson Medical Research Building. The eight-story building is also home to the A. B. Hancock Jr. Memorial Laboratory for Cancer Research.

Frances Preston Medical Research Building

This building is named in honor of the late Frances Williams Preston, President and CEO of Broadcast Music, Incorporated. This building consolidates the Vanderbilt-Ingram Cancer Center's programs into one primary location on the VUMC campus.

Medical Research Building III

MRB III houses research laboratories, teaching laboratories, research support areas, offices, conference rooms, classrooms, and a greenhouse for research and teaching. It is a joint undertaking of the College of Arts and Science and VUMC.

Medical Research Building IV

MRB IV houses a significant amount of wet lab space and supports continued growth in VINC research programs.

Medical Center North

The Newman Clinical Research Center, an inpatient orthopaedic unit and a general-care unit are inside Medical Center North. The complex also houses laboratories and administrative support services for VUMC.

Faculty and administrative offices and research space for medical school departments are in Medical Center North. The original portions of the building were completed it 1925. Since that time a number of connecting wings and buildings have been added.

Vanderbilt Health One Hundred Oaks

This 440,000-square-foot doctors' office suite opened for patient care in 2009 and is designed for easy access off the interstate highway system, abundant surface parking automated check-in, and integrated services, labs, and radiology. It houses numerous specialty clinics, primary care services, and advanced imaging facilities.

Vanderbilt Health Williamson County

Vanderbilt Health Williamson County offers more than 250 physicians in practices ranging from primary care to sports medicine, GI, cancer care, imaging, and pediatrics.

Vanderbilt Dayani Center for Health and Wellness

The Vanderbilt Dayani Center is a medically based fitness/health promotion center that specializes in modifying risk factors, for conditions including cardiovascular disease, weight management, stress, sedentary lifestyle, and smoking. It was the first Certified Medical Fitness Center in Tennessee, is closely aligned with the Department of Physical Medicine and Rehabilitation, and serves patient care, research, and education functions within VUMC.

vanderbilthealth.com/davani

VUMC Strategy and Innovation Office

The Strategy and Innovation Office's mission is to accelerate change in health care. It provides methods for reducing time to results, conducts research through demonstration projects, and supports active learning through sessions that leverage facts during solution design.

vumc.org/strategy/SAI

Vanderbilt Heart and Vascular Institute

The Vanderbilt Heart and Vascular Institute is a comprehensive and integrated program offering diagnosis, treatment, minimally invasive therapies, surgical intervention, disease management, state-of-the-art techniques, and personalized treatment programs to meet each patient's unique needs.vanderbilthealth.com/heart

Vanderbilt Bill Wilkerson Center for Otolaryngology and Communication Sciences

The Vanderbilt Bill Wilkerson Center is devoted to comprehensive patient care, education, and research in the field of communication disorders and diseases, as well as ailments of the ear, nose, throat, head, and neck. *vanderbilthealth.com/billwilkerson*

Vanderbilt Transplant Center

The Vanderbilt Transplant Center, one of the Southeast's largest, is a multidisciplinary alliance of transplant specialists. Each transplant program within the center represents a collaboration of medical and surgical professionals working together in the best interests of the transplant patient.

vanderbilthealth.com/transplant

Related VUMC Committees

Vanderbilt Institute for Clinical and Translational Research (VICT) Scientific Review Committee

The VICTR Scientific Review Committee meets regularly to act upon research proposals requesting support for the use of the VICTR resources including the Clinical Research Center, Hearth Services Research, Biomedical Informatics, Biomedical Statistics, Research Cores, and Research Support Services.

Harvey Murff, Co-chair; Alan Storrow, Co-chair. Donald Alcendor, Melinda Aldrich, Eric Austin, Margaret Benningfield, Evan Brittain, Zhongmao Guo, David Haa, Rizwar Harvid, Darlene Jenkins, Tiye Link, Melanie Lutenbacher, and Ashley Shoemaker. Ex officio: Goldon R. Bernard, Italo Biaggioni, Frank E. Harrell, Kevin Niswender.

Vanderbilt Human Research Protections Foram and Institutional Review Board Committees (IRB)

The Vanderbilt Human Research Protections Program (HRPP) supports and facilitates the IRB process, the purpose of which is to protect human research subjects engaged by Vanderbilt University and Vanderbilt University Medical Center research studies. The HRPP administers the Vanderbilt Institutional Review Board Committees, assuring the policies and procedures of Vanderbilt University and Vanderbilt University Medical Center are effective and applied in compliance with state and federal laws and regulations, as well as consistent with the policies of the FWA, OHRP, FDA, NIH, OCR, and other applicable federal agencies. The VU VUMC IRB Committees may also serve as the single IRB for other entities upon request consistent with any existing agreements.

In addition, the Vanderbilt HRPP per orms and documents quality assurance activities (including internal and external monitoring) to assure compliance with state and federal regulations. These activities include directed audits and random compliance reviews. Based on these reviews, the HRPP formulates and implements, as needed, recommendations for investigators and their staff. The HRPP also takes enforcement action on non-compliance according to HRPP policies and procedures, as necessary.

The HRPP conducts ongoing educational programs (e.g., News You Can Use, Research Matters, IRB Essentials, etc.) for investigators, key study personnel, IRB Committee members, and HRPP staff.

Vanderbilt Institutional Review Board (IRB) Committees

- Social and Behavioral Sciences Committee
- Health Sciences Committee #1
- Health Sciences Committee #2
- Health Sciences Committee #3

- Sub-Committees of the IRB
 - o Radioactive Drug Research Committee
 - Institutional Biosafety Committee for Human Subjects
 - o Institutional Human Pluripotent Cell Research Oversight

Graduate Medical Education

Vanderbilt University Medical Center has built a strong reputation as a national and international leader in medical education of health professionals, research in medical science, and patient care. Residency training began at Vanderbilt University Medical Center with just twelve residents in 1925. Now, VUMC trains more than 1,000 house staff in 98 accredited residency and fellowship programs.

Residency Training

Medical school graduates preparing for the practice of medicine usually spend three or more years in residency training in order to be able to sit for the certification examination in their chosen specialty. Such supervised experiences at Vanderbilt cover an incredibly broad range of specialties and allow the learner to gain graduated responsibility with the ultimate goal of independent practice. Vanderbilt attracts highly qualified candidates from diverse backgrounds, ensuring a house staff that is devoted to delivering safe, high-quality patient care, to succeeding in their chosen discipline, and to teaching other learners in the process. As a result, the house staff take their responsibility in medical student teaching as both an honor and a privilege and devote considerable time to the medical students.

In addition to their primary responsibilities at Vanderbilt University Medical Center (including Vanderbilt University Hospital, Monroe Carell Jr. Children's Hospital at Vanderbilt, the Vanderbilt Psychiatric Youpital, and The Vanderbilt Clinic), the residents also work in a variety of other clinical settings across Nashville including the Veterans Administration Hospital, NorthCrest Hospital and Williamson County Medical Center with supervision by outstanding faculty in each setting.

Vanderbilt University Medical Center (VUMC) is a major referral center and consequently has a patient population with complex pediatric, medical and surgical problems. The Veterans Administration Hospital, adjacent to VUMC, serves veterans and their families from the original the mid-south and is an important component of the teaching program. All physicians at the VA Hospital are rull-time faculty members of the School of Medicine.

Post-Residency Clinical Fellowships

After residency training, many physicians choose to pursue further subspecialization through a clinical fellowship. Fellows admitted to these programs must have completed an approved residency program. These training programs have as their goal the training of physicians for practice and certification in a medical subspecialty. As with the residents mentioned above, the fellows are expected to participate in departmental activities related to teaching, clinical services, and research and leave as another outstanding resource for medical student education.

Office for Continuous Professional Descripment

Vanderbilt University School of Mencine and Vanderbilt University Medical Center (VUMC) recognize a major commitment to the continuous professional development of VUMC physicians and others in the health professions. At VUMC, continuing medical education is considered an important part of the continuum of medical education which is initiated in the undergraduate experience, progresses through graduate medical education, and matures in ongoing continuing medical education and continuing professional development. The Division of CME sponsors learning opportunities for physicians and other members of the health care team that enable them to provide the very best possible care to their patients and perform optimally in their other professional responsibilities as measured by improvements in competence, performance, and patient health status. The Vanderbilt University School of Medicine Division of CME maintains Accreditation from the Accreditation Council for Continuing Medical Education (ACCME), recognizing demonstrated engagement with the quality improvement enterprise in a way that supports physician learning and quality patient care.

Vanderbilt has also been recognized by the Multi-Specialty Board of the American Board of Medical Specialties (ABMS) as a certified site for the Maintenance of Certification (MOC) Portfolio Program. The MOC Portfolio Program was established by ABMS to permit institutions such as Vanderbilt to provide support to physicians who are pursuing Maintenance of Certification Part IV projects, thus aligning physicians' performance improvement requirements with the institution's performance improvement goals. The Vanderbilt MOC Portfolio Program is a collaborative effort of the Office of Quality, Safety and Risk Prevention, the Informatics Center, and the Office for Continuous Professional Development.

Inquiries about CME or MOC should be directed to the Office for Continuous Professional Development or to departments and divisions about specific programming.

VUSM Office for Diversity Affairs

The Office for Diversity Affairs (ODA), as the Office of Minority Student Affairs, was created in 1991, as a means to focus on the problem of a lack of Underrepresented Groups (URG) in medical school. This work was viewed as foundational to the development of a broader program to imbed diversity and inclusion into the fabric of VUSM and VUMC. These early efforts have led to roughly one of four to one of five members of the VUSM entering medical school class being from a historically URM (Underrepresented in Medicine) group. According to the Association for American Medical Colleges (AAMC) data (for the past six years on the top 15 USNWR research medical schools), VUSM URM numbers consistently rank in the top five. Furthermore, in 2011, the Student National Medical Association ranked VUSM #6 in its activities to promote racial diversity in its classes.

Over the last decade, the ODA has worked to build a culture and climate committed to valuing and building diversity and inclusion into the framework of the medical school and medical center. This has been fostered by a number of new activities, including the Levi Watkins Jr. M.D. Lecture, the Martin Luther King, Jr., Day Lecture, Hidden VUMC Figures, and the unveiling of URM faculty portraits, among others. The ODA maintains working relationships with various medical student groups, including those representing African-Americans, Hispanics, Asian-American and Pacific Islanders, LGBTQ, as well as others.

Tennessee Valley Healthcare System of the Veterans Administration

The Tennessee Valley Healthcare System (TVHS), a part of the U.S. Department of Voierans Affairs, is a Level 1A, integrated tertiary healthcare system comprised of two hospitals, the Alvin C. York Campus in Murfreesboro, Tennessee, and the Nashville Campus in Nashville, Tennessee. TVHs has over 20 community-based outpatient clinics located in Tennessee and Kentucky. TVHS provides annual atory care, primary care, and secondary care in acute medicine and surgery; specialized tertiary care; transplant service (Spinal cord injury outpatient care; and a full range of extended care and mental health services.

TVHS's Nashville Campus is the only VA facility supporting all colid organ transplant programs, including bone marrow transplants and is a national referral site for bone marrow and solid organ transplants. The York Campus is a network referral center for mental health services, long term psychiatric care, geriatrics, and extended care. TVHS provides a full range of specialized medical services.

VUMC is co-located with the TVHS Nachville compus, and they collaborate on many research and educational endeavors, with hundreds of students and providers cross-affiliated with both organizations.

VA Academic Partnership Council for the Department of Veterans Affairs, Tennessee

The VA Academic Partnership Council is the fundamental administrative unit for policy development and evaluation of educational and research programs at the affiliated Department of Veterans Affairs, Tennessee Valley Healthcare System (TVHS). It is composed of senior faculty members of the School of Medicine and others who are associated with TVHS.

Committee Voting Members

Digna Forbes, Chair. John Nadeau, Co-chair. Philip Perdue, R. Daniel Beauchamp, Donald Brady, Brian Christman, Leon Dent, Stephan H. W. Heckers, Cynthia Johnson, Stephen McLeod-Bryant, Linda Norman, Alphonse Pasipanodya, David Raiford, Raymond Harris, Sam R. Sells, Duane Smoot, James Staiger, Jennifer Vedral-Baron, Leonard Webster, Lloyda B. Williamson.

Non-Voting Members

Richard Akatue, Marianne Myers, Smita Patel, Frank Royal, Kyla Terhune,..

Learning Environment

Information about VUSM Policies

This VUSM catalog contains Vanderbilt University, School of Medicine and its constituent programs' policies, procedures, and resources intended to inform and guide students, faculty, and staff in their work related to VUSM programs. Several other VU-related resources contain similarly important information. The policies and procedures presented in the VUSM catalog, as well as those presented in each of the following resources, are designed to function in alignment with one another, and students, faculty, and staff are required to be familiar with them:

- Vanderbilt University Student Handbook. The handbook covers university policies and regulations on a wide range of topics, including (but not limited to) student conduct, alcohol and controlled substances, student engagement, and sexual misconduct and intimate partner violence. The university-wide policies and procedures in the handbook apply to all Vanderbilt University students, including School of Medicine students. The Student Handbook may be found at vvanderbilt.edw/student_handbook.
- Vanderbilt University Enrollment Bulletin. The bulletin is intended as a single point-of-entry for students to access policies and procedures important to their Vanderbilt University student lives. This resource is most helpful for accessing university-level resources. For areas where relevant information is provided via school-level or program-level documents/outlets, the bulletin makes references to those essurces.
- Explore VUSM. This website (https://medschool.vanderbilt.edu/explore-vusm/) provides all VUSM students with easily accessible information about the School, as well as links to a valie of university and programspecific resources.
- **Program Websites.** All VUSM programs maintain websites containing information important for students, faculty, and staff, as well as applicants and alumni.
- **Program Handbooks/MD Gateway.** VUSM program provide their students with program handbooks containing day-to-day information about the program, with a focus on practical information and procedures. The MD Program offers its students this information via the MD Gateway (https://medschool.vanderbilt.edu/md-gateway/).

IMPORTANT NOTICE TO STUDENTS.

All students enrolled in Vanderbilt University programs are bound by all applicable Vanderbilt University, School of Medicine, and degree program policies. By enrolling in a VUSM program, every student acknowledges his or her responsibility to abide by and advere to all institutional and programmatic policies and procedures. Students, therefore, have the responsibility of being familiar with the policies and procedures described in the documents outlined above.

The Vanderbilt University Statement of the Honor Code

Vanderbilt University students pursue all academic endeavors with integrity. They conduct themselves honorably, professionally, and respectfully in all realms of their studies in order to promote and secure an atmosphere of dignity and trust. The keystone of our honor system is self-regulation, which requires cooperation and support from each member of the university community.

From the Students of Vanderbilt University School of Medicine: The School of Medicine Honor System

The Honor System at Vanderbilt University School of Medicine is conducted by students for the benefit of students, faculty, staff, and patients. The Honor System, as delineated by the Honor Code, requires students to conduct themselves with honor in all aspects of their lives. By demanding great responsibility, the Honor System fosters an environment of freedom and trust that benefits the entire Medical School. In signing this statement upon enrollment, each student agrees to participate in the Honor System and abide by its code.

As representatives of the Vanderbilt University School of Medicine and the medical professions, students pledge to conduct themselves with honor and integrity at all times. The Promotion Committees and the Honor Council serve to protect the environment of trust created by this Honor System. The Promotion Committees periodically evaluate each student's performance with special attention to work and conduct appropriate for professional practice. The Honor Council serves to educate members of the student body about their responsibilities as outlined in the written code; to conduct investigations and hearings regarding reported violations of the code; and to decide the nature of penalties deemed appropriate for such violations. Decisions reached by the Honor Council do not preclude the discussion of reported violations by the Promotion Committees, as the Committees may examine these incidents in the larger context of a student's general performance.

The School of Medicine Honor Code

All students pledge to conduct themselves honorably, professionally, and respectfully in all realms and aspects of medical education and patient care. Under the Honor System, the student pledges that he or she neither gives nor receives unauthorized aid nor leaves unreported any knowledge of such aid given or received by any other student. Unauthorized aid includes the use of any examinations from previous semesters that have not been pre-approved by the course director and made readily available to all other students taking the course. This pledge applies to all course work, examinations, presentations, or any other activities required for the awarding of any of the graduate degrees offered by the school. This pledge encompasses all clinical work involving patient care and representations of patient care information. Any student taking a course in the School of Medicine, regardless of where registered, is under the jurisdiction of the Honor Council of Vanderbilt University School of Medicine (VUSM) and subject to the penalties it may impose.

Constitution

Article I—Name

The name of the council shall be the Honor Council of Vanderbilt University School of Medicine.

Article II—Purpose

- 1. To receive and evaluate evidence of Honor Code violations and to save against false accusations.
- 2. To determine guilt or innocence.
- 3. To forward to the dean of the School of Medicine appropriate penalties for the guilty.

Article III—Membership and Officers

- 1. A faculty member shall be appointed by the dean of the School of Medicine as the Honor Council adviser. His/her roles include ensuring that all the rules are followed. In the case of an actustion, he/she will decide with the co-chairs of the Honor Council whether there is sufficient evidence to proceed with a trial after a formal investigation has been carried out.
- 2. The Honor Council of the School of Medicine shall be composed of representation from all degree-granting graduate programs under the administrative charge of the school. C. ... rently, this includes Doctor of Audiology (Au.D.), Master of Education of the Deaf (M.D.E.), Master of Science–Speech-Language Pathology. (M.S.-S.L.P.), Doctor of Medical Physics (D.M.P.), Master of Science in Medical Physics (M.S.M.P.), Master of Laboratory Investigation (M.L.I.), Master of Public Health (M.P.H.), Master of Science in Clinical Investigation (M.S.C.I.), Master of Science–Applied Clinical Informatics (M.S.-A.C.I.), Master of Genetic Counseling (M.G.C.), and Doctor of Medicine (M.D.). Any new graduate degree programs created within the school will become eligible by sufficient enrollment, as stipulated below.
- 3. The minimum student enrollment limit for a single graduate degree program to be eligible to elect an Honor Council representative is ten. If a program falls below that number, it will not be eligible to have a representative. It will regain eligibility when its enrollment reaches a minimum of ten students. However, some of the programs are closely affiliated; if, in the judgment of the program director(s) of these programs, there is sufficient overlap in required courses, these programs may be thought of as a unit (a.k.a., "affiliated degree programs") for purposes of Honor Council representation. In these cases, the degree programs will be grouped for representation purposes, and allowed to elect an Honor Council representative on behalf of the affiliated degree programs. Current affiliated degree programs are the Au.D., M.D.E., and M.S.-S.L.P. programs, which will elect two representatives from their combined student cohorts, and the D.M.P. and M.S.M.P. programs, which will elect one representative from their combined student cohorts. All other non-M.D. programs will elect one representative. The M.D. program will follow its traditional practice of electing two representatives from each of the four classes.
- 4. In the non-M.D. programs, students will vote for Honor Council candidates within their own graduate program or affiliated degree programs. In the M.D. program, students will vote for Honor Council representatives within their own medical student class. Honor Council representatives are elected for one-year terms.
- 5. Honor Council members will select their own co-chairs. Two co-chairs will be elected from the M.D. program Honor Council representatives, for which all Honor Council representatives will vote, and one co-chair will be elected from the non-M.D. Honor Council representatives, for

which all Honor Council representatives will vote. In both cases, co-chairs will be elected by simple majority. Co-chairs are elected for one-year terms and must have served at least one year on the council to be eligible.

6. Voting for Honor Council representatives will be completed no later than April 1 of each year. The new Honor Council will convene to elect its co-chairs no later than April 30. It is the duty of the outgoing Honor Council co-chairs to assure a successful transition. The exception for the April 1 deadline for election of representatives is for incoming medical students who will elect their representatives in September, and for the entering cohort of students in any one-year degree programs, as long as there are at least ten enrolled students in that program.

Article IV—Duties of Officers

- It shall be the duty of the co-chairs to preside at all meetings of the Honor Council, to arrange for the hearing of any student accused, and to perform all duties common to their office.
- The co-chairs shall keep full minutes of all meetings and full proceedings of all hearings, which must be kept in permanent files. The co-chairs shall notify all members of all hearings, meetings, and retreats and shall perform any other related duties. These responsibilities will be rotated among the three co-chairs throughout the year.
- 3. Honor Council representatives for each program, together with the co-chairs, will have primary responsibility for conducting an annual program to educate their fellow students about the Honor Council and its processes, and for assuring the timeliness of elections. Program directors and the Honor Council faculty adviser will act in a supportive and advisory capacity.

Article V—Meetings

- 1. One regular meeting shall be held within four weeks of the start of the school year. At this meeting, the co-chairs of the Honor Council and the faculty adviser will explain the duties and procedures of the Honor Council to the members.
- Special meetings may be called by the co-chairs at any time and must be called within to: won ing days when expested by two or more members of the Honor Council.
- 3. All meetings shall be conducted according to Roberts Rules of Order, Newly Revised.
- 4. A meeting by the Honor Council to re-evaluate and review the Honor Code should be convened at mum of every four years.

Article VI—Ouorum

A quorum for an Honor Council hearing concerning a violation of the Honor Code is nine. This quorum may be adjusted by the co-chairs in circumstances in which students recuse themselves because the hearing concerns a faculty member who is, or will be, in a supervisory position over them. The absolute minimum for an Honor Council quorum shill be seven in the circumstances when a quorum is otherwise unavailable, the senior associate dean for health sciences education will appoint a temporary sevent member or members to assure a quorum is present to meet the timeline requirements for due process.

Article VII—Hearings

- A hearing shall be called by the co-chairs of ne Honor Countil, if appropriate.
- 2. The accuser and the accused must be or contract at all rearings during the presentation of evidence and the accused has a right to question the accuser and any witnesses and make a statement to the Council.
- 3. Legal counsel will not be allowed for any part to learing, but the accused may have present a character witness or non-legally trained faculty adviser if he or she so chooses.
- 4. Any member of the Honor Council related by birth or marriage to the accused or the accuser or who has any other personal interest in the hearing shall relieve himself/herself from participation in that hearing.
- 5. The proceedings of the hearing art contribution dential. Any member present at a hearing is not at liberty to discuss its proceedings with anyone other than the members of the Honor Council present at the hearing or other persons with a legitimate need to know, e.g., law enforcement agents.
- 6. In the event a hearing concerns a charge against a graduate student, a medical student or a faculty member who is in a supervisory role for any Honor Council members, those members shall recuse themselves from participation in the hearing.
- 7. Upon completion of the review of evidence, the Honor Council in closed executive session shall reach a decision of "guilty" or "not guilty" of violation of the Honor Code by simple majority vote. The Honor Council shall make its determination using an evidentiary standard of "beyond a reasonable doubt." The co-chairs have a vote in all decisions unless contraindicated by *Roberts Rules of Order*.
- 8. Written notice of the Honor Council decision will be sent to the accused and to the dean of the School of Medicine. The dean will also receive the vote count, a written summary of the case, and an oral report of the case from the co-chairs. The Promotion Committee will not be notified unless a verdict of "guilty" has been found. In the case of a "guilty" verdict, the Promotion Committee will receive a written summary of the proceedings. The written summary also will be kept in the permanent records of the Honor Council.
- 9. When the Honor Council reaches a decision of "guilty," the penalty, representing the majority opinion of the Honor Council, shall be sent to the dean of the School of Medicine. The recommended penalties should conform to the severity of offenses and may include expulsion from the School of Medicine, and may also include lesser penalties such as failure of a course, or suspension for a designated period of time.

Article VIII—Publicity

1. Each new student entering the School of Medicine will be informed by the Honor Council as to the functions of the Honor System and his or her obligations to the Honor Code. Each student will be provided a copy of the Constitution and Bylaws of the Honor System and the Honor Code.

- 2. At the commencement of each academic year, all students shall reaffirm their commitment to the honor system by signing the Honor Code.
- 3. Names of the members of the Honor Council will be made known to all students upon commencement of each academic year. The Honor Council members will be accessible to any student to address concerns or questions regarding protocol, violations, or other Honor Council issues.

Article IX—Miscellaneous

In case a student withdraws from the School after a charge has been made against him or her and before the hearing, the Honor Council shall record the facts and the accused shall not be allowed to re-enter until he or she has had a hearing before the Honor Council.

Article X—Amendments

Amendments to this Constitution shall require for their adoption the approval of a majority of the total membership of the Honor Council and ratification by a majority of the voting student body. These amendments must be approved by the dean of the School of Medicine and the faculty adviser before becoming final.

Bylaws

Article I—Reporting an Incident

- 1. If a student or an instructor has reason to believe that a breach of the Honor Code has been committed, he/she mus, within seven class days, report the incident in signed written form in one of the following ways:
 - a. Directly to one or both of the co-chairs of the Honor Council, or
 - b. By way of the faculty adviser who will notify the co-chairs of the Honor Courcil, or
 - c. To any member of the Honor Council, who will report directly and only to en hearth co-chairs or me faculty adviser.
- 2. Failure to take action on an incident is a breach of the Honor Code. Students are reward to export it writing any suspected violations of the Honor Code.
- 3. Once an incident is reported, it shall be the responsibility of the Honor Council, not the student or instructor, to investigate the incident and determine the next course of action. The student or instructor who eports a violation is charged with maintaining confidence of his or her accusation; the accused is also required to maintain the confidence of the accusation and the hearing. Such confidence can be broken only as required in response to law enforcement agencies and to assure access to appropriate advice.
- 4. Perjury before the dean or any Honor Council member regal ling the reporting of or investigation into an incident is a breach of the Honor Code and is subject to punishment.
- 5. Once an incident has been reported, the co-chairs and the facility adviser, in the to discuss the incident. The co-chairs shall appoint a committee of two members from the Honor Council to investigate the case and poor their findings to the faculty adviser and the co-chairs. These two members shall be ineligible to vote in the event the Honor Council convened. At the conclusion of the investigation, the co-chairs and faculty adviser will then decide whether to convene the Honor Council. If the decision is made to convene the Honor Council, the student in question will be notified that he/she has been formally accused of a violation of the Honor Code. The Honor Council should be convened within ten class days from the initial reporting of the incide at Both the accuser and the accused will be notified of the nature of the charge as well as the time and place of the assembly of the Honor Council.
- 6. Once the Honor Council is assembled, the accusation will be presented by the co-chairs, and a hearing will be held by the Honor Council.
- 7. A student who reports his or her own Honor (od violation will be given consideration for his or her initiative in self-reporting the transgression. The co-chairs, with advice of the faculty adviser, will decide if an investigation is warranted.

Article II—Penalties

- 1. Penalties given to those declared "guilty" will be recommended by the Honor Council and enforced by the dean of the School of Medicine as he/she sees fit. The final decision and penalty will be reported by the dean to the student involved, to the reporting individual, and to the Honor Council.
- Penalties may range from the minimum of failure of the assignment to the maximum of expulsion from Vanderbilt University School of Medicine.
- 3. If the violation was committed under extenuating circumstances, the Honor Council may, by a majority vote, recommend a suspension of the sentence. However, suspension of the sentence shall in no way alter the findings of "guilt" under the Code.

Article III—Appeals

Appeals to any final actions that result from Honor Council hearings can be made with a petition to the Vanderbilt University Appellate Review Board as follows:

- a. The appeal petition must be in writing.
- b. It must specify the grounds for appeal.
- c. It must be filed within seven class days of the original notification of the verdict or within two weeks if school is not in session for seven days following the notification.

Article IV—Summer Honor Council

1. The Summer Council will have official functions from the day following university Commencement exercises until the day class registration begins for the fall semester.

- 2. In the event that a designated member will not be in Nashville during the summer, the respective program representative should appoint a member of his/her class who will be in Nashville, to be approved by the Honor Council.
- 3. In the event that both co-chairs will not be in Nashville during the summer, then the faculty adviser should recommend a chair from the members of the Honor Council, subject to Honor Council approval.

Standards of Behavior for Interactions with Vanderbilt University School of Medicine Students¹

Statement of Standards

All faculty and staff involved with educating Vanderbilt University School of Medicine students are held to high standards of professionalism and patient care. The learning environment is expected to facilitate students' acquisition of the professional and collegial attitudes necessary for effective, caring, and compassionate health care. The development and nurturing of these attitudes requires mutual respect between teachers (including faculty, residents, and staff) and students, and between each student and his or her fellow students. Mutual respect between student and teacher, and between fellow students, may be expressed in many ways but all interactions shall include honesty, fairness, and evenhanded treatment. Behavior that is inimical to the development of mutual respect shall be prohibited. Such behavior may include but is not limited to:

- (1) Harassment of a sexual nature;
- (2) Discrimination or harassment based on race, sex, religion, color, actional or ethnic origin, age, disability, military service, sexual orientation, or gender identity.
- (3) Grading, promoting, or otherwise evaluating any student on any basis other than that student performance or merit.

¹ All Vanderbilt University policies concerning VOSM student interactions with faculty and staff as set forth in the Vanderbilt University Student Handbook, the Faculty Manual, and any other Vanderbilt University publication remain in full force and effect.

² By their express terms, these Standard's apply only to inverticions which involve one or more students; however, it is hoped that these Standards serve as a guide to all member of the Vander's ill University School of Medicine community, in all workplace interactions. The reporting procedure outlined herein shall apply only to ellegations of the violation of these Standards in interactions involving VUSM student(s).

Comments

The following delineates more clearly the behavior enumerated above that may be inimical to the development of mutual respect between students and teacher, and between fellow students. For purposes of these Comments, the term "person" shall refer to a student in interactions between fellow students or, in student-teacher interactions, to the student or teacher, as appropriate.

- (1) Harassment of a sexual nature may include:
 - a. Denying the opportunity for training or rewards because of a student's gender;
 - b. Requesting sexual favors in exchange for grades or other awards;
 - c. Making unwanted sexual advances;
 - d. Unreasonable and inappropriate sexual or sexist conduct directed towards any person;
 - e. Displaying in an unreasonable and inappropriate manner sexually suggestive or pornographic materials; or
 - f. Grading or evaluating a student based upon gender rather than performance or merit.
- (2) Discrimination and harassment may include:
 - a. Denying the opportunity for training or rewards because of a student's age, race, religious affiliation, gender, or any other attribute of the student other than merit or performance;
 - b. Unreasonable and inappropriate conduct directed towards any person which is intended to insult or stigmatize that person;

- c. Exclusion of a student from any usual and reasonable expected educational opportunity for any reason other than as a reasonable response to that student's performance or merit;
- d. Requiring a student to perform personal services such as shopping or babysitting;
- e. Showing favoritism among students based upon any attribute of the student(s) other than performance or merit and thereby reducing educational opportunities available to the nonfavored student(s);
- f. Grading or evaluating a student based upon any attribute of a student other than that student's performance or merit:
- g. Any physical mistreatment, such as hitting, slapping or kicking, or threatening such physical mistreatment; or h. Requiring a student to perform menial tasks with the intent to humiliate the student.

Any perceived violation of these Standards of Behavior ("Standards") should be reported in accordance with the following procedure. Violations of these Standards may subject the offender to disciplinary action. These Standards may be amended at any time by the Executive Faculty. The Standards Committee shall be composed of such members as the dean shall appoint from time to time. In cases where there is a potential conflict between the Standards and university policy, university policy prevails.

Reporting Procedure

When a student feels that he or she has been mistreated, the student is encouraged to report the incident to university and/or medical school officials through a variety of reporting mechanisms (these include PiSL). Veritas, trained faculty members, and the Vanderbilt University Title IX office). Students are provided information about resources for such reports during orientation. When the mistreatment involves an allegation of discrimination and/or harassment, including sexual misconduct and/or intimate partner volence, Vanderbilt University faculty and staff members must report the incident to the Vanderbilt University Title IX office. If there is a report of sexual misconduct and/or intimate partner violence involving a student, the Sexual Misconduct and Intimate Partner Violence Policy, which can be found in the Vanderbilt University Stude a Handbook (vanderbilt.edw/student_handbook/sexual-misconduct), applies to all Vanderbilt students, including students in the School of Medicine. Please consult that policy for more information.

The Standards of Behavior for Interactions with Stude vts in the Vanderbilt University School of Medicine policy was reviewed and approved by the Executive Faculty of the Vanderbilt University School of Medicine Committee on June 17, 2020.

VUSM Compact Between Teachers and Learners in VUSM Programs

Preamble

As a community of teachers and learners, we acknowledge the fundamental importance of our professional values in creating and maintaining an environment that promotes the highest standard of learning and the highest quality of research, service and patient care. The following principles characterize this environment and guide us in making daily decisions: Respect, Service, Internity, Accountability, Scholarship, and Compassion. Recognizing that in an academic community we are teachers and learners simultaneously, we make the following commitments with the understanding that each applies to all of us, regardless of our status, whether faculty, resident, clinical staff, or student.

Commitments of Teachers

- We will respect students, colleagues, staff and patients as individuals.‡
- We will strive to provide the highest quality instruction, by preparing adequately for all teaching sessions, using evidence-based content, arriving on time, and admitting any gaps in knowledge. We will strive for continuous improvement in our teaching efforts by responding to feedback and evaluation.
- We will demonstrate respect for our learners by turning off cell phones and silencing pagers during sessions we teach, unless they are required for service responsibilities.
- We will clearly express learning objectives for all courses and teaching sessions, and understand how
 these promote the learning objectives of the school. We will clearly define any specific academic and
 behavioral expectations for our classes.

We will be aware of institutional and national policies, such as duty hours, and make sure that our
expectations are consistent with those policies.

- We will assign tasks that are appropriate for the stage of learning, level of responsibility, and status as students. If an assigned clinical task conflicts with the personal ethics of a learner, we will discuss this with the learner and attempt to resolve the conflict in a manner that respects the learner while placing priority on the interests and well-being of the patient. We will seek not to require our learners to take actions inconsistent with their personal values.
- We will recognize the responsibilities implicit in our roles as mentors and coaches, and in the spirit of cultivating excellence in our learners, provide timely and constructive feedback.
- We will recognize our status as role models, and in our interactions with patients, staff, students, and colleagues, we will exhibit the same standard of professional behavior that we expect from others.
- We acknowledge that the teacher-learner relationship is a model for the clinician-patient relationship, and will strive to know our students as individuals, answer their correspondences promptly, exercise concern for their well-being, and treat them with compassion.
- We will respect the intellectual property of others and will use online resources, such as VSTAR and Brightspace, in a manner that is consistent with that respect.
- We will demonstrate honesty and integrity in all academic endeavors, including examinations, research
 efforts, and patient care entries.
- We will strive to create a culture of safety. This culture includes evaluation for asclosure, event analysis, and process change when a safety concern is identified.

Commitments of Learners

- We will respect students, colleagues, staff, and patients as individuals:
- We will strive for excellence in attaining the knowledge, at mades, and skills needed for the highest standards of practice.
- We will attend all learning sessions designated as required by our programs' teachers. We will demonstrate respect towards teachers and peers by arriving on time, turning off cell phones, silencing pagers, and complying with other specific expectations define 1 b; the faculty.
- We will wear appropriate attire. In the class room setting, our attire should not cause distraction. In practice settings, it should comply with the standards published by the institution.* We will adhere to any additional attire requirements of our programs and courses.
- We will work effectively in leams, respecting the contributions of all members, assuming a fair share of responsibility, and performing leadership tasks with a sense of service to others.
- In practice settings we will acknowledge and seek help if assigned a task that is beyond our level of skill. If an assigned task conflicts with personal ethics, we will discuss this with the supervising faculty or staff member and strive to reach a resolution that places priority on the interests of the patient.
- We will recognize our obligations as a collegial community, sharing knowledge and assisting peers in their quest to achieve professional and personal goals. We will assist our colleagues in distress.
- We will establish the habit of critical reflection, acknowledge gaps in our knowledge, recognize our limitations, and strive for constant self-improvement.
- We will respect the intellectual property of others and will use online resources, such as VSTAR and Brightspace, in a manner that is consistent with that respect.
- We will demonstrate honesty and integrity in all academic endeavors, including examinations, research efforts and patient care entries.
- We will strive to create a culture of safety. We will accept responsibility for errors and near-errors by
 disclosing them, analyzing them and implementing changes that would prevent similar events in the
 future.
- In the spirit of continuous quality improvement, we will accept the responsibility of constructive
 evaluation of our courses and teachers.

Acknowledgements

This document draws heavily from the following sources:

1. Association of American Medical Colleges, Compact Between Teachers and Learners of Medicine.

- 2. National Board of Medical Examiners, Center for Innovation, The Behaviors of Professionalism.
- 3. ABIM Foundation, ACP-ASIM Foundation, and European Federation of Internal Medicine, Medical Professionalism in the New Millennium: A Physician Charter, *Annals of Internal Medicine*, 136:3, 243-6, 2002.

‡In compliance with federal law, including the provisions of Title VI and Title VII of the Civil Rights Act of 1964, Title IX of the Education Amendment of 1972, Sections 503 and 504 of the Rehabilitation Act of 1973, the Americans with Disabilities Act (ADA) of 1990, the ADA Amendments Act of 2008, Executive Order 11246, the Vietnam Era Veterans Readjustment Assistance Act of 1974 as amended by the Jobs for Veterans Act, and the Uniformed Services Employment and Reemployment Rights Act, as amended, and the Genetic Information Nondiscrimination Act of 2008, Vanderbilt University does not discriminate against individuals on the basis of their race, sex, sexual orientation, gender identity, religion, color, national or ethnic origin, age, disability, military service, covered veterans status, or genetic information in its administration of educational policies, programs, or activities; admissions policies; scholarship and loan programs; athletic or other university-administered programs; or employment. In addition, the university does not discriminate against individuals on the basis of their gender expression. Requests for information, inquiries or complaints should be directed to these offices: Equal Opportunity and Access Office, eoa@vanderbilt.edu, telephone (615) 343-9036; Title IX Office, Title IX Coordinator, titleix@vanderbilt.edu, telephone (615) 343-9727.

*Vanderbilt University Medical Center dress code may be found at vanderbi.lt/vumcdresscodef

The VUSM Compact Between Teachers and Learners in VUSM Programs policy was reviewed and approved by the Executive Faculty of the Vanderbilt University School of Medicine Committee on June 17, 2020.

Faculty/Educator Roles

Policy on Multiple Roles

Many VUSM faculty members hold multiple roles in our education program, and we believe that our students benefit from rich relationships with various supportive faculty members. However, faculty members engaged in multiple educational roles can face competing demands, which may directly or indirectly affect (or have the appearance of affecting) an individual's professional judgment in exercising any educator duties and responsibilities.

Of particular concern to students is the intersection of roles involving advising students regarding personal or academic struggles with roles in assessment of student performance or assigning grades. Because not all conflicts can be eliminated, it is necessary to establish a pun for managing and minimizing conflict.

Conflict management typically involves ensuring that any individual in an advising role does not serve as the sole assessor of students in any required course. During the academic year, when individuals are proposed for new roles, assignments are reviewed for potential conflicts. Conflict management plans are created by faculty members involved and are reviewed and maintained by the associate dean for undergraduate medical education (M.D. program) and program director (over VUSM degree programs).

Policy on VUSM Faculty Supervising Family

It is the policy of Vanderbilt School of Medicine that students may not be supervised or graded by a parent or family member.

Policy on VUSM Educators Providing Student Health Care

Vanderbilt University Medical Center physicians occasionally provide clinical care for Vanderbilt students. Some of these faculty members also teach and assess students in the classroom or clinical setting. Should a situation arise in which a Vanderbilt faculty member finds himself/herself in a dual role as care provider and as a teacher/assessor of a Vanderbilt student, he/she must recuse himself/herself from either the teacher/assessor role or the care provider role. Examples of such situations include faculty serving as small group leaders in a course, or as team leaders for clinical learning experiences. Furthermore, if a Vanderbilt faculty member serves as a course or clinical learning experience director, placing him/her in a teacher/assessor role with students in a degree program, he/she should not accept as patients any students in that program.

When a student has a pre-existing therapeutic relationship as a patient of a faculty member who directs a course or clerkship, the patient-provider relationship should not be disrupted. In these situations, the faculty member must discuss the situation with the student and arrange for an alternative means of assessment in the course or clinical experience. This arrangement would likely involve identifying a different faculty member to provide the assessment in the course or clinical experience. This policy serves to secure and protect the integrity of the learning environment at the School of

Medicine. For questions regarding the implementation of this policy, please contact the senior associate dean for health sciences education.

The Faculty/Educator Roles policy was reviewed and approved by the Executive Faculty of the Vanderbilt University School of Medicine Committee on June 17, 2020.

Expectations for Conduct Regarding Examinations and Work Submitted for Academic Credit

Faculty and Students' Responsibilities

- 1. In order to create and maintain an academic environment that promotes the highest professional standards, it is important to be transparent in the expectations of all students regarding conduct in examination settings and regarding all work submitted for academic credit. As stated in the Vanderbilt School of Medicine Honor Code, "By demanding great responsibility, the Honor System fosters an environment of freedom and trust that benefits the entire Medical School." It is the responsibility of the faculty and staff to help protect the trusting environment created when the students agree to and sign the Honor Code pledge.
- Students are expected to adhere to the VUSM Compact Between Teachers and Learners in VUSM Programs in all courses. In order to facilitate transparency of expectations, students are applied of any coursespecific expectations on the first day of class or during the first week that a course meets
- 3. Appropriate attribution is expected for all work submitted for credit and in all cathes to the electronic health record. Students must use proper citation practices and are expected to be aware of appropriate mechanisms to avoid plagiarism. Faculty clarify if an assignment may be collaborative.
 - 4. It is the student's responsibility to be aware of and to ache, to the published guidelines for each course.
- 5. Incidents going before the Honor Council may be separately incorporated into the competency domain assessment and promotion committee review process as appropriate

A Word Subm niversity School & The Expectations for Conduct Regarding Examinations and Worl Submitted for Academic Credit policy was reviewed and approved by the Executive Faculty of the Vanderbilt University School of Newscare Committee on June 17, 2020.

Admission to School of Medicine Programs

Technical Standards

All candidates for admission must possess sufficient intelligence, integrity, and personal and emotional characteristics with or without reasonable accommodations to meet the academic requirements of the respective School of Medicine program without fundamental alteration in the nature of the program. Requests for disability-related reasonable accommodation should be made to Vanderbilt University Student Access Services (SAS). The senior associate dean for health sciences education, the admission committee for the applicable degree program, and Vanderbilt University SAS are responsible for interpreting these technical standards as they may apply to an individual applicant to a School of Medicine program, as well as to any enrolled student. In addition, the School of Medicine interprets and implements these standards consistently with any applicable federal and state law.

Each VUSM degree program may enunciate more detailed Technical Standards specific to that degree program. Program-specific standards may be found in the relevant degree program section of this catalog.

Requirement for Baccalaureate Degree

Consistent with Vanderbilt University policy governing professional degree programs, all VUSM degree program students are required to have been awarded the baccalaureate degree prior to matriculation

Admitted students are required to provide official documentation of the baccalaureate degree prior to matriculation to all VUSM degree programs. Instructions for submitting documentation of the baccalaureate degree are available in the relevant degree program section of this catalog. A additional information about degree verifications may also be found on the Vanderbilt University Pegistrar web. ite

Requirement for Background Investigation

A criminal background check is required of all structures prior to matriculation.

Upon notification of admission to a VUSM regree program, he student is provided information about how to complete the criminal background investigation. Frogram readership reviews all items flagged on criminal background reports and may consult the admoc VUSM Criminal Background Check Committee for advice on any report. While individuals with flagged background reports are not automatically disqualified from enrollment in VUSM degree programs, Vanderbild University and the School of Medicine reserve the right to withdraw an offer of admission to any individual with one or more disqualifying events on a criminal background report.

School Policy on Language Proficiency

Vanderbilt University School of Medicine requires its students to be proficient in the English language, both written and spoken. VUSM programs and establish admission requirements based on English-language proficiency, such as minimum TOEFL scores. Admission policies for individual programs are available in the relevant degree program sections of this catalog.

School Policy on International Students

School of Medicine degree programs may admit international students, but only programs with proper U.S. Department of Homeland Security approval may do so. To determine whether or not a particular VUSM degree program admits international students, please refer to the individual program section of this catalog.

An individual who possesses a United States Permanent Resident Card (a.k.a., a Green Card) is eligible to apply to all VUSM degree programs.

School Policy on Transfer Students

School of Medicine degree programs may admit transfer students, but not all programs do. To determine whether or not a particular VUSM degree program admits transfer students, please refer to the individual program section of

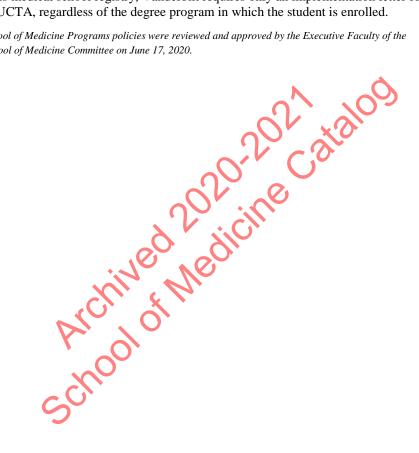
this catalog. Policies regarding review of incoming transfer credits are contained in the VUSM academic policy section of this catalog.

School Policy on Visiting Students

School of Medicine degree programs may offer learning opportunities to visiting students from other institutions, but not all programs do. For more information about whether or not a particular VUSM degree program allows visiting students (and any application/admission requirements), please refer to the individual program section of this catalog.

An affiliation agreement must be signed and in place before any domestic or international visiting student may enroll to study at Vanderbilt University. Vanderbilt University School of Medicine has signed on to the AAMC Uniform Clinical Training Agreement (UCTA) that was endorsed by the Liaison Committee on Medical Education. As a participant in this medical school registry, Vanderbilt requires only an implementation letter for any school that has signed on to the UCTA, regardless of the degree program in which the student is enrolled.

The Admission to School of Medicine Programs policies were reviewed and approved by the Executive Faculty of the Vanderbilt University School of Medicine Committee on June 17, 2020.



Academic Policies for All School of Medicine Programs

Degree Requirements

Students must successfully complete all applicable requirements in order to earn a degree from a VUSM program. All degree requirements must be completed within the maximum time allowed by the respective degree. Exceptions to the maximum allowable time-to-degree may be considered by the senior associate dean for health sciences education. Programs may require students to successfully complete examinations conducted by entities other than Vanderbilt University School of Medicine in order to graduate. Students who are not in good academic standing are not eligible to receive a degree. Also, Vanderbilt University requires that all balances due on student accounts be paid before a degree will be conferred and/or verified.

Toward the end of each student's study as part of a VUSM degree program, his/her academic record is audited by the VUSM Office of Student Records to ensure compliance with all degree requirements. Students who have met degree requirements are recommended to the dean for conferral of diplomas by the VUSM Executive Committee of the Executive Faculty each spring.

Each School of Medicine degree program establishes its degree requirements, within the parameters and requirements established by Vanderbilt University. Programs may require students to pass qualifying or other examinations specific to the field of study as a requirement for graduation, whether adminittered by Vanderbilt University or another institution. Students enrolled at Vanderbilt University School of Medicine must complete required course work at VUSM or a VUSM affiliate institution, unless otherwise explicitly indicated. Students must complete program requirements within the maximum amount of time allowed to complete the degree.

Enrollment, Course Registration, and Student Status

Enrollment Requirements

All VUSM students (including special students) are required to have been admitted to a program and enrolled at Vanderbilt University in order to register for and take VUSM courses. All full-time students must register each term with no breaks in registration to remain in good standing, except in cases of approved leave of absence. Students who fail to enroll for course work in a term in which leave of absence has not been approved are considered withdrawn and must apply for readmission.

Students pursuing dual degrees are required to designate enrollment in a primary degree program during each registration period. This may affect program scholarships, so students should be aware of such ramifications prior to pursuing a dual degree.

Academic Load and Credit Hours

The M.D. degree program is **considered** to be a full-time program and as such all students enrolled in that degree are classified as full-time students and are expected to adhere to the expectations of full-time students. For programs other than the M.D., the academic load for full-time status in the fall and spring semesters is 8 or more hours. A student who wishes to carry more than 16 hours must secure authorization from the degree program director before registration. Three-quarter-time status is 6 to 7 hours; half-time status is 4 to 5 hours. The summer full-time load is 6 or more hours; three-quarter-time load is 5 hours, and half-time load is 3 to 4 hours. Eligibility for most federal financial assistance requires a minimum of half-time enrollment.

Credit hours are semester hours (e.g., a three-hour course carries credit of 3 semester hours). One semester credit hour represents at least three hours of academic work per week, on average, for one semester. Academic work includes, but is not necessarily limited to, lectures, laboratory work, homework, research, class readings, independent study, internships, practica, studio work, recitals, practicing, rehearsing, and recitations. Some Vanderbilt courses may have requirements that exceed this definition.

Course Registration

Students register for courses using the Vanderbilt University enrollment/registration system, called YES (Your Enrollment Services), at <u>yes.vanderbilt.edu</u> unless individual programs or courses indicate otherwise. Course work

must be completed during the term in which the student is registered, unless a student receives a grade of Incomplete for the course.

Changes in Registration

Changes to term-long courses are allowed only within the change period (the first ten days of the term). A student may formally withdraw from a course after the end of the change period with the permission of the faculty member, and a grade of W is given. Withdrawals from courses that do not run the full term are allowed until the mid-point of the course, and a grade of W is given. After the mid-point of the term, a student is not permitted to withdraw from the course except in rare instances of extenuating circumstances and with approval of the program director. Students should also be aware of financial ramifications of dropping a course after the change period.

Auditing a Course

Auditing is allowed in some programs, but not all. Program-specific sections in this catalog provide more information about whether a specific program allows courses to be audited.

In programs where auditing is allowed, a request must be submitted to and approved by both the program director and course instructor. Only students registered for regular courses are allowed to audit a course. Students who audit are expected to attend class regularly. The number of courses that a student is allowed to audit during a given term may be limited by the program director. Audits are recorded on the student's transcript. A grade of AW is entered onto a transcript when a student withdraws from an audited course after the change period (the first ten days of the term).

Special Students

Some, but not all, School of Medicine programs admit special, non-degree-seeking students. School of Medicine programs are not required to admit special students. Information about the special student policies of individual programs is available in the relevant degree program section of this catalog.

Special students admitted as non-degree-seeking students may egister for selected courses. Students seeking special student status must submit an application to the program offering the course. Approval of the instructor and the program administration is required to take the course. Special students must meet the same admission requirements as the program's degree-seeking students. Registration for individual classes is contingent upon availability of space in the course.

Credit for Course Work Completed Away

School of Medicine degree programs may an ow students to obtain Vanderbilt University credit for learning experiences completed at other institution. An affiliation agreement must be signed and in place prior to any domestic or international learning experience, in order to obtain credit for such work. Vanderbilt University School of Medicine has signed on to the AMC Uniform Clinical Training Agreement (UCTA) that was endorsed by the Liaison Committee on Medical Education. As a participant in this medical school registry, Vanderbilt requires only an implementation letter for any school that has signed on to the UCTA, regardless of the degree program in which the student is enrolled. For information about whether or not VUSM maintains an executed affiliation with a specific institution, please contact the VUSM Office of Student Records.

Transfer Credit

Only those courses for which a student has received a grade of B (or its equivalent) or higher are considered for incoming credit transfer. Refer to the appropriate program section of this catalog for information about the number of transfer credit hours that may be applied toward degree graduation requirements.

Applicants notify degree program directors, prior to admission, of their intent to petition for transfer credit. Transfer credit is approved at the discretion of the Associate Dean for Undergraduate Medical Education (MD Program) or degree program director (other VUSM degree programs) and then endorsed and processed by the director of student records for the School of Medicine. Credit is not given for courses taken in the Vanderbilt University Division of Unclassified Studies.

Credit for Courses Taken as an Undergraduate

Students may not request credit for course work taken prior to beginning the degree program if the course credit was used to satisfy requirements of the previous degree. Students wishing to transfer in graduate-level credit for previously completed course work must make such a request prior to admission to the program (see Transfer Credit above).

Leave of Absence

Students who wish to interrupt their study must request a leave of absence in writing from the associate dean for medical student affairs (M.D. program) or the program director (other VUSM degree programs). The dean/program director provides the student a written decision regarding the request. A one-time leave of absence may be granted for a maximum of one year for students seeking a master's or doctoral degree. On rare occasions a second leave of absence for a period of up to a year may be allowed for doctoral students.

Students taking a leave of absence are responsible for meeting with the associate dean for medical student affairs (M.D. program) or the program director (other VUSM degree programs) prior to the leave in order to plan for their course work and timeline for successful degree completion following their return. Students who do not register for classes before the final date of a leave of absence may be disenrolled and required to request reinstatement to the program. All programs have limits to the time within which all degree requirements must be completed, and it is the student's responsibility to be aware of these limits. Students are advised to consult the appropriate degree program section of this catalog for more information. Students should also discuss with VUSM Office of Enrollment Services and VU Office of Student Accounts staff the financial implications (i.e., tu tion/fee charges and financial aid) of taking a leave of absence before moving forward with the process.

Withdrawal from the University

Students who wish to withdraw from the university for any reason must do so in writing to the associate dean for medical student affairs (M.D. program) or the program hard tor (other VUSM degree programs). In some cases, the student may be able to receive a refund of tuition, but it is important that the student discuss this decision with VUSM Office of Enrollment Services staff before moving for vard with the process. A student who has been dismissed from school, but decides to appeal the decision, is no longer able to choose to withdraw. If a student withdraws, reentry is possible only through the application process.

Attendance

Programs may require attendance at some or all activities. Such requirements are communicated to students in program documentation (e.g., this catalog, course syllabi, etc.). Also provided are requirements and procedures to request approval for and document absences, policies regarding maximum allowed absences, and requirements for making up learning activities/course work missed during absences.

A School of Medicine program may take appropriate administrative action in response to unexplained or unexcused student absence. For example, students may be placed on leave of absence or on temporary suspension.

Student Work/Extracurricular Activities

Student Duty Hours

In order to encourage a well-rounded, balanced journey through training, it is the policy of Vanderbilt University School of Medicine that duty hours of students should reflect the general guidelines set forth by nationally recognized accreditation organizations relevant to specific degree programs. Details regarding each program's expectations for student duty hours are included in the program-specific sections of this catalog.

Extracurricular Work or Activities

The School of Medicine does not regulate the outside work or activities of its students, although it does take the firm position of discouraging outside work. Outside commitments assumed by School of Medicine students must not compromise their responsibilities.

Students may not be paid for work performed as part of their elective or required course work for credit. Exceptions to this rule are made only when students are in special programs, such as students on military scholarships, students in funded graduate certificate programs, students in funded M.D./Ph.D. programs, students in the MIDP program completing certain industry internships, and students in the Oral Surgery program when acting as residents.

Transportation

During their School of Medicine careers, students may be placed for educational experiences in sites located a distance from the Vanderbilt University campus. Students are responsible for their own transportation to and from all sites for educational experiences, including all costs associated with that travel. Each VUSM program establishes the maximum distance from the Vanderbilt University campus that students may be required to travel in a single day to reach off-site placements. Students are advised to contact their respective programs for additional information.

Student Assessment and Grading

Grading Policies

of the che M.D. pa The Doctor of Medicine program uses a grading scale different from that of the other VVSV p of essional degree programs. Details of the M.D. program grading scale are presented in the M.D. program, section of this catalog. For VUSM professional degree programs other than the M.D.:

A+= 4.0Α = 4.0A-= 3.7B+= 3.3

Grade = **Quality Points Per Hour**

В = 3.0B-= 2.7C+= 2.3C = 2.0

= 1.7 (No earned hours. Quality hours and quality points only.) C-

= No credit

Degree programs may choose not to use plus or minus letter grades. For any assignment, project, or activity, the course director retains discretion over the specific requirements and expectations which comprise the final letter grade.

Course work approved for transfer into a degree program carries earned hours, but not quality hours. Therefore, those courses are not computed in the grade point average.

Pass/Fail Grading. Some courses may be designated as pass/fail. The grades for these courses are not calculated into the GPA unless the final grade is F. Degree-seeking students may not elect to take a graded course as pass/fail. Non-degree-seeking students may be allowed by a program to elect to take a course pass/fail.

Incomplete. The grade I (Incomplete) may be used at the discretion of the instructor in those cases in which the student is not able to complete course work in the normal time. An I that is not replaced by a letter grade within one year may be changed to an F at the discretion of the instructor. Otherwise, the I may become permanent and remain on the transcript as such.

In Progress. The grade IP (In Progress) may be used at the discretion of the instructor as a temporary grade in those cases in which insufficient information is available to assign a final grade. The IP ultimately is replaced by a final, permanent grade.

A Grade of W. The grade of W is entered onto the transcript when a student withdraws from a course (or from the degree program) after the close of the change period (the first ten days of the term) but before the end of the term.

Grade Change Policy. A grade recorded in the University Registrar's Office (on a transcript) may be changed only upon the written request of the instructor with the approval of the appropriate program official. Requests for

grade changes may be submitted, by the appropriate program official, to the School of Medicine Office of Enrollment Services. This policy includes changing an I to a final grade.

Grade Grievance Procedure. Students should seek redress of a problem with a grade as soon as possible after receiving the grade and in no case later than four weeks after the grade is released. Students with a problem should confer directly with the course director. Every effort should be made to resolve the problem fairly and promptly at this level. If the student cannot resolve the problem through discussion with the course director, the student should request an appeal by writing (email is acceptable) the designated official for the student's program. Please refer to the appropriate program section of this catalog for more information.

Student Progress and Promotion

Academic Progress and Promotion

School of Medicine degree program students are expected to progress academically through the program at a pace that ensures that students attain current and relevant professional knowledge, skills and attitudes. Students are expected to maintain satisfactory academic progress at all times. Each program establishes the normal time and maximum time allowed to progress though the program and complete the degree. Since grades are a significant element in determination of satisfactory academic progress, it is the student's responsibility to be aware of the minimum satisfactory grade level required for courses to be applied toward acgree requirements. In addition, students are responsible for understanding experiential learning (clinical rolations, practical, etc.) requirements and minimum standards of performance (including semester GPA and current). (See each program's degree requirements and academic progress in order to remain in good academic standing. (See each program's degree requirements and academic policies in the relevant degree program section of this catalog.)

Each student's progress is evaluated at least annually by an accidemic progress review committee. Committee name, size and membership varies by program, but all operate under the supervision of the School of Medicine and the policies contained in this catalog. Committees are populated by faculty members well versed in the program's degree requirements and in acceptable academic standards and performance for the program and its related profession.

Academic progress review committees review students' progress and may make the following determinations at each scheduled meeting:

- Satisfactory academic progress (Good standing and promotion)
- Satisfactory academic progress with concern/remediation (Good standing and promotion [or contingency for promotion])
- Academic probation unsatisfactory progress (Not in good standing—remediation required; promotion [or contingency for promotion])
- Dismissal (after failing to successfully remediate)

Students are notified in writing of the committee's determination if academic progress is deemed to be unsatisfactory. Degree programs' student support and advisory systems work with committees to facilitate the best possible outcome for all students.

For programs other than the M.D., a cumulative grade point average of at least 3.0 is required for graduation. A student should maintain a semester GPA of at least 3.0 to remain in good academic standing. A student whose cumulative GPA falls below 3.0 may be placed on probation for one semester. If at the end of the semester the grade point average is still below 3.0, the student may be dismissed from the program based on unsatisfactory academic performance. Students may withdraw in lieu of dismissal.

Repeating a Course

Students may be required to repeat a course after having received a grade below the level deemed acceptable for graduation credit by the degree program. In rare instances, in some programs, students may make a request of the program director to re-take a course if doing so would significantly benefit the student's academic performance and progress. Both courses are reflected on the transcript, but the second grade earned is the one used in computing the student's grade point average. Students should refer to their program policies for more information about whether the option to retake courses is available in the program.

Probation

Students placed on probation are notified through a letter from the associate dean for undergraduate medical education (M.D. program) or the program director (other VUSM degree programs) and/or the academic progress review committee that outlines the reasons for the probation; the requirements and recommendations for addressing deficiencies; the conditions for removal of probation, including an expected time frame; and actions that are taken if conditions are not met. Students placed on probation for any reason are required to complete a specific remediation plan that has been developed by the associate dean for undergraduate medical education (M.D. program) or the program director (other VUSM degree programs) in consultation with the academic progress review committee. The remediation plan may include requirements placed on the student, such as regular meetings with faculty/advisers, elimination of extracurricular activities that may be interfering with satisfactory academic progress, etc.

All students on probation will be reviewed by the academic progress review committee at least once each term to determine the student's academic progress. At that time, the academic progress review committee may take the following actions:

- 1. Remove probation: Probation may be removed if the student has satisfactorily addressed deficiencies, even if this is before the time frame originally designated in the student's probation notification letter.
- 2. Continue probation: Progress is being made.
- 3. Recommend dismissal: Performance continues to be unsatisfactory.

Written notification is provided to the student regarding the outcome of my review.

Probation is considered an adverse action and may be reported in future graduation verifications and other requests for information. More information about how programs may report probation information is contained in the program-specific sections of this catalog, as well as in program information elsewhere online.

Appeal of Probation/Non-promotion

Students may request reconsideration of any decision for probation or non-promotion. The request must be made in writing within seven calendar days of receiving the decision from the program's academic progress review committee. Requests must be made to the associate dean for medical student affairs (M.D. program) or the program director (other VUSM degree programs). The student may meet with or present my additional information in writing to the senior associate dean for health sciences education, who reviews the information presented by the student, the degree program director, and the deliberations of the academic progress review committee. The SADHSE makes a determination to: 1) uphold the decision, 2) reverse the decision, or 3) request that the academic progress review committee meet for reconsideration of additional information. The SADHSE notifies the degree program director and the academic progress review committee in writing of his or her decision. In the case of a reversal, the SADHSE may require that the student follow requirements and/or recommendations of the academic progress review committee for addressing deficiencies.

Dismissal

Academic progress review committees will recommend dismissal for unsatisfactory academic progress only after a student has been given a reasonable probationary period (at least one term) to address deficiencies.

Dismissal may also be recommended at any time a student demonstrates a singular egregious behavior; involvement in one or more serious incidents inconsistent with the expectations for students at VUSM; violation of Vanderbilt University policy or that of VUSM educational/clinical affiliate institutions; or demonstrating a pattern of unprofessional behavior. In such cases, the associate dean for medical student affairs and/or the associate dean for undergraduate medical education (M.D. program) or the program director (other VUSM degree programs) and the academic progress review committee consider the situation, including its severity, as quickly as possible and render a recommendation to the School of Medicine dean or the dean's designee.

A decision to recommend dismissal requires participation of all academic progress review committee members, unless an exception is granted by the SADHSE. The committee will meet as soon as possible to consider the situation, including its severity, and render a recommendation. The student may meet with the associate dean for medical student affairs (M.D. program) or the program director (other VUSM degree programs) prior to any academic progress review committee meeting to present an explanation, including any mitigating circumstances. The associate dean for medical student affairs (M.D. program) or the program director (other VUSM degree programs) presents the student's explanation, as well as any mitigating circumstances, to the academic progress

review committee. Alternately, the student may elect to appear before the academic progress review committee in person or to submit in writing his or her explanation and any other information to be considered by the academic progress review committee. A student may also ask a non-committee faculty member to offer information on behalf of him or her at the meeting.

If a recommendation for dismissal is made by the academic progress review committee, the associate dean for undergraduate medical education (M.D. program) or the program director (other VUSM degree programs) presents this recommendation to the dean or the dean's designee, which is normally the senior associate dean for health sciences education (SADHSE). The dean (or designee) takes into consideration any mitigating factors presented in writing by the student. The dean or designee shares his or her decision in writing (accepts dismissal or rejects dismissal) with the program's academic progress review committee. The dean or designee may reverse the recommendation, if he or she disagrees with the decision. If the dismissal decision is reversed, the academic progress review committee then considers whether probation or other action is appropriate under the guidelines above (see Probation).

If the dean/SADHSE affirms the recommendation of dismissal, the decision is described in a notice to the student written by the academic review committee chair, along with the associate dean for undergraduate medical education (M.D. program) or the program director (other VUSM degree programs). This notification is presented to the student, in person whenever possible, by the associate dean for medical student affairs or associate dean for undergraduate medical education (M.D. program) or the program director (other VUSM degree programs). If the student is unable or unwilling to meet regarding the dismissal decision, the student is informed of the decision in writing by secure file transfer notification sent to the student's Vanderbilt University email account. If the school cannot confirm receipt of the electronic notification, a hard copy is mailed to the student's local address, as listed in YES. The window of time for the student to communicate his or her choice from the prior listed below starts on the date the email notice is sent.

In this notification the dismissal decision and the following options are presented, in writing, to the student:

- 1. Voluntary withdrawal from VUSM. The decision to withdraw must be presented in writing by the student to the associate dean for medical student affairs (M.D. program) or the program director (other VUSM degree programs) within seven (7) calendar days of the date the dismissal notification email was sent to the student.
- 2. Dismissal. If the student does not equest to withdraw within the seven (7)-calendar-day window, the dismissal takes effect on the eighth calendar day.
- 3. Appeal. The student may appeal the dismissal. (See Appeal of Dismissal.) A student who requests an appeal forfeits the option to withdraw. In addition, the student is placed on administrative leave and may not participate in patient care clusies until the appeal is resolved.

Appeal of Dismissal

A student who decides to appeal a decition of dismissal must submit a written request to the associate dean for medical student affairs (M.D. program) or the assistant dean for health sciences education (other VUSM degree programs) within seven (7) coloral and adays of the date the dismissal notification email was sent to the student. The associate dean for medical student affairs (M.D. program) or the assistant dean for health sciences education (other VUSM degree programs) informs the SADHSE and the associate dean for undergraduate medical education (M.D. program) or the relevant program director (other VUSM degree programs) of the student's request for appeal.

If a dismissal decision is appealed, the student is placed on administrative leave and may not participate in patient care duties until the appeal is resolved. The dean or dean's designee, usually the SADHSE, assembles and convenes a review panel consisting of at least five (5) members of the School of Medicine Executive Committee of the Executive Faculty (from among them a chair is designated) for a hearing within thirty (30) calendar days of receipt of the written request from the student, unless the chair of the review panel determines that there are valid reasons to extend this time frame. In this review, the role of the dean or dean's designee is purely administrative, and he or she has no decision-making authority in this context.

In preparation for the review, the associate dean for undergraduate medical education (M.D. program) or the program director (other VUSM degree programs) makes available any relevant information/documentation for the panel's review. The associate dean for medical student affairs (M.D. program) or the assistant dean for health sciences education (other VUSM degree programs) provides the student information about the appeal process. The student may choose to be present at the appeal review meeting and/or to make a presentation in writing. Information presented by the student may contain documentation from other students, faculty members, and/or other sources.

The student is not allowed to have other representatives at the review. The chair of the degree program's academic progress review committee attends the review to present the findings of the progress review committee. In the case of the M.D. program, the associate dean of undergraduate medical education also attends, and the associate dean for medical student affairs attends the meeting to answer questions from the review panel. The review meeting is conducted without the presence of attorneys for either party. However, either party may consult with its own counsel prior to the review meeting or during any breaks that might take place during the meeting.

If the review panel upholds the decision, the student is dismissed without the opportunity to withdraw. If the review panel reverses the decision, the review panel provides the program's academic progress review committee with its written findings and refers to that committee for consideration of whether probation is appropriate for the student and, if so, determination of conditions that would accompany probation. The decision of the review panel is final for the school.

Temporary Suspension

The School of Medicine reserves the right, through the SADHSE (or designee), to temporarily suspend a student for conduct disrupting or negatively impacting the learning environment, pending the student's referral to the degree program's academic progress review committee. The SADHSE notifies the student in writing of the conditions of the temporary suspension. If the student is reinstated, the student works with the associate dean for medical student affairs (M.D. program) or the program director (other VUSM degree programs) to address any course work missed during the suspension.

Program Evaluation

Note: The term "evaluation" is used to refer to the measurement of effectiveness of School of Medicine programs, not individual student performance. Focuses of evaluation in his context may include the curriculum (courses and other learning activities), as well as faculty and administrator.

The purpose of evaluation at Vanderbilt University school of Medicine is to provide timely information that can be used to determine the effectiveness of programs' curricula and teaching and, ultimately, to determine whether programs are accomplishing their goals. Therefore, program evaluation supports continuous improvement of all program components. All VUSM students, fact its members, and staff members have a role in identifying needs and implementing strategies for improvement. For that reason, vUSM students may be required by degree programs to complete curriculum, program, and/or n culty/administrator evaluations.

Program evaluations examine the impact of overall curriculum and the interaction of its components and the learning environment on student learning. At V ISM, program evaluation activities include, but are not limited to:

- Course evaluations
- Rotation evaluations
- Overall program evaluations
- Faculty and administrator evaluations
- Data from student assessments (e.g., student course passage rates, rates of board exam passage, etc.)

Each VUSM program establishes its own evaluation strategy and methodologies. Various evaluation administration tools are used by different programs. More information about a specific program's evaluation strategies and tools may be found in program materials in this catalog, as well as elsewhere online. Data collected for evaluation purposes by all VUSM programs must be stored securely, and the privacy of those involved in evaluation protected appropriately and in accordance with relevant laws and regulations.

Student Compliance Requirements

All Vanderbilt University School of Medicine students are required to be in compliance with the rules and regulations that govern professional student education. In order to attain and/or maintain this compliance, students must provide information or complete compliance activities at various times throughout their VUSM careers. Students are contacted at appropriate intervals to make them aware of their responsibilities to meet these requirements and to notify them about the process for doing so. Specific requirements vary by degree program; more

information about compliance requirements for each degree program are available from the program. Failure to complete the requirement by the stated deadlines results in the student's removal from educational activities.

Student Contact Information

The School of Medicine may need to reach students during their educational careers for any number of reasons, so students are required to maintain current contact information through YES, including mailing address, and phone contact information. Each student should provide two phone numbers: 1) his/her personal cell phone, and 2) a cell or landline phone of a family member contact for cases of emergency. Students are expected to update this information immediately when changes occur by logging in to YES (Your Enrollment Services) at yes.vanderbilt.edu and clicking on the Personal Information link. Vanderbilt University and the School of Medicine use the student's official university email account for all communications. Students are expected to check their Vanderbilt University email account on at least a daily basis. Students who are unable to check their email daily (e.g., if taking approved absence) are expected to use out-of-office notifications during the time they will not be checking email daily.

Commencement

The university holds its annual Commencement ceremony following the spring semester. Degree candidates must have completed successfully all curriculum requirements and have passed all prescribed examinations by the published deadlines to be allowed to participate in the ceremony. A stud in completing degree requirements in a summer or fall semester may participate in Commencement the following lay, and ordinarily the degree is conferred at the end of the term in which requirements are completed. Any student analyse to participate in a Commencement ceremony receives his or her diploma by mail

The Academic Policies for All School of Medicine Programs were reviewed approved by the Executive Faculty of the Vanderbilt University School of Medicine Committee on June 17, 2029

School of Medicine Tuition, Fees, and Financial Aid

Vanderbilt University Board of Trust

Tuition and fees are set annually by the Vanderbilt University Board of Trust and are subject to review and change without further notice.

University and School of Medicine Policies

Tuition and Fees

Tuition and fee amounts for each program are listed in the corresponding program section of this catalog. Tuition, fees, and all other university charges incurred prior to or at registration are due and payment must be received by August 31 for the fall semester and December 31 for the spring semester (January 31 for the M.D. program). If courses are added *after* the initial billing period, it is the student's responsibility to contact the Office of Student Accounts for due dates and amounts related to tuition in order to avoid any holds and/or late payment penalties. All other charges incurred after classes begin are due and payment must be received in full by the last business day of the month in which they are billed to the student. Additional information can be found at wave bill.

Refund of Tuition

Students who withdraw officially or who are dismissed from the unive sity for any vason after the beginning of a term may be entitled to a partial refund in accordance with the schedule shown below. No refund is made after the tenth week in any term. Because MD students have a full-year enrollment term but are assessed tuition in two equal parts (July and January), the refund schedule below applies to weeks of class the student attended after the July 1 or January 1 assessment

Withdrawal prior to the en	d of	Reduction
	:40	NO
1st full week		130%
2nd full week		90%
3rd full week	\ \(\frac{1}{2}\)	85%
4th full week	011	80%
5th full week		75%
6th full week		65%
7th full week		60%
8th full week		50%
9th full week		45%
10th full week		40%

No refund after the 10th full week.

Late Payment of Tuition and Fees

All charges not paid by the specified due dates may be assessed a late payment fee of \$1.50 on each \$100 owed (minimum late fee of \$5). No transcript (official or unofficial) will be issued for a student who has an outstanding balance. Diplomas of graduating students will not be released until all indebtedness to the university is cleared.

Financial Clearance

Students may not be allowed to register for any term if they have outstanding unpaid balances for any previous term. No transcript, official or unofficial, is issued for a student who has an outstanding balance until the account has been paid. Diplomas of graduating students may be withheld until all bills are paid.

International students must provide documentation of having funds sufficient to meet all tuition, mandatory fees, and living expenses for the anticipated period of enrollment before a visa is issued. Information is provided by the university Office of International Student and Scholar Services.

Tuition Billing for Dual Degree Students

Students pursuing two degree programs are typically classified as being enrolled in only one degree program each semester. Tuition and fees are charged each term based on the degree program in which they are enrolled that semester.

Costs and Fees

2020/2021

The following university costs are included with tuition:

Professional liability insurance, student long-term disability insurance (M.D. students only), student health service, and verifications.

service, and verifications.
The following university fees are assessed individually and separate from tuition:
Student services fee (M.D.—Annual fee) \$634
Student services fee (Other VUSM programs
—Fall/Spring semesters combined) \$542
Student services fee (Other VUSM programs—Summer) \$92
Student health insurance (All programs) \$3,653
Transcript fee (One time only; all programs) \$100
tudent Services Fee
he required student services fee entitles stude its to use the loc lities of Sarratt Student Center a
Villiams II Student Degraption and Wallness Center, The Sec also covers admission to certain so

Student Services Fee

The required student services fee entitles students to use the required student Student Center and the David Williams II Student Recreation and Wellness Center. The see also covers admission to certain social and cultural events and subscriptions to certain campas publications. Specific information on this fee is published annually in the Vanderbilt University Student Handbook. By payment of an additional fee, students and their spouses may use their identification cards for admission to athletic event.

Professional Liability Insurance

School of Medicine students enrolled in programs that require clinical/patient care responsibilities are automatically covered with professional liability insurance, required of all enrolled students, at the time of registration. Details of the policy are available through the university student insurance office, and students are encouraged to familiarize themselves with these details and with their responsibilities in this regard.

Students are covered when they are completing required and elective learning activities related to their courses of study at the Vanderbilt-affiliated hospitals (e.g., Vanderbilt University Medical Center or Nashville Veterans Administration Hospital) or elsewhere as a "visiting student," providing that (1) the clerkship or other educational experience has prior approval from the School of Medicine as course work for credit, (2) the activities within this experience are consonant with the student's level of training and experience and are performed under the supervision of appropriate faculty and/or staff, and (3) an academic/clinical affiliation agreement has been executed by both Vanderbilt University and the host institution.

Long-Term Disability Insurance

M.D. students are automatically covered with long-term disability insurance, required of all enrolled medical students, at the time of registration. Details of the policy can be found at medschool.vanderbilt.edu/mdgateway/insurance/.

Student Health Insurance

All degree-seeking students registered at Vanderbilt for 4 or more hours, or who are actively enrolled in research courses (including, but not limited to dissertation or thesis courses), are required to have adequate health insurance coverage. The University offers a sickness and accident insurance plan through Gallagher Student Health and Risk that is designed to provide hospital, surgical, and major medical benefits. Students are automatically enrolled in and billed for the University-endorsed policy unless they complete an online waiver. A brochure explaining the limits, exclusions, and benefits of insurance coverage is available at *gallagherstudent.com/vanderbilt*. Additional information is available at *vanderbilt.edu/stuaccts/graduate/health-insurance.php*.

Student Health Service Costs

Student health service costs include required immunizations and health screening tests.

Verification Costs

Verification costs cover all required verification processes including criminal background checks and drug screens.

Transcript Fee

All students entering Vanderbilt for the first time are charged a one-time transcript fee for official university transcripts, usually in the first semester of enrollment.

Financial Assistance

Approved educational expenses are met with funds from a combination of sources, including scholarships (from VU and non-VU sources) and student loans. Federal Direct Unsubsidized Loans and Federal Direct Graduate PLUS loans are two federal government loan programs that furnish a significant amount of support to VUSM students. Private loans are also available to international students. Additional information and applications for financial aid are online at medschool.vanderbilt.edu/financial-aid/. A policants desiring more specific information about financial aid resources should contact the School of Medicine Office of Student Financial Aid. (medschool.vanderbilt.edu/financial-aid/)

Federal Financial Aid Satisfactory Academic Progress

Federal Satisfactory Academic Progress standards (SAP) used to determine eligibility for federal student aid are separate from academic policies that the School of Medicine may require for degree completion. Students must be meeting SAP standards, as define 1 by the Office of Student Financial Aid and Scholarships, to remain eligible for federal Title IV student aid. The SAP policies for the School of Medicine are available at medschool.vanderbilt.edu/financial-cia/

Financial Assistance for Dan Degree Students

Students pursuing two degree programs are typically classified as being enrolled in only one degree program each semester. Scholarship funds are awarded on the basis of that one degree program. Students may not receive scholarship funds for one degree program while enrolled in a separate VU degree program.

Doctor of Medicine

Program Overview

Program Accreditation

Liaison Committee on Medical Education LCME Secretariat (AMA) American Medical Association 330 North Wabash Avenue Suite 39300 Chicago, IL 60611-5885

Phone: 312-464-4933

LCME.org

LCME Secretariat (AAMC) Association of American Medical Colleges 655 K Street NW Suite 100

Washington, DC 20001-2399 Phone: 202-828-0596

LCME.org

Standing Program Committees

Doctor of Medicine Admission Committees

The M.D. Program admission committees have the responsibility of leviewing medical school applications for admission and admitting those applicants considered most qualified for admission. Chairs and the Director of Admission oversee and continually review the entire admission process accruit committee members, schedule and conduct training sessions for the committees, and organize and lead committee meetings. Chairs are named by the dean for five-year appointments.

In selecting members for all committees, the chairs will strive to achieve the broad diversity that represents the distinctiveness of the community and assures however perspectives in reviewing applicants. Authority to review applications in the subcommittees has been vested by the Admissions Committee.

- Step 1—Leadership Team Subcommittee (LTS): Leadership Team Subcommittee members screen primary applications to to determine which candidates who did not receive an automatic secondary will receive a secondary application and be forwarded to the Interview Review Subcommittee (IRS).
- Step 2—Interview Review Subcommittee: This subcommittee includes faculty members who review and score application materials to provide a ranking to be used in the decision to invite candidates for interviews.
- Step 3—Admission Committee This committee includes faculty members on rotating appointments who review all application materials, including interview reports and provide a score that guides the decision for admissions.

Note: Doctor of Medicine Admission Bylaws are found at the end of the Doctor of Medicine chapter.

Undergraduate Medical Education Accreditation Standards Committee

Purpose: The UME Accreditation Standards Committee (UASC) is established to monitor ongoing compliance of the Vanderbilt University School of Medicine M.D. program with Liaison Committee on Medical Education (LCME) standards and elements.

Responsibilities: For LCME accreditation and continuous quality improvement requirements, UASC has the following responsibilities:

- a. Continuously monitor compliance with all twelve standards and corresponding elements.
- b. Identify standards and elements for which improvements are required to assure compliance.
- c. With assistance from other faculty and staff members, develop formal quality improvement processes for these standards that include measurable outcomes.
- d. UASC shall have the authority to assure that Quality Improvement processes are iteratively implemented, and outcomes are monitored, in order to achieve necessary results.

Reporting: UASC shall report to the Executive Faculty of VUSM, which is chaired by the dean of the School of Medicine. It provides annual reports to the Executive Faculty, with additional updates as needed. In addition, it provides intermittent reports to the senior leadership team of Vanderbilt University Medical Center, which reports to the dean of VUSM in his joint role as CEO of VUMC.

Membership: Chair: Donald W. Brady. Joey Barnett, William B. Cutrer, Amy E. Fleming, Alyssa Hasty, Larry Marnett, John Penn, Cathy Pettepher, Anderson Spickard III, Kyla Terhune, Kim Vinson, Chris Williams. Adviser: Bonnie Miller

Doctor of Medicine Phase Teams

Phase Teams consist of the course directors and major teachers responsible for implementation of the curriculum for each of the phases in medical school, as well as representatives of the Student Curriculum Committee and staff members working with the curriculum. The associate dean for undergraduate medical education and the chair of the Undergraduate Medical Education Committee (UMEC) Curriculum Sub-Committee coordinate the work of the Phase Teams to support the curricular quality improvement process.

Foundations of Medical Knowledge Team: Neil Osheroff, Cathleen C. Pettepher, Co-chairs. All block and longitudinal course directors serve on this committee. Ex officio: Donald W. Brady, William B. Cutrer, Amy E. Fleming, and Logan Key.

Foundations of Clinical Care Team: Ed Vasilevskis, Chair. All clerkship directors and to gurdinal course directors serve on this committee. Ex officio: Donald W. Brady, William B. Cutrer, Amy E. Flerning, and Logan Key.

Immersion Team: Lourdes Estrada, Kendra Parekh, Co-chairs. Mer bers of the Inviersion Phase Working Group, along with Immersion course directors, serve on this committee Lx officio: Lonald W. Brady, William B. Cutrer, Amy E. Fleming, and Logan Key.

Doctor of Medicine Student Promotion Committees

The dean or the dean's designee (usually the senior associate dean for health sciences education [SADHSE]), appoints a Promotion Committee to each of three phases of training (FMK, FCC, Immersion Phase). Promotion Committees meet regularly to review the progress of individual students and the aggregate progress of the cohort of students in its assigned phase. Each promotion committee has the responsibility for making recommendations to the dean and the executive faculty concerning promotion, remedial action, or dismissal as appropriate for each student in the class/phase for which it is responsible.

Each committee consists of at least seven faculty n embers who represent a variety of clinical and basic science departments, as well as the broad diversity of the School of Medicine community. Each member serves a four-year term, with staggered terms.

The SADHSE appoints a faculty char for each committee, and the associate dean for undergraduate medical education (ADUME) oversees the promotion committee process. The chair of each committee may determine whether members must be physically present or may participate remotely for any given meeting. A quorum of the Promotion Committee consists of at least four of the voting members of a committee; however, any proposed dismissal requires the participation of all voting members, unless an exception is granted by the SADHSE. The associate dean for medical student affairs (ADMSA), the ADUME, the assistant dean for medical student assessment (ADA), and the associate dean for diversity in medical education, are non-voting ex officio members of each committee.

Foundations of Medical Knowledge Phase

Jennifer Blackford, Chair. Rob Carnahan, Daisy Ceiner, Shubhada Jagasia, Kevin Johnson, Keith Meador, Kurt Smith, John York. Ex officio: William B. Cutrer, Amy E. Fleming, Cathleen C. Pettepher, Kim Vinson

Foundations of Clinical Care Phase

William (Bill) Cooper, Chair. Louise Alexander, Kecia Carroll, Joyce Johnson, Ela Knapik, James S. Powers, Consuelo Wilkins. Ex officio: William B. Cutrer, Amy E. Fleming, Cathleen C. Pettepher, Kim Vinson.

Immersion Phase

Leslie Gewin, Chair. Rachel Forbes, Jay Jerome, Matt McEvoy, Ingrid Meszoely, Kevin Niswender, Lorraine Ware. Ex Officio: William B. Cutrer, Amy E. Fleming, Cathleen C. Pettepher, Kim Vinson.

Doctor of Medicine Undergraduate Medical Education Committee

The Undergraduate Medical Education Executive Committee (UMEC) is composed of members of the School of Medicine leadership appointed by the dean to include key faculty leaders from multiple departments, the phase team leaders, and leaders of longitudinal elements, led by a faculty chair of the committee, also appointed by the dean. (Details of committee membership are outlined in the UMEC charter.)

Ex officio members include the senior associate dean for health sciences education, the associate dean for undergraduate medical education, the associate dean for medical student affairs, the associate dean for diversity, the assistant dean for undergraduate medical education, the assistant dean for assessment, the assistant dean for educational informatics and technology, , and the director of program evaluation. There is also student representation on this committee.

UMEC is advisory to the dean and, along with the dean, it holds authority for central oversight of the UME curriculum. UMEC meets in either full committee or sub-committee format. Meetings are devoted to course approval/evaluation, program evaluation, and/or educational policy. The agenda is determined jointly by the associate dean for UME and the faculty chairs of the Curriculum and Policy sub-committees. The committee has the option of convening additional meetings as needed.

The UMEC consists of faculty representatives from basic science and clinical departments.

Note: Doctor of Medicine UMEC Bylaws are found at the end of the Doctor of Medicine chapter.

Longitudinal Element Teams

Longitudinal Element teams will consist of the faculty members and studer ts charged with oversight of that element. These teams meet regularly to coordinate experiences and to review program evaluation data. Additionally, each longitudinal team will appoint a representative to each phase team. Each longitudinal team will appoint co-chairs who will serve on the Policy and Curriculum Monitoring Sub-Committees and LMEC. In addition, they will prepare an annual report on the element, to include review of the element's evaluations across levels of training. The team will set annual goals accordingly, and the annual review will be presented at the Annual Curriculum Summit. The teams include Learning Communities (LC), Foundations of Healthcare Delivery (FHD) & Vanderbilt Program for Interprofessional Learning (VPIL), and Research.

Learning System Integration Team

The Learning System Integration (LSI) Team is a trans-phase collaborative group meeting every other month to focus on operational and logistical issues (such as scheduling, faculty demands, space utilization, coordinated communications, IT support, etc.). The YSY ream will refer any programmatic and/or policy issues to UMEC for review and decision-making. Membe, ship will include: leaders of all phase teams and longitudinal elements (FMK, FCC, Immersion; Research, Learning Communitie), FHD and VPIL), representation of the assessment and portfolio programs, the SADHSE, the ADMSA, the Assistant Dean for Assessment, the Assistant Dean for UME, the Assistant Deans for Educational Informatics and Technology, the director of clinical skills development, the associate director of the MSTP, the associate director of MIDP, the director of threads, the director of program evaluation, the director of student records, the Chair of UMEC, the Administrative Officer, and the Chairs of the student curriculum committee. This committee will be chaired by the Associate Dean for UME or designee.

Standing Assessment Committee

The Standing Assessment Committee is responsible for guiding a programmatic assessment system that directly links assessment to desired learning outcomes and provides consistency throughout the curriculum. The committee will include representation from clinical and foundational science faculty experienced with trainees across all levels of the medical education continuum, and is chaired by the Associate Dean for UME or designee. The Standing Assessment Committee will provide the following functions: (a) Serve as consultants to individual courses to promote alignment with overarching programmatic goals and foster best practices in assessment, (b) Oversee centralized assessment programs and events, (c) Monitor outcomes and perform continuous quality improvement, and (d) Advise UMEC regarding assessment policy.

Medical Innovators Development Program (MIDP) Internal Advisory Council

The MIDP Internal Advisory Council provides strategic planning and program oversight for all aspects of the program. This committee meets once or twice each year. The council is composed of experts from across the Vanderbilt University Medical Center, the Vanderbilt University School of Medicine, the Vanderbilt University School of Engineering, and the Owen Graduate School of Management.

Medical Innovators Development Program (MIDP) Leadership Team

The MIDP Leadership Team is appointed annually by the dean to assist in the admission process and provide program oversight and strategic planning. Each applicant for the MIDP is initially screened, in a Skype interview, by several members of this team. The on-site interview process includes a combination of one-on-one discussions with applicants and a unique team-based Design Challenge, which serves to identify highly qualified candidates to be approved by the Admission Committee.

Reed Omary, Director; Trent Rosenbloom and Matthew Walker, Associate Directors. André Churchwell, Ali Coffey, Lourdes Estrada, Michael King, Lindsey Moloney, Brent Savoie, and Melanie Schuele. A student member is appointed to the leadership team each year.

Medical Scientist Training Program (MSTP) Admission Sub-Committee

The MSTP Admission Sub-Committee (MASC) is appointed annually to assist in the admission process. Each MSTP applicant is interviewed by several members of the MASC, which serves to identify highly qualified candidates to be approved by the Admission Committee. The MASC includes numerous institutional leaders and senior scientists with experience and responsibility for M.D. and Ph.D. training.

Christopher S. Williams, Director; Lourdes Estrada, Ambra Pozzi, Danny Winder, Sally York. Associate Directors; Megan A. Williams, Assistant Director. Ronald Alvarez, R. Daniel Beauchamp, Bruce D. Carter, James Cassat, Jin Chen, Cynthia Gadd, Maria Hadjifrangiskou, Anna Hemnes, Patrick Mu, Paula Hurky, Houra Merrikh, W. David Merryman, Sachin Patel, Mary Philip, Jeffrey Rathmell, Cynthia Reinhart-King, Dan M. Roden, Edward Sherwood, Michelle Southard-Smith, Digna Velez Edwards, John York, Roy Zent Student Members: Cam Bermudez, Elizabeth Flook, Christopher Peek, and Cody Stothers. Ex officio: Jeey Barnett, Donald W. Brady, G. Roger Chalkley, Kimberly Vinson, William B. Cutrer, Amy E. Flyning, and Cathy Fuchs.

Medical Scientist Training Program (MSTP) Senior Over ignt Committee

The MSTP SOC provides guidance to the MSTP Leader hip Team on program evaluation, strategic planning, and alignment with institutional initiatives.

The Committee includes the MSTP Leadership T an; Donald Brady, Mark Wallace, Larry Marnett, Roger Chalkley, William Cutrer, and Dr. Amy Flewing.

The MSTP Senior Oversight Committee has the following responsibilities: a) provide guidance to the MSTP Leadership Team in optimizing program outcomes, b) provide input regarding programmatic strategic directions, and c) advise the MSTP ensuring alignment with the Institution's overall mission.

Major Learning Facilities

The primary location for M.D. program classrooms, the student lounge, and first-year student lockers, as well as Vanderbilt University School of Medicine administrative offices, is the Annette and Irwin Eskind Family Biomedical Library and Learning Center (EBL).

This home for the School of Medicine occupies the second, third, and fourth floors of EBL. It provides a state-of-the-art learning environment, with versatile physical spaces and innovative technology; comfortable, modern gathering spaces for both formal and informal student activities; and a bright, airy working environment for M.D. students and School of Medicine faculty and staff. EBL is located on the same campus as Vanderbilt University Medical Center.

VUMC houses educational sites for the M.D. program as well. Rudolph A. Light Hall provides a venue for select learning and co-curricular activities for the M.D. program. Clinical learning experiences take place throughout VUMC and the Veterans Administration Hospital.

Major VUMC buildings are located within close walking distance to EBL, while away-from-campus locations are in other parts of Nashville and Davidson County.

More information about VUMC facilities is available in the Principal Clinical Education Affiliates section of this catalog.

Students enrolled at Vanderbilt University School of Medicine must complete required course work at VUSM or at an institution with which VUSM has an executed affiliation agreement, unless otherwise explicitly indicated. (See Clinical Educational Affiliates in School of Medicine Academic Policies and Credit for Course Work Completed Away in School of Medicine Academic Policies, above.)

Competencies for Learners Across the Continuum

The following set of core competencies was adopted by the Undergraduate Medical Education Committee in 2009, updated in July 2012, and re-affirmed at the 2018 Annual Curriculum Summit. These competencies represent goals for medical education across the continuum, and while it is expected that students will be able to demonstrate some degree of mastery in all of them by the time of graduation, it is not expected that all graduating students will be expert in all of them. These core competencies are based on the six ACGME competencies that guide learning throughout postgraduate medical education.

I. Medical Knowledge

Physicians must understand established and evolving biological, clinical, epidemiological, and social-behavioral sciences and must be able to apply this knowledge to patient care. Learners will be able to:

- MK1. Explain the biological, behavioral, and social factors that promote health or predispose individuals to illness, and how these may be used in partnership with patients to predict, prevent or mitigate the onset of disease.
- MK2. Demonstrate deep knowledge of the sciences essential for one's chosen field of practice.
- MK3. Demonstrate knowledge of the sciences that support other specialty fields as they relate to one's own
 practice.
- MK4. Demonstrate knowledge of the sciences underlying the common and important health and wellness issues affecting our society and other societies around the globe.
- MK5. Demonstrate an appreciation for the importance of the sciences that underlies the effective practice of
 medicine and the resulting commitment to maintain an up-to-date fund of knowledge through continuous
 learning.
- MK6. Apply knowledge of the scientific method, reproducible research, and experimental design in evaluating questions of interest.
- MK7. Collect, analyze, and interpret new information to enhance knowledge in the various disciplines related to medicine.

II. Patient Care

Physicians must consistently provide care that is compassionate, culturally competent, safe, efficient, cost sensitive, appropriate, and effective for the treatment of iliness and the promotion of health. Learners will be able to:

- PC1. Perform a problem-focused or complete his tory and physical examination as indicated, and to obtain necessary diagnostic studies, including imaging into oratory, and procedural tests.
- PC2. Interpret clinical information and for bulate a prioritized differential diagnosis that reflects the use of medical knowledge in a probabilistic reasoning process.
- PC3. Formulate a management plan based on evaluation of the scientific evidence as well as on the patient's values, cultural background, beliefs, and behaviors; critically review the literature with an understanding of the levels of evidence provided by variable experimental or study designs, measurement techniques, and analyses; recognize common forms of bias.
- PC4. Implement a comprehensive management plan that would include performing indicated procedures within the scope of one's training
- PC5. Utilize knowledge expport tools such as evidence-based diagnostic criteria, management guidelines and point-of-care information resources.
- PC6. Utilize informatics and health information technology in support of patient care in a manner that reflects understanding of their capabilities, limitations, benefits, and risks. Examples include the electronic health record, computerized physician order entry, decision support systems, and messaging systems.
- PC7. Demonstrate clinical judgment that is safe and commensurate for the level of training.
- PC8. Re-examine and address prior decisions when desired outcomes are not achieved and/or the patient is dissatisfied.

III. Interpersonal and Communication Skills

Physicians must be able to communicate in ways that result in safe, culturally sensitive, effective, and respectful information exchange and create beneficial partnerships with patients, their families, and other health professionals. Learners will be able to:

ICS1. Discuss the enduring value of effective relationships and the factors that can facilitate or impede their formation, including power imbalances and social, economic, and cultural differences.

• ICS2. Demonstrate sensitivity to the diversity with which people perceive, think, learn, communicate, and make decisions, both individually and in groups, and an understanding of how these processes might be impacted by illness.

- ICS3. Explain the elements of a validated provider-patient communication model, and demonstrate appropriate components of the model during patient interactions.
- ICS4. Discuss the strengths, limitations, and appropriate applications of various communication modalities, and utilize verbal, non-verbal, written, electronic, graphic, synchronous, and asynchronous modalities in appropriate ways.
- ICS5. Discuss the challenges and opportunities created by cross-cultural communications and their potential
 impact on patient care, health disparities and health outcomes, and engage support systems that facilitate
 cross-cultural communication.
- ICS6. Discuss the elements of effective team building and utilize appropriate techniques to create, participate in, and lead effective teams.
- ICS7. Establish and utilize effective communication strategies with patients, families, and healthcare colleagues, regardless of their cultural background.
- ICS8. Build and sustain effective relationships in a wide variety of settings and with persons from diverse backgrounds.
- ICS9. Effectively manage interpersonal conflict and provide and receive constructive feedback.
- ICS10. Disclose medical error to patients, families, and health care providers in a mamer that is truthful, sensitive, responsible, constructive and supportive.

IV. Professionalism

Physicians must possess the knowledge, skills, and attitudes necessary to carry out professional responsibilities, adhere to ethical standards and establish and maintain productive respectful relationships with patients and colleagues. Professionalism applies to formal and informal in erections in education systems, in health care practice settings, and in the wider community. Learners will be able to

- PR1. Discuss the duties and obligations of the maical profession, its health care institutions, and its individual practitioners to patients, communities, and society
- PR2. Place the primacy of the patient in all health care and eavors.
- PR3. Work for a more just health care system, including the ability to advocate effectively on behalf of individual patients and patient populations.
- PR4. Discuss the principles of biomedical ethis and apply these principles in practical contexts.
- PR5. Demonstrate honesty and man sparency in all dealings with patients, learners, and colleagues.
- PR6. Comply with the professional and legal standards that safeguard patient confidentiality.
- PR7. Discuss the concepts surrounding conflict of interest and competing priorities; identify and manage these in ways that maintain the primary of patient interests and the health of the public.
- PR8. Demonstrate compassion and respect for all persons regardless of differences in values, beliefs, and experiences.
- PR9. Demonstrate awareness of the vulnerability of patients and the inherent power differentials in organizational and interpar onal relationships, and respect the boundaries that define therapeutic relationships.
- PR10. Seek excellence in all professional endeavors.

V. Practice-Based Learning and Improvement

Physicians must be able to continuously improve patient care by investigating and evaluating outcomes of care and by engaging in learning activities which involve critical appraisal and assimilation of scientific evidence and application of relevant knowledge to individual patients and populations. To demonstrate competence in practice-based learning and improvement, each learner will be able to:

- PBLI1. Systematically collect, monitor, and analyze data describing current performance at the individual, team and/or systems levels in an effort to achieve the highest possible quality of care.
- PBLI2. Continuously pursue knowledge regarding best practices and optimal patient outcomes.
- PBLI3. Compare data about current performance at the individual, team, and/or systems level with expected outcomes, and identify and implement the learning strategies needed to improve performance.
- PBLI4. Develop and implement improvement projects using a systematic approach that employs the principles of improvement science.
- PBLI5. Recognize, acknowledge, and analyze medical errors and devise system-based strategies that would prevent similar errors in the future.

VI. Systems-Based Practice

Physicians must understand and respond to the larger context and system of health care and effectively call on system resources to provide care that is of optimal value. Learners will be able to:

- SBP1. Explain why health care of optimal value is safe, effective, patient-centered, culturally sensitive, timely, efficient, and equitable.
- SBP2. Explain basic principles of systems science and the ways in which people, processes, technology, and policy combine to form systems.
- SBP3. Describe the basic organization of health care systems, including the various relationships between
 patients, providers, practices, institutions, insurers and benefits managers, community health organizations,
 federal and state regulators, accrediting bodies, professional organizations, licensing boards, the
 pharmaceutical and biotechnology industries, and legislators.
- SBP4. Compare and contrast the local systems in which acute patient care and health maintenance are provided, such as emergency departments, outpatient clinics, hospitals, mental health clinics, public health clinics, pharmacies, etc.; coordinate patient care within these systems.
- SBP5. Describe different health professionals' roles and responsibilities within the health care delivery
 system and maximally utilize the capabilities of all health care team members to achieve optimal patient
 outcomes.
- SBP6. Discuss the key elements of leadership, management, and organizational behavior and how these elements apply in teams, health care organizations, and society; demonstrate these in one's own leadership roles
- SBP7. Describe how public health and health policy shape the nature of our health care system and discuss how and when clinicians must interact with public health officials and policyn akers.
- SBP8. Explain risk, complexity, resilience, and related concepts that influence the performance of humans and the systems in which they work.
- SBP9. Design, analyze, and evaluate health care microsystems, and propose interventions that improve quality, safety, and cost-effectiveness.

Special Doctor of Medicine Programs

Medical Scientist Training Program

The Medical Scientist Training Program is the M.D./Ph.D. program at VUSM. The central goal of the MSTP is to identify, mentor, and foster the care is of a diverse workforce of superior future leaders in academic medicine, industry, and government who are dedicated to improving human health through research, clinical activities, and leadership. Based on solid clinical training and rigorous, highly impactful research training, our program fosters the development of independent scientific careers. We provide students with an integrated curriculum comprising a strong core education in medicine and intensive training in scientific inquiry. Successful completion of the program leads to attainment of both the M.D. and Ph.D. degrees.

MSTP Financial Support

Funding for tuition and stipend is provided for those who gain admission to the Medical Scientist Training Program. A training grant from the NIH supports about 19 percent of the expenses for the MSTP; the remainder comes from institutional support and philanthropy. Students who do not maintain good academic standing risk losing this financial support.

Medical Innovators Development Program

The Medical Innovators Development Program (MIDP) is a unique four-year Ph.D.-to-M.D. training program tailored to engineers and applied scientists with existing Ph.D. degrees. The purpose is to fill an unmet need for applied physician-engineers who can solve clinical problems by translating discoveries in engineering into valuable innovation that improves the lives of our patients.

Motivated innovative physician-engineers who understand clinical medicine, as well as biomedical design, are critical to achieving more than incremental change. The MIDP is the School of Medicine's first step in a broader mission to bridge the gap between academia, industry, and health.

MIDP students constitute a small cohort of students in the M.D. program. The program emphasizes multidisciplinary collaboration with faculty expertise across the schools of medicine, engineering, and business.

MIDP Financial Support

Funding for tuition is provided for those who gain admission to the Medical Innovators Development Program. Continued funding is predicated on maintaining satisfactory performance in the M.D. and MIDP programs.

Oral and Maxillofacial Surgery—Doctor of Medicine Program (OMS-MD)

The Vanderbilt University Medical Center offers an Oral and Maxillofacial Surgical (OMS) Residency Program that, in collaboration with Vanderbilt University School of Medicine, allows qualified individuals to complete a Vanderbilt University M.D. in three years and thereafter progress directly into the VUMC OMS residency. The Vanderbilt University Oral and Maxillofacial Surgical Residency Program and VU M.D. program accept one student each year to this program. The OMS-MD curriculum allows trainees to meet graduation requirements for the doctor of medicine at the end of three years, at which point the Vanderbilt University M.D. is conferred. During the last three of six years in the OMS-MD program, the trainees continue full time in the VUMC OMS residency program.

With a case-based, system-based learning model and personalized medical school curriculum, there are generous opportunities for the OMS resident-medical student to explore areas of personal interest and emphasis programs for an outstanding medical/surgical education. The program prepares residents for the community practice of oral and maxillofacial surgery as well as for advanced fellowship training and academic careers. Areas of clinical strength include the comprehensive management of all facets of facial trauma, benign and malignant head and neck pathology, orthognathic surgery, facial reconstruction, secondary cleft care, and dentoalveolar surgery and in plants with an emphasis on implant site development.

Admission to the Doctor of Medicine Program

Technical Standards for the Doctor of Medicine

The Vanderbilt University School of Medicine Admission Committee affirms that all candidates for the M.D. must possess the intellectual, physical, and emotional capabilities recessive to undertake the required curriculum in a reasonably independent manner, without having to rely on intermediaries, and that all students must be able to achieve the levels of competence required by the faculty to complete medical school and enter residency and clinical practice. Candidates for the M.D. must have abilities and skills in the following areas: observational skills; communication skills; motor skills; interfectual, conceptual, integrative, and quantitative skills; and behavioral and social skills. Technological compensation can be made for some limitations in certain of these areas, but candidates must be able to perform in a real enably independent manner. The use of a trained intermediary is not allowable as this shifts the reliance of candidates' judgment from their own observation and prioritization to that of another.

Candidates must have sufficient sensory and motor function to independently gather information from patients by physical examination and observation. All candidates should be expected to perform basic laboratory tests (blood and urine analysis, etc.), execute diagnostic procedures (lumbar puncture, venipuncture, etc.), and interpret ancillary diagnostic data (EKGs and X-rays). Candidates should be able to provide general care and emergency treatment to patients. Examples of emergency treatment reasonably required of physicians are cardiopulmonary resuscitation, the administration of intravenous medication, the application of pressure to stop bleeding, the opening of obstructed airways, the suturing of simple wounds, and the performance of simple obstetrical maneuvers. Such tasks and actions require equilibrium, the coordination of gross and fine muscular movements, and functional use of the senses.

These guidelines were formally adopted by the Vanderbilt University School of Medicine Undergraduate Medical Education Executive Committee and are reviewed annually.

Implementation of Technical Standards in the Admissions Process. All applicants for admission to the Vanderbilt University School of Medicine will be evaluated according to the same standards and criteria outlined in the Technical Standards. Although these standards serve to delineate the necessary physical and mental abilities of all candidates, they are not intended to deter any candidate for whom reasonable accommodation will allow the fulfillment of the complete curriculum.

Implementation of Technical Standards during Degree Candidacy. Should a candidate have or develop a condition that would place patients, the candidate, or others at risk or that may affect his/her need for accommodation, an evaluation with an appropriate medical provider followed by assessment through the Vanderbilt University Student Access Services office would be needed to provide recommended accommodations to the School of Medicine. The associate dean for undergraduate medical education (ADUME) and the assistant dean for medical student assessment (and, if needed, the senior associate dean for health sciences education) would review the student

assessment and requested accommodations carefully. A complete and careful reconsideration of all the skills, attitudes, and attributes of each candidate will be performed. This includes an assessment of his/her willingness, desire, and ability to complete the medical curriculum and fulfill all requirements for medical licensure, and will be informed by the knowledge that students with varied types of disabilities have the ability to become successful medical professionals.

Technical Standards

Observational Skills

Candidates must assimilate essential information as presented through demonstrations and experiences in the basic sciences. In addition, candidates must be able to:

- Observe a patient accurately and acquire relevant health and medical information, including written documents, images from the medical literature, slides and/or video.
- Interpret X-ray and other graphic images, and digital or analog representations of physiologic data (e.g., EKGs). The required observation and information acquisition and analysis necessitate the functional use of visual, auditory, and somatic sensation. In any case where a candidate's ability to observe or acquire information through these sensory modalities is compromised, the candidate must demonstrate alternative means and/or abilities to acquire essential observational information.

Communication Skills

Candidates must be able to demonstrate proficiency in the English language such that they can communicate effectively in oral and written form with all members of the health care team. Candidates must be able to communicate with patients in order to elicit information. They must have the capacity for comfortable verbal and non-verbal communication and interpersonal skills, to enable effective caregiving of patients and collaboration within a multidisciplinary team. In any case where a candidate sability to communicate is compromised, the candidate must demonstrate alternative means and/or abilities to communicate with patients and teams.

Motor Skills

It is required that candidates possess the motor skills ne ressary to conplete and interpret the physical findings of patients. Such actions may require coordination of coth gross are fine muscular movements, equilibrium, and functional use of the senses of touch. In any case where a cardidate's ability to complete and interpret physical findings because of motor skills is compromised, the cardidate must demonstrate alternative means and/or abilities to retrieve these physical findings.

Intellectual-Conceptual Skills

Candidates must exhibit the requisite intellectual and conceptual skills to effectively interpret, assimilate, and understand the complex information required to function within our medical school curriculum. Effective participation in learning modalities, such as individual, small group, and lecture formats, in both the classroom and the clinical setting, will be required. Candidates must be able to effectively learn, participate, collaborate, and contribute as a part of a team. They will need to synthes, enformation effectively both in person and via remote technology. Candidates must be able to interpret causal connections and make accurate, fact-based conclusions based on available data and information. They must be able to formulate a hypothesis, investigate the potential answers and outcomes, and formulate appropriate and accurate conclusions.

Cognitive Skills

Candidates must be able to measure, calculate, reason, analyze, integrate, and synthesize. In addition, the candidate must be able to comprehend three-dimensional relationships and to understand the spatial relationships of structures. Problem solving, a critical skill demanded of physicians, requires all of these intellectual abilities. Candidates must be able to perform these problem-solving skills in a timely fashion.

Behavioral Attributes, Social Skills, and Professional Expectations

Candidates must be able to fully utilize their intellectual abilities, to exercise good judgment, to promptly complete all responsibilities attendant to the diagnosis and care of patients, and to develop mature, sensitive, and effective relationships with patients. Candidates must be able to effectively handle and manage heavy workloads and to function effectively under stress. They must be able to adapt to changing environments and to learn to function in the face of uncertainties inherent in the clinical problems of patients. Candidates must care for all individuals in a respectful and effective manner regardless of gender, age, race, sexual orientation, religion, or any other protected status identified in the university's Non-Discrimination Policy. Professionalism, compassion, integrity, concern for

others, interpersonal skills, interest, and motivation are all qualities that are expected throughout the educational processes.

Any concerns about the content or application of these technical standards should be referred to the School of Medicine director of admissions, or the School of Medicine associate dean for medical student affairs.

Content current as of May 11, 2019.

Doctor of Medicine Requirements for Entrance

The Vanderbilt University Doctor of Medicine program seeks students with a strong background in both science and liberal arts who have the baccalaureate degree before matriculation. The Medical College Admission Test (MCAT) is required and used along with other observations to predict success in pre-clinical course work.

Vanderbilt University School of Medicine recognizes that the undergraduate academic experience of applicants varies greatly. Therefore, we made the decision to move away from "requirements" to "recommendations." The expansive and ever-changing landscape of medicine and its practice necessitates that an applicant have demonstrated competencies in the natural and life sciences, social sciences, and mathematics. These competencies can be met through traditional and/or newly-established interdisciplinary courses of study in an accredited institution of higher learning. The use of AP or other credit is acceptable, but it is strongly encouraged to build stronger competencies through courses taken in college. Although there is no timeframe in which students must meet the above competencies, it is recommended that students have recent exposures to most or all of these areas. Competitive applicants should demonstrate in-depth competency in each of the following areas of study based on the AAMC-HHMI Scientific Foundations for Future Physicians and AAMC-Behavioral and Social Science Foundations for Future Physicians. Mastery of competencies is reflected by a strong per formance in the classroom and on the MCAT, as well as in letters of evaluation.

Biology: Applicants should demonstrate competence in the unperstanding of molecular and cellular biology, genetics, and how they regulate organ and organismic structure and function. Fields of study analyzing diverse human properties are viewed in a strong, positive light.

Chemistry/Biochemistry: Applicants should demons rate competence in the basic principles of chemistry as it pertains to living systems. Studies in biochemistry are a rexemplary way to prepare students for training in medicine science.

Mathematics/Statistics and Physics: Applicants should demonstrate competence in the basic principles of physics and mathematics underlying living systems. Applicants should demonstrate basic competence in statistics or biostatistics, which is important to understand the quantilative aspects of medicine and biomedical research.

Social Sciences and Communication: It is imperative that the applicant demonstrate competence in the humanistic understanding of patients as numan beings and as part of a familial and social structure. In this regard, studies in psychology and sociology are viewed favorably. It is required that the applicant speaks, writes, and reads English fluently.

The faculty of the Vanderbilt University School of Medicine recognizes its responsibility to present candidates for the M.D. degree who have the knowledge and skills to function in a broad variety of clinical situations and to render a wide spectrum of patient care. Can didates for the M.D. degree ordinarily have the broad preliminary preparation to enter postgraduate medical education in any of the diverse specialties of medicine.

Doctor of Medicine Recommendations for Entrance

A broad experience in non-science courses is encouraged, especially experience beyond the introductory course level in areas such as English, the humanities, the arts, and the social and behavioral sciences. A major in non-science courses does not affect selection.

Medical College Admission Test

The Medical College Admission Test is given under the auspices of the Association of American Medical Colleges and is required of applicants to Vanderbilt. It is given multiple times each year. Since the examination score is used by medical schools in the selection of applicants, candidates should take the test in the spring prior to the time application is submitted, if possible. Results of the September examination are acceptable, but delay review of the application until scores are received.

Doctor of Medicine Selection Factors

Vanderbilt University School of Medicine seeks to matriculate a diverse group of academically exceptional students whose attributes and accomplishments suggest that they will be future leaders and/or scholars in medicine. To

accomplish this goal, VUSM provides a review of each candidate by multiple members of the faculty who are broadly representative of the faculty body. The committee uses a holistic approach to evaluate an array of applicant attributes, including academic excellence, personal characteristics, accomplishments in research, leadership, service to others, contribution to diversity (gender, race, ethnicity, sexual orientation, socio-economic background, geographic origin), and participation in extracurricular activities.

Medical Scientist Training Program (MSTP-MD/PhD) Admission

MSTP students are recruited from a diverse applicant pool drawn from throughout the nation and abroad. MSTP applicants should possess:

- 1) an excellent academic record;
- 2) a strong motivation to pursue a career as a physician-scientist;
- 3) significant and substantial prior research experience outside of required laboratory courses; and
- 4) demonstrable leadership qualities.

Medical Innovators Development Program (MIDP) Admission

MIDP applicants must have a doctoral degree in engineering or applied sciences, with evidence of academic excellence. The doctoral program must be completed prior to matriculation. If a final transcript will not be available until after matriculation, a letter from the registrar or dean of the institution awarding the degree stating that all degree requirements have been met (including approval of dissertation) is required before that culation.

All course recommendations applicable to the Doctor of Medicine program apply to MDP applicants as well. Please refer to the requirements outlined for the Doctor of Medicine program.

Oral and Maxillofacial Surgery—Doctor of Medicine Program (OMS-MD) Admission

One candidate per year is admitted to the program. Applicants must have passed Part 1 and Part 2 of the National Dental Board Examination; must have earned a D.M.D./D.D.S. degree or equivalent and must be a U.S. citizen or a permanent resident.

In addition, all applicants to the OMS-MD program are required to take the CBSE (Comprehensive Basic Science Examination) administered by the NBME. This examination is taken during or just prior to their final year of dental school.

The selection factors for applicants emphasize of a cade not performance; personal attributes such as a sound work ethic, dedication, and honesty; and a demonstrated commitment to postgraduate training in oral and maxillofacial surgery. The latter may be demonstrated through completion of one or more OMS externships, preferably of at least two (2) weeks' duration. Letters of recommendation are required and specified by the PASS application information for this program. Such letters are very carefully reviewed and should be provided by dental school faculty who can share personal knowledge of the applicant's qualifications, commitment, personal attributes, and accomplishments.

Application Procedure for Admission to the Doctor of Medicine Program

As a convenience to the applicant Vinderbilt University School of Medicine participates in the American Medical College Application Service. And pplication materials may be obtained online through AMCAS by going to https://www.aamc.org/. Applications are received online by AMCAS any time after 1 June and before 1 November preceding the anticipated enrollment date the next year.

The Leadership Team Subcommittee evaluates the initial application materials. The Interview Review Subcommittee evaluates AMCAS, secondary application, and letters of recommendation to decide which applicants are invited for an interview. Interviews are conducted at Vanderbilt between September and February. The Admission Committee evaluates the application materials and interview reports to decide which applicants are invited to join the entering class. Invitations to join the class are made in December and February.

Vanderbilt does not participate in the Early Decision Program through the American Medical College Application Service and does not have an Early Assurance Program. Vanderbilt University School of Medicine offers various dual degree programs. Application is made to each program separately, and admission to both programs is required to enter a dual degree program.

A criminal background check is required after admission to the Doctor of Medicine program and must be received by the school before matriculation.

Disclosure of offenses post-background check completion: Current full-time students are required to immediately report to the ADMSA or the ADUME any arrest, criminal charge, or conviction occurring after their

background checks have been completed. Required disclosure also includes, but is not limited to, allegations, investigations, and/or disciplinary action from any licensing board or Abuse scan.

Application Procedure for Medical Innovators Development Program Admission

The MIDP admission process is the same as that for the M.D. program except as outlined below.

Like traditional M.D. applicants, MIDP applicants submit letters of recommendation. However, one should be from a research mentor or work supervisor who can describe the applicant's potential for and commitment to success as an applied physician-scientist.

In addition to the three essays submitted through the AMCAS application, MIDP applicants must submit an MIDP-focused essay explaining the reason(s) the applicant is interested in joining the Medical Innovators Development Program and how the MIDP program helps the applicant achieve his or her career goals. (~500 words)

Further screening of secondary applications is done via a virtual interview using live video technology platforms. Successfully screened candidates are then invited to the on-site interview/Design Challenge. The MIDP Leadership Team has the responsibility of reviewing and ranking MIDP applications for presentation to the VUSM Admission Committee. No candidates are offered MIDP acceptance without the approval of the Admission Committee.

Application Procedure for Oral and Maxillofacial Surgery—Doctor of Medicine Program Admission

Applications are accepted through the American Dental Education Association Postdoctoral Application Support Service (ADEA PASS) (www.adea.org/pass/). Applications are accepted from among only U.S. citizens and US permanent residents.

Applications are due by September 1 each year. Interview invitations are sent directly to selected candidates for September and October interviews. After interviewing, residents are matched via the Postdoctoral Dental Matching Program (natmatch.com/dentres/).

The following materials are required, and must be uploaded to your PASS at plication:

- 1. 2x2 Passport style photo
- 2. NBDE Score report (part 1, and part 2 if you have taken t)
- 3. CBSE Score report

A \$35 dollar supplemental application fee is required. Please see the OMFS admission website for more information on applying, at *yumc.org/deptoralmaxilsurgy* 28 84.

One OMS-MD trainee is admitted an ually through the OMS residency selection process. The OMS department recommends the selected candidate to the School of Medicine Admission Committee. The Admission Committee reviews the applicant's credentials and makes an M.D. program admission determination.

Application Procedure for MSTP (M.D./Ph.D.) Admission

Application to the M.D./Ph.D. program is indicated by selecting M.D./Ph.D. degree on the AMCAS application to Vanderbilt University School of Medicine followed by completion of the MSTP secondary application. The application is reviewed by the MSTP Admission Sub-committee. Competitive applicants are invited to interview at Vanderbilt. Students in the first year of Ph.D. training may also be considered for admission. The final acceptance for all Doctor of Medicine programs rests with the Admission Committee. More information may be found at medschool.vanderbilt.edu/mstp/admission-process.

Application to Dual Degree Programs

Vanderbilt University School of Medicine offers various dual degree programs. Application is made to each program separately, and admission to both programs is required to enter a dual degree program.

Transfer Students

Transfer students are not accepted into the Doctor of Medicine Program at the Vanderbilt University School of Medicine.

Non-degree-seeking Students

Non-degree-seeking students are not allowed to enroll in Doctor of Medicine course work offered by the School of Medicine.

Visiting Students (General Information)

Vanderbilt School of Medicine welcomes visiting senior medical students, space permitting, into clinical rotations. The visitor must be an enrolled post-clerkship medical student in good academic standing at a U.S. allopathic or osteopathic medical school. (Not all specialties at Vanderbilt University School of Medicine accept osteopathic students.) Each approved student must be taking the elective for credit from his/her own school with his/her dean's approval and must have adequate professional liability and health insurance coverage. In addition, the visitor must submit immunization records which are reviewed by Vanderbilt University Student Health services. The visitor must be deemed compliant by Student Health before being cleared to rotate in a clinical setting. In addition, the visitor must show proof of a criminal background check conducted within 12 months of the rotation. Visitors must also have taken and passed the NBME Step 1 exam.

Visiting students may take ACE electives in the School of Medicine, space permitting, with the approval of the appropriate department and with concurrence of the course instructor and the associate dean for medical student affairs. Visiting students should not contact the course directors directly. All inquiries must be made through the Office of Enrollment Services. Failure to apply through this office may result in the student's not being able to take the course.

Students wishing to visit at Vanderbilt School of Medicine should submit a Visiting Student Application through the AAMC Visiting Student Application Service (VSAS). Applications are processed up to twelve weeks in advance of the requested rotation. For more information on VSAS, visit aamc.org. Applications are accepted beginning on March 15. A complete application includes a picture, CV, USMLE Step Score, transcript, immunization form, and federal criminal background check report. All accepted students must confirm their participation by submitting a non-refundable \$160 processing fee by check or money order payable to Vanderbilt University School of Medicine. Visitors are also required to participate in an orientation with the Office of Enrollment Services on the first day of their rotation which includes training sessions in Blood forme Pathogens, Standards of Conduct and HIPAA. Visiting students may not enroll for more than eight weeks of elective work at Vanderbilt without special approval. Complete information about the Visiting Student Program is online at medschool.vanderbilt.edu/visiting-medical-students/.

Meharry Medical Students

The Vanderbilt School of Medicine has an alliance with Melany Medical College which allows Meharry medical students to take electives at Vanderbilt, space permitting, a propagation and cost. Applications must be submitted through the VSAS application program in the same manner as for other medical students (outlined above).

International Visiting Students

Vanderbilt School of Medicine accepts a finite number of international visiting medical students during November through April each year. International students are eligible for this program if:

- There are available spaces in existing courses;
- The student is in his or her final year of medical school;
- The student demonstrates proficiency in English as evidenced by the TOEFL score or has been taught in English;
- The student has been nominated by an institution with whom Vanderbilt has an existing collaboration or by a clinical faculty member at Vanderbilt who already has a professional relationship with the student.

International visiting students must pay a \$250 registration fee and \$750 per elective. The elective fee is waived for students at the University of Jordan with which Vanderbilt has a reciprocal relationship.

Information on the program is on the website at <u>medschool.vanderbilt.edu/visiting-medical-students/visiting-international-students/.</u>

An affiliation agreement must be signed and in place before any domestic or international visiting student may rotate at Vanderbilt. Vanderbilt University School of Medicine has signed on to the AAMC Universal Clinical Training Agreement (UCTA) that was endorsed by the Liaison Committee on Medical Education. As a participant in this medical school registry, Vanderbilt requires only an implementation letter for any school that has signed on to the UCTA.

Degree Requirements for the Doctor of Medicine

In order to graduate with the doctor of medicine, all M.D. students must:

- Have satisfactorily completed the medical curriculum.
- Have attained or acquired all required programmatic competencies.
- Have taken Step 1, Step 2 Clinical Knowledge (CK) and Step 2 Clinical Skills (CS) of the United States Medical Licensing Examination by the following deadlines: waivers must be approved by ADMSA or ADUME
 - Have taken Step 1 prior to orientation week of the Immersion phase.
 - Have taken Step 2CK and Step 2CS by February 1 of their 4th year/final year of medical school.
- Have no outstanding unpaid balances with the university, other than sanctioned educational loans.

Length and Delivery of Program

In accordance with the requirements of the Liaison Committee on Medical Education, candidates for the M.D. must have spent at least 130 weeks of study as matriculated medical students. The maximum time for enrollment in required M.D. course work is six years, including time spent on approved personal and/or medical leave(s) of absence. Time spent on leave of absence related to an approved alternate academic pathway (e.g., pursuing another degree, completing a research year, etc.) does not count toward the six-year maximum time to complete the M.D.*

*Any student who exits the M.D. curriculum for approved experiences (research, dual degree; leave of all ence, etc.) encounters different course options upon return. Requirements for these students are aligned with expectations in the year of entry by a prying the closest equivalent experiences available. Such students must meet with the associate deans of medical, the entaffairs and year regular medical education to clarify requirements for their degrees.

MSTP

The MSTP is a dual endeavor between the Vanderbik University School of Medicine and the Vanderbilt University Graduate School. Trainees are required to fu'fill all of the training requirements for both the M.D. and the Ph.D. programs. Since some competencies for the M.D. are met by the graduate school experience, it is possible for MSTP students matriculating July 2013 or after to complete the M.D. program in a total of three years. The MSTP allows both dual and alternating encollerent in the School of Medicine and the Graduate School. MSTP students will typically complete the FMK and FCC phases, exit for graduate studies, then return for a single year in the Immersion Phase.

The cornerstone of the Vanderbitt MSTP is training in scientific inquiry afforded by a rigorous Ph.D. experience. After completing the first two years of medical school and at least two laboratory rotations, trainees select a laboratory and department for graduate studies. This selection is typically formalized before the end of the second year of medical school.

Requirements for successful completion of the Ph.D. are the same for all students at Vanderbilt, and the Ph.D. thesis must be successfully defended prior to reentry into medical school. Most MSTP students will begin their final year of medical school in early but or earlier to complete the Immersion phase of their training.

Medical Innovators Development Program

In addition to the degree requirements for the Doctor of Medicine, MIDP candidates complete the following:

Over all four years:

- Innovation Forums
- Right Brain Activities

During the second year:

• Innovation Activism

During the third year:

• Innovation Design Experience and Applications (IDEA)

During the fourth year:

• Industry Immersion

During the third and fourth year:

• Business and Entrepreneurship

OMS-MD Program

Students in the OMS-MD program meet in full the requirements for the doctor of medicine after three years of full-time training.

Doctor of Medicine Curriculum Requirements (Aka Curriculum 2.0)

Foundations of Medical Knowledge Phase (FMK–Year 1)

This phase of the curriculum (49 weeks) provides students a strong foundation in the basic sciences, humanities, and behavioral and social sciences that supports ongoing developmental learning over ensuing years. All students participate in meaningful clinical work during this phase to initiate their development as professionals, to provide clinical relevance for the foundational course work, and to provide an early understanding of health care systems.

Required courses include Foundations of the Profession; Human Blueprint and Architecture (HBA); Microbes and Immunity (MI); Homeostasis; Endocrine, Digestion and Reproduction (EDR); Brain, Behavior and Movement (BBM); Physical Diagnosis (PDx); Learning Communities (LC)—FMK; CASE (Inquiry Program); and Continuity Clinical Experience (CCX) for either Foundations of Healthcare Delivery (FHD)1 or Vanderbilt Program in Interprofessional Learning (VPIL).

Foundations of Clinical Care Phase (FCC–Year 2)

This phase (41 weeks) provides a strong foundation in clinical care denvery, including core clerkships, clinical electives, and longitudinal programs to support the development of clinical skills and clinical reasoning.

Clerkships. Students rotate through discipline-specific clinical clarkships including Surgery (8 weeks), Medicine (8 weeks), Pediatrics (6 weeks), Obstetrics-Gynecology (6 weeks), Neurology (1 weeks), and Psychiatry (4 weeks).

Ordinarily, students complete all clerkships before proceeding to the Immersion phase, but under special circumstances, students may defer one or more clerkships to pursue special research or clinical interests. Such plans must be approved by the associate dean for undergraduat; medical education. MSTP students who enter the FCC phase after the first clerkship block may defer one block to the immersion phase, with the permission of the Medical Scientist Training Program director and the ADUME. These students remain accountable for the longitudinal elements of the FCC phase.

Electives. All students are required to take two (2) two-week electives during the FCC phase. These experiences are designed to allow students to exploit focused clinical areas and potential career choices. Students may select from offerings across many clinical disciplines. The scheduling of these electives is linked to the clerkship blocks in Pediatrics and in Obstetrics and Gynecology.

A student may request an exemption from the elective requirement if she/he has a compelling reason. Reasons may include a need to make up clerkship t.mo, illness requiring treatment, or other unavoidable life events that require the student to be away from school. When the student needs an exemption, she/he must contact the associate dean for medical student affairs (ADMSA) to make a formal request. The decision to grant the exemption is made by the ADMSA. Once an exemption is granted, the student may not be required to complete the elective at a later date. An exempted elective that is not made up at a later time does not appear on the transcript.

Master Clinical Teacher (MCT) Program. Direct observations by a master clinical teacher are required during the FCC phase. MCTs observe students during patient encounters and provide immediate feedback and teaching of advanced clinical skills. The structure and expectations of the observations are consistent throughout the phase; however, the logistics and scheduling of observations are specific to each clerkship. Participation in the MCT process is mandatory and contributes to the clerkship grade and portfolio.

Diagnosis and Therapeutics (D&T). This required course runs longitudinally throughout the phase. The course begins with a one-week intensive review of diagnostic approaches and continues throughout the FCC phase with a series of small group meetings aligned with specific clerkships.

Ongoing Longitudinal Elements. The longitudinal elements (Foundations of Healthcare Delivery and, if participating, Vanderbilt Program in Interprofessional Learning, Learning Communities—FCC, and Research) continue during the FCC phase. For ease of scheduling, these activities have been aggregated to "longitudinal days." All activities during longitudinal days are considered mandatory.

Immersion Phase (IMM–Years 3 and 4)

The Immersion phase is a highly individualized experience that allows each student to create a schedule that optimally meets core educational needs, strengthens all competency domains, and builds specialized skill sets

aligned with the student's future clinical and scholarly trajectory. Students are required to complete 15 one-month blocks over this 22-month period (including the Research Immersion, described below). Students complete a mixture of experiences with varying levels of structured versus work place learning, including acting internships (AIs), integrated science courses (ISCs), advanced clinical experiences (ACEs), and electives. Requirements for experiences across various care settings (primary care, acute care) and clinical disciplines ensure a broad preparation. Refer to the School of Medicine website for a full description of the requirements of the Immersion phase (medschool.vanderbilt.edu/curriculum/immersion//).

The longitudinal elements (Foundations of Healthcare Delivery, Learning Communities, and VC3) continue during the Immersion phase. Some of this longitudinal course work is completed while participating in other core rotations. Some content is delivered in week-long courses, in which an entire class of students physically convenes. All activities during week-long courses are mandatory.

The Research Immersion, an intensive 3-month mentored scholarly experience, must be completed during the Immersion phase. Each mentor works with a student, aligning resources to support the student's project during their planned research months. Students must complete the PLAN course before beginning the Research Immersion. Once the research months are determined, these agreed-upon months may not be shifted or adjusted without approval of the Research Immersion leadership, as this jeopardizes the project by impacting the effort faculty have made to align said resources. Students may request an extension of the Research Immersion of up to a total of six months (as a contiguous or non-contiguous block); approval is contingent upon satisfactory progress across all competency domains and is granted by the Inquiry Program director. Students must complete (or have attained waivers for all Research Immersion requirements before April (by the end of block #3) of the intended year of graduation.

Longitudinal Curriculum Requirements

Several curricular elements span all phases of the four years of training.

Foundations of Health Care Delivery (FHD)

FHD is a series of courses, over the four years of medical school, embedding students into care delivery systems to:

- Prepare professionals with systems level skills necessary to provide care that is safe, effective, patient-centered, timely, efficient, and equitable
- Integrate health systems science with clinical are
- Cultivate respectful professionals

The vision of these courses is to offer students a longitudinal experience in which they learn about the systems of health care as well as foundational skills that help their better understand how health systems function, while at the same time gaining important skills to function in and eventually modify those systems. Graduation requirements are detailed at <u>medschool.vanderbil.edu/curriculum/fl/d/</u>.

Vanderbilt Program in Interprofessional Learning (VPIL)

Students have the opportunity to apply for VPIL, a two-year course in which medical, nursing, pharmacy, and social work students work and learn together as a team in a clinical environment. Participation in VPIL allows medical students to fulfill a particle of their FHD requirements for graduation. The goals of the program include:

- Cultivate respectful professionals
- Nurture self-directed workplace learners
- Prepare leaders who contribute to a collaborative practice–ready workforce
- Integrate the patient care experience with health professions knowledge
- Improve the health care delivery system by integrating systems knowledge with patient care.

Student teams learn to provide care to a panel of patients under the supervision of multi-professional attending providers. Teams also meet regularly for a variety of classroom-based and simulation activities focused on social determinants of health. Teams discuss cases together, go on a home visit, and learn a variety of other clinic-based skills that they can accomplish as a team. In their second year, student teams design and implement a quality improvement project in their clinic and present it at an end of year Capstone event.

Graduation requirements for students accepted into VPIL are detailed at medschool.vanderbilt.edu/vpil/

Learning Communities

Learning Communities course work capitalizes on strong relationships within the Colleges, utilizing small group formats to address key elements of professional development. The Learning Communities curriculum includes meta-

cognition, medical ethics, medical humanities, health care policy, and narrative medicine, delivered in a discussion-based format. Leadership is also a focus of the Learning Communities curriculum.

Inquiry Program

Research and scholarship are addressed over a four-year curriculum that introduces students to the role of physician-researcher and provides education in the skills, knowledge, and attitudes required to succeed in that role. The Inquiry Program consists of the following components:

- FMK Phase: CASE (Clinical Applications of Scientific Evidence)
- FCC Phase: Discovery
- · Immersion Phase: PLAN (Planning, Logistics, and Navigation) and Research Immersion

The research courses in FMK and FCC phases prepare each student to complete a Research Immersion of 3–6 months during the Immersion phase.

Vanderbilt Core Clinical Curriculum

The Vanderbilt Core Clinical Curriculum (VC3) is based upon a set of twenty-five common presenting complaints. These topics do not encompass all that each student is expected to learn, but do represent core clinical scenarios that all graduates are expected to recognize, diagnose and, where appropriate, develop a management plan. A set of learning objectives is established for each presenting problem. The VC3 topics are introduced in the FMK phase and continually revisited throughout the curriculum. Students are expected to populate a digital da aboard demonstrating experience with these topics throughout their clinical rotations. More information may be found at medschool.vanderbilt.edu/vc3.

Core Entrustable Professional Activities for Entering Residency Core EPA(1)

The AAMC has defined thirteen tasks that interns are expected to perform without direct supervision. Training in the Core EPAs is provided throughout the curriculum, and students are assessed throughout FCC and the Immersion Phase. Although proficiency in all thirteen tasks is not a requirement for graduation, progress in the Core EPAs is monitored as part of each student's overall competency development. "Core EPA veek," occurring in the spring semester of the third year, includes didactic and simulation activities to support student readiness for residency. This event is mandatory.

Course List

A full list of doctor of medicine courses is provided in this catalog under Courses of Study.

Tuition, Fees and Financial Aid

Tuition for the academic year 2020/21 \$\$50,870. The annual estimated cost of attendance for an M.D. student in academic year 2020/21 is as follows

First year \$96,874 Second year \$57,4 9 Third year \$98,719 Fourth year \$97,212

(See <u>medschool.vanderbilt.edu/financial-aid/md-cost-of-attendance.</u>)

The following university costs are included with tuition:

- professional liability insurance
- · student long-term disability insurance
- · student health service
- verifications

Please refer to the School of Medicine Tuition, Fees, and Financial Aid section of this catalog for more information about university and School of Medicine costs and fees.

Payment of Tuition and Fees

For students enrolled in the Doctor of Medicine program, one half of tuition, fees, and other university charges is due and payable by 31 August. The second half of tuition, fees, and other university charges is due and payable by

31 January. Additional information can be found in the School of Medicine Tuition, Fees, and Financial Aid chapter of this catalog and at *vanderbilt.edw/stuaccts*.

Students in the Medical Scientist Training Program (MSTP) are principally enrolled in either the School of Medicine or the Graduate School. Each MSTP student receives a full scholarship from the program that covers tuition and fees for all clinical training and for the first graduate school year. The research mentor is responsible for tuition, stipend, and fees from second year of graduate school until the date of Ph.D. dissertation defense.

Financial Assistance

Education leading to the doctor of medicine requires a careful consideration of financial commitment by prospective students and their families. Financial planning is an important part of the student's preparation for medical school.

Scholarships awarded on the basis of merit and need are available through Vanderbilt. Financial aid from school sources must be considered a supplement to governmental and other sources, rather than the primary source of funds necessary to attend medical school. Scholarships may not be adequate to meet students' demonstrated need, but approved educational expenses are met with funds from a combination of sources, including loans. Government funds that furnish significant loans to medical students are the Federal Direct Unsubsidized Loan and the Federal Direct Graduate PLUS loans. Private loans are also available to all students, including international students.

Additional information and applications for financial aid are online at <u>medschool.vanderbilt.edu/financial-aid/</u>. Applicants desiring more specific information about financial aid resources should contact the medical school Office of Enrollment Services, Financial Aid.

Assessment System for the Doctor of Medicine Program

Assessment Philosophy

The underlying philosophy for the Doctor of Medicine program is that attainment of the knowledge, skills, and attitudes competencies needed for safe, effective, patient centered care is a developmental process that occurs over many years of education, training, and practice. It is also pased on a philosophy of continuous improvement. Therefore, the system is designed to:

- Guide learning with measures that benchmark performance against explicit expectations;
- Promote the skills needed for accurate and reflective self-assessment;
- Direct students to next learning steps and associated learning resources;
- Provide evidence for high-stakes decisions.
- Provide evidence of program effectiveners.

Since the abilities to accurately self-assets and subsequently create appropriate learning goals are also developmental processes, the system provides students with faculty coaches who assist them as they practice these skills. Importantly, the system encourages students to assume increasing levels of responsibility for their own learning.

Elements of Student Assessment

- VUSM Core Competency Domains: Medical Knowledge; Patient Care; Interpersonal and Communication Skills; Professionalism; Practice-based Learning and Improvement; and Systems-based Practice.
- Competencies that describe the specific knowledge, skills, and attitudes within each core competency domain and the synthetic application of those competencies to perform "entrustable professional activities."
- Milestones for focus competencies within each domain that describe explicit and measurable behaviors that learners demonstrate as they progress from novice to expert.
- Course and clerkship grades
- Centralized assessment events
- Full participation in the portfolio review process, as described below. All formative and summative
 assessments are gathered in an interactive, electronic learning portfolio and can be sorted by course or by
 competency domain to facilitate portfolio reviews.

Narrative Assessment Policy

Each student will receive narrative assessments during the curriculum that when aggregated provide feedback on their knowledge, skills, attitudes and behaviors in a manner consistent with the VUSM competencies for learners

across the continuum (e.g. patient care, medical knowledge, professionalism, interpersonal and communication skills, systems-based learning and practice-based learning and improvement).

- During the pre-clerkship (FMK) phase, students will receive narrative assessment from their peers, small group facilitators, course directors, and portfolio coach, as well as narrative self-assessment.
- During the clerkship (FCC) Phase, students will receive narrative assessment from their Master Clinical Teachers (MCT), clerkship directors, supervising faculty and residents, and portfolio coach, as well as narrative self-assessment.
- During the post-clerkship (Immersion) phase, students will receive narrative assessment from their course directors, supervising faculty and residents, research area director and mentors, and portfolio coach, as well as narrative self-assessment.

Narrative assessments will be made available to the student, the student's portfolio coach, and the promotions committee via the student's electronic portfolio.

The Narrative Assessment Policy was reviewed and approved by the Undergraduate Medical Education Committee on April 28, 2020.

Policy for Direct Observation

All students will be directly observed on all required clerkships while performing patient evaluations, with special attention to those aspects of the evaluation that are most pertinent to that specialty, and to the patient problems or conditions (e.g., VC3 problems) designated as required experiences for that clerkship. This must be documented in the student's Portfolio, along with feedback on the performance.

The Policy for Direct Observation was reviewed and approved by the Undergradu ite Me ical Education Committee on April 28, 2020.

Midcourse Feedback Policy

Students will receive formal formative feedback on all required clerkship, and all courses four (4) weeks of length or longer at a point in time that has allowed for meaningful observation and also allows for improvement before the end of the course; generally, this will occur at the mid-point of the clerkship or course. The feedback must align with final assessment criteria and must be provided by the course director or a designee with knowledge of the student's performance. The feedback will be documented in a timely manner that is easily viewable by the student.

The Midcourse Feedback Policy was reviewed and a proved by be Undergraduate Medical Education Committee on April 28, 2020.

Grading Policy

The Doctor of Medicine program has established a series of learning objectives for its medical educational program that are aligned with the competency domains described by the Accrediting Council for Graduate Medical Education (residency requirements): (1) medical knowledge, (2) patient care, (3) interpersonal and communication skills, (4) professionalism, (5) practice-based learning and improvement, and (6) systems-based practice. The ongoing growth of competency in these domains defines the successful development of the physician and occurs during medical school and throughout one's career.

Performance across these domains is assessed in every course and program. In addition to meeting course requirements, satisfactory performance must be maintained in each domain. Efforts are made by program faculty to bring any significant performance concern during a required course or clerkship to the attention of the student early enough to allow sufficient time to develop a remediation plan. A student for whom major concern persists despite coaching may be given a failing grade (F) for the course and/or may not be promoted despite satisfactory performance in other categories. Grades for all courses are due within six weeks of the last day of the course.

Grading Scales

Pass/Fail. Final grades of Pass (P) or Fail (F) are applied in the following courses:

- FMK: All courses
- FCC: All courses
- Immersion: Electives; Learning Communities; PLAN (Inquiry Program); Foundations of Healthcare Delivery (with the exception of QI courses listed below)

Honors/High Pass/Pass/Fail. Final grades of Honors (H), High Pass (HP), Pass (P), Fail (F) are applied in the following courses:

- Immersion: All ACEs, ISCs, AIs, Foundations of Healthcare Delivery: Quality Improvement (QI) and the Research Immersion project
- An H grade is given to students for superior or outstanding achievement in all aspects of course work and multiple competency domains.
- An HP grade is given to students with superior achievement in several, but not all, aspects/domains.
- A P grade is given to students who demonstrate satisfactory achievement in all aspects/domains. If any
 aspect of performance is marginal, this is indicated by a designation of "threshold" in the domains(s) of
 concern.
- An F grade is given for unsatisfactory work resulting in failure. A student receiving a "below threshold" in any competency domain, or "threshold" in multiple domains, may receive an F for the course or clerkship.

The Grade of W. The grade of W is entered onto the transcript when a student withdraws from any course (or from the degree program) after the close of the change period but before the end of the term.

Temporary Grades

P-star. A temporary grade of P* is given to students whose performance is marginal because of important deficiencies in some aspects of course work which preclude awarding academic credit for completion of that course. The P* grade should only be applied if a plan for remediation, such as repeating an exam, has been put in place. The P* grade may be applicable for academic credit only after that remediation has been completed to the satisfaction of the course director, in which case the P* is converted on the official transcript to a P. No grade higher than a P can be assigned after such remediation, and the domain(s) of concern are marked as threshold in the final grade. In the absence of satisfactory remediation, the P* grade is converted on the official transcript to an F. If a transcript is requested before final resolution, the P* is present to indicate the course work has not yet been completed at a satisfactory level.

Any remediation plan must be completed in a timely manner: for courses in the Immersion phase, within six weeks of receiving the P* grade; in FCC, within six weeks of coursetion of the student's final clerkship block; in FMK, prior to entry into the FCC phase. P* should not be used to indicate performance that is marginal but does not require course-specific remediation. Such a concern should be indicated as a threshold performance in the relevant competency domain(s). This is then tracked across courses in the portfolio system. P* should not be used to indicate incomplete work.

Incomplete. A grade of Incomplete is to be used only to reflect that mandatory course work has not been completed (for example, if the surface was ill and did not attempt the final exam). Incomplete should not be used when work has been completed but at an unsatisfactory level (i.e., work that requires remediation). Any incomplete course work must be completed in a timely manner: For longitudinal courses in the Immersion Phase, a mutually agreed upon written plan between the course director(s) and student to complete incomplete coursework must be in place within six weeks of the original course end date. For all other Immersion Phase courses, incomplete work must be completed within six weeks of the original course end date; in FCC, within six weeks of completion of the student's final clerkship block; in FMK, prior to entry into the FCC phase. There is no ceiling on the final grading or competency ratings for a student who previously received an Incomplete.

Clinician Assessments of Student Performance

Faculty and house staff providing primary evaluations of student clinical performance may be asked to report (1) behaviors consistently displayed by the student in the various competencies subject to assessment, (2) judgment of the level of supervision the student requires to complete core tasks, and (3) an overall assessment of the student's performance on service. In addition to scaled ratings of student performance, faculty are encouraged to provide meaningful narrative comments.

Additional information about phase-specific assessments of student clinical performance is provided in the section of this catalog outlining the doctor of medicine curriculum.

.Faculty Advisers' Roles and Responsibilities for Grading

The School of Medicine supports an active advising program for students in every year of medical school. This program supports faculty members who are selected and trained to counsel students regarding academic progress, career direction, and personal well-being. In order to preserve the integrity of the assessment system and protect students from either real or perceived bias, faculty members who serve in formal advisory roles do not assign

summative course or clerkship grades without the assistance of a faculty grading committee. Faculty members who serve as advisers to individual students may provide formative feedback to students as part of other teaching responsibilities. If this feedback is submitted to a course director or grading committee as part of a summative assessment process, the advising relationship is disclosed.

Student Grievance Concerning Grades

Students should seek redress of a problem with a grade as soon as possible after receiving the grade and in no case later than four weeks after the grade is released. Students with a problem should confer directly with the course director. Every effort should be made to resolve the problem fairly and promptly at this level. If the student cannot resolve the problem through discussion with the course director, within two weeks of talking with the course director, the student should make a formal request of an appeal in writing to the course director and the associate dean for medical student affairs. The ADMSA informs the associate dean for undergraduate medical education, which prompts a review of the course's assessment practices by the Standing Assessment Committee, as well as review of the individual student's situation by the ADMSA, the ADUME, and a neutral faculty reviewer as indicated. If resolution is still not achieved, the associate dean for medical student affairs refers the case to the senior associate dean for health sciences education, who makes the final decision.

The Grading Policy was reviewed and approved by the Undergraduate Medical Education Committee on April 28, 2020.

Expectations for Conduct During Examinations and Work Submitted for Academic Credit

Faculty and Students' Responsibilities

- 1. In order to create and maintain an academic environment that promotes the highest professional standards, it is important to be transparent in the expectations of all students regarding conduct in examination settings and regarding all work submitted for academic credit. As stated in the Vanderbit School of Medicine Honor Code, "By demanding great responsibility, the Honor System foster a venvironment of freedom and trust that benefits the entire Medical School." It is the responsibility of the faculty and st. If to help protect the trusting environment created when the students agree to and sign the Honor Code pleage.
- 2. In order to facilitate transparency of expectations students are apprised of appropriate conduct for a given course on the first day of class or during the first well that a course meets. Standards of behavior for each course are published in the course syllabus, and course directors explain the pertinent points (especially in regard to examinations) verbally as well.
- 3. Appropriate attribution is expected for all work submitted for credit and in all entries to the electronic health record. Students must use proper cita for practices and are expected to be aware of appropriate mechanisms to avoid plagiarism. Faculty clarify if an assignment may be collaborative.
- 4. It is the student's responsibility to be a vare of and to adhere to the published guidelines for each course.
- 5. Incidents going before the Honor Council may be separately incorporated into the competency domain assessment and promotion committee review process as appropriate.

Expectations for Conduct in NBME Examinations

- "Suspicious behavior" during an exam may be construed as a violation of the Honor Code. Examples include looking at the work of other students and excessive talking or other disruptions.
- The use of cell phones is prohibited during the examination period, except in explicitly predetermined situations. If a student has a legitimate need to be available to urgent outside communications during the assessment period, the student must make the appropriate arrangements with the Office of Undergraduate Medical Education (OUME) prior to the assessment period. An OUME staff member is designated to receive any urgent communications and notifies the student of outside communications if the need arises.
- Personal belongings may not be brought in the seating area of the testing room. All materials, except computers
 for online examinations, must be left outside the room or deposited in the area designated for personal
 belongings. Items listed below are not permitted in the seating area of the testing room:
 - 1. Personal digital devices, calculators, or cellular telephones
 - 2. Recording/filming devices
 - 3. Watches with alarms, computer, or memory capability
 - 4. Radios or paging devices
 - 5. Reference materials (books, notes, or papers)

- 6. Backpacks, briefcases, luggage, coats, or brimmed hats
- 7. Beverages or food of any type
- 8. Eyeglasses are permitted, but may be subject to inspection by proctors
- 9. For online examinations, students are responsible for confirming device eligibility, working with the educational technology team as needed.
- Students may leave the room only for restroom breaks during the examination. Leaving the room can be disruptive to other students, so it is preferred that students not leave the room unless it is unavoidable. Students are escorted by a proctor to the restroom, and additional testing time is not given.
- It is unacceptable behavior to discuss the exam or course materials with others during the exam.
- If a student finishes the exam before time is called, the student should leave quietly and not return to the classroom or immediate outside area until the examination period is over.
- Because students take exams at different times, material covered on exams SHOULD NOT be discussed inside or
 outside of the examination room during the designated exam period.

Medical Student Progress and Promotion

Promotion committees of the faculty, in consultation with representatives of the faculty responsible for instruction, are charged with making recommendations to the dean and the executive faculty regarding progress and promotion of students. The executive faculty of the School of Medicine has final responsibility for the determination of medical student progress in the school.

Students who entered the curriculum in or before 2012, exited the radit onal path, a) and then return, follow the promotion procedures applicable to the class with which they are scheduled to graduate; however, as much as feasible, their academic requirements are aligned with expectations a the time of their entry to school. Such students are expected to confer with the ADUME and the ADMSA to clarify expectations prior to registering for their final year.

Portfolio Reviews

The portfolio review process serves to summarize evidence regarding student performance to direct future learning and to guide decisions of the promotion committees defined in the Promotion Committee section of this chapter. At times designated on the academic calendar for each place, students prepare either formative self-assessments (FSAs) or summative self-assessments (SSAs) that reflect on the current cycle. These self-assessments use a VUSM Core Competency format and are guided by templates in the portfolio.

Students begin their self-assessn ents by reviewing data accrued for each of the VUSM competencies in a core competency domain. This data accrues from curricular assessments, and students may enter data that represents extracurricular activities, such as voluntee work or organizational leadership. For each competency, students designate a milestone level that describes their consistent level of achievement. Students assign an overall progress level for each VUSM core competency domain:

For the FMK and FCC phases these domain progress levels are:

- · Below Threshold
- Threshold
- Target

For Immersion phase, these progress levels are:

- Below Threshold
- Threshold
- Target

Because the attainment of competencies is a developmental process, the performance levels that define Threshold, and Target progress with the phases of the curriculum.

After assigning a domain progress level for each core competency domain, students must compose the following:

• A brief justification for each level, citing specific assessment evidence. These justifications are guided by prompting questions and must be written for all core competency domains.

[&]quot;Below Threshold" indicates failing performance.

[&]quot;Threshold" indicates a marginal performance that meets expectations in some areas but not all.

[&]quot;Target" indicates a performance that meets all expectations.

- A summary reflection indicating areas of strength, areas for improvement, and areas of interest. This reflection is guided by prompting questions.
- A personalized learning plan (PLP) based on the summary reflection. The PLP consists of:
 - Learning goals
 - Activities that students undertake to meet learning goals
 - Metrics that indicate attainment of learning goals
 - Timeline for achievement

Students must specifically address any core competency domain with a progress level of Threshold or Below Threshold both in the summary reflection and in the PLP.

Students submit self-assessments and PLPs electronically and schedule meetings with the portfolio coaches during specific review periods. Coaches review student portfolios prior to the meetings, and independently designate progress levels for each core competency domain. At the time of the meetings, coaches and students review assessments, discuss and attempt to resolve any differences in progress level determinations, and review PLPs for appropriateness. Because this process integrates performance evidence across courses, it is possible that a student's performance could be designated as "threshold" or "below threshold" in a competency domain despite passing grades in all courses. The original student self-assessment, the coach assessment, and the report of the joint assessment resulting from the student-coach meeting are retained in the portfolio. If differences between student and coach interpretations of evidence were not resolved during the student-coach meeting, this is indicated in the coach-finalized form.

Promotion Committee Process

Each Promotion Committee member is assigned a cohort of students of follow throughout the phase. Prior to each meeting, Promotion Committee members review the portfolio and learning plan of each assigned student. Promotion Committee members have complete access to the assessment evidence in the Learning Portfolios of all students assigned to them to assist in making determinations regarding progress and promotion.

Meetings occur three times during the Foundations of Medical Knowledge phase, twice in the Foundations of Clinical Care phase, and three times in the Immersion phase. Additional meetings may be called by the ADUME if performance concerns arise regarding any individual student or as needed at the discretion of the ADUME.

Students to be discussed during committee meetings include

- any student on probation;
- any student with a failing or marginal course grade;
- any student with a domain progress level of Threshold or Below Threshold;
- any student seeking special privileges that require the committee's permissions; and
- other students as deemed necessary by faculty or administration.

If a committee member cannot attend a meeting in person or remotely, the assistant dean for medical student assessment will present student information on behalf of the committee member. The committee member assigned to the student shares with the Assistant Dean for Assessment any information that he/she may have assembled in preparation for the meeting. Discussion includes input from the student's portfolio coach, course directors, and other members of the committee.

Course directors for their respective phases attend Promotion Committee meetings to provide information about the class as a whole, and to answer questions that committee members may pose regarding individual students. Portfolio Coaches also attend committee meetings during which any of their assigned students are scheduled for presentation. A quorum of the Promotion Committee shall consist of at least four of the voting members of a committee; however, any proposed dismissal requires the participation of all voting members, unless an exception is granted by the SADHSE.

Each promotion committee is charged with making decisions or recommendations as follows:

Decisions on Satisfactory Progress

Portfolio reviews assess whether students are making satisfactory progress towards attaining the achievement levels required for promotion to the next phase, or towards graduation, based on review of the assessment data compiled in each student's portfolio. Any students on probation are closely re-evaluated during these meetings.

- 1. Satisfactory Progress: Generally for students with progress levels for all domains at Target or Reach and passing grades in all courses
- 2. Satisfactory Progress with Concern: Generally for students with 1-2 domains at Threshold (regardless of course grades) and/or P* course grade with correlated domain score.

3. *Unsatisfactory Progress:* Generally, for students with >2 domains at Threshold, persistent Threshold performance in any single domain over time, or any domain Below Threshold (regardless of course grades), and/or a failing course grade**. Ordinarily these students are placed on academic probation. (See section on Probation below)

Students with designation of "Satisfactory Progress with Concern" receive a Letter of Concern from the Promotion Committee that outlines areas of concern and expectations for improvement. Letters of Concern are not reported externally and are intended to assist students in avoiding adverse actions; see section on Adverse Action below. The PLPs for these students must explicitly address concerns and be approved by the Promotion Committee; the progress of such students is reviewed at the next committee meeting. The Promotion Committee may require additional meetings between the coach and such students during the period between PC meetings. Students who fail a required block, course, or clerkship must repeat that element, or must have an alternate remediation plan that is approved by the course director. The remediation plan must be articulated in the PLP.

**Any performance deficiency that is serious enough to result in course failure must be attributed to one or more specific competency domains by the course director, which automatically results in a Below Threshold level in that domain for that portfolio review cycle.

Decisions on Student Promotion

Decisions regarding promotion are made at the end of the FMK phase and the end of the FCC phase. In view of the integrated and individualized nature of the Immersion phase, meetings during this phase focus on the academic progress of the individual students, granting eligibility for the national residency matching process, and certifying eligibility for graduation.

Promotion Committees determine whether students are ready for pron ofton based on successful completion of all phase requirements, as evidenced by passing grades in all required courses, and satisfactory progress in each VUSM Core Competency Domain. The Promotion Committee's determination of satisfactory progress in competency domains is based on review of the assessment accumentation compiled in each student's learning portfolio. Students must fully participate in the self-assessment and perconalized learning plan process in order to be promoted to the next phase.

The FMK and FCC Phase Promotion Committees make one of the following recommendations for each student (see initial section under Promotion Committees, ineve, for frequency of Promotion Committee meetings):

- 1. Promotion to next phase
- 2. Promotion contingent upon authorized delayed can obtion of specified requirement(s). To support the individualized nature of our curriculum, situation, may arise in which it is appropriate to permit special scheduling of educational opportunities. Students in good standing may request such scheduling flexibility through the ADUME. Some students, in compliance with approved targeted remediation plans, may also be eligible for this action.
- 3. Promotion on probation which include a plan for targeted remediation
- 4. No promotion
 - a. Targeted remediation, with rater re-evaluation for promotion
 - b. Repeat the phase on probation
 - c. Dismissal

Targeted remediation may include repeating a failed exam, retaking a failed course, and/or specialized coaching for deficits in specific domains.

The Immersion Promotion Committee makes one of the following decisions or recommendations for each student in the fall of the anticipated final academic year of training (see initial section under Promotion Committees, above, for frequency of Promotion Committee meetings):

- 1. Promotion to senior status (eligible for match process)
- 2. Promotion on probation (eligible for match process) which includes a targeted remediation plan
- 3. No promotion
 - a. Targeted remediation, with later re-evaluation for promotion to senior status
 - b. Dismissal

The Immersion Promotion Committee makes one of the following decisions or recommendations for each student in the spring of the anticipated final academic year of training:

- 1. Recommended for graduation
- 2. Not eligible for graduation
 - a. Targeted remediation on probation, with later re-evaluation for promotion to senior status
 - b. Dismissal

Because the portfolio review includes assessment of competencies across courses, it is possible for a student to pass all courses and still have concerns within competency domains that warrant probation or dismissal.

Decisions on all actions other than dismissal (promotion, promotion on probation, no promotion with targeted remediation, or no promotion with repeat the phase on probation) are made by the Promotion Committee.

Students are notified by the committee chair and the ADUME of all Promotion Committee decisions. For the action of promotion, this is generally done in writing. For other actions of the Promotion Committee, in addition to written notification, the student is informed in person (if possible) by the ADUME or the ADMSA in order to facilitate appropriate advising.

Adverse Actions

Probation

Promotion Committees ordinarily recommend that a student be placed on academic probation if course grades include: any failures, competency progress levels persistently at Threshold in a single domain despite coaching or remediation, or competency progress levels Below Threshold in any single domain.

Academic probation generally monitors performance in active course work for a period of time as specified by the Promotion Committee. Probation serves three functions:

- It serves as official documentation that the student is deficient in areas related to academic performance and/ or competency development.
- It provides a pathway that the student must follow in order to reg in good standing. This may include remediation, maintaining appropriate performance standards, and/or adhering to professional expectations.
- It describes the consequences that result if a student does not need stated expectations during the period of probation.

Probation is noted in the Medical Student Performance Evaluation and will be reported in graduation verifications (e.g., for medical licensure).

The personalized learning plans (PLPs) for students who are placed on probation must include a remediation plan that explicitly addresses the domains of concern and is approved by the Promotion Committee. The committee may add requirements to the PLP, such as regular meetings with the ADMSA or other advisers, and/or recommendations such as elimination of extracurricular activities in it may be interfering with satisfactory academic progress. All students who are placed on probation receive a letter from the ADUME and the chair of the Promotion Committee that outlines reasons for the probation, in quirements and recommendations for addressing deficiencies, conditions for removal of probation, including an expected time frame, and actions that may be taken if conditions are not met.

Any student on probation is presented at the lex Promotion Committee meeting to determine whether there has been satisfactory progress (see in all section under Promotion Committees, above, for frequency of Promotion Committee meetings). At that time, the committee may take the following actions:

- 1. Remove probation: Domains of concern now at Target. Probation can be removed at any PC regular meeting if students have satisfactor by addressed deficiencies, even if this is before the time frame originally designated by the PC.
- 2. Continue probation: Domain scores not yet at Target but progress is being made.
- 3. Recommend dismissal: If a student who is on probation receives a P* or failing grade in a course, or demonstrates persistent Threshold or Below Threshold performance in any competency domain, the Promotion Committee considers dismissal.

Temporary Suspension

The School of Medicine reserves the right, through the SADHSE (or designee), to temporarily suspend a student for conduct disrupting or otherwise negatively impacting the learning environment, pending referral to the Promotion Committee or other appropriate process. The SADHSE notifies the student in writing of the conditions of the temporary suspension. If the student is reinstated, the student works with the ADMSA to address any course work missed during the suspension.

Dismissal

Promotion Committees ordinarily recommend dismissal only after a student has been given a reasonable probationary period to address deficiencies. Most often, this reasonable period consists of a full academic phase or academic year. Dismissal may also be recommended at any time for a student who demonstrates either a singular egregious behavior or is involved in one or more serious incidents inconsistent with the expectations for medical

students at VUSM or in violation of university policy.

A decision to recommend dismissal requires participation of all promotion committee members, unless an exception is granted by the SADHSE. The committee meets as soon as possible to consider the situation, including its severity, and renders a recommendation. The ADMSA meets with the student prior to the committee meeting to hear the student's explanation, including any mitigating circumstances that could affect the committee's recommendations. The ADMSA presents the student's explanation, as well as any mitigating circumstances, to the Promotion Committee. Alternately, the student may elect to appear before the committee in person, submit an explanation in writing, or ask another faculty member to appear on his or her behalf.

Any recommendation for dismissal is presented by the ADUME to the dean or the dean's designee which is normally the SADHSE. The dean or designee may reverse the recommendation, in which case the dean or designee responds in writing to the Promotion Committee. In this circumstance, the Promotion Committee considers whether probation or other action is appropriate under the guidelines above. If the dean or designee accepts the recommendation of dismissal, the decision is described in a notice to the student written by the promotion committee chair and the ADUME. This communication is presented to the student in person (if possible) by the ADUME or the ADMSA.

Other Promotion Committee Decisions

Eligibility for Special Experiences

All committees may serve a role in recommending students for special opportunities, such as avail degrees or leaves of absence.

Certification for Participation in Residency Match Process

Students apply to residency programs during the fall semester of the intended a admic year of graduation. In the spring semester, the School of Medicine must officially certify that student participating in the match process are eligible for graduation. The Promotion Committee for the Impersion Phase reviews student progress to make this determination in February. Any student with insufficient completion of requirements for graduation (accounting for planned course work in February, March, and April) sould be withheld from the match process.

Student Recourse Regarding Promotion Committee Decisions

Probation/Non-promotion

Students may ask for reconsideration of any decision for probation or non-promotion. The request must be made in writing to the associate dean for medical student at fairs (ADMSA) within seven (7) calendar days of delivery of the committee decision. Reviews are carried out by the senior associate dean for health sciences education (SADHSE). The student may meet with the SADHSE or present any additional information in writing. The SADHSE reviews the information presented by the student, information from the associate dean for undergraduate medical education (ADUME), and input from the relevant promotion Committee (to include minutes, letters issued by the Committee, and direct input from the Committee Chair). The SADHSE (1) upholds the Promotion Committee decision, (2) requests a meeting of the Promotion Committee for reconsideration of additional information, or (3) reverses the decision. The decision of the SADHSE is provided in writing to the Promotion Committee. Even if the SADHSE reverses a decision of the committee, the SADHSE can require that the student follow any committee requirements and/or recommendations for addressing deficiencies.

Dismissal

Upon a decision of dismissal, a student is notified in writing of that decision and of the following options:

- 1. Voluntary withdrawal from VUSM. The decision to withdraw must be presented in writing by the student to the ADMSA within seven (7) calendar days after the student is informed of the decision for dismissal.
- 2. Dismissal. If the student does not request to withdraw within the seven-day period, the dismissal takes effect on the eighth calendar day.
- 3. Appeal. The student must make a formal request for appeal in writing (which may include electronic mail) so that it is received by the ADMSA within seven (7) calendar days after the student is informed of the decision for dismissal. A student who requests an appeal forfeits the option to withdraw. The ADMSA serves as the student's information resource in the appeals process and informs the ADUME and the SADHSE of the student's request for appeal.

If a dismissal decision is appealed, the student is placed on administrative leave and may not participate in patient care duties until the appeal is resolved. The dean or dean's designee, usually the SADHSE, assembles and convenes a review panel consisting of at least five (5) members of the executive committee of the executive faculty for an appeal review meeting within 30 days. In this review, the role of the dean or dean's designee is purely administrative, and he or she has no decision-making authority in this context. In preparation for the meeting, the ADUME makes available any relevant information/documentation to the panel, which includes all the assessment components of the student's portfolio. The ADMSA provides information to the student about the process. The student may choose to be present at the appeal review meeting and/or make a presentation in writing, which may contain documentation from other students, faculty members, and/or other sources. The student cannot have other representatives at this meeting. The chair of the Promotion Committee and the ADUME attend this meeting to present the findings of the Promotion Committee. The ADMSA also attends the meeting to answer questions from the review panel. The review meeting is conducted without the presence of attorneys for either party. However, either party may consult with its own counsel prior to the review meeting or during any breaks that might take place during the meeting. If the review panel upholds the decision, the student is dismissed without the opportunity to withdraw. If the review panel reverses the decision, the review panel provides the Promotion Committee with its written findings and refers to the Promotion Committee for consideration of whether probation is appropriate and, if so, for determination of the requirements and conditions to accompany probation. The decision of the review panel is final for the school.

Withdrawal from School

Students who wish to withdraw from the School of Medicine for any teas of must do so in writing to the associate dean for medical student affairs. In some cases, the student may be alle to receive a refund of tuition, but it is important that the student discuss this decision with VUSM Office of Enrol/ment Services staff before moving forward with the process. A student who has been dismissed from school, but decides to appeal the decision, is no longer able to choose to withdraw. If a student withdraws, reentry is possible only through the application process.

M.D. Student Support and Advising

Vanderbilt University School of Medicine provides comprehensive advising resources to promote student wellness and success in medical school. The advising program provides distinct resources to address the three domains of student life: academic, career, and personal. Students are introduced to the system of advising at orientation prior to entering their first year of medical school. Subsequent discussions of advising resources take place in a number of settings during the first semester of medical school. In addition to the formal advising system, a variety of other resources for student academic support exist, including phase/course/clerkship directors, course self-assessment modules, group study, and optional review sessions.

Students are strongly encouraged to seek assistance and support of various types as needed during training. The abilities to self-identify a need for assistance/support and to reach out to resources are important professional skills, and students are expected to develop these skills during their medical school careers.

School of Medicine Resources

VUSM Office for Medical Student Affairs. This office provides resources to support all students. The ADMSA is available for individual meetings and hosts weekly office hours.

VUSM Colleges. All entering students are placed in one of the four advisory Colleges upon matriculation—Batson, Chapman, Gabbe, or Robinson. Each College is led by two faculty College mentors, with whom students meet regularly in groups and individually, as needed. At these meetings the students discuss their progress, wellness, and career exploration. In addition to group and individual meetings, the College mentors have weekly office hours, as well as study breaks for students. Students may connect with their College mentors at any time for guidance and support. Although College mentors provide direct teaching in a variety of settings, they do not assign student grades, and College mentors do not make decisions regarding promotion of students from one year to the next. College mentors do not have access to the students' academic records.

Learning Portfolio. Upon matriculating, each student is assigned to a Portfolio Coach and develops a learning portfolio. Students meet with their Portfolio Coaches individually at designated time points to critically review individual performance data and establish academic goals across all domains of competence. Additionally, each student should meet with his/her Portfolio Coach on an as-needed basis to review any specific academic concerns.

Refer to the Medical Student Progress and Promotion section of this catalog for a detailed description of the learning portfolio system and portfolio coaches.

Student Assistance Program. This program provides students with guidance in study skills, test-taking strategies, and general advice for academic success. Students may directly contact the Student Assistance Program director regarding academic concerns.

VUSM-Funded Tutoring Services. Tutoring funded by the School of Medicine is available for students who are having serious difficulty academically or who are deemed by the block/course director or the assistant dean for medical student assessment, who is also the student assistance program director, to be at risk for marginal or failing performance (ordinarily ~75 percent or less).

Decisions about access to this program and about tutor assignments are made jointly by the block/course director(s) and the director of the Student Assistance Program. This allows the matching of individual student needs with individual tutor strengths and assures that tutoring resources are distributed appropriately. Generally it is expected that students will have availed themselves of other forms of student academic support (e.g., course self-assessment modules, group study, review sessions, etc.) before entering formal tutoring.

If a student has failing or marginal performance in a block or course, and wishes to obtain a VUSM-funded tutor, he/she must follow these steps:

- a. The student sets up a meeting to consult with the block/course director(s) and/or the Student Assistance Program director.
- b. Once the student's situation has been assessed by the block/course director(s) and the Student Assistance Program director, the appropriate level of tutoring support is determined.
- c. On assignment of a tutor, the student contacts the assigned tutor to set up tutoring appointments.
- d. The student should also review performance challenges with his/her Portrolio Coach and include the area (s) of concern in his/her Personalized Learning Plan

Because VUSM-funded tutoring services require no payment from students, those who receive tutoring are responsible for signing a tutoring sheet that confirms that he/s be worked with the assigned tutor for the time indicated by the tutor. Tutoring sheets must be submitted by the tutor to the student assistance program director's assistant in a timely manner.

The duration of time during which VUSM-funded tutoring services are provided is determined by block/course directors and/or the Student Assistance Program Director. El gil lility for services is reassessed on an ongoing basis once tutoring begins. Individual tutor assignments may be on inged or adjusted over time to meet the needs of the pool of students requiring aid.

Important note about VUSM-funded autoring: In situations where VUSM-funded tutoring has been recommended, and the student decicles not to avail him/herself of this service, he/she should be aware that this may be viewed negatively by the Prometion Committee in the context of ongoing academic difficulty.

Privately Paid Tutoring. Students who are performing adequately but wish to seek additional assistance through private tutoring (e.g., from upper classmen) are responsible for arranging for these services and for payment.

VUSM Office for Diversity Ariairs (ODA). This office provides resources to support students on issues related to disability, ethnicity, gende religion, and sexual orientation. The many programs in ODA serve individual students' needs and educate the medical school community on diversity issues.

University Resources

The university provides a range of services to School of Medicine students, including access to medical care, psychological counseling, and disability accommodation. The university also provides resources to protect all students from discrimination, harassment, and retaliation. Information on these and other university services may be found in the Life at Vanderbilt chapter of this catalog.

Career Advisory Services

The Careers in Medicine (CIM) program at Vanderbilt University supports students as they explore career options in the health care field, provides structured advising as they decide among various specialty choices, and paves the path for graduates to succeed as they begin to embark upon their professional journey. Programming is planned by a student-led committee, in conjunction with the associate dean for medical student affairs and the CIM faculty advisers, to ensure that helpful, timely, and relevant information is provided to VUSM students at the right stage of training. CIM also has resources on a national level through the American Association of Medical Colleges.

Health and Wellness

In addition to the Vanderbilt University resources described earlier in this chapter, the School of Medicine offers, through its Office of Medical Student Affairs, specialized programs to meet the wellness needs of medical students.

Student Wellness Program: Vanderbilt University School of Medicine's Wellness Program was created to help students develop healthy living habits in the context of the stresses of medical school. It does this by celebrating student involvement in those activities important to their physical, social, and spiritual wellness. The Wellness Program is a student-run initiative composed of five committees, each supporting a different area of student wellbeing—physical/body, mind/spiritual, interpersonal, academic/professional, and environmental/community. Throughout the year, the Wellness Committee is responsible for supporting student life through various programs, events, and resources for medical students. More information about the Student Wellness Program is available online, at *medschool.vanderbilt.edu/student-affairs/student-wellness/*.

The Colleges Program: Each medical student is assigned to one of four learning communities, called "colleges," upon entering the M.D. program. Each college spans the four years (or more for dual degrees) of medical school, providing different "generations" of medical students a chance to meet, socialize, and create community and support. Each college also has two faculty member college mentors who are selected based on a competitive application process including student input. Additionally, each college has eight to ten assigned faculty affiliate advisers and ten student affiliate advisers (3rd- and 4th-year student peer mentors) who also support the mentoring and well-being mission of the colleges. Together, the learning community creates a "home within a home," providing students a rich environment of academic and career mentoring, a collaborative si fe environment for learning and discussion, and general support and encouragement. More information arout the Colleges Program is available online at medschool.vanderbilt.edu/student-affairs/the-coileges.

Faculty Support and Advising Roles

Many individuals provide advising and support to VUSM stulents. Each of the advising roles at Vanderbilt is defined in a manner that makes it distinct from, yet complimentary to the other roles in the system. Each faculty member in an advising role undergoes development on the specific role as well as the overall advising system. The product of faculty development is an adviser who is able to perform his or her advising role responsibilities and is also able to refer students to resources as appropriate to individual student needs.

Managing Multiple Faculty Roles

Faculty members engaged in multiple educational roles can face competing demands, which may directly or indirectly affect (or have the appearance of affecting) an individual's professional judgment in exercising any educator duties and responsibilities. Of particular concern to students is the intersection of roles involving advising students regarding personal or academic students roles in assessment of student performance or assigning grades.

To identify and manage potential conflicts, the VUSM administration established a system that defines compatible and incompatible faculty roles within the educational enterprise. Authority over this system resides centrally, with the Office of the Spinior Associate Dean for Health Sciences Education (SADHSE).

The Educator Role Matrix (vanderbi.lt/rolematrix) illustrates roles that have been identified as including some potential for conflict. The matrix places advising roles in one of two categories as they relate to assessment activity: (1) Manageable conflict, and (2) Incompatible conflict. For manageable conflicts (yellow on matrix), the adviser must develop and submit for approval by the senior associate dean for health sciences education a conflict management plan that mitigates or eliminates the role conflict.

The Office of Undergraduate Medical Education (OUME) maintains records of Role Conflict Management Plans. (Management plans are available to students upon request.) When roles are determined to be incompatible (red on matrix), the faculty member must relinquish either the assessing or advising role. Before each new academic year, the associate dean for undergraduate medical education (ADUME) reviews all educators' roles and existing conflict management plans to ensure that they conform to the school's standards. Any new conflict management plans are required to be completed prior to the commencement of the academic year.

Key Advisory Roles

Senior Associate Dean for Health Sciences Education (SADHSE): The SADHSE is a member of the VUSM administration. Her/his primary role is oversight of educational affairs for the School of Medicine. The

SADHSE may not occupy any of the advisory or assessment roles contained in the Educator Role Matrix, with the exception of course director provided a grading committee is in place.

Associate Dean for Medical Student Affairs (ADMSA): The ADMSA is a member of the VUSM administration. Her/his primary role is advising on academic, career, and personal concerns. The ADMSA has office hours and meets with students in all years of training. The ADMSA is the primary VUSM official designated to write each student's Medical Student Performance Evaluation, but students may request that another school official complete the MSPE. The ADMSA also writes letters of recommendation for students applying for scholarships or various academic opportunities. The ADMSA oversees the Colleges program, the Student Wellness Program, RISE (the mistreatment reporting system), and the Careers in Medicine program. The ADMSA has access to all academic records. The ADMSA may not occupy any of the advisory or assessment roles contained in the Educator Role Matrix, with the exception of course director provided a grading committee is in place.

Associate Dean for Undergraduate Medical Education (ADUME): The ADUME is a member of the VUSM administration. Her/his primary role in the medical school involves development and delivery of curriculum and assessment for the M.D. degree. The ADUME has office hours and can meet with students in any year of training to discuss academic and career concerns. The ADUME frequently meets with students who are navigating the curriculum to maximize various academic opportunities. The ADUME has access to all academic records and administers the Promotion Committee process. The ADUME may not occupy any of the advisory or assessment roles contained in the Educator Role Matrix, with the exception of course director provided a grading committee is in place.

Associate Dean for Diversity Affairs (ADDiversity): The ADDiversity is a member of the VUSM administration. One of her/his roles includes advising students on academic, career, and personal concerns. ADDiversity is a secondary VUSM official designated to write student's Medical Student Performance Evaluation, but students may request that another school official complete the MSPE. The ADDiversity also oversees RISE (the mistreatment reporting system).

Assistant Dean for Undergraduate Medical Education (aDUME): The aDUME is a member of the VUSM administration. Her/his primary role in the medical school ravitives development and delivery of curriculum and assessment for the M.D. degree. The aDUME frequently may meet with students who are navigating the curriculum to maximize various academic opportunities. The aDUME has access to all academic records. The aDUME may occupy the advisory or assessment roles of Portfolio Coach and/or Course Director with an acceptable conflict management plan in place.

Assistant Dean for Medical Student Assessment (aDA): The aDA is a member of the VUSM administration. Her/his primary role is to identify and a sist students with performance issues. One of the key roles of the assistant dean for assessment is to direct the Student Assistance Program (SAP). The goal of the SAP is to provide students with guidance in study skills, test-taking strategies and general advice for academic success within a rigorous medical school curriculum. The aDA serves as an academic resource for students, meeting with individuals as indicated and coordinating tutoring in partnership with course directors. The aDA communicates with Vanderbilt University Student Access Services in the event that a student requires accommodation. The aDA helps to coordinate Promotion Committee meetings by preparing the meeting agenda, assembling the academic data to be reviewed, attending all meetings and reporting on student progress/concerns, as needed, and following up with students, as needed, after promotions committee meetings occur. The aDA has access to all academic records. The aDA may not occupy any of the advisory or assessment roles contained in the Educator Role Matrix, with the exception of course director provided a grading committee is in place.

College Mentor (CM): CMs are VUSM faculty members who manage the activities of and advising programs within the VUSM Colleges and Learning Communities. CMs serve assigned students as advisers in the areas of professional wellness and career counseling. CMs are involved with programming throughout the year in the school's Student Wellness Program and Careers in Medicine program. CMs also serve as teachers in the VUSM Learning Communities, focusing on content in medical humanities, metacognition, ethics, leadership, and policy. The CMs do not grade students in learning communities, but instead provide formative feedback. CMs may have teaching or supervisory roles with their college mentees in the context of other academic activities. However, role conflict management plans are created to ensure that they do not grade their mentees in those activities. CMs do not have access to student academic records (grades, etc.). A student may grant a CM access to his/her academic record and may revoke such permission at any time without negative consequences.

Portfolio Coach (PC): The PCs are VUSM faculty members who work with an assigned group of students throughout medical school. The PC role was created as part of Curriculum 2.0. Each member of an entering class is assigned an individual coach from the cohort of coaches appointed for their class. Students meet individually with their assigned PCs three times during the first phase of medical school and at least twice during each subsequent

phase. Portfolio coaches play a vital role in the Curriculum 2.0 assessment system. PCs have access to the academic records of only the students to whom they are assigned. They coach individual students in developing the skills for informed self-assessment and lifelong learning. They help students critically appraise data about their performance and translate those assessments into action plans for future learning. PCs have an active role in the assessment of assigned students' progress through the curriculum. The PC may occupy several of the assessment roles contained in the Educator Role Matrix provided there is an approved conflict management plan.

Specialty Adviser (SA): As students approach their senior year of medical school, they are urged to choose an adviser from the specialty in which they will apply for residency. Specialty advisers are VUSM faculty members. Once established, this advisory relationship exists for the duration of the residency application and the National Residency Match processes. SAs provide academic and career counseling, strategic schedule planning, and interviewing advice specific to the specialty of choice. SAs do not have access to student academic records (grades, etc.). The primary goal of this relationship is to provide students with resources to most effectively obtain a successful residency match.

The Faculty Support and Advising Roles Policy (to include the Educator Role Matrix) was reviewed and approved by the Undergraduate Medical Education Committee on May 26, 2020.

Medical Student Performance Evaluation

The Medical Student Performance Evaluation (MSPE) is created as a part of a student's permanent record and is submitted through the Electronic Residency Application Service system by October 1 for four h-year medical students. Included in the MSPE are summative comments from performance evaluations throughout medical training.

Generally, the associate dean for medical student affairs works with students on the creation of the MSPE. However, students may instead choose to work with the associate dear for undergraduate medical education or the assistant dean for diversity and inclusion to create the MSPE. Students are reither asked nor expected to provide any reason or justification for their choice of MSPE writer.

Honors and Awards

Alpha Omega Alpha

A chapter of this medical honor society was established by charter in the School of Medicine in 1923. Not more than one-fourth of the students of the fourth-year class are eligible for membership, and no more than 16 percent (one-sixth of the graduating class) can be nominated per class.

The society has for its purpose the development of high standards of personal conduct and scholarship and the encouragement of medical research. Students are elected into membership on the basis of scholarship, character, and originality.

Gold Humanism Honor Society

A chapter of this honor society was founded in 2015 in an effort to recognize, support, and promote the values of humanism and professionalism in medicine. The number of members eligible to be nominated and selected is up to 15 percent of the medical school class. Students are elected into membership by showing that they are exemplars of integrity, excellence, compassion, altruism, respect, empathy, and service.

Founder's Medal

The Founder's Medal, signifying first honors, was endowed by Commodore Cornelius Vanderbilt as one of his gifts to the university. This medal is awarded to the student in the graduating class of the Doctor of Medicine program who, in the judgment of the faculty, has achieved the strongest record in the several areas of personal, professional, and academic performance in meeting the requirements for the doctor of medicine degree during four years of study at Vanderbilt.

Graduation Awards

AMERICAN ACADEMY OF NEUROLOGY MEDICAL STUDENT PRIZE FOR EXCELLENCE IN NEUROLOGY. This award is to recognize medical students for excellence in clinical neurology.

BEAUCHAMP SCHOLARSHIP. Endowed and awarded to the student showing the greatest progress in the field of psychiatry.

LONNIE S. BURNETT AWARD IN OBSTETRICS AND GYNECOLOGY. This award is given to the student demonstrating superior performance and who exemplifies the qualities of dedication, leadership, compassion, and integrity in the field of obstetrics and gynecology.

DIXON N. BURNS AWARD IN MEDICAL ETHICS. This is an award given by the Center for Biomedical Ethics and Society to the graduating medical student who has gained distinction in biomedical ethics through notable scholarship, excellence in clinical ethics consultation, and collegial engagement in the life of the center as a medical student.

THE GEORGE AND BARBARA BURRUS MEDICAL MISSIONS AWARD. This award is presented to a student who has demonstrated exceptional interest and participation in providing medical care to the poor during medical school, either locally or abroad.

CHAPMAN SOCIETY AWARD. With nominations generated from the fourth-year class, this award is presented to a member of the graduating class who possesses those intangible qualities of common sense, knowledge, thoughtfulness, personal warmth, gentleness, and confidence which combine to make the "Ideal Doctor"—the person fellow classmates would most like to have as their personal physician.

THE GEOFFREY DAVID CHAZEN AWARD. This award for innovation in medical education was established to recognize a student, resident, fellow, or faculty member who has made special contributions to the educational programs of the Vanderbilt University School of Medicine through the development and implementation of effective innovation in educational approach.

AMOS CHRISTIE AWARD. This award recognizes the student in the graduating class who has deponstrated the obstanling qualities of scholarship and humanity embodied in the ideal pediatrician.

JOHN G. CONIGLIO PRIZE IN BIOCHEMISTRY. This award presented to a medical student who has distinguished him/herself in biochemistry. Both accomplishments in biomedical research and performance in biochemistry courses are consider the evaluating candidates for this award. This award was established by friends of Professor Coniglio on the occasion of his retirement to hand have many contributions to medical education at Vanderbilt.

OSCAR B. CROFFORD AWARD FOR DIABETES/ ENDOCRINE RESEARCH. This award is presented by the Division of Diabetes, Endocrinology, and Metabolism and the Vanderbilt Diabetes Center to the graduating reducal student who has performed outstanding research in the area of diabetes and endocrinology. This award was established to hop or Dr. Oscar B. Crofford for his contributions to the diabetes research at Vanderbilt and throughout the world.

DEAN'S AWARD. Presented to medical students distinguished by outstanding service to the School of Medicine and the community.

THE DEAN'S AWARD FOR RESEARCH. This award is presented to be graduating medical student who best exemplifies the attributes that lead to success in basic science or clinical research, namely creativity, dedicates, productivity/multiple publications, and careful diligence.

EXCELLENCE IN EMERGENCY MEDICINE. The award for excellence in emergency medicine is given on behalf of the Society for Academic Emergency Medicine. This award recognizes a medical student who demonstrated outstanding ability in and commitment to the specialty of emergency medicine at Vanderbilt University Medical Center.

EXCELLENCE IN INFECTIOUS DISEASES. This award is presented by the Divisions of Infectious Diseases in the Departments of Medicine and Pediatrics to the student who has demonstrated outstanding aptitude and performance in clinical and investigative efforts in infectious diseases or microbiology.

EXCELLENCE IN PUBLIC HEAL (PAC) of the United States Public Health Service (USPAS). The purpose is to recognize medical students who conduct public health work in their community and exemplify the USPAS and its mission to protect, promote, and advance the health and safety of our nation.

GERALD FENICHEL AWARD IN NEUROLOGY. Dr. Gerald Fenichel, professor of neurology and pediatrics, founded the Department of Neurology at Vanderbilt University Medical Center and served as chairman from 1969 to 2001. As one of the founders of the Child Neurology Society, his contributions to the fields of neurology and child neurology are immeasurable. This award is presented to a graduating medical student entering neurology or child neurology who has demonstrated outstanding aptitude for clinical neurology and a devotion to patient care.

J. DONALD M. GASS AWARD IN OPHTHALMOLOGY. This award is established in honor of Dr. J. Donald M. Gass, a graduate of Vanderbilt University School of Medicine, Class of 1957, and a renowned medical retina specialist. This award is given to a student who demonstrates excellence in ophthalmic education and research

GLASGOW-RUBIN CERTIFICATE OF COMMENDATION. This certificate is presented in recognition of women medical students who graduate as honor graduates, with special recognition to any female who is the top graduate. It serves to reaffirm the American Medical Women's Association's commitment to encouraging their continuing achievement.

JAMES T. GWATHMEY PRIZE IN ANESTHESIOLOGY. This award is presented to the graduating medical student who most clearly demonstrates the potential for excellence in academic anesthesiology. It is named after Dr. James Tayloe Gwathmey, a former Vanderbilt medical student who graduated in 1899 and went on to lead the creation of a new medical specialty called anesthesiology.

PAULA C. HOOS AWARD. The first-year class presents this award in recognition of excellence in student teaching in the basic sciences and to express appreciation for the assistance of members of the graduating class.

HOSPITAL AWARD OF EXCELLENCE. This award recognizes the fourth- year medical student, by the chief residents of the services, as having contributed most toward excellent patient care by demonstrating sensitivity, compassion, and concern in clinical responsibilities to patients of Vanderbilt University Medical Center.

RICHARD B. JOHNSTON JR. AWARD. This award is presented to a graduating student entering pediatrics who has demonstrated excellence in academic scholarship and an extraordinary commitment to clinical medicine exemplifying the highest professional standards of the physician-scientist.

RUDOLPH H. KAMPMEIER PRIZE IN MEDICINE. The Kampmeier Prize is presented by the Department of Medicine to the graduate who, in the judgment of the faculty, best combines high academic achievement with clinical excellence, original scholarship, or research, and demonstrated potential for an academic career.

THE KAUFMAN PRIZE IN MEDICINE. This award honoring J. Kenneth Kaufman, M.D. '39, is presented to a graduating medical student who has demonstrated qualities of humaneness, dedication, and unselfish service in the study of medicine and will apply these qualities in medical practice.

THE TOM NESBITT AWARD. This award is presented by the Nashville Academy of Medicine to honor the outstanding service of Tom Nesbitt, M.D., a member of the academy and the 133rd president of the American Medical Association. This award is presented to the graduating medical student who demonstrates exemplary character and leadership and has an understanding of and appreciation for organized medicine.

DAVID N. ORTH AWARD IN ENDOCRINOLOGY. This award is presented by the Division of Diabetes, Endocrinology, and Metabolism and the Endocrine Society, the largest professional association devoted to all aspects of endocrinology, to a graduating medical student who has demonstrated outstanding performance in clinical or research endocrinology. The award honors Dr. David N. Orth for his contributions to and leadership in endocrinology. He served as director of Vanderbilt's Endocrinology Division and as president of the Endocrine Society.

THE ORTHOPAEDIC SURGERY CLERKSHIP AWARD. This award is presented by the Department of Orthopaedic Surgery to the student who has excelled in both the third and fourth year orthopaedic clerkships, and who has demorstrated outstanding potential in the field of orthopaedic surgery.

ROENTGEN AWARD. This award is given to a graduating medical student who has made important countil utions in one of the radiological sciences during four years of study. Named for Wilhelm Conrad Roentgen, a pioneer in diagnostic radiology, the a vard recognizes discoveries in either clinical or research areas.

THE SCHOOL OF MEDICINE AWARD OF DISTINCTION. This ava. It is presented to the student who has demonstrated outstanding leadership abilities in service to the School of Medicine.

THE H. WILLIAM SCOTT JR. PRIZE IN SURGERY. This a ward is presented to the graduating medical student who exemplifies the qualities of leadership, performance, and character reflecting the ideal surge in.

JOHN L. SHAPIRO AWARD FOR EXCELLENCE IN PATH DLOGY. This award, given upon action of the Department of Pathology, recognizes outstanding student performance in pathology. It is given a mually or cities used depending upon action by the department and honors the memory of Dr. John L. Shapiro, who was a professor and chair of the Department of Pathology from 1956 to 1971. Dr. Shapiro remained an active participant in a variety of university and community activities, and his death on July 15, 1983.

MILDRED T. STAHLMAN AWARD. This avard, honoring the pioneering spirit and achievements of Vanderbilt pediatrician Mildred Stahlman, is presented to the graduating student entering pediatrics whose performance exemplifies the highest standards of leadership, professionalism, and commitment to improving the lives of children.

TENNESSEE ACADEMY OF FAMILY PHYS CLANS AWARD. This award is presented in recognition of an outstanding student in family medicine.

THE LEONARD TOW HUMANISM IN NEDICINE AWARD. PRESENTED BY THE ARNOLD P. GOLD FOUNDATION. This award is given to a graduating student and a faculty member who demonstrate compassion and empathy in the delivery of health care, and who engender trust and confidence in both their patients and colleagues while adhering to professional ethical standards.

STEN H. VERMUND AWARD IN GLOBAL HEALTH. This award recognizes the graduating medical student who has most demonstrated a strong commitment to improving the health of the people of or from a low- or middle-income country through distinguished scholarship, education, and/or contributions to the improvement of clinical care. The award was established in 2017 to honor Dr. Sten H. Vermund, who was the founding director of the Vanderbilt Institute for Global Health.

THE ALBERT WEINSTEIN PRIZE IN MEDICINE. The Weinstein Prize in Medicine is awarded to a student who has demonstrated high academic achievement, superior clinical competence, and the qualities of dedication and professionalism that characterize a good physician.

DAVID L. ZEALEAR PH.D. OTOLARYNGOLOGY SCHOLAR-INITIATIVE AWARD. This award is presented to a medical student who excels beyond clinical competence and who has become distinguished for outstanding effort towards the academic mission of otolaryngology—research, teaching, and/or outreach.

Other Program Policies

Curriculum 2.0 Program Evaluation

Curriculum 2.0 program evaluation at VUSM seeks to obtain information to determine if medical students are experiencing the best possible learning experiences during their medical school career. There are three major components to curriculum evaluation at VUSM:

- Course evaluation at VUSM examines how the design and organization of courses, clerkships, and immersions and their content helps medical students learn.
- Faculty educator assessment examines the performance of teaching faculty, residents, and fellows in providing learning opportunities in which appropriate content is conveyed to medical students.
- Program evaluation examines the impact of the overall curriculum and the interaction of its components on medical student learning.

Course Evaluation Process

Course evaluation uses an eight-step evaluation process to examine how the design and organization of courses, clerkships, and immersions and their content helps medical students learn. More about this process is available online at *medschool.yanderbilt.edu/md-gateway/course-evaluation-process-overview/*.

Course Evaluation Policy

Students are required to complete each survey that they receive from the Office of Unite graduate Medical Education evaluation team. Students who do not complete surveys will be reported to the associate dean of undergraduate medical education and the Promotions Committee. Completing program and course evaluations is a vital part of the continuous improvement process at Vanderbilt. However, surdent may opt out of any VUSM-developed evaluation survey and/or any assigned VUSM-developed evaluation foct a group. Any student wishing opt-out must request a meeting with the associate dean for undergraduate medical education to discuss the student's reasons for wanting to be excused from the requirement to respond to a survey of participate in a focus group. This process must be started before the day the survey closes, which is disclosed to the student on the day he/she receives the survey request.

The full course evaluation policy is available prime at <u>meds hool.vanderbilt.edu/md-gateway/summary-of-vusm-gvaluation-policy/.</u>

Leave of Absence

A student may request a leave of absence (LOA) from school for any reason (personal, medical, maternity/paternity, research, dual degree, etc.), subject to the approval of the associate dean for medical student affairs (ADMSA). The student must submit a written request to the ADMSA, outlining the nature of the requested leave and providing the starting and ending dates. Students may consult with Vanderbilt University Student Access Services (vanderbilt.edw/student-access/) when contemplating a leave of absence, and the ADMSA may consult with student access services when evaluating a request for leave of absence. The ADMSA may grant the student a leave of absence for up to one year, as long as the student is in good academic standing. Prior to leave, a plan for re-entry into the curriculum and meeting requirements for graduation should be outlined with the ADMSA, with the assistance of the associate dean for undergraduate medical education (ADUME) as indicated.

A student on LOA may request an extension of the leave beyond one year, subject to the approval of the ADMSA. The student must submit a written request outlining the nature of the requested extension and providing a new ending date. A request for extension of a leave of absence must be submitted to the ADMSA at least three months before the ending date of the approved leave. Requests may be made for additional extensions using the process outlined above.

Upon return from LOA, the student must complete a background check and update immunization records and all other compliance requirements.

Students who are not in good academic standing may request a leave of absence using the request procedure described above, but approval of the leave may be granted only by the student's Promotion Committee (the request is presented to the Promotion Committee by the ADMSA). Leave of absence form is available at *medschool.vanderbilt.edu/md-gateway/forms*.

Students pursuing the Ph.D. as part of the Medical Scientist Training Program are not required to request a leave of absence when entering the Ph.D. phase of the program.

Attendance Policy for Doctor of Medicine

Requirements for All Doctor of Medicine Students

Student Absence Request forms are available online at medschool.vanderbilt.edw/md-gateway/forms. Required information includes the date, time, and reason for the absence request. The signatures of (1) the block/clerkship/course director and (2) the associate dean for medical student affairs (ADMSA) or the assistant dean for medical student assessment (ADA) are required. Note that for the Immersion Phase, the associate dean for medical student affairs (ADMSA) and the assistant dean for medical student assessment (ADA) are notified of all absences that are approved, but their signatures are not required.

Important Considerations:

- Students should not make travel arrangements prior to receiving notification of the outcome of their request. Approval is not granted just because travel arrangements have been made.
- Unapproved or denied absences are not allowed.
- Students are held responsible for didactic material they miss during approved absences. Make-up work for other activities may be required by course faculty/directors.

Examples of situations in which make-up work is not allowed, and the student's grade is affected include:

- Absences for which no request was made.
- Absences for which a request was made and denied.

Phase-Specific Requirements

Foundations of Medical Knowledge (FMK) Phase

Students are apprised of the attendance policies for a course on the first day that the class meets. Standards are provided in writing in course syllabi and in most classes are reviewed verbally by course directors. It is the student's responsibility to understand which sessions are mand are yet the definitions of excused absences and personal days, and the consequences for unexcused absences.

It is expected that students will arrive on time or courses and other school-related obligations and demonstrate respect for teachers, fellow students, and other white participating.

- 1. Unless stated otherwise, students are not required to attend general lectures in FMK courses. However, because many topics are covered only in lecture, and many exam questions are derived directly from this material, attendance in lectures is strongly encouraged.
- 2. Student attendance at all small group sessions is mandatory. Small groups may include discussion or presentation sessions, team-based or case-based learning sessions, laboratory sessions, etc., as defined for individual courses.
- 3. Student attendance at all examinations is mandatory. If, due to extenuating circumstances, a student cannot be present for an examination, the squant must notify the course administration, the assistant dean for medical student assessment (ADA) and the associate dean for medical student affairs (ADMSA) immediately. The student should work with course leadership/administration to make arrangements to satisfy the examination requirement.
- 4. Student attendance may be required at other sessions, as indicated by the course administration.
- 5. Excused Absences from Mandatory Sessions. Students can request to be excused from mandatory sessions on the basis of serious health issues, need to access health services, family emergencies, religious holy days, or presentation of their work at meetings (other similar circumstances to be handled on a case-by-case basis). In these circumstances, students must notify the course administration/course director and ADMSA or ADA and complete the absence request form at least four (4) weeks in advance (or as soon as possible for an emergency) for each active course or clerkship in which sessions would be missed if they are requesting an absence. If the mandatory session is a small group, students also should notify their group facilitator and group mates. If the student will miss clinical duties, he/she must also alert the supervising resident. It is recognized that in some situations students are not able to provide advance notice. In these circumstances, students should contact the course administration as soon as possible to explain why they were unable to attend.
- 6. Foundations of Medical Knowledge Phase Personal Days. It is recognized that life events that are neither serious health issues nor family emergencies may affect a student's schedule. In these cases, students may request one or more personal days in order to miss a mandatory session. Permission for absence may be granted at the discretion of the individual course directors. The rules that govern the use of personal days are:

• Students must request permission from the course administration for each active course in which sessions would be missed in writing and in advance using the appropriate Student Absence Request form.

- If granted an absence, students who anticipate missing a mandatory small group session due to taking a personal day must notify their group facilitator/clinical team/classmates at least 4 weeks in advance that they are not attending.
- Students are held responsible for material they miss when taking personal days. At the discretion of the
 course administration, students may have to complete a make-up assignment on material they missed.
- During the FMK phase, students are allowed to take up to a total of three (3) personal days (not more than one day per block).
- Personal Day Blackout Periods: Students may not use a personal day to extend a school holiday (not
 including normal weekend breaks). Also, students may not use personal days to miss the following sessions,
 including:
 - Examinations
 - o First day of any class
 - o Orientation
 - Last day of class before an assessment in a block
 - Other sessions as determined by course leadership/administration
- 7. Unexcused Absences from Mandatory Sessions. All absences from mandatory sessions that are not defined above as excused or personal days are considered unexcused absences. Unexcused absences are unacceptable and may have a negative effect on the student's competency domain evaluation and/or overall grade in the class.

Foundations of Clinical Care (FCC) Phase

Students are apprised of the attendance policies for a course on the first day that the class meets. Standards are provided in writing in course syllabi and in most classes are reviewed verbally by course directors. It is the student's responsibility to understand which sessions are mandatory, in the initions of excused absences and personal days, and the consequences for unexcused absences.

It is expected that students will arrive on time for course and other school-related obligations and demonstrate respect for teachers, fellow students, and others while paracipating.

- 1. During the clerkships, students are excused from clinical dates so that they may attend clerkship didactic sessions. Students are strongly encouraged of attend unless there is an urgent clinical situation or one that enriches their education.
- 2. Student attendance for assigned clinical duty is mandatory. Similarly, student attendance at all classroom sessions that include patients (actual or simulated) is mandatory. These sessions are not recorded due to concerns regarding patient privacy.
- 3. Student attendance at all examinations is mandatory. If, due to extenuating circumstances, a student cannot be present for an examination, the student must notify the course administration, the assistant dean for medical student assessment (ADA), and the associate dean for medical student affairs (ADMSA) immediately. The student should work with course leadership/administration to make arrangements to satisfy the examination requirement.

Regarding NBME shelf clerkship examinations: in special circumstances, students may be granted permission to take a missed shelf exam on one of two standard makeup dates (January and June).

- 4. Attendance is mandatory for all sessions of the longitudinal days during the FCC phase, including all large group and small group sessions.
- 5. Student attendance may be required at other sessions, as indicated by the course administration.
- 6. Excused Absences from Mandatory Sessions. Students can request to be excused from mandatory sessions on the basis of serious health issues, need to access health services, family emergencies, religious holy days, or presentation of their work at meetings (other similar circumstances to be handled on a case-by-case basis). In these circumstances, students must notify the course administration/course director and ADMSA or aDA and complete the absence request form at least four (4) weeks in advance (or as soon as possible for an emergency) for each active course or clerkship in which sessions would be missed if they are requesting an absence. If the mandatory session is a small group, students also should notify their group facilitator and group mates. If the student will miss clinical duties, he/she must also alert the supervising resident. It is recognized that in some situations students are not able to provide advance notice. In these circumstances, students should contact the course administration as soon as possible to explain why they were unable to attend.

- 7. At the discretion of the senior resident and the attending physician on the ward team, students may occasionally be given time off from clinical duties when working conditions permit. In the event such time off is expected to last longer than 24 hours, a signed Student Absence Request form must be submitted per the instructions above.
- 8. A student is not allowed to miss more than two days, and also not allowed to miss required sessions in any FCC block (see "Unexcused Absences from Mandatory Sessions" below). A student may petition to be permitted more than two days in a given rotation. If granted, the student must submit an absence form describing the full extent of absence and must arrange to make up the additional time.
- 9. Unexcused Absences from Mandatory Sessions. All absences from mandatory sessions that are not defined above as excused are considered unexcused absences. Unexcused absences are unacceptable and may have a negative effect on the student's competency domain evaluation and/or overall grade in the class.
- 10. While "personal days," as described above, are permitted during the FMK phase, they are not allowed during the FCC phase. Students are expected to be present for all clinical and educational duties, unless express permission is requested and approved according to the conditions described in FCC #1-9 above.

Immersion Phase

Introduction

The mandatory sessions for each course can be found in the course syllabus. It is the student's responsibility to understand which sessions are mandatory, the definitions of excused absences, and the confedences for unexcused absences.

- 1. Student attendance at Immersion Weeks is mandatory.
- 2. Student attendance at Foundations of Healthcare Delivery, Learning Communities, and Research face-to-face sessions is mandatory.
- 3. Student attendance for assigned clinical duty (as determined by the course director) is mandatory. If any clinical session is going to be missed, the student must complete the Absence Request Process (detailed below). A student cannot miss more than two clinical assigned sessions.
- 4. A student cannot miss other sessions (e.g. lecture, simulation, etc.) deemed mandatory by the course director. The following are considered mandatory in every Immersion Phase course, unless otherwise indicated by the course director:
 - First day of course
 - Course orientation
 - Examinations
 - Any day that extends a since holiday (except normal weekend breaks)
- 5. Student attendance at other sessions is at the discretion of the course director.
- 6. Excused Absences from Mandatory Sessions for Non-Emergent Reasons. Students can request to be excused from mandatory sessions on the basis of need to access health services, religious holy days, interviews for residency, presentation of mein work at meetings, or other similar circumstances handled on a case-by-case basis. In these circumstances, students must complete the Absence Request Process (detailed below) and request approval from the course administration/course director and ADMSA or aDA and complete the absence request form at least 4 weeks from the start of the course. If the absence request is approved, students must also notify the clinical team (e.g. supervising resident and/or attending). While students may submit requests to be absent for other life events (e.g. weddings, non-emergent family events, etc.) these absences are highly discouraged and are not likely to be approved given their impact on both the student learning experience and the clinical learning environment. Students are encouraged to plan their flex months to accommodate these major life events.
- 7. Excused Absences from Mandatory Sessions for Emergent Reasons. It is recognized that in some situations (e.g., serious health emergency, family emergency) students are not able to provide advanced notice of an absence. In these circumstances, students should contact the course administration as soon as possible to explain the absence. The Absence Request Process (detailed below) must be completed as soon as possible.
- 8. Unexcused Absences from Mandatory Sessions. All absences from mandatory sessions that are not defined above as excused are considered unexcused absences. Unexcused absences are unacceptable and have a negative effect on the student's competency domain assessment and/or overall grade in the course. Students may fail the course.

Absence Request Process

Students may request permission to miss mandatory sessions due to circumstances outlined above. To make a request, the student must complete the VUSM Immersion Phase Absence Request form at least four (4) weeks in advance of the start of the course (or as soon as possible in the case of an emergency). To complete the form the student must:

- 1. Visit the MD Gateway (<u>medschool.vanderbilt.edu/md-gateway/</u>) to access the Immersion Phase online absence request form.
- 2. Complete the online form. All requested information must be entered, including information regarding the primary and longitudinal course if applicable (Research, PLAN, Learning Communities, and FHD) for which you will be absent.

The form will be automatically routed to the appropriate course director(s) and the Immersion Phase team. The course director and Immersion Team will review the student's request and approve or deny it. Once the decision is finalized, the student will be notified.

The Attendance Policy for Doctor of Medicine was reviewed and approved by the Undergraduate Medical Education Committee on May 26, 2020.

Student Work Policy

Medical Student Duty Hours Policy

FMK Phase

Vanderbilt University School of Medicine adheres to the following guidelines regarding the amount of scheduled time during a given week of the pre-clerkship phase of the curriculum:

- 1. Within each week, the students will receive a maximum of 30 (thirty) hours of scheduled instructional time inclusive of longitudinal coursework (e.g., Foundations of Healthcare Delivery and Learning Communities).
- 2. Not all scheduled time will have mandato v attendance.
- 3. With occasional exceptions, attendance and dactic lectures within the Foundational Block courses should be encouraged but not required. When possible, they should be recorded and available online for the students to review on their own time.

Foundations of Clinical Care and Immersion Phases

In order to encourage a well-rounded, balanced journey through medical school, and to ensure maximal benefit of educational activities while limiting fatigue that may negatively impact patient care and education, it is the policy of Vanderbilt University School of Medicine that duty hours of medical students should reflect the general guidelines set forth for residents by the Accreditation Council for Graduate Medical Education (ACGME).

Duty Hours are defined as all clinical and educational activities related to the student's current coursework. This includes:

- 1. All direct patient care activities (whether completed in-house or at home) such as note writing, preparing to present on rounds, completing medical records, reviewing testing, the provision for transfer of patient care, and in-house call activities
- All mandatory scheduled educational activities such as lectures or small group sessions inclusive of time in longitudinal courses (Foundations of Healthcare Delivery, Learning Communities, and Research and Inquiry Program).

Duty hours DO NOT include time spent:

- 1. Commuting
- 2. Reading, studying, or preparing academically for activities that are not scheduled as part of current coursework.
- 3. Participating in volunteer activities.

We expect that:

- 1. Total required educational and clinical activities should not exceed eighty hours per week which is inclusive of longitudinal coursework (e.g., Foundations of Healthcare Delivery and Learning Communities in Immersion Phase)
- 2. Students should take one day off in seven; this is typically a weekend day.

- 3. Students should be off (free from clinical and educational responsibilities) for eight (8) consecutive hours after a daily duty period/shift before returning to duty.
- 4. In-house call no more than once every three nights, averaged over the length of the course.
- 5. Continuous on-site duty should not exceed twenty-four (24) consecutive hours, and up to four (4) additional hours for educational activities (e.g., transitioning care, formal didactics).
- 6. Should be off (free from clinical and educational responsibilities) for 14 consecutive hours after 24 hours of in-house call.

It is also expected that course directors, supervising house staff and attending physicians are sensitive to student fatigue and total number of hours spent on clinical and educational activities. If any student believes they have worked over the maximum of eighty (80) hours per week or worked more than outlined above, the student should contact the Associate Dean of Undergraduate Medical Education.

The Medical Student Duty Hours Policy was reviewed and approved by the Undergraduate Medical Education Committee on May 26, 2020.

Extracurricular Work or Activities

The School of Medicine does not regulate the outside work or activities of its M.D. program students, although it does take the firm position of discouraging outside work. No outside commitments may be assumed by medical students that may compromise their responsibilities at the medical school. If the outside obligation creates a conflict of interest, a student may be required to discontinue it.

Student Pay for Work Performed for Credit

Students may not be paid for work performed as part of their elective or require pourse work for credit. Exceptions to this rule are made only when students are in special programs, such as students on military scholarships, students in funded graduate certificate programs, students in funded in D/h.D. programs, students in MIDP completing certain industry internships, and students in the Oral Surgery program when acting as residents.

Transportation

During their medical school careers, students may be placed for educational experiences in clinical sites located away from the Vanderbilt University campus. Generally speaking, students should be prepared to drive up to 35 miles from the Vanderbilt University campus to reach off site placements. Students are responsible for their own transportation to and from all clinical sites for educational experiences, including all costs associated with that travel.

Policy on Student Assignment to Clinical Sites

Assignments to clinical sites are made by the clerkship or course director. Students can request an alternate site or clinical assignment when there are extenuating circumstances. To request an alternate site or clinical assignment, students must contact the Associate Dean of Medical Student Affairs (ADMSA) in writing (email is acceptable). Each request will be evaluated on the nature of the request, impact on other students, and available options. Requests based on conflicts of interest, accommodations, compliance issues, and mistreatment will be given priority. In instances where only one site is used for a particular experience, the student may be assigned to a new preceptor or team as able. Students are not provided the opportunity to negotiate with their peers to switch assignments.

VUSM Doctor of Medicine Program Admission Bylaws

Article I – Overview and Mission Statements

Section 1 – Introduction: This document is meant to provide Vanderbilt University School of Medicine (VUSM) and constituents with the authority, structure, and procedure for the admissions process for students applying to the MD program. This includes the Regular MD program as well as unique training pathways which include the Medical Scientist Training Program (MSTP), the Medical Innovators Development Program (MIDP), and training for Oral Maxillofacial Surgery (OMFS). The overarching principles driving the MD admissions process are enunciated below:

Section 2 – VUSM Mission Statement: The vision of Vanderbilt University School of Medicine is to shape a future in which all persons reach their full health potential.

The core values of Vanderbilt University School of Medicine are integrity, inclusion, humility, mutual respect and excellence.

The mission of Vanderbilt University School of Medicine is to catalyze the advancement of impactful discovery, servant leadership, and lifelong learning.

In order to carry out this mission, we make these strategic commitments

- To nurture the growth of clinicians, scientists and educators who vill serve and lead their local, national and global communities.
- To create, implement and disseminate new knowledge that expands understanding of health, disease and healthcare systems.
- To teach, learn and provide compassionate, personal zed caring of the highest quality for every patient who seeks our service and to strive to achieve health equity in the perulations we serve.
- To embrace a culture of lifelong learning, critical thinking, and innovation so that we will continuously improve in all we do.
- To build a diverse community of faculty, striff and suclents that expands the richness of our learning environment and enhances excellence in all of our endeavors.

Section 3 – VUSM Admissions Mission Statement: Valuerbilt University School of Medicine (VUSM) seeks to matriculate a diverse group of acadenically exceptional students whose attributes and accomplishments suggest that they will be future leaders and/or scholars in medicine.

Section 4 – Authority of the Admissions Committee: The VUSM Admissions Committee is charged by the Dean of the School of Medicine to select all members of each entering VUSM medical student class and is granted sole authority in making all related decisions.

Article II - The Overall Structure of the Admissions Process.

The structure of our admissions process is intended to provide the framework upon which we can evaluate and recruit an outstanding group of diverse students to VUSM in the fairest and most efficient method possible. The process is designed to include a holistic review of applications and to be independent of political or financial influence.

Section 1 – Director and Senior Assistant Director of Medical Admissions:

- The Director of Medical Admissions reports to the Director of Admissions for Vanderbilt University and works
 closely with the Senior Associate Dean for Health Sciences Education in the School of Medicine, the Faculty
 Co-Chairs of the Admissions Committee, the Admissions Leadership Team, and individual members of the
 Admissions Committee.
- 2. The Senior Assistant Director of Medical Admissions reports to the Director of Medical Admissions.
- 3. The following are the roles/duties of the Director and Senior Assistant Director of Medical Admissions:
 - a. Collaborate with the University Enrollment Affairs team in modeling admissions and scholarship strategies toward achieving goals established annually by the Dean of the School of Medicine.
 - b. Manage all operations related to the admissions process.

- c. Work with the Co-Chairs of the Medical School Admissions Committee to ensure interviewers and reviewers are properly trained for their roles.
- d. Evaluate the admissions process, along with the Co-Chairs of the Admissions Committee and the Admissions Leadership Team, to ensure a continuous quality improvement of said process.
- e. Assign applicants for review by the various sub-review committees and the Admissions Committee with guidance from the Co-Chairs.
- f. Supervise the logistics of the interview day.
- g. Schedule training sessions for review sub-committees and Admissions Committee members and interviewers.
- h. Manage the Admissions Process compensation program.
- i. Create a communications flow that includes suspected, invited and matriculated applicants.
- j. Plan and oversee Second Look Weekend for admitted students and Pre-Med PreVU for pre-med advisers.
- k. Oversee the admissions portal and coordinate the technical standards of the portal with the Academic Affairs Process and Solution Implementations team.
- 1. Monitor and document application flow and note admissions trends.
- m. Coordinate the waitlist selection program, with the Faculty Co-Chairs of Admissions and members of the Admissions Committee.
- n. Interface with the Association of American Medical Colleges (AAMC) and the Group on Student Affairs (GSA) regarding admissions.
- o. Engage in other recruitment efforts.

Section 2 – Faculty Co-Chairs of Medical School Admissions:

- 1. Selection and tenure of Faculty Admissions Co-Chairs
 - a. Two Vanderbilt University School of Medicine faculty monoers shall serve as the Faculty Co-Chairs of the Medical School Admissions Committee. Ideally, these two candidates will represent diverse backgrounds and experiences.
 - b. The Senior Associate Dean for Health Sciences Education van appoint the Co-Chairs with input from the Dean of the VUSM, leadership from the Office of Diversity and Inclusion, prior Admissions Committee Co-Chairs and the Director of Medical Admissions.
 - c. Co-Chairs will serve five-year terms. To esc terms should be staggered so that an experienced individual is always in office. Each co-chair may serve again to the position after a gap of at least one year. An individual can serve no more than two five year terms.
- 2. The following are the roles/duties of the Co-Chair. In all cases, the Co-Chairs will collaborate with the Director and Senior Assistant Director of Medical Admissions and the Senior Associate Dean for Health Sciences Education:
 - a. Oversee and continually review the entire admissions process, including MSTP, MIDP, and OMFS applicants, with input from the Admissions Leadership Team. The Admission Leadership Team is described below in Section 3. The Faculty Co-Chairs remind committee members and interviewers that all admissions decisions are made free from political or financial influence. In all phases of the review process the Faculty Co-Chairs monitor the process to ensure that no undue influences impact the process of applicant evaluation or selection.
 - b. Recruit a diverse team of application review committee members, Admissions Committee members, and interviewers.
 - c. Conduct training sessions for the committees and interviewers.
 - d. Organize and lead committee meetings

Section 3: Admissions Leadership Team:

- The Admissions Leadership Team, chaired by the Faculty Co-Chairs of the Admissions Committee, includes a
 representative Dean from the Office of Diversity and Inclusion, the Director of Medical Admissions, the Senior
 Assistant Director of Medical Admissions, and decision makers and faculty leaders that represent the MSTP,
 MIDP, and OMFS programs.
- 2. The Admissions Leadership Team communicates regularly and meets as needed but no less than bimonthly to monitor ongoing results of the admissions process and make improvements in the process as indicated.
- 3. Ongoing communication is provided to the Senior Associate Dean for Health Sciences Education.

Article III – Organization of Admissions Review and Acceptance

A commitment is made to ensure a candidate's file is reviewed by several faculty members. In all phases of the review process the Faculty Co-Chairs monitor the process to ensure that no undue influences impact the process of applicant evaluation or selection. Authority to review applications in the subcommittees named below have been vested by the Admissions Committee. Quorum for the Admissions Committee and all subcommittees is defined as a simple majority. Quorum is required for any vote by the committees.

Section 1. MD-only Program:

- 1. Leadership Team Subcommittee (LTS) members screen primary applications to determine which candidates who did not receive an automatic secondary application will receive a secondary application and be forwarded to the Interview Review Subcommittee (IRS).
- 2. Interview Review Subcommittee (IRS) members review completed applications including secondary application material to determine offers for an interview.
- 3. Admissions Committee (AC) members review files of applicants who have completed their interviews; this committee determines final scores for potential admission and approves the final list of admitted students and wait list.

Section 2. Special Programs: The role of Medical Innovators Development Program (MD), the Medical Scientist Training Program (MSTP), and Oral Maxillofacial Surgery (OMFS) Subcommittees. The constitution of subcommittees for the MIDP, MSTP, and OMFS provides a mechanism for the efficient and effective review of applicants to these specialized training programs. Each subcommittee includes facility members and students from the School of Medicine who have interest and expertise in the respective area. Each subcommittee has representation on the Admissions Committee and presents evaluated and tanked applicants to the Admissions Committee for consideration for admission.

- 1. Medical Innovators Development Program (MIDP) Review subcommittee process parallels the regular M.D. program admissions process with additions that support the evaluation of applicants to this training program for PhD's in engineering and applied sciences.
- 2. Medical Scientist Training Program (VaSTP) Review subcommittee review process parallels that described for the regular MD program with additions that support the evaluation of applicants to this program that provides integrated training for both the MD and PhD degrees.
- 3. Oral Maxillofacial Surgery (OMFS) Review subcommittee review process parallels that described for the regular MD program with additions that support the evaluation of recent dental school applicants who will complete an integrated MD degree and Oral Naxillofacial Surgery Residency.

Section 3. Acceptance Process. The Admissions Committee will have the final authority to admit candidates from the MD-only Program, Medical Scientist Training Program (MSTP), Medical Innovators Development Program (MIDP), and Oral Maxillofacial Surgery Program (OMFS).

Twice each admissions season, ordinarily in December and February, all applicants reviewed by the Admissions Committee are considered for acceptance by the Admissions Committee with admissions modeling assistance from the Vanderbilt University Enrollment Affairs team.

Section 4. Waitlist

- The Co-Chairs of the Admissions Committee, in collaboration with the Director and Senior Assistant Director
 of Medical Admissions, identify applicants as needed from the approved waitlist so as meet the enrollment
 goals of the Admissions Committee, including total number of students in the class, gender balance, and broad
 diversity of the class. These invitations generally occur beginning in late April and may continue as needed until
 the class matriculates.
- 2. Admissions are conditional based upon the satisfactory criminal background check and verification of a verified baccalaureate degree upon matriculation.

The VUSM Doctor of Medicine Program Admission Bylaws were reviewed and approved by the Undergraduate Medical Education Committee on April 28, 2020.

Bylaws for the Undergraduate Medical Education Committee VUSM Doctor of Medicine Program

Article I—Overview and Charge

Section 1—Introduction: These bylaws establish the authority, structure, and goals of the Vanderbilt University School of Medicine (VUSM) Undergraduate Medical Education Committee (UMEC), and outline the processes and methodologies used to obtain those goals.

Section 2—Charge: The UMEC is charged by the Dean of the School of Medicine to provide oversight and governance of the program leading to the MD degree. UMEC reports to the dean through the associate dean for undergraduate medical education (UME) and the senior associate dean for health sciences education (HSE), and along with the dean holds final authority for the curriculum as a whole. This includes oversight of the design and delivery of the MD curriculum and the authority to establish and monitor policies governing all aspects of the program, including admissions, student affairs, curriculum, assessment, progress and promotions, and learning environment.

Section 3—Goals: The goals of the UMEC are to assure that the MD program is aligned with the VUSM mission statement, that the execution of the program achieves its stated goals, and that all aspects of the program comply with standards and elements established by the Liaison Committee on Medical Education.

Article 2—Composition and Structure of the UMEC

Section 1—Faculty and Staff Representatives: UMEC shall be composed of members of the School of Medicine faculty, to include:

- Two representatives from each of the six departments with required clerkships during the FCC phase (Medicine, Surgery, Pediatrics, Obstetrics/Gynecology, Psychiatric, Neurology). One representative from these core clinical departments will be a Chair, Vice Chair for education, or Core Program Director. The second core clinical representative should be selected by the department chair after receiving self-nominations from the faculty members of each department. Each serves a term of three years, and may serve up to two consecutive terms if re-elected by their departments.

 Six total at-large faculty representatives, four from non-core clinical and two from basic science departments,
- Six total at-large faculty representatives, four from non-core clinical and two from basic science departments, who are selected by the department chair after recalling self-nominations from the clinical department faculty and basic science department faculty respectively. Each serves a term of three years and may serve up to two consecutive terms.
- Two representatives from each phase of medical school (ordinarily, the faculty co-chairs of each phase team).
- One representative from each longitudinal element (Foundations of Health Care Delivery, Research, and Learning Communities).
- One representative from the Medical Scientist Training Program (MSTP) and one representative from the Medical Innovators Development Program (MIDP) programs.
- One representative from the Vanderbilt University School of Nursing (VUSN)
- One representative of the Vanderbilt University Medical Center (VUMC) clinical leadership recruited by the senior associate dean for HSE (e.g., Chief of Staff, Chief Medical Officer)
- Two representatives of the house staff recruited by the VUMC Designated Institutional Official
- One patient representative recruited from the Patient and Family Advisory Council.

Section 2—Ex officio Members: The senior associate dean for HSE, the associate and assistant deans for UME, the associate dean for medical student affairs, the assistant dean for assessment, the assistant dean for diversity, the assistant dean for educational design and informatics, and the Chair(s) of the student curriculum committee shall serve on UMEC as ex officio members. The director of program evaluation, the director of student records, and the director of the office of UME shall also serve as ex officio members.

Voting privileges will be limited to the faculty representatives, including the phase team chairs; the student representatives, the patient representative and the house staff representatives. Other ex officio members are nonvoting. A quorum will be constituted by 19 of 36 voting members.

Section 3—Structure of UMEC: UMEC shall consist of an Executive Committee, a Curriculum Monitoring Sub-Committee, and a Policy Sub-Committee. The Executive Committee is chaired by the associate dean for UME and consists of the two sub-committee co-chairs, the associate dean for medical student affairs and the senior associate dean

for HSE. The Executive Committee is responsible for monitoring the progress of the sub-committees and for monitoring UMEC elections to ensure that these comply with these by-laws. It will oversee the activities of all of the teams that execute and support the curriculum (Phase Teams, Longitudinal Element Teams, Program Evaluation Team, etc.) and will also be responsible for planning the Annual Curriculum Summit.

Each voting representative on UMEC will be assigned to one of the two sub-committees. Faculty co-chairs will serve terms of three years, with the option of serving two consecutive terms. The chairs shall be responsible for all activities of their sub-committees.

Article 3—UMEC and Sub-Committee Functions

Section 1—Policy Sub-Committee: The policy sub-committee will meet every other month, opposite meetings of the full UMEC. It shall carry out the following responsibilities:

- a. Maintain an inventory of all policy related to the MD program, including policies related to the curriculum, student affairs, learning environment and progress and promotions.
- b. Review each policy on a regular basis, at least every three years, or sooner if issues arise.
- c. Annual review of LCME standards and elements related to the MD program to ensure existing policies remain in compliance.
- d. Recommend changes to policy as needed, to be presented for approval to the full UMEC
- e. Craft new policies as necessary, in response to internally identified needs or external courth needs issues. These will be presented to the full UMEC for discussion and approval.

Section 2—Curriculum Monitoring Sub-Committee: The curriculum monitoring sub-committee will meet every other month opposite the full UMEC. It shall carry out the following esponsibilities:

- a. Conduct annual reviews of course and longitudinal element evaluations as presented by the respective phase or element teams.
- b. Prepare and present annual phase and longitudinal element reviews for the full UMEC.
- c. Request and review reports and recommendations from content thread teams as needed.
- d. Review long-term and short-term program evaluation data
- e. Annual review of LCME standards related to delivery of the curriculum.
- f. Recommend changes in courses and programs based on above reviews and present any major recommendations for change to UMEC for approval. (For example, respectively) change in course length, content areas, teaching and/or assessment approaches.)

Section 3—UMEC (Full Committee): The full committee will meet every other month. Meetings will be devoted to reports from the Curriculum Monitoring and Policy Sub-Committees and to issues identified by the Executive Committee or the Sub-Committees that require discussion and decisions. The agenda will be determined by the UME Executive Committee. UMEC will curry out its responsibilities via the following functions:

- a. Review, revise and/or approve any recommendations for major changes in policy as recommended by the Policy Sub-Committee.
- b. Review, revise and/or approve new policies as recommended by the Policy Sub-Committee.
- c. Request that the Policy Sub-Committee make revisions to existing policy or request creation of new policies if the need emerges from internal VUSM discussions or review of compliance requirements by the UME Accreditation standards committee.
- d. Review and approve annual phase team and longitudinal element reports, along with recommendations that might emerge from the Curriculum Monitoring Sub-Committee.
- e. Approve plans for major changes in courses, new courses or segments of the curriculum, as defined in Article 3: Section 2: item f above.
- f. Review annual program level evaluation data, including but not limited to the AAMC Graduation Questionnaire, the Y2Q survey, the annual VUSM learning system survey, USMLE scores, aggregate promotions and progress data, and results of annual assessment events, such as EPA weeks.
- g. Recommend changes to the curriculum or to major assessment events based on that review.
- h. Sponsor an Annual Curriculum Summit. The UME Executive Committee will determine the agenda, which will focus on topics that would most benefit from input of a wider group of stakeholders. Prior this meeting, the UMEC will distribute a summative program evaluation report to the participating faculty and students and time will be allotted for questions and discussion. Participants in this Summit will include the Dean, department chairs,

all elected and ex officio members of UMEC, all phase and longitudinal element teams, members of the Office for Education Design and Informatics, and members of the Program Evaluation and assessment team.

Article 4—Curricular Teams

Section 1—Phase teams: Phase teams will consist of all course, program and block directors and other faculty members who have major teaching roles in that phase, to include representation from each of the longitudinal elements. Each phase team will include representation from the student curriculum committee. There will be teams for the Foundations of Medical Knowledge phase, the Foundations of Clinical Care phase and the Immersion phase. Each phase team will appoint co-chairs who will serve on UMEC and will represent their respective phases at Policy and Curriculum Monitoring Sub-Committee Meetings. Phase teams will meet monthly to carry out the following responsibilities:

- a. Review course content to ensure horizontal integration with special attention to gaps and redundancies.
- b. Review assessment approaches and policies to ensure consistency across similar course types (e.g. clerkships in FCC, ISCs in the Immersion Phase)
- c. Review each course annually, including student performance, student evaluations, and course director reflections, and make recommendations for improvement.
- d. Review and make recommendations to the Policy Sub-Committee regarding policies specific to the phase, such as attendance and excused absence and duty hours.
- e. Prepare regular reports as needed for the Curriculum Monitoring Sub-Committee.
- f. Review relevant annual data from sources such as the Y2Q Questionnaire, the Graduation Questionnaire, and the annual Learning System Survey.
- g. Prepare a report for the Annual Curriculum Summit to include review of the learn's activities over the course of the year, a summary of student performance for the entire year (including any adverse actions, probation, remediation of courses, etc.); evidence of successful integration among phase elements; and any other information deemed important by the phase teams. The learn will set an unal phase goals accordingly.
- h. Make recommendations for major changes to the Currenum Monitoring Sub-Committee and UMEC. Major changes requiring higher level approval include:
 - 1. Addition or deletion of courses to the ph se, or changes in numbers of required courses such as ISCs in the Immersion Phase.
 - 2. Major changes in course length
 - 3. Changes in major curriculum level requirements, such as changes to the Vanderbilt Core Clinical Curriculum.

Section 2. Longitudinal Element Teams: Longitudinal Element teams will consist of the faculty members and students charged with oversight of that element. These teams meet regularly to coordinate experiences and to review program evaluation data. Additionally each longitudinal team will appoint a representative to each phase team. Each longitudinal team will appoint to-chairs who will serve on the Policy and Curriculum Monitoring Sub-Committees and UMEC. In addition, they will prepare an annual report on the element, to include review of the element's evaluations across levels of training. The team will set annual goals accordingly, and the annual review will be presented at the Annual Curriculum Summit.

Section 3. Standing Assessment Committee: The Standing Assessment Committee is responsible for guiding a programmatic assessment system that directly links assessment to desired learning outcomes and provides consistency throughout the curriculum. The committee will include representation from clinical and foundational science faculty experienced with trainees across all levels of the medical education continuum, and is chaired by the Associate Dean for UME or designee. The Standing Assessment Committee will provide the following functions:

- a. Serve as consultants to individual courses to promote alignment with overarching programmatic goals and foster best practices in assessment,
- b. Oversee centralized assessment programs and events,
- c. Monitor outcomes and perform continuous quality improvement,
- d. Advise UMEC regarding assessment policy.

Article 5: Curriculum Evaluation and Operations

Section 1—Learning System Integration Team: The Learning System Integration (LSI) Team is a trans-phase collaborative group meeting every other month to focus on operational and logistical issues (such as scheduling,

faculty demands, space utilization, coordinated communications, IT support, etc.). The LSI Team will refer any programmatic and/or policy issues to UMEC for review and decision-making. Membership will include: leaders of all phase teams and longitudinal elements (FMK, FCC, Immersion; Research, Learning Communities, FHD and VPIL), representation of the assessment and portfolio programs, the SADHSE, the ADUME, the ADMSA, the Assistant Dean for Assessment, the Assistant Dean for UME, the Assistant Dean for Educational Design and Informatics, the director of clinical skills development, the associate director of the MSTP, the associate director of MIDP, the director of threads, the director of program evaluation, the director of student records, the Chair of UMEC, the Administrative Officer, and the Chairs of the student curriculum committee. This committee will be chaired by the Associate Dean for UME or designee.

The Bylaws for the Undergraduate Medical Education Committee VUSM Doctor of Medicine Program were reviewed and approved by the Undergraduate Medical Education Committee on July 24, 2019.



Professional Degrees in Hearing and Speech Sciences

DOCTOR OF AUDIOLOGY

Program Overview

The doctor of audiology (Au.D.) is a four-year post-baccalaureate degree which replaced the master of science degree as the requirement for the entry-level practitioner of audiology.

The doctor of philosophy (Ph.D.) degree continues to be offered to students interested in becoming teacher/investigators.

At present, Vanderbilt's Au.D. program is ranked #1 in the nation by U.S. News and World Report.

Department of Hearing and Speech Sciences Mission

The DHSS is dedicated to serving persons with communicative and related disorders through treatment, education, and research; enhancing our knowledge of communicative and related disorders; shaping the future of communication disorders and related disciplines through national and international leadership; promoting public awareness and prevention of communicative and related disorders; ensuring continuous improvement of operations through personal and professional development; and generating measurable benefits for our community, employees, students, clients and their families, and other customers. As part of this mission, the Au.D. program ensures that students complete all academic course and clinical practica requirements for certification standards in a according.

Program Accreditation

The doctor of audiology (Au.D.) education program at Voncerbilt University is accredited by the Council on Academic Accreditation in Audiology and Speech-Language Pathology of the American Speech-Language-Hearing Association, 2200 Research Blvd., #310, Rockville, MD 20850, (800) 498-2071 or (301) 296-5700.

Standing Program Committees

Admission Committee

This committee has the responsibility of making recommendations concerning admission and scholarships for applicants to the Au.D., M.D.E., and M.S.-S.Y.P. programs. The committee oversees and continually reviews the admission process. It typically meets twice per academic year. Membership includes all DHSS faculty.

Promotion Committee

This committee monitors student progress toward completing the Au.D. degree requirements and makes recommendations regarding promotion, remedial action, or dismissal as appropriate for each student. This committee meets at least twice per academic year but is called to meet, in addition to these regular meetings, when there is a student of concern identified. Membership includes all DHSS audiology program faculty.

Curriculum Committee

This committee continually monitors and reviews the Au.D. curriculum. Any recommended changes to the curriculum are made to the DHSS faculty. Membership includes all DHSS audiology program faculty.

Program's Major Facilities

Practicum sites include the Vanderbilt University Medical Center, Monroe Carell Jr. Children's Hospital at Vanderbilt, and the Vanderbilt Bill Wilkerson Center for Otolaryngology and Communication Sciences. Additional sites include the Veterans Affairs Medical Center and various other hospitals, outpatient clinics, and private practices in the middle Tennessee area.

Admission

Admission Requirements

The Au.D. program encourages applicants with backgrounds in such areas as communication disorders and other health-related professions, biomedical sciences, psychology, and psychoacoustics. All students must possess GRE scores consistent with Vanderbilt standards, a strong record of past academic achievement, a commitment to hearing health care, excellent oral and written communication skills, a willingness to work collaboratively, a strong work ethic, perseverance, and strong organizational and time management skills.

Undergraduate Prerequisites

There are no specific undergraduate prerequisites for the Au.D. However, courses related to the profession and basic sciences are helpful.

A Course in normal language development is strongly encouraged but not mandatory. Students who do not have an undergraduate course in normal language development are required to take the Master of Science in Speech-Language Pathology (M.S.-SLP) course in Child Language Acquisition during the Au.D. program.

Please visit our website at medschool.vanderbilt.edu/hearing-speech/ for additional information.

Application Process

Application Deadline: January 15

The application, test scores, and all supporting materials must be received by January 15.

Application Fee

Non-refundable \$50.00 application fee

Statement of Purpose (personal statement)

The Statement of Purpose is a required and important part of the application. The DHSS has no set criteria for the personal statement; it should be no less than one page but no more than 1-1/2 pages (single spaced).

Required Materials

Transcripts/Academic information

Official transcripts, which also should be sent after the completion of your degree, must be sent directly to Vanderbilt according to instructions below. You will be prompted to upload your academic record for each college or university you have attended when you officially subtrict your application. An academic record can be in the form of a legible scanned copy of a transcript or an academic record from the institution's Student Information System portal. If you are currently enrolled, please submit your academic record after your fall semester grades have been posted, if at all possible.

If you don't have your official transcripts during your application, unofficial transcripts can be provided instead. Official transcripts are required only after an offer of admission is made and accepted. To be considered official, a transcript must be sent directly from your institution to Vanderbilt.

Official transcripts should be mailed to Vanderbilt University CDM, PMB 407833, 2301 Vanderbilt Place, Nashville, TN 37240-7833, or securely emailed to cdm@vanderbilt.edu through your school's secure electronic transcript service. All other transcripts are considered unofficial. Please do not mail transcripts to the department office.

Letters of Recommendation

Three are required and up to five maximum can be accepted. Letters of recommendation should be from individuals who can speak to the applicant's academic abilities and accomplishments and likelihood of the applicant's success in a clinical or research program. With a maximum of five, supervisors, teaching assistants, etc., are certainly welcome to provide a recommendation for you.

Recommenders are strongly encouraged to submit their letters electronically. The application allows the applicant to identify their recommenders and the system notifies them (on your behalf) by e-mail. When the electronic recommendations are submitted, they are "attached" to the application, and you receive an email message confirming receipt of each recommendation.

Please note: email addresses should be proofed for accuracy before finalizing the application. If an incorrect email address is entered into the system, the recommender will not receive the request for recommendation. If you choose not to use the electronic method, it is your responsibility to contact your recommenders and provide them with the DHSS recommendation link found on the department's website at *medschool.vanderbilt.edu/hearing-speech* under Academic, Au.D., Application Information. Paper letters of recommendation should be mailed to Vanderbilt University CDM, PMB 407833, 2301 Vanderbilt Place, Nashville, TN 37240-7833 and should be received in that office by the application deadline.

Test Scores

Official GRE scores come electronically from the Educational Testing Service (ETS) and are required for all applicants. Official TOEFL scores are required for international applicants only, even if you have completed a 4-year degree in a U.S. institution. The scores should be sent to institution code 1871. The department code is not required in order for your official scores to attach to the application.

Important Note: It is the applicant's responsibility to allow sufficient time for the ETS to score and report test results. Please refer to the ETS website (www.ets.org/gre) to access the Detailed Score Reporting Schedule for the GRE exam.

Resume/CV or Supplemental Materials

You may upload your resume/cv or other documents the committee may review by accessing the status page of the application and adding the documents in the "upload materials" section.

Tuition Scholarships

Given that most graduate students need financial assistance, need is not a factor; financial awards are offered on the basis of merit, using criteria very similar to those used to judge acceptance into the program. There are no additional forms to complete for scholarships.

Special Requirements for International Applicants

Test of English as a Foreign Language (TOEFL) is required for all international student applicants. Since the Au.D. is a clinical practice degree, it is critical that students have robust written and spoken English skills. Consequently, a TOEFL score of at least 110 is expected for successful applicant.

Financial Resources: In order to meet requirements for entry into the United States, international applicants must demonstrate that they have sufficient financial resources to cover the cost of their education. Please be prepared to provide evidence of this funding.

Selection Criteria, Offer, and Acceptance

All students must possess GRE scores consistent with Vanderbilt standards, a strong record of past academic achievement, a commitment to hearing lea'th care, excellent oral and written skills, a willingness to work collaboratively, a strong work ethic, receverance, and organizational and time management skills.

Admission Decisions

Admission decisions are mailed by March 15.

Response from Students: April 15

If your written response is not received by April 15, the department has the right to rescind the offer of admission and financial award. Confirmed receipt of an email to the vice chair of graduate studies specifying your decision by April 15th can be used to extend our deadline for receipt of the written response.

Transfer Students/Credits

Transfer credit is not accepted for the Au.D. program. Transfer students may apply and, if accepted, generally start at the beginning of the academic year and complete the program's curriculum in its entirety.

Non-degree-seeking Students

Non-degree-seeking students are allowed to enroll in audiology courses offered by the School of Medicine with approval from the instructor and vice chair of graduate studies on a case-by-case basis. In many cases, class size and/or resource limitations prevent this approval from occurring.

Visiting Students

Visiting students are not allowed to enroll in audiology courses offered by the School of Medicine.

Degree Requirements

Requirements to Earn Degree

All candidates for the Doctor of Audiology must have satisfactorily completed all residency, academic course, and clinical practica requirements of the program.

A minimum of 91 credit hours (including 58 didactic/course work credit hours and 33 clinical practicum/externship credit hours) is required for the Au.D.

Length and Delivery of Program

The candidate for the Au.D. degree generally spends eleven academic somesters completing the program and is expected to be enrolled in the School of Medicine during each fall spring, and summer semester until completion of the degree.

The normal time frame for completion of required course von; for the doctor of audiology degree is four years. If an individual requires additional time due to unusual circumstances (e.g., remediation, personal leave of absence), the degree program may extend the maximum amount of time to complete the degree to five years.

Curriculum and Tracks

The Vanderbilt DHSS offers a specialty track training for Au.D. students in early identification and management of infants and children with hearing loss. Students enrolled in the specialty track will have additional course work and practicum experience that will prepare them to work with infants and children who are deaf or hard of hearing. This interdisciplinary approach to training—by combining some core courses with speech-language pathology, audiology, and deaf education students while continuing separate courses that are specific to their disciplines—is unique to our Vanderbilt program.

There is also specialty track training in the area of vestibular sciences. Students who decide to follow this specialty track will, at graduation, possess specialized skills in the assessment of the peripheral and central vestibular system (i.e., vestibulo-occular vestibulo-spinal, and vestibulo-colic reflexes). Additionally, graduates will understand what rehabilitative op iors are available to patients with either unilateral or bilateral vestibular system impairments. Course work will include three (3) formal courses in vestibular sciences. Specialty track students will have practicum experiences in the Balance Disorders Clinic that assesses ~1400 patients/year. It is our intention for specialty track students to be offered the opportunity to have a concentrated clinical Maymester experience at a clinical site separate from Vanderbilt University. Finally, it will be expected that the capstone project conducted by the specialty track student will be in a vestibular system/balance topic area.

Externship

Au.D. students must complete a fourth-year clinical externship which begins during the summer of the third year and must continue for a minimum of ten months.

Dissertation/Capstone

All Au.D. students must complete a capstone project. The doctoral capstone project comprises 6 credit hours taken in years 2 and 3.

Course List

A full list of program courses is provided in this catalog under "Courses of Study."

Tuition, Fees, and Financial Aid

The following university costs are included with tuition:

- professional liability insurance
- · student health service
- verifications

Academic Year 2020/2021 Tuition

Tuition, 1st, 2nd, 3rd years	\$42,025
Tuition, 4th year	8,320
Hourly rate	1,598

The total estimated cost of attendance for a first-year student is \$78,279. The estimated cost of attendance for a second-, or third-year student is \$78,179. The estimated cost of attendance for a fourth-year student is \$35,352. (See *medschool.vanderbilt.edu/financial-aid/doctor-of-audiology-cost-of-attendance.)*

Payment of Tuition and Fees

Students registered for a full-time course load (eight hours or more for fall and spring and six hours or more for summer) are billed at the block tuition rate for the term in which they are enrolled. Students registered for less than a full-time course load (seven hours or fewer in the fall and spring or five 5 hours or fewer in the summer) are billed at the hourly tuition rate for the term in which they are enrolled. Certain courses are designated to trigger full-time enrollment (and block tuition billing) even though the number of credits carried by the course is fewer than eight.

Please refer to the School of Medicine Tuition, Fees, and Financial Aid section of this catalog for more information about university costs and School of Medicine fees. Additional information can be found at *vanderbilt.edu/stuaccts*.

Student Assessment

Grades

The Department of Hearing and Speech Sciences follows School of Medicine policy for grades. See the Academic Policies for All School of Medicine Programs chapter of this catalog.

Grade Grievance Procedur

Students should seek redress of a problem with a grade as soon as possible after receiving the grade and in no case later than four weeks after the grade is released. Students with a problem should confer directly with the course director. Every effort should be made to resolve the problem fairly and promptly at this level. If the student cannot resolve the problem through discussion with the course director, the student should request an appeal by writing (email is acceptable) to the program director within two weeks of speaking with the course director. (The course director also should be included on the request for appeal.) In cases where the course director is also the degree program director, the appeal should be made to the assistant dean of health sciences education or his/her designee. If resolution is not achieved by the program director/assistant dean of health sciences education, the case is referred to the senior associate dean of health sciences education or his/her designee, who makes the final decision. At each level of review, the course's assessment practices are reviewed and the individual student's situation taken into account.

Clinical Assessment

All Au.D. students are expected to make good progress in developing clinical skills by participating in clinical practicum throughout their time in the program. The first semester of clinical practicum involves more observation and guidance than actual hands-on experience. Students are graded in the first semester of practicum, primarily based on

attendance, punctuality, professionalism, and active engagement in the learning process. In subsequent semesters, clinical supervisors assess clinical performance/learning for competency areas specific to the clinical setting. Grades for practicum assignments and case conference may be reduced for unexcused absences from either clinic or clinical case conference according to prevailing departmental guidelines.

Progress and Promotion

Periodic Reviews

Student performance is reviewed annually, and a failure to appropriately develop clinical skills can result in probationary status which must be alleviated in order to continue in the program.

Satisfactory Academic Progress and Good Standing

All students who maintain at least a 3.0 GPA and have earned at least a B- in all course work and clinical practica are classified as in good standing through their demonstration of satisfactory academic progress.

Graduation

The Department of Hearing and Speech Sciences follows School of Medicine policy for general degree requirements. See the Academic Policies for All School of Medicine Programs chapter of this catalog.

Program Commencement

Degree candidates must have completed successfully all curriculum, acadenic, chinical, and residency requirements (applicable to the degree sought) to be allowed to participate in the ceremony. A student completing degree requirements in the summer or fall semester is invited to participate in Commencement the following May. However, the semester in which the degree was earned is the one recorded on the diploma and the student's permanent record.

Formal Remediation and Probation

Formal Remediation Plan

Students who receive a grade of C+ of poorer in academic courses and/or clinical courses/practica, whether required or elective, may be required to remedy the grade as specified in a formal remediation plan. If the course in question is prerequisite for another course, the student is required to remedy the grade before being permitted to proceed. Possible remedies include re-examination course/practica repetition, and/or prerequisite examination prior to entering a higher-level course. Credit now be given on the basis of re-examination or satisfactory repetition of the course/practica work, but the original grade remains on the record and may be counted in the computations as cause for dismissal if additional poor performance occurs.

Probation

Failure to appropriately develop clinical skills, failure to earn at least a B- in a single course, or failure to maintain a GPA equal to or above a 3.0 results in probationary status which must be alleviated in order to continue in the program. The faculty committee recommends removal of probationary status when a student has demonstrated a continuing record of satisfactory performance in succeeding units of academic study/clinical practica and maintains a GPA of at least 3.0.

Dismissal

Students placed on academic and/or clinical probation who do not perform in a satisfactory manner during the subsequent academic year, including meeting the formal goals specified in their remediation plan, are considered for dismissal from school unless there are mitigating circumstances approved by the appropriate faculty committee, VCGS, and chair, DHSS. Students on probation may be considered for dismissal from school if their academic and/or clinical performance continues at a marginal level, even though there may be no recorded failures.

The Department of Hearing and Speech Sciences follows School of Medicine policy for formal remediation,

probation, dismissal, and appeals. See the Academic Policies for All School of Medicine Programs chapter of this catalog for more information on these topics.

Eligibility to Reapply

Students who are dismissed from the program are not eligible to reapply.

Student Support and Advisory Services

Academic Advisory Resources

The program director has an open-door policy for all students in the Au.D. program.

Health and Wellness

See Vanderbilt University Student Resources in the Life at Vanderbilt chapter of this catalog.

Other Program Policies

Program Evaluation

The DHSS chair has regular, town hall type meetings with staff, stracts and faculty and the outcomes of these meetings, in combination with curriculum review committee meetings, employer surveys, alumni surveys, and supervisor evaluations, are used to identify areas of potential program improvement. These areas are then discussed in regular meetings (typically monthly) of the full DHSS faculty and considered during annual revisions of department pillar goals.

Leave of Absence

Graduate programs in the DHSS require continuous registration for fall, spring, and summer semesters. Students who want to interrupt their graduate study must apply to the Vice Chair of Graduate Studies (Au.D., M.D.E., and M.S.-S.L.P.) and receive an authorized leave of absence. Any student who feels a medical (including mental health) or family leave of absence may be required should first contact either the vice chair for graduate studies or the Vanderbilt Student Access Services office (van (erbilt.edw/student-access/) to initiate the procedure. For non-medical or family leave request, the student should contact the vice chair for graduate studies. Leave of absence is granted for a maximum of one year. Those without authorized leave who do not register are dropped from the rolls of the School of Medicine and are not considered students. If they want to resume graduate study at Vanderbilt, they must apply for reinstatement. Reins ite ment and degree completion timelines are also governed by policies of the medical school as appropriate.

Attendance and Leave

Class

Students are expected to attend classes at all time. Attendance regulations are based on the assumption that academic and clinical success is the student's primary goal when pursuing a graduate degree. The weight given to class attendance in determining your course grades are an academic matter; therefore, instructors are responsible for allowing make-up work in the case of unexcused absences. If a grade penalty exists, it should be noted in the course syllabus.

Clinic

Student attendance is required at every clinical session throughout the duration of each practicum assignment unless otherwise scheduled by the supervisor. Only those absences due to illness or similar unanticipated emergencies may be excused; these should be reported immediately, directly to the supervisor. For additional information, see the clinic handbook.

Any absences from class or clinic due to illness, death of an immediate family member, or similar unanticipated emergencies that affect more than one class or clinic period should be reported to the vice chair of graduate studies

as soon as possible. The VCGS will work with the student and affected parties to ensure that adequate and reasonable accommodations are provided for without penalty to the student. In the case of medical issues including mental health difficulties with long-term implications, the student is encouraged to contact the Vanderbilt University Student Access Services office directly to arrange accommodations.

Student Work Policy

Students are typically allowed to work 10 hours per week outside of their scheduled classes while school is in session. All student workers need to request the approval of the vice chair of graduate studies prior to beginning employment.

Transportation

Students may be placed for educational experiences in clinical sites located away from the Vanderbilt University campus and may be locations in counties surrounding Davidson County (Nashville). Generally speaking, students should be prepared to drive up to 60 miles (one way) from the Vanderbilt University campus to reach off-site placements. External placements may be up to three days per week for an entire semester. Students are responsible for their own transportation to and from all clinical sites for educational experiences, including all costs associated with that travel.

Honors and Awards

Jay W. Sanders Award. For outstanding clinical and academic achievements in ulfology.

postess and ext OHDE-Grantham Award for Excellence in Student Research. For students who exemplify excellence in research in any of the departmental disciplines.

Laura Knox Humanitarian Award. For students who possess and exemplify compassion for others through service leadership.

MASTER OF EDUCATION OF THE DEAF

Program Overview

The Department of Hearing and Speech Sciences offers a Master of Education of the Deaf program. This one-to two-year program emphasizes skills related to effectively planning and implementing specialized instruction for children and youth with hearing loss.

The DHSS is home to a unique, interdisciplinary approach to teacher training by combining training in audiology, speech-language pathology, and deaf education. Please visit our website at *medschool.vanderbilt.edu/hearing-speech* for additional information.

Program Accreditation

Council for the Accreditation of Educator Preparation (CAEP)

CAEP 1140 19th Street NW, Suite 400 Washington DC, 20036 (202) 223-0077 *caepnet.org*

Standing Program Committees

Admission Committee

This committee has the responsibility of making recommendations concerning admission and scholarships for applicants to the Au.D., M.D.E and M.S.-S.L.P. programs. The committee oversees and continually reviews the admission process. It typically meets twice per academic year. Membership includes all DHSS faculty.

Promotion Committee

This committee monitors student progress toward completing the M.D.E degree requirements and makes recommendations regarding promotion, enedial action, or dismissal as appropriate for each student. This committee meets at least twice per acidemic year out is called to meet in addition to these regular meetings, when there is a student of concern identified. Membership includes all DHSS M.D.E. program faculty.

Curriculum Committee

This committee continually monitors and eviews the M.D.E. curriculum. Any recommended changes to the curriculum are made to the DHSS faculty. Membership includes all DHSS M.D.E. program faculty.

Program's Major Facilities

The Mama Lere Hearing School in our National Center for Childhood Deafness and Family Communication serves as one of the practicum placements for the DHSS deaf education program. This early childhood school for children who are deaf or hard of hearing is known for its outstanding work in the areas of speech development, auditory training, cochlear implant habilitation, language, and reading. In addition, MDE students complete practicum hours in urban and rural settings in the greater Nashville area.

Admission

We encourage all interested students to apply for our graduate program. The program will be one year in length (three semesters: fall, spring, and summer including Maymester) for those entering with teacher certification in deaf education and two years (five semesters: fall, spring and summer including Maymester in year 1, fall and spring in year 2) for those entering with teacher certification in an area other than deaf education. The two-year program leads to an endorsement in special education preK-12 hearing.

Admission Requirements

Students entering the Master of Education of the Deaf program are required to have an undergraduate degree in deaf education, special education, early childhood education, or general education and must have teacher certification.

Application Process

Application Deadline: January 15

The application, test scores, and all supporting materials must be received by January 15.

Application Fee

Non-refundable \$50.00 application fee

Statement of Purpose (personal statement)

The Statement of Purpose is a required and important part of the application. The DHSS has no set criteria for the personal statement; it should be no less than one page but no more than 1-1/2 pages (single spaced).

Required Materials

Transcripts/Academic information

Official transcripts, which also should be sent after the completion of your degree, must be sent directly to Vanderbilt according to instructions below. You will be prompted to upload your read-mic record for each college or university you have attended when you officially submit your application. At a ademic record can be in the form of a legible scanned copy of a transcript or an academic record from the institution's Student Information System portal. If you are currently enrolled, please submit your academic record after your fall semester grades have been posted, if at all possible.

If you don't have your official transcripts during your application, unofficial transcripts can be provided instead. Official transcripts are required only after an offer of admission is made and accepted. To be considered official, a transcript must be sent directly from your institution to Vander in Official transcripts should be mailed to Vanderbilt University CDM, PMB 407833, 2301 Vanderbilt Place, Nashville, TN 37240-7833, or securely emailed to cdm@vanderbilt.edu through your school's secure election of anscript service. All other transcripts are considered unofficial. Please do not mail transcripts to the department office.

Letters of Recommendation

Three are required and up to five maximum can be accepted. Letters of recommendation should be from individuals who can speak to the applicant's cademic abilities and accomplishments and likelihood of the applicant's success in a teaching program. With a maximum of five, supervisors, teaching assistants, etc., are certainly welcome to provide a recommendation for you

Recommenders are strongly encouraged to submit their letters electronically. The application allows the applicant to identify their recommenders and the system notifies them (on your behalf) by email. When the electronic recommendations are submitted, they are "attached" to the application, and you receive an email message confirming receipt of each recommendation.

Please note: email addresses should be proofed for accuracy before finalizing the application. If an incorrect email address is entered into the system, the recommender will not receive the request for recommendation. If you choose not to use the electronic method, it is your responsibility to contact your recommenders and provide them with the DHSS recommendation link found on the department's website at *medschool.vanderbilt.edu/hearing-speech* under Academic, M.D.E., Application Information. Paper letters of recommendation should be mailed to Vanderbilt University CDM, PMB 407833, 2301 Vanderbilt Place, Nashville, TN 37240-7833 and should be received in that office by the application deadline.

Test Scores

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Important Note: It is the applicant's responsibility to allow sufficient time for the ETS to score and report test

results. Please refer to the ETS website (http://www.ets.org/gre) to access the Detailed Score Reporting Schedule for the GRE exam.

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Tuition Scholarships

Given that most graduate students need financial assistance, need is not a factor; financial awards are offered on the basis of merit, using criteria very similar to those used to judge acceptance into the program. There are no additional forms to complete for scholarships.

Special Requirements for International Applicants

Test of English as a Foreign Language is required of all international student applicants.

Financial Resources: In order to meet requirements for entry into the United States, international applicants must demonstrate that they have sufficient financial resources to cover the cost of their education. Please be prepared to provide evidence of this funding.

Selection Criteria, Offer, and Acceptance

All students must possess GRE scores consistent with Vanderbilt standards, a strong record of past academic achievement, a commitment to hearing health care, excellent oral and written skills, a willingness to work collaboratively, a strong work ethic, perseverance, and organizational and time management skills.

Admission Decisions

Admission decisions are mailed by March 15.

Response from Students: April 15

If your written response is not received by April 13, the department has the right to rescind the offer of admission and financial award. Confirmed receipt of an email to the director of graduate studies specifying your decision by April 15th can be used to extend our deadline of receipt of the written response.

Transfer Students/Credits

Transfer credit is not accepted for the MDE program. Transfer students may apply and, if accepted, generally start at the beginning of and complete the program's curriculum in its entirety.

Non-degree-seeking Students

Non-degree-seeking students are illowed to enroll in M.D.E. courses offered by the School of Medicine with approval from the instructor and rice chair of graduate studies on a case-by-case basis. In many cases, class size and/or resource limitations prevent this approval from occurring.

Visiting Students

Visiting students are not allowed to enroll in MDE courses offered by the School of Medicine.

Degree Requirements

Requirements to Earn Degree

All candidates for the Master of Education of the Deaf must have satisfactorily completed all residency, academic course, and practica requirements of the program.

Length and Delivery of Program

The candidate for the MDE program spends at least three academic semesters of graduate study at Vanderbilt. Candidates for the MDE degree are expected to be enrolled in the School of Medicine during each fall, spring, or summer semester until completion of the degree.

The normal time frame for completion of required course work for the master of education of the deaf degree is one to two years, depending on student's academic background upon entering the program. If an individual requires additional time due to unusual circumstances (e.g., remediation, personal leave of absence), the degree program may extend the maximum amount of time to complete the degree to three years.

Curriculum and Tracks

For MDE students on the one-year track, a minimum of 37 semester hours (which includes 29 hours of formal, didactic course work and 8 practicum hours) is required. Students on the two-year track must complete a minimum of 64 semester hours (which includes 50 hours of formal, didactic course work and 14 practicum hours) for the MDE and endorsement in special education hearing in pre K-12. For two-year students not seeking endorsement, a minimum of 58 semester hours (which includes 44 hours of formal, didactic course work and 14 practicum hours) is required.

Internship/Externship

Maymester internship/externship, designed to provide students with a unique opportunity for a three-week intensive practicum working with deaf and hard-of-hearing children, is required for graduation

Other Degree Requirements

Students must also complete a service obligation experience which provides them with the opportunity to gain an enhanced understanding of children with hearing loss and their families. Service obligations require a minimum of 100 hours during the first year of enrollment. At least half of the hours should involve direct child contact.

Course List

A full list of program courses is provided in this catalog under "Courses of Study."

Tuition, Fees, and Financial Aid

The following university costs are included with tuition:

- professional liability insurance
- · student health service
- verifications

Academic Year 2020/2021 Tuition

Tuition, 1st year (12 months)	\$42,025
Tuition, 2nd year (9 months)	\$28,016
Hourly rate	1,598

The total estimated cost of attendance for a first-year student is \$78,279. The estimated cost of attendance for a second-year student is \$55,048.

(See medschool.vanderbilt.edu/financial-aid/master-of-education-of-the-deaf-cost-of-attendance.)

Payment of Tuition and Fees

Students registered for a full-time course load (eight hours or more for fall and spring and six hours or more for summer) are billed at the block tuition rate for the term in which they are enrolled. Students registered for less than a full-time course load (seven hours or fewer in the fall and spring or five 5 hours or fewer in the summer) are billed at

the hourly tuition rate for the term in which they are enrolled. Certain courses are designated to trigger full-time enrollment (and block tuition billing) even though the number of credits carried by the course is fewer than eight.

Please refer to the School of Medicine Tuition, Fees, and Financial Aid section of this catalog for more information about university costs and School of Medicine fees. Additional information can be found at *vanderbilt.edu/stuaccts*.

Student Assessment

Grades

The Department of Hearing and Speech Sciences follows School of Medicine policy for grades. See the Academic Policies for All School of Medicine Programs chapter of this catalog.

Grade Grievance Procedure

Students should seek redress of a problem with a grade as soon as possible after receiving the grade and in no case later than four weeks after the grade is released. Students with a problem should confer directly with the course director. Every effort should be made to resolve the problem fairly and promptly at this level. If the student cannot resolve the problem through discussion with the course director, the student should request an appeal by writing (email is acceptable) to the program director within two weeks of speaking with the course director. (The course director also should be included on the request for appeal.) In cases where the course director is also the degree program director, the appeal should be made to the assistant dean of health sciences education or his/her designee. If resolution is not achieved by the program director/assistant dean of health sciences education, the case is referred to the senior associate dean of health sciences education or his/her designee, who makes the final decision. At each level of review, the course's assessment practices are reviewed and the individual sat dent's situation taken into account.

Progress and Promotion

Periodic Reviews

Student performance is reviewed annually

Satisfactory Academic Progress and Good Standing

All students who maintain at least a 3.0 GPA and have earned at least a B- in all course work are classified as in good standing through their demonstration of at sfactory academic progress.

Graduation

The Department of Hearing and Speech Sciences follows School of Medicine policy for general degree requirements. See the Academic Policies for All School of Medicine Programs chapter of this catalog.

Formal Remediation and Probation

Formal Remediation Plan

Students who receive a grade of C+ or poorer in academic courses and/or clinical courses/practica, whether required or elective, may be required to remedy the grade as specified in a formal remediation plan. If the course in question is prerequisite for another course, the student is required to remedy the grade before being permitted to proceed. Possible remedies include re-examination, course/practica repetition, and/or prerequisite examination prior to entering a higher level course. Credit may be given on the basis of re-examination or satisfactory repetition of the course work, but the original grade remains on the record and may be counted in the computations as cause for dismissal, if additional poor performance occurs.

Probation

Failure to appropriately develop teaching skills, failure to earn at least a B- in a single course, or failure to maintain a GPA equal to or above a 3.0 results in probationary status which must be alleviated in order to continue in the program.

Dismissal

Students placed on academic and/or practica probation who do not perform in a satisfactory manner during the subsequent academic year, including meeting the formal goals specified in their remediation plan, are considered for dismissal from school unless there are mitigating circumstances approved by the appropriate faculty committee, VCGS, and chair, DHSS. Students on probation may be considered for dismissal from school if their academic and/or practica performance continues at a marginal level, even though there may be no recorded failures.

The Department of Hearing and Speech Sciences follows School of Medicine policy for formal remediation, probation, dismissal, and appeals. See the Academic Policies for All School of Medicine Programs chapter of this catalog for more information on these topics.

Eligibility to Reapply

Students who are dismissed from the program are not eligible to reapply.

Student Support and Advisory Services

Academic Advisory Resources

The program director has an open door policy for all students in the MDE program.

Health and Wellness

See Vanderbilt University Student Resources in the Life at Vanderbilt chapter of this catalog.

Other Program Policies

Program Evaluation

The DHSS chair has regular, town hall type meetings with staff, students, and faculty and the outcomes of these meetings, in combination with curriculum renew committee meetings, employer surveys, alumni surveys, and supervisor evaluations, are used to identify areas of potential program improvement. These areas are then discussed in regular meetings (typically monthly) of the full DHSS faculty and considered during annual revisions of department pillar goals.

Leave of Absence

Graduate programs in the DHSS require continuous registration for fall, spring, and summer semesters. Students who want to interrupt their graduate study must apply to the Vice Chair of Graduate Studies (Au.D., MDE, and M.S.-S.L.P.) and receive an authorized leave of absence. Any student who feels a medical (including mental health) or family leave of absence may be required should first contact either the vice chair for graduate studies or the Vanderbilt Student Access Services office (vanderbilt.edw/student-access/) to initiate the procedure. For non-medical or family leave request, the student should contact the vice chair for graduate studies. Leave of absence is granted for a maximum of one year. Those without authorized leave who do not register are dropped from the rolls of the School of Medicine and are not considered students. If they want to resume graduate study at Vanderbilt, they must apply for reinstatement. Reinstatement and degree completion time lines are also governed by policies of the medical school as appropriate.

Attendance and Leave

Class

Students are expected to attend classes at all time. Attendance regulations are based on the assumption that academic and clinical success is the student's primary goal when pursuing a graduate degree. The weight given to class attendance in determining your course grades are an academic matter; therefore, instructors are responsible for allowing make-up work in the case of unexcused absences. If a grade penalty exists, it should be noted in the course syllabus.

Educational Practica

Student attendance is required at every practica session throughout the duration of each practicum assignment unless otherwise scheduled by the supervisor. Only those absences due to illness or similar unanticipated emergencies may be excused; these should be reported immediately directly to the supervisor. For additional information, see your clinic handbook.

Any absences from class or practica due to illness, death of an immediate family member, or similar unanticipated emergencies that affect more than one class or practica period should be reported to the Vice Chair of Graduate Studies as soon as possible. The VCGS will work with the student and affected parties to ensure that adequate and reasonable accommodations are provided for without penalty to the student. In the case of medical issues including mental health difficulties with long-term implications, the student is encouraged to contact the Vanderbilt Student Access Services office directly to arrange accommodations.

Student Work Policy

All student workers must request approval from the MDE program director prior to beginning student employment.

Transportation

Students may be placed for educational experiences in sites located away from the Vanderbilt University campus. Generally speaking, students should be prepared to drive up to 60 miles from the Vanderbilt University campus to reach off-site placements. Students are responsible for their own transportation to and from all sites for educational experiences, including all costs associated with that travel.

Honors and Awards

OHDE–Grantham Award for Excellence in Student Research. For students who exemplify excellence in research in any of the departmental disciplines.

Laura Knox Humanitarian Award. For students who possess and exemplify compassion for others through service leadership.

MASTER OF SCIENCE (SPEECH-LANGUAGE PATHOLOGY)

Program Overview

The master's program in speech-language pathology is administered through the Vanderbilt University School of Medicine. The program provides clinical education leading to professional certification in speech-language pathology. The five- or six-semester program (depending on background) spans up to two calendar years of full-time study.

Students without a background in communication disorders require an extra semester. Many clinical opportunities are available throughout the program. The program culminates in a ten-week clinical externship. The program meets or exceeds American Speech-Language-Hearing Association certification requirements.

Cochlear implant, autism, and education courses are a part of the curriculum for students with interests in those areas. There is also a thesis option. At present, Vanderbilt's M.S.-SLP program is ranked #1 in the nation by *U.S. News and World Report*.

Program Mission/Goals/Objectives

The mission of the M.S.-SLP is to present students with an evidence-based education leading to appropriate and effective clinical service in the context of a department engaged in and allowing exposure to cutting-edge research.

Program Accreditation

The master of science (M.S.) education program in speech-language bathology at Yanderbilt University is accredited by the Council on Academic Accreditation in Audiology and Speech Language Pathology of the American Speech-Language-Hearing Association, 2200 Research Blvd. #310, Rockville, MD 20850, (800) 498-2071 or (301) 296-5700.

Standing Program Committees

Admission Committee

This committee has the responsibility of making recommendations concerning admission and scholarships for applicants to the Au.D., M.D.E and M.S. S.L.P. programs. The committee oversees and continually reviews the admission process. It typically meets twice per academic year. Membership includes all DHSS faculty.

Promotion Committee

This committee monitors student proof is toward completing the M.S.-S.L.P. degree requirements and makes recommendations regarding promotion, remedial action, or dismissal as appropriate for each student. This committee meets at least twice per academic year but is called to meet in addition to these regular meetings, when there is a student of concern identified. Membership includes all DHSS S.L.P. program faculty.

Curriculum Committee

This committee continually monitors and reviews the M.S.-S.L.P. curriculum. Any recommended changes to the curriculum are made to the DHSS faculty. Membership includes all DHSS S.L.P. program faculty.

Program's Major Facilities

Practicum sites include the Vanderbilt University Medical Center, Monroe Carell Jr. Children's Hospital at Vanderbilt, and the Vanderbilt Bill Wilkerson Center for Otolaryngology and Communication Sciences. Additional sites include the Veterans Affairs Medical Center, hospitals, outpatient clinics, and private practices in the Middle Tennessee area.

Admission

Admission Requirements

Students with backgrounds in such areas as communication disorders and other health-related professions, biomedical sciences, psychology, and linguistics are encouraged to apply.

It is necessary for all M.S.-S.L.P. applicants to have satisfied the following prerequisites prior to matriculation in the Vanderbilt program.

- 1. Biological Sciences (at least one college-level course, for example, Intro to Biology)
- 2. Physics or Chemistry (at least one college-level course in either area, examples, Introduction to Chemistry, Physics I).
- 3. Statistics (course work must be statistics and <u>not</u> a research methods class)
- 4. Social/Behavioral Sciences (at least one college-level course in psychology, political science, economics, or anthropology)

The above four areas of study are required by the Council on Clinical Certification of the American Speech-Language-Hearing Association for applicants seeking certification in speech-language pathology. DHSS requires that students complete these prerequisites prior to enrollment in the M.S. program.

Please visit our website at medschool.vanderbilt.edu/hearing-speech/ for additional information.

Application Process

Application Deadline: January 15

The application, test scores, and all supporting materials must be received by January 15.

Application Fee

Non-refundable \$50.00 application fee

Statement of Purpose (personal statement)

The Statement of Purpose is a required and important part of the application. The DHSS has no set criteria for the personal statement; it should be no less than one page but no more than 1-1/2 pages (single spaced).

Required Materials

Transcripts/Academic information

Official transcripts, which also should be sent after the completion of your degree, must be sent directly to Vanderbilt according to instructions below. You will be prompted to upload your academic record for each college or university you have attended when you officially submit your application. An academic record can be in the form of a legible scanned copy of a transcript or an academic record from the institution's Student Information System portal. If you are currently enrolled, please submit your academic record after your fall semester grades have been posted, if at all possible.

If you don't have your official transcripts during your application, unofficial transcripts can be provided instead. Official transcripts are required only after an offer of admission is made and accepted. To be considered official, a transcript must be sent directly from your institution to Vanderbilt. Official transcripts should be mailed to Vanderbilt University CDM, PMB 407833, 2301 Vanderbilt Place, Nashville, TN 37240-7833, or securely emailed to cdm@vanderbilt.edu through your school's secure electronic transcript service. All other transcripts are considered unofficial. Please do not mail transcripts to the department office.

Letters of Recommendation

Three are required and up to five maximum can be accepted. Letters of recommendation should be from individuals who can speak to the applicant's academic abilities and accomplishments and likelihood of the applicant's success in a clinical or research program. With a maximum of five, supervisors, teaching assistants, etc., are certainly welcome to provide a recommendation for you.

Recommenders are strongly encouraged to submit their letters electronically. The application allows the

applicant to identify their recommenders and the system notifies them (on your behalf) by e-mail. When the electronic recommendations are submitted, they are "attached" to the application, and you receive an email message confirming receipt of each recommendation.

Please note: email addresses should be proofed for accuracy before finalizing the application. If an incorrect email address is entered into the system, the recommender will not receive the request for recommendation. If you choose not to use the electronic method, it is your responsibility to contact your recommenders and provide them with the DHSS recommendation link found on the department's website at medschool.vanderbilt.edu/hearing-speech under Academic, M.S.-S.L.P., Application Information. Paper letters of recommendation should be mailed to Vanderbilt University CDM, PMB 407833, 2301 Vanderbilt Place, Nashville, TN 37240-7833 and should be received in that office by the application deadline.

Test Scores

Official GRE scores come electronically from the Educational Testing Service (ETS) and are required for all applicants. Official TOEFL scores are required for international applicants only, even if you have completed a 4-year degree in a U.S. institution. The scores should be sent to institution code 1871. The department code is not required in order for your official scores to attach to the application.

Important Note: It is the applicant's responsibility to allow sufficient time for the ETS to score and report test results. Please refer to the ETS website (www.ets.org/gre) to access the Detailed Score Reporting Schedule for the GRE exam.

Resume/CV or Supplemental Materials

You may upload your resume/cv or other documents the committee may review by accessing the status page of the application and adding the documents in the "upload materials" section.

Tuition Scholarships

Given that most graduate students need financial assistance, need is not a factor, financial awards are offered on the basis of merit, using criteria very similar to that used to judge acceptance into the program. There are no additional forms to complete for scholarships.

Special Requirements for International Applicants

Test of English as a Foreign Language (TOEFL) is required for all international student applicants. Since the M.S.-S.L.P. is a clinical practice degree, it is critical that students have robust written and spoken English skills. Consequently, a TOEFL score of at least 110 c expected for successful applicants.

Financial Resources: In order to meet requirements for entry into the United States, international applicants must demonstrate that they have sufficient linancial resources to cover the cost of their education. Please be prepared to provide evidence of this funding.

Selection Criteria, Offer, and Acceptance

All students must possess GRE scores consistent with Vanderbilt's standards, a strong record of past academic achievement, a commitment to persoverance, and exceptional organizational and time-management skills.

Admission Decisions

Admission decisions are mailed by March 15.

Response from Students: April 15

If your written response is not received by April 15, the Department has the right to rescind the offer of admission and financial award. Confirmed receipt of an email to the director of graduate studies specifying your decision by April 15th can be used to extend our deadline for receipt of the written response.

Transfer Students/Credits

Transfer credit is not accepted for the M.S.-SLP program. Transfer students may apply and, if accepted, generally start at the beginning of and complete the program's curriculum in its entirety.

Non-degree-seeking Students

Non-degree-seeking students are allowed to enroll in M.S.-S.L.P. courses offered by the School of Medicine with approval from the instructor and vice chair of graduate studies on a case-by-case basis. In many cases, class size and/or resource limitations prevent this approval from occurring. Visiting Students

Visiting students are not allowed to enroll in S.L.P. courses offered by the School of Medicine.

Degree Requirements

Requirements to Earn Degree

All candidates for the Master of Science (Speech-Language Pathology) must have satisfactorily completed all residency, academic course, and clinical practica requirements of the program.

For M.S.-S.L.P. students with an undergraduate background in communication sciences and disorders, a minimum of 47 semester hours (including 37 didactic credit hours and 10 clinical practicum credit hours) is required for the master's degree.

For M.S.-S.L.P. students without an undergraduate background in communication sciences and disorders, a minimum of 54 semester credit hours (including 43 didactic credit hours and 11 clinical practicum credit hours) is required. Curriculum requirements, course content, and the number and distribution of credit hours are determined by the M.S.-S.L.P. program faculty.

Length and Delivery of Program

The candidate for the M.S.-S.L.P. spends at least five acadom c semesters of graduate study at Vanderbilt. Candidates for the M.S.-S.L.P. are expected to be enrolled in the School of Medicine during each fall, spring, and summer semester until completion of their degree requirements.

The normal time frame for completion of required course work for the master of science in speech-language pathology is two years. If an individual requires additional time due to unusual circumstances (e.g., remediation, personal leave of absence), the degree program may extend the maximum amount of time to complete the degree to three years.

Curriculum and Tracks

Enrollment in clinical practicum is required during each semester of the student's enrollment. Students must have 25 clock hours of guided clinical observation (f clinical service provision conducted by or supervised by a person with the Certificate of Clinical Competence (CCC) is speech-language pathology from the American Speech-Language-Hearing Association. If this observation has not occur met prior to enrollment in the M.S.—SLP program, the student completes the guided observation during the nitial weeks of clinical placements each semester. Sufficient guided observation is completed in each clinical placement before a student participates in direct patient contact. Specialty Tracks which provide special training in the areas of Language and Literacy in the Schools, Pediatric Hearing Loss, Research (Master's Thesis) and Autism are available. Details of the additional coursework and experiences required for these tracks are described during orientation.

Internships/Externship

During the final semester of enrollment, the student completes a 10-week full-time externship. Students are expected to have completed a minimum of 300 clinical clock hours prior to initiation of the externship.

Course List

A full list of program courses is provided in this catalog under "Courses of Study."

Tuition, Fees, and Financial Aid

The following university costs are included with tuition:

- · professional liability insurance
- · student health service
- · verifications

Academic Year 2020/2021 Tuition

Tuition, 1st year	\$42,022.50
Tuition, 2nd year (6 semester students)	42,022.50
Tuition, 2nd year (5 semester students)	28,015
Hourly rate	1,598

The total estimated cost of attendance for a first-year student is \$78,276. The estimated cost of attendance for a second-year student attending all 3 semesters (6 semester student) is \$78,176, and attending 2 semesters (5 semester student) is \$55,047.

(See medschool.vanderbilt.edu/financial-aid/master-of-science-speech-language-pathology-cost-of-attendance.)

Payment of Tuition and Fees

Students registered for a full-time course load (eight hours or more for fall and spring and six hours or more for summer) are billed at the block tuition rate for the term in which they are enrolled. Students registered for less than a full-time course load (seven hours or fewer in the fall and spring or five 5 hours or fewer in the summer) are billed at the hourly tuition rate for the term in which they are enrolled. Certain courses are designated to trigger full-time enrollment (and block tuition billing) even though the number of credits carried by the course is fewer than eight.

Please refer to the School of Medicine Tuition, Fees and Financial Aid section of this catalog for more information about university costs and School of Medicine fees. Additional information can be found at *vanderbilt.edu/stuaccts*.

Student Assessment

Grades

The Department of Hearing and Specin Sciences follows School of Medicine policy for grades. See the Academic Policies for All School of Medicine Programs chapter of this catalog.

Grade Grievance Procedure

Students should seek redress of a problem with a grade as soon as possible after receiving the grade and in no case later than four weeks after the grade is released. Students with a problem should confer directly with the course director. Every effort should be made to resolve the problem fairly and promptly at this level. If the student cannot resolve the problem through discussion with the course director, the student should request an appeal by writing (email is acceptable) to the program director within two weeks of speaking with the course director. (The course director also should be included on the request for appeal.) In cases where the course director is also the degree program director, the appeal should be made to the assistant dean of health sciences education or his/her designee. If resolution is not achieved by the program director/assistant dean of health sciences education, the case is referred to the senior associate dean of health sciences education or his/her designee, who makes the final decision. At each level of review, the course's assessment practices are reviewed and the individual student's situation taken into account.

Clinical Assessment

All M.S.-S.L.P. students are expected to make good progress in developing clinical skills by participating in clinical practicum throughout their time in the program. The first semester of clinical practicum involves more observation and guidance than actual hands-on experience. Grading in the first semester is primarily based on attendance, punctuality, professionalism, and active engagement in the learning process during clinic assignments. In subsequent semesters, clinical supervisors assess clinical performance/learning for competency areas specific to the clinical

setting, Grades for practicum assignments may be reduced for unexcused absences from clinic according to prevailing departmental guidelines.

Competency Assessment

Each student prepares a formal case report on a client or clinical procedure during the final year of the two-year program, with guidance from a clinical faculty member or clinical supervisor, for presentation to faculty, staff, and student peers. The quality of the case presentation is assessed formally by faculty and staff members regarding a number of elements of content.

Progress and Promotion

Periodic Reviews

Student's progress is reviewed annually.

Satisfactory Academic Progress and Good Standing

All students who maintain at least a 3.0 GPA and have earned at least a B- in all course work and clinical practica are classified as in good standing through their demonstration of satisfactory academic progress.

Graduation

The Department of Hearing and Speech Sciences follows School of Medicine policy for general degree requirements. See the Academic Policies for All School of Medicine Programs shapter of this catalog.

Formal Remediation and Probation

Formal Remediation Plan

Students who receive a grade of C+ or poorer in cademic courses and/or clinical courses/practica, whether required or elective, may be required to remedy the grade as specified in a formal remediation plan. If the course in question is prerequisite for another course, the student is required to remedy the grade before being permitted to proceed. Possible remedies include re-examination, course/practica repetition, and/or prerequisite examination prior to entering a higher level course. Credit may be given on the basis of le-examination or satisfactory repetition of the course/practica work, but the original grade remains on the record and may be counted in the computations as cause for dismissal if additional poor performance occurs.

Probation

Failure to appropriately develop clinical skills, failure to earn at least a B- in a single course, or a failure to maintain a GPA equal to or above a 3.0 results in probationary status which must be alleviated in order to continue in the program.

Dismissal

Students placed on academic and/or clinical probation who do not perform in a satisfactory manner during the subsequent academic year including meeting the formal goals specified in their remediation plan considered for dismissal from school unless there are mitigating circumstances approved by the appropriate faculty committee, VCGS, and chair, DHSS. Students on probation may be considered for dismissal from school if their academic and/or clinical performance continues at a marginal level, even though there may be no recorded failures.

The Department of Hearing and Speech Sciences follows School of Medicine policy for formal remediation, probation, dismissal, and appeals. See the Academic Policies for All School of Medicine Programs chapter of this catalog for more information on these topics.

Eligibility to Reapply

Students who are dismissed from the program are not eligible to reapply.

Student Support and Advisory Services

Academic Advisory Resources

The program director has an open-door policy for all students in the M.S.-SLP program.

Health and Wellness

See Vanderbilt University Student Resources in the Life at Vanderbilt chapter of this catalog.

Other Program Policies

Program Evaluation

The DHSS chair has regular, town hall type meetings with staff, students, and faculty and the outcomes of these meetings, in combination with curriculum review committee meetings, employer surveys, alumni surveys, and supervisor evaluations, are used to identify areas of potential program improvement. These areas are then discussed in regular meetings (typically monthly) of the full DHSS faculty and considered during annual revisions of department pillar goals.

Leave of Absence

Graduate programs in the DHSS require continuous registration for fold, spring, and summer semesters. Students who want to interrupt their graduate study must apply to the vice chair of graduate studies (Au.D., M.D.E., and M.S.-S.L.P.) and receive an authorized leave of absence. Any student who feels a medical (including mental health) or family leave of absence may be required should first con act either the vice chair for graduate studies or the Vanderbilt Student Access Services office (vanderbilt.e lustudent-cosess/) to initiate the procedure. For non-medical or family leave request, the student should contact the vice chair for graduate studies. Leave of absence is granted for a maximum of one year. Those without authorized leave who do not register are dropped from the rolls of the School of Medicine and are not considered students of they want to resume graduate study at Vanderbilt, they must apply for reinstatement. Reinstatement and degree completion time lines are also governed by policies of the medical school as appropriate.

Attendance and Leave

Class

Students are expected to attend classes at all time. Attendance regulations are based on the assumption that academic and clinical success is the student' primary goal when pursuing a graduate degree. The weight given to class attendance in determining your course grades are an academic matter; therefore, instructors are responsible for allowing make-up work in the case of unexcused absences. If a grade penalty exists, it should be noted in the course syllabus.

Clinic

Student attendance is required at every clinical session throughout the duration of each practicum assignment unless otherwise scheduled by the supervisor. Only those absences due to illness or similar unanticipated emergencies may be excused; these should be reported immediately directly to the supervisor. For additional information, see your clinic handbook.

Any absences from class or clinic due to illness, death of an immediate family member, or similar unanticipated emergencies that affect more than one class or clinic period should be reported to the vice chair of graduate studies as soon as possible. The VCGS will work with the student and affected parties to ensure that adequate and reasonable accommodations are provided for without penalty to the student. In the case of medical issues including mental health difficulties with long-term implications, the student is encouraged to contact the Vanderbilt Student Access Services office directly to arrange accommodations.

Student Work Policy

Students are typically allowed to work ten hours per week outside of their scheduled classes while school is in session. All student workers need to request the approval of the vice chair of graduate studies prior to beginning employment.

Transportation

Students may be placed for educational experiences in clinical sites located away from the Vanderbilt University campus and may be locations in counties surrounding Davidson County (Nashville). Generally speaking, students should be prepared to drive up to 60 miles (one way) from the Vanderbilt University campus to reach off-site placements. External placements may be up to three days per week for an entire semester. Students are responsible for their own transportation to and from all clinical sites for educational experiences, including all costs associated with that travel.

Honors and Awards

Russell J. Love Award. For outstanding clinical and academic achievements in speech-language pathology.

and exemplify con OHDE-Grantham Award for Excellence in Student Research. For students who exempting excellence in research in any of the departmental disciplines.

Laura Knox Humanitarian Award. For students who possess and every by compassion for others through service leadership.

Professional Programs in Medical Physics

PROFESSIONAL DOCTORATE IN MEDICAL PHYSICS

Program Overview

Medical physics is an applied branch of physics devoted to the application of concepts and methods from physics to the diagnosis and treatment of human disease.

Medical physicists are scientists concerned with three primary areas of activity: clinical service and consultation, research and development, and teaching. Clinically, medical physicists are called upon to contribute scientific advice and resources to solve physical problems arising in radiological medical physics. Medical physics research typically involves the discovery and development of new instrumentation and technology, new medical diagnostic and therapeutic procedures, and tests using existing technologies. Historically, this type of activity has been primarily in radiological imaging and radiation oncology, but it now has a growing breadth of involvement throughout medicine.

Many medical physicists not only provide clinical service in health care facilities, but also have faculty appointments at universities and colleges, work in the industry as scientists and/or consultants, and are responsible for teaching future medical physicists, resident physicians, medical students, and hospital technical staff.

Vanderbilt University offers the CAMPEP-accredited professional doctorate in medical physics (D.M.P.), in the diagnostic physics track.

Program Mission/Goals/Objectives

The following is based on the AAPM Strategic Plan:

- Vision: Improving health through the education of ledders in medical physics
- Mission: Advancing medicine through excellence in the education of medical physicists

Program Accreditation

Committee on Accreditation of Medical Physics Education Programs (CAMPEP)

CAMPEP, Inc.
1631 Prince Street
Alexandria, VA 22314
Phone: 571-298-1239
Fax: 571-298-1301
campep_admin@campep.org

Standing Program Committees

Master of Science in Medical Physics (M.S.M.P) and Doctor of Medical Physics (D.M.P) Super-Steering Committee

The super-steering committee supervises and monitors the graduate programs in medical physics (D.M.P and M.S.M.P.). It is composed of the chair of the Department of Radiation Oncology or her/his designee, the chair of the Department of Radiology and Radiological Sciences or her/his designee, the program director, the associate program director, and one member of the medical physics faculty elected by the Medical Physics Faculty Committee.

Medical Physics Faculty Steering Committee

The Medical Physics Faculty Steering Committee discusses and approves admission of new students, curriculum, and policy changes for the M.S.M.P. and the D.M.P. It is composed of all medical physics teaching faculty. The Medical Physics Faculty Steering Committee is chaired by the Program Director or, should he not be available, the Associate Program Director. This committee meets at least twice a year in compliance with CAMPEP requirements.

Diagnostic Sub-steering Committee

The Diagnostics Sub-steering Committee supervises and monitors the medical physics programs in the diagnostic track.

Therapeutic Sub-steering Committee

The Therapeutic Sub-steering Committee supervises and monitors the medical physics programs in the therapeutic track.

Program's Major Facilities

These interdisciplinary degree programs are administered through the Department of Radiation Oncology and the Department of Radiology and Radiological Sciences in the School of Medicine and involve faculty and courses from the Vanderbilt University School of Medicine, the Department of Radiology and Radiological Sciences, the Department of Radiation Oncology, the College of Arts and Science, the Department of Physics and Astronomy, and the School of Engineering (Department of Biomedical Engineering).

Admission

The CAMPEP-accredited professional doctorate in medical physics is offered at Vanderbill University in the diagnostic track. Students are accepted for admission only in the fall territ (mid-August). No students are admitted for the spring or summer terms.

Admission Requirements

- Bachelor's degree in physics, applied physics, physical science, or engineering (with the equivalent of a minor in physics) from an accredited college or university.
- Physics prerequisite courses or equivalent: Calculus III, Differential Equations, Modern Physics, Modern Physics Lab, and Computer Programming Language or Jemonstrated valivalent; junior/senior level undergraduate physics courses in Electricity and Magnetism, Classical Mechanics, and Quantum Mechanics. Also, although not prerequisite, we strongly encourage some formal knowledge of statistics.
- The successful candidate should have a minimum and ergraduate GPA of 3.0/4.0 or a B average.
- The general GRE is required. The suggested maximal acceptable score for admission is a total of 312, with a minimum score on the quantitative section of 155.
- The GRE advanced physics exam is not required.
- Students from non-English-speaking countries are required to demonstrate proficiency in English by submitting results of the Test of English as a Foreign Language (TOEFL). The suggested minimum acceptable score on the TOEFL exam is 600 (paper)/250 (computer)/100 (internet).

Application Process

The application process consists of two steps: Pre-screening and campus visit

Pre-screening

Applicants must use the electronic application system and submit the following items by mid-December of the previous admission year (exact deadline date is published at the program website: medschool.vanderbilt.edu/medical-physics/admission/):

- Completed electronic application form
- Transcripts for all college classes: submit transcripts via online application system **and, in addition,** please send an official hard copy of all college transcripts to Vanderbilt University CDM, PMB 407833, 2301 Vanderbilt Place, Nashville, TN 37240-7833
 - Three academic/professional references
 - GRE General score (the GRE ETS code to submit scores to our program is 1871)
 - Statement of Purpose

• Application fee. The application fee is mandatory for all initiated applications and is non-refundable, regardless of whether your application is considered complete and/or whether your application is reviewed by our application committee.

Based on these materials, a number of candidates are selected for a campus visit or teleconference (international candidates only). The candidates that have not been selected are informed that they have not passed our prescreening process, and their applications have been declined for admission for this period.

Campus Visit

Applicants selected in the pre-screening process are contacted to schedule a campus visit or for teleconference interviews (international candidates only) not later than mid-January of the admission year. In the campus visit, the applicant meets and informally interviews with the program director, faculty members, staff, and current students. The program director discusses the curricula in therapy and diagnostic physics, the M.S.M.P. and D.M.P., and the student applicant selection process. It would be most beneficial at the time of interview if the applicants have a clear understanding of their career interests in therapy and/or diagnostic medical physics and additionally have carefully considered the choice of the M.S.M.P. or D.M.P. program. Furthermore, we strongly encourage shadowing of a medical physicist prior to the campus visit. The campus interview process is generally completed within five to six hours. Any travel expenses associated with the campus visit (airline, ground transportation, hotel, etc.) are at the expense of the student.

Offer and Acceptance

The Medical Physics Faculty Committee reviews the applications and makes a decision by late February of the admission year. Candidates are notified in writing regarding their admission status, eccepted, on waiting list, or denied. Accepted candidates must officially accept or decline admission by Ap.il 15 of the admission year.

Transfer Credits

At the discretion of the program director, students may retition for fransfer credit in accordance with the policy established in the School of Medicine Academic Policy chapter above. In general, no more than 6 credit hours earned from an accredited institution may be applied to ward degree graduation requirements.

Non-Medical Physics Student Course Enrollment

Courses offered in medical physics are open only to degree-seeking students in the Medical Physics program (i.e., D.M.P. or M.S.M.P.). On rare occasions, a course director may allow a Vanderbilt student (graduate or undergraduate) to audit or enroll in a medical physics course for credit. In these circumstances, the student also must obtain permission to enroll in the course from the director of the primary program in which the student is enrolled.

Visiting (non-Vanderbilt) Students

Visiting students are not allowed o enroll in courses offered by the Medical Physics program.

Degree Requirements

Requirements to Earn Degree

Degree requirements include 50 didactic credit hours, 6 research credit hours, and 36 hours of clinical training. The didactic hours are completed in years one and two, and the clinical training credit hours and the 6 research hours are completed in years three and four.

Students in the D.M.P. program who complete all of the necessary degree requirements for the M.S.M.P. degree, including passing the oral qualifying exam, are awarded the M.S.M.P. (in passing). Thus, D.M.P. students entering year 3 are regarded as having completed a graduate degree in medical physics and can correctly be referred to as "medical physics residents."

Length and Delivery of Program

The normal time frame for completion of required course work for the doctorate in medical physics is four academic years. The maximum time for completion of this degree is no more than five years.

Curriculum and Tracks

The D.M.P. program offers a diagnostic medical physics track. The clinical medical physics experience gained in years three and four is equivalent to a two-year medical physics residency.

All students and applicants may access this information and more online by visiting our webpage at *medschool.vanderbilt.edu/medical-physics/*.

Degree Requirements

Candidates for the D.M.P. must complete a total of 92 semester credit hours. Of this total, 50 semester credit hours are in didactic classroom and laboratory instruction, with an emphasis on diagnostic imaging physics.

Candidates complete an independent study project for six semester credit hours.

Students are required to complete 30 semester credit hours of professional clinical rotations. Clinical training totals a minimum of 24 months. Limited introductory clinical training called practicum (approximately three full-time equivalent months) occurs in year 2; students receive 6 professional credit hours for the successful completion of the practicum.

Other Degree Requirements

Candidates must pass an oral qualifying exam by the end of their fifth term in the program.

Course List

A full list of program courses is provided in this catalog under "Courses of Study."

Tuition, Fees, and Financial Aid

The following university costs are included with tuited:

- professional liability insurance
- student health service
- verifications

Academic Year 2020/2021 Tuition

Tuition, 1st, 2nd years	\$40,515
Tuition, 3rd, 4th years	34,045
Hourly Rate	1.620

The total estimated cost of attendance for a first-year student is \$76,769. The total estimated cost of attendance for a second-year student is \$76,669. The estimated cost of attendance for a third- or fourth-year student is \$70,199. (See medical-physics-cost-of-attendance.)

Payment of Tuition and Fees

Students registered for a full-time course load (eight hours or more for fall and spring and six hours or more for summer) are billed at the block tuition rate for the term in which they are enrolled. Students registered for less than a full-time course load (seven hours or fewer in the fall and spring or five hours or fewer in the summer) are billed at the hourly tuition rate for the term in which they are enrolled. Certain courses are designated to trigger full-time enrollment (and block tuition billing) even though the number of credits carried by the course is fewer than eight.

Please refer to the School of Medicine Tuition, Fees and Financial Aid chapter of this catalog for more information about university costs and School of Medicine fees. Additional information can be found at *vanderbilt.edu/stuaccts*.

Student Assessment

Grades

The D.M.P. Program uses the VUSM grading scale, presented in the chapter of this catalog titled Academic Policies for All School of Medicine Programs.

Academic grades for individual clinical rotations during year 3 and year 4 are on the scale A, B, C, or Fail.

- B- grade is the minimum grade permitted for a core course within the medical physics curriculum.
- C- grade does not earn graduate credit hours toward graduation.

Pass/Fail Grading

No Pass/Fail graded courses are accepted for credit within the program.

Repeating a Course

Students are required to repeat a core course for which a grade of C+ or below was received. Both courses are reflected on the transcript, but the second grade earned is the one used in computing the student's grade point average. Only a grade of B- or better in a core course counts toward degree requirements.

Grade Grievance Policy

Students should seek redress of a problem with a grade as soon as possible after receiving the grade and in no case later than four weeks after the grade is released. Students with a problem should confer directly with the course director. Every effort should be made to resolve the problem fairly and promptly at this level. If the student cannot resolve the problem through discussion with the course director, the student should request an appeal by writing (email is acceptable) to the program director within two weeks of speaking with the course director. (The course director also should be included on the request for appeal.) In cases where the course director is also the degree program director, the appeal should be made to the assistant dean of hearth sciences education or his/her designee. If resolution is not achieved by the program director/assistant dean of hearth sciences education, the case is referred to the senior associate dean of health sciences education or his/her designee, who makes the final decision. At each level of review, the course's assessment practices are reviewed and the individual student's situation taken into account.

Auditing a Course

Medical physics students may audit one or more courses (above the 50-hour didactic required credit hours) with the instructor's and program director's permission. Virgical physics students may not audit a core course (one that is required to earn the degree). In a diftion, students may not audit an elective course whose credits are included in the required 50 didactic hours. For more information refer to the Auditing a Course section in the Academic Policies for All School of Medicine Programs chapter of this catalog.

Examinations

Format of student examination is at the discretion of the course instructor. Students are expected to be present for the exam on the scheduled exam date. Should a student knowingly have to be absent on the scheduled exam date, the student should meet with the instructor and ask to take the exam early. Should the student miss class the day of the scheduled exam, the student must meet with the instructor for instructions concerning taking a makeup exam.

Note: Some instructors may not allow make-up exams or the make-up exams may be different from the original exam. Additionally, students who missed an exam shall not discuss exam materials with any student until the make-up exam has been taken.

Clinical Assessment

At the conclusion of year 2 (summer term), the student is assigned a clinical physics mentor by the program director. The clinical physics mentor is responsible for the student's completion of year 3 and year 4 requirements. Each of the clinical rotations for year 3 is repeated in year 4. The intent of the repeat rotations is that the student observe and participate during year 3 and gain the necessary training and experience for competency in each clinical area in year 4. Evaluation for completion of each rotation may include documentation, reports, and competency examinations. The clinical physics mentor is responsible for collection and scoring of the evaluation materials. Academic grades for

individual rotations are on the scale A, B, C, or Fail. Semester grades are submitted to the School of Medicine Registrar's Office with a copy given to the program director.

The student must successfully complete the necessary requirements and acquired clinical skills before the clinical physics mentor and program director allow progression to the next rotation. Should the student not successfully complete a rotation with the minimum grade of C, the clinical physics mentor and program director meet with the student to discuss remedial action to resolve the discrepancy. The student is required to correctly complete all documentation and reports in a timely manner and may be required to take a written or oral examination over the materials within that rotation; the student's failing semester grade cannot be raised above a grade of C. Should the student not successfully complete the remedial assignments and/or fail the oral examination, that rotation must be retaken at the conclusion of year 4 (summer term). Hence, this extends clinical rotations beyond the normal twenty-four-month period.

The D.M.P. medical physics program and the School of Medicine require a cumulative GPA of 3.0 at the time of graduation. With the successful completion of all clinical rotations, the student will have received a total of 30 credit hours during years 3 and 4.

Other Assessment Systems

D.M.P. Research Project

During the summer of year 2 and the fall of year 3, each D.M.P. student chooses a clinical research project. The project must be approved by both the program director and the clinical physics director. A memor is selected to guide the student's research efforts. The project should be approximately equivalent to a three to-four-month full-time effort (FTE). The project results are in a written format consistent with a manuscript submission to a medical physics scientific journal. The project is defended during a student presentation to faculty, staff, and students. Projects should be completed on or before March 30 of year 4.

Board Exams

Recommended Test Dates for the American Board of Radiology (ABR) Exams Parts I and II

Students successfully completing year 1 are encoraged to take the ABR Exam Part I during the summer between year 1 and year 2. Students successfully completing year 4 are encouraged to take ABR Exam Part II during the summer after their graduation.

Progress and Promotion

Satisfactory Academic Progress and Good Standing

A term average of 3.0 is required to remain in "good standing."

Graduation

A cumulative grade point average of 3.0 is required for graduation.

Allowance for Delaying Graduation

Graduation may be delayed beyond the normal time required to complete for formal remediation or approved leave(s) of absence. (See D.M.P. program Leave of Absence section.)

Program Commencement

All degree requirements (didactic, research, and clinical) are satisfied by the end of June in the fourth year; the students are dismissed by July 1 of that year. A graduation ceremony is organized at that time to celebrate their achievements. No diplomas are presented during the program ceremony. The D.M.P. diplomas are formally issued by the university at the end of the summer term of the fourth year (mid-August). Those students who wish to "walk" are permitted to do so during Commencement the following May.

Formal Remediation

Formal Remediation Plan

A student whose cumulative grade point average falls below 3.0 is considered as "not in good standing." A remedial action plan is developed with the student, appropriate faculty member(s), and the program director. The remedial action plan may result in the student's having to take additional time to complete the degree requirements. If, at the end of the next two consecutive terms, the cumulative grade point average is still below 3.0, adverse action may be taken, including probation and/or dismissal.

Probation and Dismissal

The D.M.P. program follows School of Medicine policy for formal remediation, probation, dismissal, and appeals. See the Academic Policies for All School of Medicine Programs chapter of this catalog for more information on these topics.

Student Support and Advisory Services

Academic and Career Advisory Resources

The program director has an open door policy for all students in the D.M.P program. Students are also assigned a clinical physics mentor during years 3 and 4. The mentor guides the student through the clinical requirements of the program and ensures completion and documentation of the student's clinical assessments.

Health and Wellness

See Vanderbilt University Student Resources section in the Life at Vanderbilt chapter of this catalog.

Other Program Policies

Program Evaluation

The program evaluation—for both MS.M.P. and M.M.P.—is performed with four different metrics:

- 1. Student course evaluations, annulistered by the School of Medicine for every course offered in the program at the end of the term.
- 2. After student graduation, successful passing of Part 2 of the American Board of Radiology certification examination is assessed.
- 3. After student graduation, saccessful job placement is assessed.
- 4. Two years after the graduate takes Part 3 of the American Board of Radiology certification examination, a survey is conducted to assess the graduate's overall satisfaction with the program.

Specific feedback from course evaluations is reviewed by the faculty member responsible for the course and the program director with the goal of improvements in the presentation of course material during the next offering of the course.

Other materials are evaluated by the program director and subsequently by the faculty with the aim of providing overall program feedback that helps direct program modifications and improvements. These evaluations occur on an annual basis.

Leave of Absence

Students who wish to interrupt their study (personal, sickness, etc.) must request a leave of absence from the program director. Students may consult with Vanderbilt University Student Access Services (<u>vanderbilt.edu/student-access/</u>) when contemplating a leave of absence, and program administrators may consult with student access services when evaluating a request for leave of absence. Granting of a leave of absence is at the discretion of the

Medical Physics Faculty Committee acting within the policies and procedures of the Vanderbilt University School of Medicine. Students who do not request and receive approval for a leave of absence may be required to request reinstatement to the program. Students' requests are based on the following considerations:

- A. Before the conclusion of the 1st semester and/or 2nd semester of the first year, a student may seek leave of absence status for the remainder of the academic year. (Caveat: A student who has been granted a leave of absence will not complete the total M.S.M.P. degree requirements within the minimum time of 21–22 months.)
- B. During the 1st year summer term, 2nd year fall term, or 2nd year spring term, a student may seek leave of absence status for the remainder of the term (and up to a total of 6 months thereafter). (**Caveat:** A student who has been granted a leave of absence will not complete the total M.S.M.P. degree requirements within the minimum time of 21–22 months.)

or

C. Following conferral of the M.S. degree, at any time during year 3 or year 4, a student may seek leave of absence status for the remainder of a three-month rotation (and up to a total of three months thereafter). The student can petition the Medical Physics Faculty Committee to reenter rotations at the beginning of a new term. (Caveat: A student who has been granted a leave of absence will not complete the total D.M.P. degree requirements within the minimum time of 46 months.)

Students may request a leave of absence provided the two following conditions are met:

- 1. The student possesses "in good standing" student status.
- 2. The student petitions in writing a request for a leave of absence stating the rationale for the leave. Should the request be for a medical leave of absence, the student must submit a Vanderbilt Caiversity School of Medicinesanctioned health professional's letter of support.

Students petition the Medical Physics Faculty Committee to reacter rotations at the beginning of a new term. Students requesting a medical leave of absence must addition if y provided Vanderbilt University School of Medicine-sanctioned health professional's letter stating that the student's health is sufficient for return to classes.

Should a student not meet the requirements above, consideration for permission to reapply and re-enter the applicant pool for the next school year is made by the Medical Physics Faculty Committee on a student-by-student basis.

Attendance and Leave

All students are expected to attend e. ch class period. Students should notify the instructor should they knowingly have to miss a class. It is the responsibility of the student to obtain class notes and assignments. Penalty for non-class attendance is at the discretion of the instructor and/or the program director.

Vacation Time (year 3 and year 4)

Fifteen vacation days per year are granted to D.M.P. students in year 3 and year 4. The student must complete an absence from duty form and have it approved by and submitted to the program director.

Holidays

The following days are designated as holidays by the university:

- New Year's Day
- Memorial Day
- July 4th
- Labor Day
- Thanksgiving
- Christmas

Sick Time

Sick days are not to exceed ten days per year. Physician note required for greater than two consecutive sick days. Time-off for illness in excess of ten sick days per calendar year is subtracted from vacation time bank. Sick days are not to be interpreted as additional vacation time.

Interview Days

Students in year 4 are allowed a maximum of four interview days over and above the fifteen vacation days. Permission must be requested and granted by the program director. The student must also complete an *absence from duty* form and have it approved by and submitted to the program director.

Student Work Policy

Students in year 1 are allowed to work part time up to a maximum of 20 hours per week with permission of the program director. Students in year 2 are allowed to work part time up to a maximum of 15 hours per week with permission of the program director. Students in year 3 and year 4 are considered as residents and hence are required to be in the respective clinical department at a minimum of 40+ hours per week; hence, regular, part-time employment is discouraged.

Professional Conduct

Students are expected to attend class, remain in "good academic standing" academically, participate in clinical activities (including QA procedures), and interact with faculty, staff, students, and patients in a professional manner. Additionally, students are to exhibit personal behavior in accordance with the School of Medicine student conduct codes. A student who does not exhibit professional conduct meets with the program director, and a remedial action plan is developed with the student, appropriate faculty member(s), and the program director. It professional conduct does not improve, disciplinary action may be taken that could eventually lead to advising the student to withdraw or face dismissal.

Honor Code

Each student will be compliant with the Vanderbilt University School of Medicine Honor Code guidelines. Every academic year, each student will sign and date a copy of the Honor Code judicating that the student will follow the Honor Code rules and requirements.

Dress Code

Students who enter the clinical areas (Radiation Oncology and Diagnostic Radiology) must dress appropriately as professionals, being aware of the presence of patients in a clinical-services department. Blue jeans, t-shirts, shorts, and beach footwear are considered non-professional dress.

Vanderbilt ID

Vanderbilt students and employees are required to wear Vanderbilt ID badges at all times while on campus. This is a security matter and is enforced by Vanderbilt representatives including the Vanderbilt University Police Department. Some campus buildings require Vanderbilt ID badge recognition for entrance.

Vanderbilt Radiation Badge

Students attending labs and/or practicum sessions where x-ray equipment is present should wear a Vanderbilt radiation badge. Third- and fourth-year students must wear a Vanderbilt radiation badge at all times when they are in the clinic. Vanderbilt radiation badges—granted by the Vanderbilt Environmental Health and Safety Office—are processed for all new students during the mandatory orientation session before starting the program.

Transportation

During their participation in the D.M.P. program, students may be required to travel off campus for educational experiences. Generally speaking, local travel to off-campus sites is limited to one-way trips of not more than 55 miles.

D.M.P. students may be placed in locations outside of the local area, in rotational experiences, for an extended (several weeks) period of time. In which case, students are responsible for all travel expenses during this time.

For more information please see the Transportation section in the Academic Policies for All School of Medicine Programs chapter of this catalog.

MASTER OF SCIENCE IN MEDICAL PHYSICS

Program Overview

Medical physics is an applied branch of physics devoted to the application of concepts and methods from physics to the diagnosis and treatment of human disease.

Medical physicists are scientists concerned with three primary areas of activity: clinical service and consultation, research and development, and teaching. Clinically, medical physicists are called upon to contribute scientific advice and resources to solve physical problems arising in radiological medical physics. Medical physics research typically involves the discovery and development of new instrumentation and technology, new medical diagnostic and therapeutic procedures, and tests using existing technologies. Historically, this type of activity has been primarily in radiological imaging and radiation oncology, but it now has a growing breadth of involvement throughout medicine.

Many medical physicists not only provide clinical service in health care facilities, but also have faculty appointments at universities and colleges, work in the industry as scientists and/or consultants, and are responsible for teaching future medical physicists, resident physicians, medical students, and hospital technical staff.

Vanderbilt University offers the CAMPEP-accredited master of science in medical physics (M.S.M.P.), in therapy and diagnostic physics tracks.

Program Mission/Goals/Objectives

The following is based on the AAPM Strategic Plan:

- Vision: Improving health through the education of leaders in riedical physics
- Mission: Advancing medicine through excellence in the education of medical physicists

Program Accreditation

Committee on Accreditation of Medical Physics Education Programs (CAMPEP)

CAMPEP, Inc. 1631 Prince Street Alexandria, VA 22314 Phone: 571-298-1239 Fax: 571-298-1301 campep_admin@campep.org

Standing Program Committee

Master of Science in Medical Physics and Doctor of Medical Physics Super-Steering Committee

The super-steering committee supervises and monitors the graduate programs in medical physics (D.M.P and M.S.M.P.). It is composed of the chair of the Department of Radiation Oncology or her/his designee, the chair of the Department of Radiology and Radiological Sciences or her/his designee, the program director, the associate program director, and one member of the medical physics faculty elected by the Medical Physics Faculty Committee.

Medical Physics Faculty Steering Committee

The Medical Physics Faculty Steering Committee discusses and approves admission of new students, curriculum, and policy changes for the M.S.M.P. and the D.M.P. It is composed of all medical physics teaching faculty. The Medical Physics Faculty Steering Committee is chaired by the Program Director or, should he not be available, the Associate Program Director. This committee meets at least twice a year in compliance with CAMPEP requirements.

Therapeutic Sub-steering Committee

The Therapeutic Sub-steering Committee supervises and monitors the medical physics program in the therapeutic track.

Diagnostic Sub-steering Committee

The Diagnostic Sub-steering Committee supervises and monitors the medical physics programs in the diagnostic track.

Program's Major Facilities

These interdisciplinary degree programs are administered through the Department of Radiation Oncology and the Department of Radiology and Radiological Sciences in the School of Medicine and involve faculty and courses from the Vanderbilt University School of Medicine, the Department of Radiology and Radiological Sciences, the Department of Radiation Oncology, the College of Arts and Science, the Department of Physics and Astronomy, and the School of Engineering (Department of Biomedical Engineering).

Admission

The CAMPEP-accredited master of science in medical physics is offered at Vanderbilt University in the diagnostic and the therapeutic tracks. Students are accepted for admission in the fall term (mid-August). No students are admitted for the spring or summer terms.

Admission Requirements

- Bachelor's degree in physics, applied physics, physical science or engineering (van the equivalent of a minor in physics) from an accredited college or university.
- Physics prerequisite courses or equivalent: Calculus III, Differ extial Equitions, Modern Physics, Modern Physics Lab, and Computer Programming Language or demorstrated equivalent; junior/senior level undergraduate physics courses in Electricity and Magnetism, Classical Mechanics, and Quantum Mechanics. Also, although not prerequisite, we strongly encourage some formal knowledge of statistics.
 - The successful candidate should have a minimum and ergraduate GPA of 3.0/4.0 or a B average.
- The general GRE is required. The suggested minimum acceptable score for admission is a total of 312, with a minimum score on the quantitative section of 156.
 - The GRE advanced physics exam is not required.
- Students from non-English speaking countries are 1 or lired to demonstrate proficiency in English by submitting results of the Test of English as a Foreign Language (TOEFL). The suggested minimal acceptable score on the TOEFL exam is a 600 (paper)/250 (computer)/100 (internet).

Application Process

The application process consists of two steps. Pre-screening and campus visit

Pre-screening

Applicants must use the electronic application system and submit the following items by mid-December of the previous admission year (exact deadline date is published at the program website: medschool.vanderbilt.edu/medical-physics/admission/):

- Completed electronic application form
- Transcripts for all college classes: submit transcripts via online application system **and, in addition,** please send an official hard copy of all college transcripts to Vanderbilt University CDM, PMB 407833, 2301 Vanderbilt Place, Nashville, TN 37240-7833
 - Three academic/professional references
 - GRE General score (the GRE ETS code to submit scores to our program is 1871)
 - Statement of Purpose
- Application fee. The application fee is mandatory for all initiated applications and is non-refundable, regardless of whether your application is considered complete and/or whether your application is reviewed by our application committee.

Based on these materials, a number of candidates are selected for a campus visit or teleconference (international candidates only). The candidates that have not been selected are informed that they have not passed our prescreening process, and their applications have been declined for admission for this period.

Campus Visit

Applicants selected in the pre-screening process are contacted to schedule a campus visit or for teleconference interviews (international candidates only) not later than mid-January of the admission year. In the campus visit, the applicant meets and informally interviews with the program director, faculty members, staff, and current students. The program director discusses the curricula in therapy and diagnostic physics, the M.S.M.P. and D.M.P., and the student applicant selection process. It would be most beneficial at the time of interview if the applicants have a clear understanding of their career interests in therapy and/or diagnostic medical physics and additionally have carefully considered the choice of the M.S.M.P. or D.M.P. program. Furthermore, we strongly encourage shadowing of a medical physicist prior to the campus visit. The campus interview process is generally completed within five to six hours. Any travel expenses associated with the campus visit (airline, ground transportation, hotel, etc.) are at the expense of the student.

Offer and Acceptance

The Medical Physics Faculty Committee reviews the applications and makes a decision by late February of the admission year. Candidates are notified in writing regarding their admission status: accepted, on waiting list, or denied. Accepted candidates must officially accept or decline admission by April 15 of the admission year.

Transfer Credits

At the discretion of the program director, students may petition for transfer c edit in accordance with the policy established in the School of Medicine Academic Policy chapter above. In general, no more than 6 credit hours earned from an accredited institution may be applied toward degree graduation requirements.

Non-Medical Physics Student Course Enrollment

Courses offered in medical physics are open only to degree-specing students in the Medical Physics program (i.e., D.M.P. or M.S.M.P.). On rare occasions, a course director may allow a Vanderbilt student (graduate or undergraduate) to audit or enroll in a medical physics course for credit. In these circumstances, the student also must obtain permission to enroll in the course from the director of the primary program in which the student is enrolled.

Visiting (non-Vanderbilt) Students

Visiting students are not allowed to enrol in courses offered by the medical physics program.

Degree Requirements

Requirements to Earn Degree

Candidates for the M.S.M.P. must complete a total of 44 semester credit hours. Of this total, 38 semester credit hours are in didactic classroom and laboratory instruction with an emphasis on either diagnostic imaging or radiotherapy physics. Students may select either a thesis option or non-thesis option.

- Degree requirements for the non-thesis option include 38 didactic credit hours and 6 credit hours of clinical practicum. Students in the non-thesis option are required to complete 6 semester credit hours of professional introductory clinical rotations or practicum. The practicum is specific to the areas of clinical diagnostic and nuclear medicine imaging or radiotherapy treatment planning and associated techniques. Students in the non-thesis option may choose to participate in a 1–2 semester credit hour independent study.
- Degree requirements for the thesis option include 38 didactic credit hours and six (6) independent study credit hours. The six independent study hours are required in order to successfully complete the M.S.M.P. thesis project, which includes completion of a master's thesis.

Length and Delivery of Program

The normal time frame for completion of required course work for the master of science in medical physics is two academic years (five terms). The maximum time for completion of this degree is no more than three years.

Curriculum and Tracks

The M.S.M.P. program offers tracks in both radiotherapy medical physics and diagnostic medical physics. Students may choose a thesis or non-thesis option in either discipline. All students and applicants may access additional information by visiting our website at medschool.vanderbilt.edu/medical-physics/.

Other Degree Requirements

Candidates must pass an oral qualifying exam before the end of their final term in the program.

Course List

A full list of program courses is provided in this catalog under "Courses of Study."

Tuition, Fees, and Financial Aid

The following university costs are included with tuition:

- professional liability insurance
- · student health service
- · verifications

Academic Year 2020/2021 Tuition

Tuition, 1st year \$40,070
Tuition, 2nd year 26,720
Hourly Rate 1,620

The total estimated cost of attendance for a first-year student is \$16,324. The estimated cost of attendance for a second-year student is \$53,752.

(See medschool.vanderbilt.edu/financial-aid/mssix-of-sci2ve-in-medical-physics-cost-of-attendance.)

Payment of Tuition and Fees

Students registered for a full-time course load (eight hours or more for fall and spring and six hours or more for summer) are billed at the block tuition rate for the term in which they are enrolled. Students registered for less than a full-time course load (seven hours or fewer in the fall and spring or five hours or fewer in the summer) are billed at the hourly tuition rate for the term in which they are enrolled. Certain courses are designated to trigger full-time enrollment (and block tuition billing) even mough the number of credits carried by the course is fewer than eight.

Please refer to the School of Medicine Tuition, Fees and Financial Aid chapter of this catalog for more information about university costs and School of Medicine fees. Additional information can be found at <u>vanderbilt.edu/stuaccts</u>.

Student Assessment

Grades

The M.S.M.P. program uses the VUSM grading scale, presented in the chapter of this catalog titled Academic Policies for All School of Medicine Programs.

B- grade is the minimum grade permitted for a core course within the medical physics curriculum.

C- grade does not earn graduate credit hours toward graduation.

Pass/Fail Grading

No Pass/Fail graded courses are accepted for credit within the program.

Repeating a Course

Students are required to repeat a core course for which a grade of C+ or below was received. Both courses are reflected on the transcript, but the second grade earned is the one used in computing the student's grade point average. Only a grade of B- or better in a core course counts toward degree requirements.

Grade Grievance Policy

Students should seek redress of a problem with a grade as soon as possible after receiving the grade and in no case later than four weeks after the grade is released. Students with a problem should confer directly with the course director. Every effort should be made to resolve the problem fairly and promptly at this level. If the student cannot resolve the problem through discussion with the course director, the student should request an appeal by writing (email is acceptable) to the program director within two weeks of speaking with the course director. (The course director also should be included on the request for appeal.) In cases where the course director is also the degree program director, the appeal should be made to the assistant dean of health sciences education or his/her designee. If resolution is not achieved by the program director/assistant dean of health sciences education, the case is referred to the senior associate dean of health sciences education or his/her designee, who makes the final decision. At each level of review, the course's assessment practices are reviewed and the individual student's situation taken into account.

Auditing a Course

Medical Physics students may audit one or more courses (above the 38-hour didactic required credit hours) with the instructor's and program director's permission. Medical physics students in ay not audit a core course (one that is required to earn the degree). In addition, students may not auditan elective course whose credits are included in the required 38 didactic hours. For more information refer to the Auditing a course section in the Academic Policies for All School of Medicine Programs chapter of this catalog.

Examinations

Format of student examinations is at the discretion of the course instructor. Students are expected to be present for the exam on the scheduled exam date. Should a student knowingly have to be absent on the scheduled exam date, the student should meet with the instructor and ask to take the exam early. Should the student miss class the day of the scheduled exam, the student must meet with the instructor for instructions concerning taking a makeup exam.

Note: Some instructors may not allow make-up exams of the make-up exams may be different from the original exam. Additionally, students who missed at exam shall not discuss exam materials with any student until the make-up exam has been taken.

Board Exams

Recommended Test Dates for the Anerican Board of Radiology (ABR) Exams Part I and II

Students successfully completing very lare encouraged to take the ABR Exam Part I during the summer between year 1 and year 2.

Progress and Promotion

Satisfactory Academic Progress and Good Standing

A term average of 3.0 is required to remain in "good standing."

Graduation

A cumulative average of 3.0 is required to graduate.

Allowance for Delaying Graduation

Graduation may be delayed beyond the normal time required to complete for formal remediation or approved leave(s) of absence. (See M.S.M.P. program Leave of Absence section below.)

Program Commencement

Degrees are granted by the university in May, August, and December. Those students who wish to "walk" but did not complete all degree requirements by May of that year are permitted to walk during the School of Medicine Commencement of the following year.

Formal Remediation

Formal Remediation Plan

A student whose cumulative grade point average falls below 3.0 is considered as "not in good standing." A remedial action plan is developed with the student, appropriate faculty member(s), and the program director. The remedial action plan may result in the student's having to take additional time to complete the degree requirements. If at the end of the next two consecutive terms, the cumulative grade point average is still below 3.0, adverse action may be taken including probation and/or dismissal.

Probation and Dismissal

The M.S.M.P. program follows School of Medicine policy for formal remediation, probation, dismissal, and appeals. See the Academic Policies for All School of Medicine Programs chapter of this catalog for more information on these topics.

Student Support and Advisory Services

Academic and Career Advisory Resources

The program director has an open door policy for all students in the M.S.M.P. program.

Health and Wellness

See Vanderbilt University Student Resources in the Life at Van erbilt chapter of this catalog.

Other Program Policies

Program Evaluation

The program evaluation—for both M.S.M.P. and D.M.P.—is performed with four different metrics:

- 1. Student course evaluations, administered by the School of Medicine for every course offered in the program at the end of the term.
- 2. After student graduation, usessful passing of Part 2 of the American Board of Radiology certification examination is assessed.
- 3. After student graduation, successful job placement is assessed.
- 4. Two years after the graduate takes Part 3 of the American Board of Radiology certification examination, a survey is conducted to assess the graduate's overall satisfaction with the program.

Specific feedback from course evaluations is reviewed by the faculty member responsible for the course and the program director with the goal of improvements in the presentation of course material during the next offering of the course.

Other materials are evaluated by the program director and subsequently by the faculty with the aim of providing overall program feedback that helps direct program modifications and improvements. These evaluations occur on an annual basis.

Leave of Absence

Students who wish to interrupt their study (personal, sickness, etc.) must request a leave of absence from the program director. Students may consult with Vanderbilt University Student Access Services (<u>vanderbilt.edu/student-access/</u>) when contemplating a leave of absence, and program administrators may consult with student access services when evaluating a request for leave of absence. Granting of a leave of absence is at the discretion of the Medical Physics Faculty Committee acting within the policies and procedures of the Vanderbilt University School of Medicine. Students who do not request and receive approval for a leave of absence may be required to request reinstatement to the program. Students' requests are based on the following considerations:

- A. Before the conclusion of the 1st semester and/or 2nd semester of the first year, a student may seek leave of absence status for the remainder of the academic year. (Caveat: A student who has been granted a leave of absence will not complete the total M.S.M.P. degree requirements within the minimum time of 21–22 months.)
- B. During the 1st year summer term, 2nd year fall term, or 2nd year spring term, a student may seek leave of absence status for the remainder of the term (and up to a total of 6 months thereafter). (Caveat: A student who has been granted a leave of absence will not complete the total M.S.M.P. degree requirements within the minimum time of 21–22 months.)

Students may request a leave of absence provided the two following conditions are met:

- 1. The student possesses "in good standing" student status
- 2. The student petitions in writing a request for a leave of absence stating the rationals for the leave. Should the request be for a medical leave of absence, the student must submit a Vanderbin University School of Medicine-sanctioned health professional's letter of support.

Students requesting a medical leave of absence must additionally provide a Vanderbilt University School of Medicine-sanctioned health professional's letter stating has the student of health is sufficient for return to classes. Should a student not meet the requirements above consideration for permission to reapply and re-enter the applicant pool for the next school year is made by the Medical Physics Faculty Committee on a student-by-student

Attendance and Leave

All students are expected to attend each class period. Students should notify the instructor should they knowingly have to miss a class. It is the responsibility of the student to obtain class notes and assignments. Penalty for non-class attendance is at the discretion of the instructor and/or the program director.

Holidays

basis.

The following days are designated a holidays by the university:

- · New Year's Day
- Memorial Day
- July 4th
- Labor Day
- Thanksgiving
- Christmas

Student Work Policy

Students in year 1 are allowed to work part time up to a maximum of 20 hours per week with permission of the program director. Students in year 2 are allowed to work part time up to a maximum of 15 hours per week with permission of the program director.

Professional Conduct

Students are expected to attend class, remain in "good academic standing" academically, participate in clinical activities (including QA procedures), and interact with faculty, staff, students, and patients in a professional manner.

Additionally, students are to exhibit personal behavior in accordance with the School of Medicine student conduct codes. A student who does not exhibit professional conduct meets with the program director, and a remedial action plan is developed with the student, appropriate faculty member(s), and the program director. If professional conduct does not improve, disciplinary action may be taken that could eventually lead to advising the student to withdraw or face dismissal.

Honor Code

Each student will be compliant with the Vanderbilt University School of Medicine Honor Code guidelines. Every academic year, each student will sign and date a copy of the Honor Code indicating that the student will follow the Honor Code rules and requirements.

Dress Code

Students who enter the clinical areas (Radiation Oncology and Diagnostic Radiology) must dress appropriately as professionals, being aware of the presence of patients in a clinical-services department. Blue jeans, t-shirts, shorts, and beach footwear are considered non-professional dress.

Vanderbilt ID

Vanderbilt students and employees are required to wear Vanderbilt ID badges at all times while on campus. This is a security matter and is enforced by Vanderbilt representatives including the Vanderbilt Police Department. Some campus buildings require Vanderbilt ID badge recognition for entrance.

Vanderbilt Radiation Badge

Students attending labs and/or practicum sessions where a rail equipme vis present should wear a Vanderbilt radiation badges. Vanderbilt radiation badges—grante ray the Vanderbilt Environmental Health and Safety office—are processed for all new students during the mandatory orientation session before starting the program.

Transportation

During their participation in the M.S.M.P. program, students may be required to travel off campus for educational experiences. Generally speaking, local travel to off-campus sites is limited to one-way trips of not more than 55 miles.

M.S.M.P. students may be placed in location's outside of the local area, in rotational experiences, for an extended (several weeks) period of time. It which case, students are responsible for all travel expenses during this time. For more information please see the Transportation section in the Academic Policies for All School of Medicine Programs chapter of this catalog.

Master of Genetic Counseling

Program Overview

The Master of Genetic Counseling (M.G.C.) is built on a foundation of medical education excellence, broad clinical expertise and innovation in genetics research through collaboration with Vanderbilt University and Vanderbilt University Medical Center. The M.G.C. is awarded by Vanderbilt University School of Medicine, with academic administrative oversight provided by the Vanderbilt University School of Medicine Office of Health Sciences Education. The program is offered in collaboration with the Vanderbilt Genetics Institute of Vanderbilt University Medical Center. More information about the Vanderbilt M.G.C. program is available online, at medschool.vanderbilt.edu/mgc.

Program Mission/Goals/Objectives

Vanderbilt Genetics Institute Mission

The mission of the Vanderbilt Genetics Institute is to promote genomic discovery and advance understanding of the human genome. Application of new discoveries will ultimately translate into improved patient care through better diagnosis, treatment, and prevention of human disease.

Vanderbilt Master of Genetic Counseling Program Mission

The mission of the Vanderbilt M.G.C. program is to graduate genetic counseling cauers in the field of genetics and genomic medicine.

The program goals are to:

- Matriculate diverse graduate students in genetic courseling who are empowered to succeed in the expanding field of genetics, genomics, and reconsized medicine.
- Facilitate faculty and student collaboration with Vander oil researchers to enable significant contributions in the areas of genetics and genomics, genetic counseling, and personalized medicine.
- Improve access to genetic services by increasing the number of providers and expanding awareness about the field.

Graduates of the MGC program will:

- Expand their knowledge about genetics and genomics and practice the application of this understanding in medicine as set forth by the Accreditation Council for Genetic Counseling (ACGC) standards.
- Develop skills to sensitively convey complex medical information to health care consumers and providers, utilizing appropriate evidence-based approaches to practice, as outlined in the ACGC competencies.
- Evaluate and analyze research to formulate important questions, and apply critical thinking and appropriate investigational methods to pursue answers to those questions.

Vision

The vision of the Vanderbilt M.G.C. program is to be on the forefront of genetics and genetic services research, to create a nurturing environment to foster genetic counseling training, and to nest the program in a strong, connected academic and medical community.

Program Accreditation

The Vanderbilt University Master of Genetic Counseling program has been granted accreditation as a New Program by the Accreditation Council for Genetic Counseling (ACGC) effective January 31, 2019. Additional information may be found on the ACGC website at <u>gceducation.org</u> and on the VUSM website at <u>medschool.vanderbilt.edu/mgc</u>.

7918 Jones Branch Drive Suite 300 McLean, VA 22102 USA (703) 506-7667 http://www.gceducation.org

Standing Program Committees

Vanderbilt Genetic Counseling Program Advisory Board

The Vanderbilt Genetic Counseling Program Advisory Board has an overarching responsibility to assist in the development and ongoing evaluation of the graduate program. The board is responsible for ensuring that the curriculum is in line with the program's mission and with the ACGC accreditation standards for the genetic counseling profession. The advisory board consists of the following individuals:

Martha Dudek, Chair (Ex officio). Laura Duncan, Rizwan Hamid, Gillian Hooker, Melinda New, Tuya Pal, Tabby Perry, Dan Roden, Donna Rosenstiel, Georgia Wiesner. Ex officio: Donald W. Brady, Nancy Cox.

Program Implementation Committee

The Program Implementation Committee includes the program director, medical director, assistant program director, practicum coordinator and program coordinator. This committee convenes regularly to ensure smooth program operations.

Martha Dudek, Chair. Elly Brokamp, Randa Newman, Jill Slamon. Ex officio: Sonia Mitchell.

Admission Committee

The Admission Committee is responsible for reviewing applications for the M.G.C. program, for inviting applicants to interview, and for making recommendations of candidates for admission to the program.

The Admission Committee is appointed and chaired by the program hector. It consists of seven to nine M.G.C. faculty members (one of which is also a member of the Diversity Committee). Members may include individuals from the program leadership. Committee members serve a three-year term, with inaugural committee members appointed for a three-year term within a staggered succession schedule.

Martha Dudek, Chair. Elly Brokamp, Laura Duncan, Brighton Goodhre, Caitlin Grabarits, Jill Slamon, Kelly Taylor, Randa Newman.

Curriculum Committee

The Curriculum Committee is charged with development and oversight of the M.G.C. program curriculum. The Curriculum Committee is appointed by the program circulum.

Martha Dudek, Chair (Ex officio). Jil Slimon, Vice-Chair. Katherine Anderson, Elly Brokamp, Laura Duncan, Caitlin Grabarits, Gillian Hocker, Mackenzie Mosera, Randa Newman, Kelly Taylor, Ferrin Wheeler.

Research Review Committee (RRC)

The role of the Research Review Connective is to establish and ensure adherence to policies and procedures for the M.G.C. thesis requirement. The RRC develops guidelines and recommends resources to ensure the success of each student in thesis development and completion. The RRC is appointed by the program director and consists of at least three M.G.C. faculty members. The RRC is responsible for 1) oversight implementation of the thesis process into the curriculum and 2) supervision of the faculty research advisers.

Gillian Hooker, Chair. Randa Newman, Kelly Taylor.

Diversity Committee

The purpose of the Diversity Committee is to increase the number of underrepresented students in the field of genetics counseling. The committee meets annually to establish and review M.G.C. program diversity goals and its progress toward meeting them. Committee members are appointed by the M.G.C. program director. The Diversity Committee includes at least one member from each of the following groups: M.G.C. program leadership, M.G.C. Advisory Board, M.G.C. faculty, and at least one former or current student.

Martha Dudek, Chair (Ex officio). Tuya Pal, Brenda Zuniga. Randa Newman Two additional members to be recruited from former students and other local genetic counselors

Academic Progress and Promotion Committee (APPC)

The APPC meets twice per academic year to review each student's academic progress through the program curriculum. The APPC has the responsibility to make recommendations to the program director concerning promotion, remedial action, or dismissal, as appropriate, for each student in the program.

The Academic Progress and Promotion Committee consists of six members with a quorum being at least 3 voting members present. The six voting members are program faculty members, all whom are board certified in genetics/genetic counseling or have extensive experience in training or working with genetic counselors. Voting members would serve for three years. The program director is a non-voting member, ex officio.

The fall meeting of the APPC each year reviews academic progress for both cohorts of students. The spring meeting reviews academic progress for both cohorts and also makes promotion decisions (for first-year cohort, decisions include promotion to second year; for second-year cohort, decisions include recommendation of students to the dean for graduation).

Program's Major Facilities

The M.G.C. office is located in Light Hall room 510. Classes are held as assigned on the 4th or 5th floor of Light redi pilt.eduv. Hall. Students complete the majority of their rotations at Vanderbilt University Medical Center sites. Students may consider an off-campus rotation as an elective. Please visit medschool.vanderbilt.edu/mgc/precticum for more information about practica.

Admission

Admission Requirements

Eligibility

- 1. Eligible candidates for the Vanderbilt M.G.C. program are required to meet the following criteria:
 - Completion of a four-year baccalaureate degree from an accredited institution is required. Course work in biology, chemistry, biochemistry, general or human genetics, statistics, and psychology is highly recommended.
 - •To support prospective students and their families during the ongoing global pandemic, Vanderbilt University Master of Genetic Couns line program will not require scores from the GRE exams for students applying to enter the program in the fall of 2021. Please see our website <u>medschool.vanderbilt.edu/mgc/admission/</u> for details.
- 2. Applicants are encouraged to have have experiences that demonstrate an interest in and familiarity with the field of genetic counseling. This experience could be obtained through volunteer work, employment, or observation in a clinical setting of a board-certified genetic counselor and/or medical geneticist.
- 3. Applicants are also expected to possess an ability to communicate clearly and compassionately with others. Individuals for whom English is not their native language are required to provide scores from the Test of English as a Foreign Language (TOEFL), which is administered by the Educational Testing Service in Princeton, New Jersey. Information about this exam is available at http://www.ets.org/toefl/. The minimum acceptable score on the paper-based TOEFL is 570, and for the Internet-based test, 88. The Vanderbilt Institution Code for TOEFL is 1871.
- 4. The Vanderbilt Master of Genetic Counseling is unable to accept international students at this time. Students who are permanent residents (Green Card holders) are eligible to apply.

Application Process

- 1. Apply through the online Vanderbilt University application apply.vanderbilt.edu/apply/.
- 2. Register with the Genetic Counseling Admissions Match through National Matching Services at natmatch.com/gcadmissions/index.html.

Complete information about the application process is available online at medschool.vanderbilt.edu/mgc/admission/apply.

Providing Transcripts

Applicants must upload an unofficial copy of transcripts from prior undergraduate and graduate work as part of their online application for admission. This is used to pre-screen for completion of recommended courses.

An official transcript, documenting degree(s) and completed course work, is required before February 15th.

Email:

CDM@vanderbilt.edu

Mail: **CDM** Vanderbilt University PMB 407833 2301 Vanderbilt Place Nashville, TN 37240-7833

Selection Criteria, Offer, and Acceptance

The M.G.C. Admission Committee values diverse academic backgrounds in its applicants. Applicants should have an academically rigorous undergraduate experience, to ensure they are well prepared for graduate work.

The M.G.C. program does not have a minimum GPA requirement. Graduate Recon Examination (GRE) scores are required to complete the application; however, no minimum score exists or admission to the M.G.C. The M.G.C. Admission Committee takes a holistic approach (including grades and test score, in addition to other factors) to ensure each applicant's potential to be academically equipped to succeed in the M.GC. program.

cations: In addition to evidence of academic rigor, the MCG Admission Committee considers the following experiences and applicant characteristics when reviewing applications.

- Understanding of the field of genetic counseling
- Unique interests
- · Leadership skills
- Life experiences
- Communications skills
- Community involvement
- Exposure to research process
- Clinical exposure
- Work experience
- Cultural understanding

Transfer Students/Credits

In general, the M.G.C. program is unable to allow transfer credits; however, on occasion students may transfer graduate credit with express approval of the Program Director.

Non-degree-seeking Students

With permission of the program director, non-degree-seeking students may audit or enroll for credit in courses offered by the M.G.C. program.

Visiting Students

Students enrolled in an ACGC accredited program may contact program director for information about clinical rotations at VUMC affiliated sites. Institutional agreements are arranged through VUMC.

Degree Requirements

Requirements to Earn Degree

- 1. Minimum of 60 hours of didactic course work, with an overall grade point average of at least a 'B';
- 2. Successful completion of required practica; and
- 3. Successful completion of a research project.

Length and Delivery of Program

Candidates for the M.G.C. degree normally spend five academic semesters at Vanderbilt and are expected to be enrolled in the School of Medicine during each fall, spring, or summer semester until completion of the degree.

The normal time for completion of the required course work for the M.G.C. degree is 21 months, over five consecutive terms. If an individual requires additional time due to unusual circumstances (e.g., remediation, personal leave of absence), a student may, with approval of the M.G.C. program director, take up to three years to complete the degree.

Curriculum

Vanderbilt M.G.C. students participate in a wide range of activities during their time in the program to prepare them for the American Board of Genetic Counseling (ABCG) certifying ex in including out a work, practicum experiences, and research experiences.

The normal progression of a student through the M.G.C. curriculum is overlined at <u>medschool.vanderbilt.edu/mgc</u>. The curriculum draws its content from various department, and courses are taught by faculty members from multiple disciplines. The curriculum is subject to annual review and revision by the Curriculum Committee.

Course Work

A complete listing of the courses with descriptions an be found in the catalog and on the program website: medschool.vanderbilt.edu/mgc/academics/timeline

Practica

Practicum experiences are an integral part of training genetic counseling professionals. Starting in the spring semester of the first year, students complete 50 weeks of practicum experience. Over ten 5-week blocks, students work with certified genetic counselors and Ph.D. and/or M.D. geneticists in the ABGC-defined practice areas of adult, cancer, pediatric, and prenatal. Experiences in specialty clinics and genetics laboratories are part of the practica. There is also opportunity to work in industry and philanthropic settings.

Thesis

Vanderbilt M.G.C. students are required to complete a research project during their 21-months of training. As part of this requirement, students are emolled in a two-part course, Research for Genetic Counselors 1 (GC6610) and Research for Genetic Counselors 2 (GC6615), during the first year. These courses explore the research process, with a focus on articulating the value of research to the practice of genetic counseling. The courses introduce the research knowledge and skills students need to develop and complete their thesis research, including principles of study design, critical reading of the literature, developing a statistical plan, quantitative and qualitative research methods, collection and management of data, human subjects research and the IRB, the informed consent process, and research ethics. As topics are discussed in class, students apply what they have learned to the development of their theses.

More information about the research program is available online, at <u>medschool.vanderbilt.edu/mgc</u>.

Tuition, Fees, and Financial Aid

2020/2021

The following university costs are included with tuition:

- professional liability insurance
- · student health service
- verifications

Academic Year 2020/2021 Tuition

Tuition, first and second year	\$40,000
Hourly rate	1,600

The total estimated cost of attendance for a first-year student is \$76,254. The total estimated cost of attendance for the second-year student is \$67,032.

(See <u>medschool.vanderbilt.edu/financial-aid/master-of-genetic-counseling-cost-of-attendance.</u>)

Payment of Tuition and Fees

Students registered for a full-time course load (eight hours or more for full and spring and six hours or more for summer) are billed at the block tuition rate for the term in which they are enrolled. Students registered for less than a full-time course load (seven hours or fewer in the fall and spring or five hours or fewer in the summer) are billed at the hourly tuition rate for the term in which they are enrolled. Certain courses are designated to trigger full-time enrollment (and block tuition billing) even though the number of credits carried by the course is fewer than eight.

Please refer to the School of Medicine Tuition, Fees, and Financial and chapter of this catalog for more information about university costs and School of Medicine rees. Additional information can be found at *vanderbilt.edu/stuaccts*.

Financial Aid

No program scholarship funds are provided to students enrolled in the Vanderbilt University Master of Genetic Counseling program. Vanderbilt University School of Medicine participates in the Federal Direct Student Loan Program. Prospective and admitted M.G.C. students may apply for federal loans to help support their attendance at Vanderbilt University. Information about federal loans and how to apply for them may be found on the VUSM Office of Student Financial Aid website.

Student Assessment

Grades

In addition to the School of Medicine policy found in the Academic Policies for All School of Medicine Programs chapter in the Student Assessment and Grading section, the M.G.C. program has the following numerical equivalents for letter grades:

A	93-100
A-	90-92
B+	87-89
В	83-86
B-	80-82
C	75-79
F	74 and below

Courses in which a student earns less than a 'B-' do not count toward degree completion and must be repeated. While a student may obtain a 'B-' in an individual course, maintenance of at least a 'B' grade average overall is

required to maintain satisfactory academic progress. Students can track their course work grades online through the course management system.

Grade Grievance Procedure

Students should seek redress of a problem with a grade as soon as possible after receiving the grade and in no case later than four weeks after the grade is released. Students with a problem should confer directly with the course director. Every effort should be made to resolve the problem fairly and promptly at this level. If the student cannot resolve the problem through discussion with the course director, the student should request an appeal by writing (email is acceptable) to the program director within two weeks of speaking with the course director. (The course director also should be included on the request for appeal.) In cases where the course director is also the degree program director, the appeal should be made to the assistant dean of health sciences education or his/her designee. If resolution is not achieved by the program director/assistant dean of health sciences education, the case is referred to the senior associate dean of health sciences education or his/her designee, who makes the final decision. At each level of review, the course's assessment practices are reviewed and the individual student's situation taken into account.

Practica Assessment

Successful completion of required practica is assessed by acquisition of clinical skills and collection of diverse and robust rotation experiences which satisfy ACGC and ABGC requirements. Clinical skill acquisition is assessed by the end of each five-week rotation block. Rotations experiences are tracked and managed through an on-line tracking system (see <u>medschool.vanderbilt.edw/mgc</u> for additional assessment detail and procedural guidance).

Competency Assessment

In accordance with ACGC Standards and Guidelines, student will gain skills and knowledge and will complete clinical cases required to be eligible for the ABGC genetic counseling board exam. Professional competencies set forth by the ABGC can be found at abgc.net/for-diplomates/practice-standards.

Research Progress Assessment

The thesis requirement is met by satisfying the riteria set form by the Research Review Committee and the Academic Progress and Promotion Committee (AFTC), below. Completion of the following goals demonstrates progress towards this requirement unless otherwise agreed by the AFTC.

By the end of the following term, the student.

First year-—Fall

Completes successfully the course Fest arch for Genetic Counselors 1 (GC6610), including timely submission of all required assignments.

First year-—Spring

Completes successfully the course Research for Genetic Counselors 2 (GC6615), including timely submission of all required assignments. This includes completion of thesis proposal and its approval after presenting it to the student's thesis committee.

Second year—Fall

Completes predetermined goals set jointly with the student's thesis committee by the end of the summer. These goals may include Institutional Review Board Approval, plan for data analysis, submission of first figure, and completion of an outline of manuscript.

Second year-—Spring

Submits to committee for approval a manuscript formatted for the target journal and

Presents thesis to committee and other invited members of faculty.

Publication is encouraged, but not a gradation requirement.

Board Exams

Graduates of ACGC-accredited programs are eligible to apply for Active Candidate status from the ABGC and apply to sit for the certifying exam. Please visit *ABGC.net* for details regarding the certification exam.

Progress and Promotion

The M.G.C. program follows the School of Medicine policy in the Academic Policies for All School of Medicine Programs chapter in the Student Progress and Promotion section of this catalog. Additional program specific policy follows.

The M.G.C. program has a continuous process of student feedback and assessment, so that if a student's performance is below expectations this is identified early in the development of knowledge, skills, and attitudes in order to mitigate barriers to achieving mastery. The Academic Progress and Promotion Committee (APPC) is the main mechanism for this process and an ad hoc meeting can be convened if pressing issues arise.

Periodic Reviews

The academic progress of each M.G.C. student is reviewed by the M.G.C. APPC twice each academic year, once in the fall semester and once in the spring semester.

During each APPC meeting, one of the following promotion determinations is made for each student:

Satisfactory Progress

Student is determined to be maintaining satisfactory academic progress

• In spring term, decision to promote [1st year] or graduate [2nd year]

Satisfactory Progress with Concerns

Student is determined to be maintaining satisfactory academic progress, but requires formal remediation

• In spring term, establish contingencies to promote [1st year] or graduate [2nd year]

Probation with Formal Remediation

Student is determined not to be maintaining satisfactory academic progress

• In spring term, establish contingencies to remove probation and to promote [1st year] or graduate [2nd year]

Dismissal

Recommendation of student dismissal from the program is made to the dean of the School of Medicine

• Dismissal follows a period of academic probation if the student does not return to making satisfactory academic progress through prescribed remediation

Satisfactory Academic Progress and Good Standing

M.G.C. students must maintain satisfactory academic progress in all program learning activities (course work, thesis, and clinical experiences) at all times.

In order to be promoted and to graduate, stedents must maintain the following satisfactory academic progress standards:

<u>Course work:</u> 'B' or above grade average While a student may obtain a 'B-' in an individual course, maintenance of at least a 'B' grade average overall is required to maintain satisfactory academic progress.

Thesis development: Expectations of progress met

Clinical skills: Progress in ascertainment of clinical skills/competencies

In addition any unexcused absence(s) during a term are considered as part of the promotion review process and may negatively affect student academic progress and promotion or commencement.

Students are notified in writing of any APPC determination that is not satisfactory progress, and the terms of the decision is documented. The decision is also reviewed biannually in the student's meeting with the program director.

The M.G.C. program student support and advisory systems work collaboratively with students on remediation plans and to facilitate students' access to resources to assist the student in returning to satisfactory academic progress status.

Graduation

Promotion Committee Endorsement

In the spring term, the APPC is charged with making recommendations to the program director regarding progress, promotion, or graduation of students.

Allowance for Delaying Graduation

If an individual requires additional time due to unusual circumstances (e.g., remediation, personal leave of absence), a student may, with approval of the M.G.C. program director, take up to three years to complete the degree.

Program Commencement

Degrees are granted by the university in May, August, and December. Those students who wish to "walk" but did not complete all degree requirements by May of that year are permitted to walk during the School of Medicine Commencement of the following year.

Formal Remediation and Probation

The M.G.C. Academic Progress and Promotion Committee may require a student to engage in a process of formal remediation in order to return to making satisfactory academic progress.

Formal Remediation Plan

In such cases, the student works with the M.G.C. program director to develop an individualized plan and timeline for remediation. Others who may provide input into or participate in the development and implementation of a student's remediation include the M.G.C. practicum coordinator, the APPC, the student's academic adviser and research adviser.

The formal remediation process is intended to be supportive of struggling students, not puritive. Depending on the nature of the academic challenges cited by the APPC, a plan for remediation might include, but is not limited to:

- Completion (or re-completion) of past assignments,
- Completion of additional assignments,
- Clinical cases with specific indications, or
- Other clinical experiences.

Referral to Vanderbilt University resources for actional and/or personal counseling, such as the Student Care Network.

Documentation related to the APPC determination (including noted performance deficiencies), the remediation plan, and the outcome of remediation are documented in the student's file.

Probation

Students who do not successfully complete form the mediation, as required by the M.G.C. Academic Progress and Promotion Committee, may be placed on probation. Students placed on probation by the APPC are notified through a letter from the program director that outlings the reasons for the probation, the requirements and recommendations for addressing deficiencies, conditions for removal of probation, expected time frame, and actions that are taken if conditions are not met. Students placed on probation for any reason are required to complete a specific remediation plan that has been approved by the program director and the APPC. The remediation plan may include requirements placed on the student, such as "gu'ar meetings with advisers, elimination of extracurricular activities that may be interfering with satisfactory academic progress, etc.

All students on probation are reviewed by the program director and the APPC at least once each semester to determine whether satisfactory academic progress has been made. At that time the program director and the APPC may take the following actions:

Remove probation

Probation may be removed if the student has adequately addressed deficiencies, even if this is before the designated time frame cited in the remediation plan.

Continue probation

Progress is being made.

Recommend dismissal

Performance continues to be unsatisfactory. Written notification is provided to the student regarding the outcome of this review. Probation is considered an adverse action and may be reported in future graduation verifications and other requests for information.

Dismissal

Dismissal for unsatisfactory academic progress takes place only after a student has been given a reasonable probationary period to address deficiencies. For the master of genetic counseling, this reasonable period usually consists of one academic term. The M.G.C. program follows School of Medicine policy for formal remediation, probation, dismissal, and appeals. See the Academic Policies for All School of Medicine Programs chapter of this catalog for more information on these topics.

Eligibility to Reapply

Students dismissed from the program for academic reasons may re-apply through the GC National Match process.

Student Support and Advisory Services

Academic and Career Advisory Resources

The goal of the Vanderbilt M.G.C. Advising Program is to support students in achieving their maximum educational potential while fostering professional development and clinical competency.

Objectives

- To enhance open lines of communication between students and the program director, administration, and faculty.
- To provide the student an adviser with whom they can discuss a ademic questions, progress, concerns, etc.
- To enhance professional development.
- To address issues in a constructive manner.

Advisers work with students to:

- Promote student growth and development.
- Assist students in assessing their interests and abilities, examine their educational goals, decision making, and developing short- and long-term plans to meet their objectives.
- Discuss and clarify educational, career, and he goals.
- Provide accurate and timely information and interpret professional, institutional, and program education requirements.
- Aid in understanding the educational context within which the student is enrolled.
- Advise on the selection of appropriate courses and other educational experiences.
- Clarify institutional and program policies and procedures.
- Evaluate and monitor student academic program and achievement of goals.
- Reinforce student self-direction and self-sufficiency.
- Identify appropriate resources relating to educational, career, personal concerns, or skill/learning deficiencies when necessary.
- Identify educational, institutional, and community resources (e.g., internships, scholarships, etc.).
- Collect and distribute relevant data about student needs, preferences, and performance for use in program decisions and policy.

Acknowledgement: Modified from the Council for Advancement of Standards in Higher Education https://www.cas.edu/

Approach

The M.G.C. Advising Program uses a combined prescriptive and developmental approach. A prescriptive approach is utilized to ensure students enroll in all required courses. A developmental approach is utilized to help promote student growth and professional development. The following tenets are assumed:

- The individual student must be considered as a whole.
- Each student is a unique person and must be treated as such.
- The total environment of the student is educational and must be used to help the student achieve full development.
- The major responsibility for a student's personal and social development rests with the student and his/her personal resources.

Logistics

Students are matched with an academic adviser who guides and monitors their progress throughout their time in the M.G.C. program. Advisers keep documentation of meetings with students. Summary of all meetings are kept in the student's file.

Adviser Responsibilities

- To meet with student as recommended/requested and no less than prior to each APPC meeting
- To listen to student concerns
- To provide constructive feedback
- To assist in finding on- and off-campus resources for academic success (e.g., tutoring, counseling, etc.)
- To communicate student concerns or concerns regarding the student to program director or appropriate program administration
- Present student progress to Academic Progress and Promotion Committee for review

Student Responsibilities

- To meet with adviser as recommended/requested and no less than prior to each APPC meeting
- To keep adviser informed of academic performance and potential problems
- To discuss with adviser any issues with clinical rotations, supervisors, &c.
- To keep adviser informed of thesis progress

Schedule for Adviser Meetings

Advisers and students are required to meet at least once each term. Meetings are required near the end of the term so that information from the meetings can be included in pronoio. Committee discussions (promotion committee meetings take place in all terms except summer).

Recommended Schedule:

- First Year—Fall: Introductions and goal-set in meeting (arring weeks 1–2)
- First Year—Fall: Mid- to late-semester advising meeting
- First Year—Spring: Mid- to late-semester advising meeting
- End of First Year—Summer: Review of clinical and research milestones/progress
- Second Year—Fall: Mid- to late semester advising meeting
- Second Year—Spring: Early- to mid-seme ter advising meeting (at least 3 months prior to graduation, to ensure student is on track for on-time graduation)
- Second Year—Spring: Career advising, as needed

Advising meetings may happen as frequently as advisers and students feel appropriate to address student needs. Students may also meet with other nembers of the program leadership as appropriate to the need.

Health and Wellness

In addition to the Student Care Network and other useful student resources found in the Life at Vanderbilt chapter of this catalog, M.G.C. faculty members and those in the program leadership are available as resources to students to discuss challenges related to work-life balance and other stressors that can accompany launching a new career, as well as life in general. Faculty members are trained during their faculty orientation about the limits to this professional role and how to recognize when students may be in need of more specialized resources, such as those provided through VU student health or the Title IX office. Faculty members are also trained to make referrals to available resources, whether doing so directly or by providing resources to students who wish to self-refer.

The M.G.C. program director is available at all times to consult with faculty members who have concerns regarding a student's well-being. By the same token, members of the Vanderbilt University School of Medicine administration, including the assistant dean for health sciences education and the senior associate dean for health sciences education, are available to the program director to consult on questions that may arise regarding student welfare.

Conflicting Faculty Roles

The M.G.C. program Educator Role Matrix (http://vanderbi.lt/mgcrolematrix) demonstrates faculty/administration dual roles that can lead to potential conflicts of interest. Incompatible roles are avoided, if at all possible, when assigning advisers. Roles for potential conflict should be mitigated with an action plan.

Other Program Policies

Program Evaluation

Note: The term "evaluation" is used to refer to the measurement of effectiveness of the curriculum, including courses and other learning activities, as well as M.G.C. program faculty and administrators, not individual student performance.

The purpose of evaluation at Vanderbilt University School of Medicine M.G.C. program is to provide timely information that can be used to determine the effectiveness of the M.G.C. curriculum and teaching. The evaluation ultimately measures whether the program is accomplishing its mission. The evaluation process supports continuous improvement of all program components.

Curriculum and teaching improvement is a community effort. All M.G.C students, faculty and staff have a role in identifying needs and implementing strategies for improvement. For the reason, ever, M.C.C. student is required to complete each M.G.C. curriculum, program and faculty/administrator evaluation survey.

The M.G.C. leadership and committee chairs, with guidance from the M.G.C. Advisory Board, broadly oversee the system of program and faculty evaluation. However, it is important to the program that students are included in the review, synthesis and discussion of evaluation data, as well as the development of program changes that result from that data. Therefore, a recent graduate (once the program graduates a class) and at least one currently enrolled student are part of the evaluation team. Student representatives discuss program outcomes with their student colleagues, provide reports and interpretations, and make recommindations for improvement.

Types of Evaluations

Program evaluation examines the impact of overall curriculum and the interaction of its components and the learning environment on student learning. (Additional detail and procedural information can be found on the Program website/gateway at) At VUSM program evaluation activities include but are not limited to:

- Course evaluations. These regulations are completed by all students for each course. Course evaluations cover important course quality indicators, including level of difficulty, course structure/organization, instructor effectiveness, text quality and give the student an opportunity to provide an overall course rating.
- Rotation evaluations. These evaluations are completed by all students for each rotation. Rotation evaluations allow students to provide meaningful feedback pertaining to the quality of supervision and mentorship they received at the rotation site. This feedback allows M.G.C. program administrators the opportunity to assess the quality of training sites and to develop targeted training for site supervisors and mentors.
- Overall program evaluations (surveys). These surveys and focus groups are used to gather data regarding evaluation of the overall program. Students, faculty, leadership, alumni and employers are asked to complete these evaluation tools.
- Faculty and administrator evaluations. These evaluations are conducted by all key program personnel, including the program leadership and primary instructional faculty/course directors. Feedback from faculty is elicited on how Program Leadership can better support instructional faculty. Leadership receives feedback on their delineated job responsibilities from students and faculty. Students provide feedback via exit survey and alumni survey. Program faculty, course directors, and clinical supervisors have the opportunity to provide feedback about Program Leadership annually on an anonymous survey.
- Focus groups. The Center for Teaching conducts focus groups of the students and faculty as needed by the program to evaluate if program is meeting the mission, goals and strategic plan. This approach is used as part of the end of year program evaluation. In the first few years of the program the focus groups are conducted at the end of

the first semester for more rapid cycle review and implementation of improvements. More informally the program director meets with the students monthly to hear any concern or suggestions.

- Data from student assessments. Student performance in courses is used to assess curriculum and the program annually. In addition the American Board of Genetic Counselors reports aggregate data to the program regarding alumni's performance on the certifying exam. The overall scores and the breakdown of performance of alumni in the different domains and competencies are reviewed by the Curriculum Committee. These data factor into the program and curriculum evaluation process.
- Evaluation data and the Program Improvement Process. Data from the above describe evaluations are compiled annually by the program coordinator under the direction of the program director.

Data are distributed for review. Responsible individuals and/or committees summarize data. Areas of improvement are addressed with action plans and measurable goals to assess progress toward improvement.

Leave of Absence

A student may request a leave of absence (LOA) from school for any reason (personal, medical, etc.). All LOAs must be approved by the M.G.C. program director. A student wishing to request an LOA should make an appointment to speak with the M.G.C. program director about the request (unless an emergency LOA). Following that meeting the student is required to submit a written request to the M.G.C. program director, outlining the nature of the requested leave and providing the starting and ending dates. Students may consult with anderbilt University Student Access Services (vanderbilt.edu/student-access/) when contemplating a leave of absence, and program administrators may consult with student access services when evaluating a request to leave of absence.

The program director may grant the student a leave of absence for up to one year as long as the student is in good academic standing. Prior to leave, a plan for re-entry into the carriculum and meeting requirements for graduation should be outlined with the program director, with the assistance of the student's adviser, as needed.

Students who are not in good academic standing may request a leave of absence using the request procedure described above, but approval of the leave may be granted only by the M.G.C. Academic Progress and Promotion Committee. The request is presented to the APPC by the M.G.C. program director.

Attendance and Leave

Attendance is required at all M.G.C. program activities unless prior approval for absence is provided by a course instructor or clinical supervisor (for single session absences) or the M.G.C. program director (for multiple-session or multiple-day absences).

Classroom Attendance Policy

Students are required to attend all class sessions, unless otherwise directed. A course instructor may choose to make an exception for a student with extended and circumstances. The student must contact the instructor to request an exception before the anticipated absence. The following guidelines may be used by M.G.C. faculty to guide decisions about approving absences from classroom sessions:

- 4 credit hour courses: 1-2 absences may be permitted (only with prior instructor notification and approval)
- 3 credit hour courses: 1-2 absences may be permitted (only with prior instructor notification and approval)
- 2 credit hour courses: 1 absence may be permitted (only with prior instructor notification and approval)
- 1 credit hour courses: For courses that meet 4-6 times during a semester, attendance is required in every class (unless specific arrangements have been made in advance of enrolling in the course).

Clinical Rotation Attendance Policy

Each student is expected to attend clinical learning opportunities, in each rotation, on designated days as scheduled. Clinics generally operate Monday through Friday with specific dates/times designated. Due to clinic start times, this may mean arriving to clinic prior to 8:00 a.m. and occasionally not leaving until after 5:00 p.m., to ensure that all clinic preparation and assignments have been completed. Students are expected to maintain regular contact with rotation supervisors to be aware of any changes to the clinical schedule.

Procedures for Requesting Absences

Planned Absences

Students who anticipate being absent for more than one class or clinical session are required to email a request to the M.G.C. program director in advance outlining the need for the absence. In these circumstances, students are responsible for notifying their instructors (classroom and clinical) in advance about their planned absence, and they are responsible for making arrangements to make up any work missed during the absence. Please see student gateway (medschool.vanderbilt.edu/mgc) for more information.

Emergency Absences

In the case of an emergency absence (i.e., illness, emergency, death in family), the student is required to contact the M.G.C. program director as soon as the student becomes aware of the need to be absent. The program director contacts the student's course instructors and/or clinical supervisors. If the absence extends beyond one day, the student must keep the program director updated regarding the anticipated duration of time away. Any absence due to illness greater than three days requires a doctor's note, to be provided to the Program Director.

Students should not attend any program activities, including lectures/student laboratory and clinical practica if they experience any of the following:

- Vomiting
- Diarrhea
- Fever greater than 101 degrees F
- Diagnosis of a communicable illness

Upon returning from an emergency absence, students are responsible for completing all work and/or assignments missed during the absence, as required the instructor/supervisor. This may require the student to arrive early or stay late in order to make up missed work.

Unexcused Absences

All absences from mandatory sessions that are not excused (using processe) above for planned and emergency absences) are considered unexcused absences. Unexcused absences are unacceptable and may have a negative effect on the student's overall academic progress through the program. All sessions/educational activities are mandatory unless otherwise indicated in the course syllabus/clinical expectations in a grials. Please contact the course or program director with any questions.

Make-Up Policy

Each M.G.C. program course director is responsible for establishing policies concerning make-up policies. Any such policies, including points for attendance and/or participation, penalties for absences, limits on excused absences, total allowable absences, etc., are specified in the course syllabus provided to students at the beginning of the course term.

Weather Policy

It is very rare for VUSM educational activities to be cancelled for weather-related reasons. However, there are days in which the weather is severe and dangerous for travel. If VU classes are cancelled by the chancellor, M.G.C. students and faculty receive an email from the M.G.C. program director with instructions.

Safety is our primary concern. Winter weather may make road conditions unsafe, even if classes are not cancelled by the university. In this situation, students are urged to use their best judgment about commuting in inclement weather. If a student is unable to get to campus due to weather conditions, he or she should notify the course instructor/clinical supervisor prior to class or clinical session, and make arrangements with the instructor to make up any missed work.

Faculty members may cancel class sessions if they feel that it is appropriate. The M.G.C. program assists faculty in scheduling make-up classes for all canceled class sessions.

Student Work Policy

Vanderbilt University Master of Genetic Counseling program students are not offered paid employment opportunities as a function of their student enrollment. However, enrolled students have access to resources available through Vanderbilt University Student Employment. More information is available at vanderbilt.edu/studentemployment/. It is recommended that students not work more than ten hours a week during academic terms.

Transportation

During their participation in the M.G.C program, students may be required to travel off campus for educational experiences. Generally speaking, local travel to off-campus sites is limited to one-way trips of not more than 35 miles.

M.G.C. students may be placed in locations outside of the local area in rotational experiences for an extended (several weeks) period of time. In which case, students are responsible for all travel expenses during this time.

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Master of Laboratory Investigation

The mission of the Master of Laboratory Investigation program is to enhance the academic, scientific, and technical expertise of research personnel who continue to work in a research environment; to foster their professional growth; and to improve the career potential of the brightest and most qualified researchers who do not wish to pursue a Ph.D. Effective August 31, 2020, the Master of Laboratory Investigation program will be closed.

Degree Requirements

- Candidates for the M.L.I. degree program are required to complete thirty-six semester credit hours. Because it
 is a program for working professionals, no more than twelve hours may be taken in an academic year, unless
 prior approval is granted by the program director. Entering students are required to complete the Responsible
 Conduct of Research course. Students may earn a maximum of 6 semester credit hours for Interdisciplinary
 Graduate Program bioregulation modules. Each student selects a program track during his or her course of
 study.
- 1) Research Track: Students who choose this track develop a research project under the direction of a mentor and they must register for twelve semester hours of research. Note: Only research conducted outside of one's job requirements is considered for research credit. In lieu of a formal thesis, a graduate student may prepare a manuscript that is suitable for publication. Although it is highly desirable that the manuscript be published, publication of the manuscript is not a graduation requirement.
- 2) Modified Research Track: Students who pursue this track are expected to pescent their research to a formal audience, which may include a conference gathering or poster presentation at Vanderbilt University. This track requires six to ten semester hours of research and two to four hours of technique training modules. Note: Only research conducted outside of one's job requirements is considered for research credit.
- The normal time for completion of graduation requirements for the M.L.I. is three years. The maximum time for completion of degree requirements is five years.
- Students are required to assemble a committee of faculty n en bers to direct their research and selection of course work and technique modules throughout the degree program. A committee includes a minimum of three faculty members, one of whom is the student's memor. Committee approval of satisfactory progress is required each semester.

Master of Public Health

Program Overview

The Master of Public Health (M.P.H.) is an interdisciplinary program designed to train research scientists and public health professionals to be innovative and effective leaders dedicated to improving public health. The program is accredited by the Council on Education for Public Health.

The M.P.H. program allows students from all academic and professional backgrounds, as well as clinical specialties, to customize their public health education and integrate their specific research and career interests with the support of committed faculty mentors.

As part of their application, students choose one area of concentration for their studies from among the program's three tracks: epidemiology, global health and health policy.

Additional information about the M.P.H. program can be found at *medschool.vanderbilt.edu/mph*.

Program Mission/Goals/Objectives

Mission

The mission of the M.P.H. program is to train future research scientists and public health professionals to be innovative and effective leaders dedicated to improving public health

Goals and Objectives

To fulfill its mission, the M.P.H. program has the following goals and objective

- 1. Educate innovative and effective public health researchers, educators, and practitioners
 - Recruit culturally diverse students who will make support antial contributions to public health
 - Engage students with interdisciplinary faculty who demonstrate commitment to educating and mentoring future public health leaders
 - Facilitate active learning through classroon and experiential training opportunities
- 2. Advance knowledge in the public health sciences through research and discovery
 - Contribute to the public health scientific evidence base
 - Engage in collaborative and interdisciplinary research
 - Compete successfully for funding in the public health sciences
- 3. Participate in development and implementation of public health programs and policies
 - Build and foster community partnerships that bridge public health science and practice
 - Engage in collaborations, including research, training, and service activities with governmental agencies and community partners in the U.S. and abroad
 - Disseminate public health Incolledge and promote implementation of effective public health policies and practices

Program Accreditation

The Master of Public Health program is accredited by the Council on Education for Public Health (<u>ceph.org</u>), 1010 Wayne Avenue, Suite 220, Silver Spring, MD 20910.

Standing Program Committees

Admission and Promotion Committee

The Admission and Promotion Committee monitors student progress toward completing the M.P.H. degree requirements and makes recommendations to the program regarding promotion, remedial action, or dismissal as appropriate for each student. This committee also has the responsibility of making recommendations concerning admission and scholarships for applicants to the M.P.H. program. The committee oversees and continually reviews the admission process. It typically meets four to six times per academic year.

Admission and Promotion Committee members for academic year 2020/21: Kecia Carroll, Marie Griffin, Bill Heerman, Marie Martin, Elizabeth Rose, Christianne Roumie, Annie Smart, David Stevenson.

Advisory Committee

The Advisory Committee provides oversight of the evaluation and planning efforts for the program, including review of attainment of stated goals and objectives. The committee facilitates the long-range planning efforts of the program and provides other guidance to the program as requested. It explores ways to strengthen ties to key constituencies, including public health practitioners, public health researchers, students, alumni, and faculty. The Advisory Committee meets once per year and more often as needed.

Advisory Committee members for academic year 2020/21: Donald Brady, Melinda Buntin, Michael Caldwell, Kecia Carroll, Charlotte Cherry, Bill Cooper, Allen Craig, John Dunn, Jennifer Erves, Gilbert Gonzales, Bill Heerman, Doug Heimburger, Tim Jones, Sarah Mansouri, Marie Martin, Melissa McPheeters, Juanita Prieto Garcia, Elizabeth Rose, Christianne Roumie, Bill Schaffner, David Stevenson, Ed Vasilevskis.

Curriculum Committee

The Curriculum Committee is charged with providing oversight of M.P.H. program curriculum and related instruction consistent with the program's mission, goals, objectives, and values and appropriate for demonstrated professional competencies as identified by the program. The committee monitors and, as needed, makes recommendations regarding courses offered within the program for relevance of learning objectives, appropriateness of procedures for assessing student competencies, and quality of faculty and student performance within courses. The committee meets three times per academic year.

Curriculum Committee members for academic year 2020/21: Bentley Akoko, Ractiel Apple, Beto Arriola Vigo, Jim Barclay, Evan Butler, Jimmy Carlucci, Kate Close, Keerti Dartuluri, Gretch n Edwards, Djamila Ghafuri, John Graves, Hannah Griffith, Bill Heerman, Arlyn Horn, Wali Johnson, Laura Keohane, Jennifer Lewis, Tamee Livermont, Alexandria Luu, Ali Manouchehri, Maric Marin, Andre Medvecz, Kelsey Minix, Kelly Moore, Sylvie Muhimpundu, India Pungarcher, Sarah Rachal, J. W. Randolph, Alyssa Rentuza, Jennifer Robles, Christianne Roumie, Emmanuel Sackey, Isaac Schlotterbeck, Milner Staub, David Stevenson, Teris Taylor, Caitlin Washburn.

Diversity Committee

The Diversity Committee provides over ight for M.P.H. program inclusion and diversity efforts. The program considers diversity to represent a broad range of individual characteristics consistent with Vanderbilt University policies, including diversity in ruce, sex, religion, color, national or ethnic origin, age, disability, military service, sexual orientation, gender identity, and gender expression.

The committee monitors and, as needed in axes recommendations regarding the inclusion and diversity of students, faculty, and staff to increase ways in which the public health workforce reflects the populations that we serve. The committee also provides recommendations for strategies to provide diverse perspectives in the program's curricular offerings and to provide students with insight into particular issues that underrepresented and/or disadvantaged groups face.

Diversity Committee members for academic year 2020/21: Muktar Aliyu, Adriana Bialostosky, Kecia Carroll, Andre Churchwell, Maria Carlo Duggan, Carleigh Frazier, Kimberly Glenn, Gilbert Gonzales, Tamee Livermont, Rebecca Mohr, Muna Muday, Mina Nordness, Juanita Prieto Garcia, Emmanuel Sackey, Victoria Umutoni, Vicky Waithe, Jasmine Walker, Ni Ketut Wilmayani.

Program's Major Facilities

The M.P.H. program office and classroom are located on the second level of the Village at Vanderbilt building, 1500 21st Avenue South. The office is in Suite 2100, and the classroom is in room 2600.

Admission

Admission Requirements

Eligible candidates include those with bachelor's, master's, or doctoral degrees. At least two years of relevant, post-undergraduate professional experience is strongly preferred, but is not required.

Application Process

Applications are submitted through SOPHAS (*sophas.org*), the centralized application for programs of public health. The SOPHAS application requirements for the M.P.H. program at Vanderbilt University are listed below:

- Current curriculum vitae or resume
- Three letters of recommendation
- Statement of purpose and objectives
- Official transcripts for all prior academic degrees and post-secondary course work
- Official standardized test score reports:
 - OGRE or MCAT scores are required for all applicants; this requirement is waived for applicants who have graduated from or are currently enrolled in a doctoral degree program (or equivalent). Examples of doctoral degrees and equivalents include: Ph.D., M.D., D.O., Pharm.D., D.V.M., M.B.Ch.P., M.B.B.S., etc. . The GRE or MCAT requirement may be waived under certain circumstances with relevant professional experience and approval from the Admissions Committee.
 - TOEFL scores are required for international applicants; this requirement is valved for applicants who have received an academic degree from an institution where English was the anguage of instruction.

Interviews are not required as part of the application process. To view application deadlines and additional information about the admission process, please visit <u>medschool vanderbilt edumph/admissions</u>.

Selection Criteria, Offer, and Acceptance

The Admissions Committee evaluates the application materials and decides which applicants are invited to join the entering class. The program seeks applicants with strong academic backgrounds and clear public health goals. Applicants should be able to articulate how the Vanderbill M.P.H. relates to their career aspirations.

Admission notifications and offers of program scholarship funding are sent to applicants by email in the spring. Admitted applicants are asked to confirm their intention to matriculate no later than April 15.

A criminal background check is required and most be completed over the summer, before matriculation. Additional information about the background check and other new student requirements is sent by email during the summer.

Transfer Credits

Up to 15 academic credit hours of pror graduate-level course work from other schools at Vanderbilt or other accredited universities may be applied to the required 42 credit hours needed for the degree, conditional upon the approval of the Admission Committee and the relevant course directors. Only those courses for which a student has received a grade of B or its equivalent will be considered for incoming credit transfer.

Students in the M.P.H. program may audit courses offered by other departments and programs with the approval of the course instructor. Students may take graduate- and professional-level courses relevant to their M.P.H. degree offered by other departments and programs for credit toward their degree with the approval of their M.P.H. track director.

Non-degree-seeking Students

Non-degree-seeking students may take courses in the M.P.H. program as long as they meet the program's admission requirements (i.e., completion of bachelor's, master's, or doctoral degree). Registration in a course is contingent upon completion of any course prerequisites, instructor approval, M.P.H. program approval, and space in the class. Tuition is charged according to the number of credit hours taken. A one-time transcript fee (\$100) may apply for first-time Vanderbilt University students. Auditing is not permitted in M.P.H. program courses.

Degree Requirements

Requirements to Earn Degree

Candidates for the M.P.H. degree must complete 42 academic credit hours of course work over five academic terms. The 42 credit hours include core and track-specific courses, as well as courses associated with the public health practicum and culminating experience. Satisfactory completion of the public health practicum, an interprofessional education activity, and the culminating experience is required for all students.

Length and Delivery of Program

The M.P.H. program is a full-time, two-year (five terms) degree program. The typical time to complete the M.P.H. is two academic years. The maximum time allowed to complete the degree is four years, unless there are unusual circumstances which merit an extension of this limit.

M.P.H. Program Competencies and Curriculum

The M.P.H. program faculty members teach and assess 22 foundational competencies and 5 track specific competencies required for accreditation by the Council on Education for Public Health. Students demonstrate competencies through course work and other degree requirements.

Foundational Competencies

Evidence-based Approaches to Public Health

- 1. Apply epidemiological methods to the breadth of settings and situations in public health practice.
- 2. Select quantitative and qualitative data collection methods propriate for a given public health context.
- 3. Analyze quantitative and qualitative data using biostatistics, informatics, computer-based programming and software, as appropriate.
- 4. Interpret results of data analysis for public heal hasearch, olicy, or practice.

Public Health and Health Care Systems

- 5. Compare the organization, structure, including the least care, public health, and regulatory systems across national and international settings.
- 6. Discuss the means by which structural bias, social inequities, and racism undermine health and create challenges to achieving health equity at organizational, community, and societal levels.

Planning and Management to Promote Health

- 7. Assess population needs, assets, and capacities that affect communities' health.
- 8. Apply awareness of cultural values and practices to the design or implementation of public health policies or programs.
- 9. Design a population-based policy, program, project, or intervention.
- 10. Explain basic principles and tools of budget and resource management.
- 11. Select methods to evaluate public health programs.

Policy in Public Health

- 12. Discuss multiple dimensions of the policy-making process, including the roles of ethics and evidence.
- 13. Propose strategies to identify stakeholders and build coalitions and partnerships for influencing public health outcomes.
- 14. Advocate for political, social, or economic policies and programs that will improve health in diverse populations.
- 15. Evaluate policies for their impact on public health and health equity.

Leadership

- 16. Apply principles of leadership, governance, and management, which include creating a vision, empowering others, fostering collaboration, and guiding decision making.
- 17. Apply negotiation and mediation skills to address organizational or community challenges.

Communication

- 18. Select communication strategies for different audiences and sectors.
- 19. Communicate audience-appropriate public health content, both in writing and through oral presentation.
- 20. Describe the importance of cultural competence in communicating public health content.

Interprofessional Practice

21. Perform effectively on interprofessional teams.

Systems Thinking

22. Apply systems thinking tools to a public health issue.

Track-specific Competencies

Epidemiology Track

- 1. Understand the strengths and weaknesses of the major study designs for population-last diresearch and the circumstances in which each would be the preferred approach for addressing an involutant gap in health-related knowledge.
- 2. Recognize sources of bias, including selection and information bias, and bias due to confounding, and know that bias can distort measures of association between a factor (i.e. exposure) and a health-related state or event (i.e. outcome).
- 3. Demonstrate proper application of principles for building of multival able regression models, and how to make inferences from these models.
- 4. Perform regression diagnostics, including residual analyses to assess how well models fit the data, inspect the presence of outliers, and assess the fulfillment of model assumptions.
- 5. Understand the ethical foundation for research regulations and their principles as applied to human subjects research, including autonomy, beneficence, and justice.

Global Health Track

- 1. Identify historical and emerging issues of significance in global health from an interdisciplinary vantage point.
- 2. Demonstrate knowledge of research methodologies and programmatic interventions used to ameliorate health and developmental problems, particularly in low-resource settings.
- 3. Describe fundamentals of organization in behavior and change, particularly in low-resource settings.
- 4. Recognize the role of policy development and advocacy in global health.
- 5. Demonstrate cultural compete ice and promote diversity in global health research, policy and practice.

Health Policy Track

- 1. Identify the main features and challenges related to the financing, incentives, and delivery of health care services and public health systems in the United States.
- 2. Describe the complementary roles of individualized health care services and population-based interventions in maintaining and improving health status.
- 3. Evaluate policies and apply theories of health insurance and the incentives that various approaches to coverage and provider payment create in the health system.
- 4. Analyze the impact of changes in public health policy and health care financing and service delivery on health care cost growth, quality of care, and access to services.
- 5. Conceptualize the data and research methods necessary to address questions of significance to policymakers and other relevant system actors.

Public Health Practicum

All students in the M.P.H. program complete a public health practicum. The public health practicum is a supervised practical field experience designed to provide students the opportunity to develop and apply the knowledge and skills

acquired in the academic program in a public health agency or other environment in which a public health function is performed. Students work with the practicum director on an individual basis to identify, arrange, and complete a satisfactory field experience that fulfills the program's practicum requirements. Additional information about the Public Health Practicum can be found at *medschool.vanderbilt.edu/mph/academics/practicum*.

Interprofessional Education

Interprofessional Education (IPE) is an integral part of public health and a required component of the M.P.H. program. The IPE requirement is composed of a didactic foundation, which is delivered as part of PUBH 5516 Public Health Practice, as well as a practical experience. For the practical experience, students participate in an interprofessional activity. Students may select an IPE activity from a list of pre-approved options, or they may propose their own.

Culminating Experience

The culminating experience is a graduation requirement for all students in the M.P.H. program. The culminating experience allows each student to demonstrate synthesis of the M.P.H. foundational and concentration competencies and produce a high-quality written product that is developed and delivered in a manner that is useful to external stakeholders. The culminating experience is completed at the end of the course of study, with final deliverables due in the student's final term (typically the spring of the second year). Students have two options for their culminating experience.

Option 1: Thesis All students who choose the thesis option take protocol development and thesis courses. Students engage in mentored research or other original scholarly work. The final p oduct may take the form of a manuscript to submit for publication, a grant application, program evaluation report, training manual, strategic plan, policy paper, or other format appropriate to the student's educational and professional goals and approved by the thesis adviser. Research is typically based on secondary data analysis. Additional information about the thesis can be found at *medschool.vanderbilt.edu/mph/academics/thesis*.

Option 2: Capstone All students who choose the capstore option take the Capstone Portfolio Development course. This course is designed to guide students through the preparation of their capstone products. Students also take a series of specific graduate- or professional level courses in a designated focus area that aligns with the student's educational and professional goals. The capstone provides students an opportunity to further hone their practical public health skills in an area of interest. Students develop an ePortfolio which includes a paper that describes their capstone deliverable which is either 1) a resource tool kit, or 2) a specific tool for an external organization. Examples of public health tools include a needs assessment, monitoring and evaluation plan, program evaluation report, strategic plan, training manual, policy statement, grant, etc. Additional information about the Capstone can be found at <u>medschool.yand rbilt.edu/mph/capstone</u>

Course List

A full list of program courses is provided in this catalog under "Courses of Study."

Tuition, Fees, and Financial Aid

2020/2021

The following university costs are included with tuition:

- · student health service
- criminal background check

Academic Year 2020/2021 Tuition

Tuition, 1st year	\$38,832
Tuition, 2nd year	19,416
Hourly rate	1,615

Estimated Cost of Attendance.

The total estimated cost of attendance is an amount established by the School of Medicine's Office of Student Financial Aid as reasonable costs for attending the program. The estimated cost of attendance is used in calculations to determine the amount of financial aid for which a student may be eligible. It includes direct costs such as tuition, the student services fee, and the transcript fee, as well as indirect costs. The indirect costs are grouped into the following categories: books/supplies, rent/utilities, meals, personal (including the student health insurance fee), transportation, and loan fees. It is expected that most students can live within these costs. The actual cost of attendance for each student will vary depending on the individual's specific needs and preferences.

The total estimated cost of attendance for a first-year student is \$75,086; for a second-year student, the cost of attendance is \$46.448.

(See <u>medschool.vanderbilt.edu/financial-aid/master-of-public-health-cost-of-attendance.</u>)

Payment of Tuition and Fees

Students registered for a full-time course load (eight hours or more for fall and spring and six hours or more for summer) are billed at the block tuition rate for the term in which they are enrolled. Students registered for less than a full-time course load (seven hours or fewer in the fall and spring or five hours or fewer in the summer) are billed at the hourly tuition rate for the term in which they are enrolled. Certain courses are designated to trigger full-time enrollment (and block tuition billing) even though the number of credits carried by the course is fewer than eight.

Please refer to the School of Medicine Tuition, Fees and Financial And chapter of this catalog for more information about university costs and School of Medicine fees. Additional information can be found at <u>vanderbilt.edu/stuaccts</u>.

Student Assessment

Student performance is assessed in every course and or gram requirement. Efforts are made by program faculty to bring any significant performance concern during a required course to the attention of the student early enough to allow sufficient time to develop a remediation plan. A student for whom major concern persists despite coaching may be given a failing grade (F) for the course and/or may not be promoted despite satisfactory performance in other courses. Course requirements and grading information are detailed in the course syllabus.

Grades

The M.P.H. program uses the VUSM grading scale, presented in the chapter of this catalog titled Academic Policies for All School of Medicine Programs.

Grade Grievance Procedure

Students should seek redress of a problem with a grade as soon as possible after receiving the grade and in no case later than four weeks after the grade is released. Students with a problem should confer directly with the course director. Every effort should be made to resolve the problem fairly and promptly at this level. If the student cannot resolve the problem through discussion with the course director, the student should request an appeal by writing (email is acceptable) to the program director within two weeks of speaking with the course director. (The course director also should be included on the request for appeal.) In cases where the course director is also the degree program director, the appeal should be made to the assistant dean of health sciences education or his/her designee. If resolution is not achieved by the program director/assistant dean of health sciences education, the case is referred to the senior associate dean of health sciences education or his/her designee, who makes the final decision. At each level of review, the course's assessment practices are reviewed and the individual student's situation taken into account.

Progress and Promotion

Periodic Reviews

Each student meets with their academic adviser twice per year. Academic advising meetings provide the opportunity to discuss course selection, progress toward meeting the degree requirements, and any academic challenges and how they may be addressed. Additional meetings may take place as needed at the student or adviser's request.

Satisfactory Academic Progress and Good Standing

A cumulative grade point average of at least 3.0 is required for graduation. A semester average of at least 3.0 is required to remain in good academic standing. A student whose cumulative grade point average falls below 3.0 may be placed on probation for one semester. If at the end of the semester the grade point average is still below 3.0, the student may be dismissed from the program based on unsatisfactory academic performance. Students may withdraw in lieu of dismissal.

Repeating a Course

Students who receive a final course grade of C+ or lower may be required to retake the course or complete additional course requirements before progressing in the program.

Graduation

Promotion Committee Endorsement

In the spring term, the Admission and Promotion Committee is that ged with making recommendations to the program director regarding progress, promotion, or graduation of students.

Allowance for Delaying Graduation

Students who need more than two years to complete the M.P.H. or requirements may propose a revised degree completion plan. This plan should include a term by-term list of completed, in progress, and anticipated degree requirements, along with a reasonable timeline for completing the degree requirements. The revised degree completion plan must be approved by the track director and program director, in writing. For incomplete courses, the relevant course director's written approval is also required.

Program Commencement

The university holds its annual Commence near ceremony following the spring semester. Degree candidates must have completed successfully all curriculum requirements by the published deadlines to be allowed to participate in the ceremony. A student completing degree requirements in a summer or fall semester may participate in Commencement the following May, and ordinarily the degree will be conferred at the end of the term in which requirements are completed. Any student unablated participate in a Commencement ceremony will receive his or her diploma by mail.

Formal Remediation and Probation

Probation

A student may be placed on academic probation if the student's cumulative grade point average falls below 3.0, or their course grades include any failures. If at the end of the semester of academic probation the grade point average is still below 3.0, the student may be dismissed from the program based on unsatisfactory academic performance.

Students placed on probation are notified through a letter from the program director that outlines the reasons for the probation; the requirements and recommendations for addressing deficiencies; the conditions for removal of probation, including an expected time frame; and actions that will be taken if conditions are not met.

Students placed on probation for any reason will be required to complete a specific remediation plan that has been approved by the track director and program director. The remediation plan may include requirements of the student, such as regular meetings with advisers, elimination of extracurricular activities that may be interfering with satisfactory academic progress, etc.

All students on probation will be reviewed by the degree program's director at least once each semester to determine whether satisfactory academic progress has been made. At that time the program's director may take the following actions:

- 1. Remove probation: Probation may be removed if the student has satisfactorily addressed deficiencies, even if this is before the time frame originally designated by the program director.
- 2. Continue probation: Progress is being made.
- 3. Recommend dismissal: Performance continues to be unsatisfactory. Written notification is provided to the student regarding the outcome of this review. Probation is considered an adverse action and may be reported in future graduation verifications and other requests for information.

Dismissal

Typically, students will be recommended for dismissal only after they have been given a reasonable probationary period to address deficiencies. The M.P.H. program follows School of Medicine policy for formal remediation, probation, dismissal, and appeals. See the Academic Policies for All School of Medicine Programs chapter of this catalog for more information on these topics.

Eligibility to Reapply

If a student withdraws from the M.P.H. program, reentry is possible only through the application process.

Student Support and Advisory Services

Academic Advisory Resources

Academic Adviser

Each student meets with their academic adviser twice per year. Academic advising meetings provide the opportunity to discuss course selection, progress toward meeting the degree requirements, and any academic challenges and how they may be addressed. Additional meetings may take place is needed at the student or adviser's request.

Mentoring Committee

Each student has a mentoring committee of three to four faculty members during their time in the M.P.H. program. The student is responsible for scheduling a full meeting of their mentoring committee at least once per term. The meetings are an opportunity for the student to garmer insight from an interdisciplinary team of experienced professionals on long-term directions for the student's training and career.

While the process of identifying members of the mentoring committee may vary from one track to another, students are expected to submit a confirmed list of their mentoring committee members by December of the first year. Changes to mentoring committees may be approved by the track director, if needed.

Practicum Advising

Starting in the fall of their first year, students meet periodically with the practicum director on an individual basis to discuss the types of skills and experiences they would like to develop during the public health practicum, and potential sites and activities that align with their goals.

Thesis and Capstone Advisers

The thesis and capstone advisers serve as the course directors for the course or series of courses associated with the thesis or capstone, respectively. In this role, the adviser guides students through the planning, development, and writing of the final thesis or capstone product. Each student also has a primary thesis or capstone mentor who is directly connected to the student's thesis or capstone and who can provide more content-specific support.

Career Advisory Support

Career Advising

Students may meet with their track director and/or the practicum director for individual career advising meetings to discuss topics such as creating a targeted job search plan, resumes, CVs, and cover letters, LinkedIn and online networking, preparing for interviews, applying to advanced degree programs, fellowships, and letters of recommendation. These meetings are scheduled as needed, at the student's request.

In addition to individual career advising meetings, career development offerings for students in the M.P.H. program include:

- M.P.H. Career Development Series
- Translational Bridge Seminar Series
- Newman Society Seminar Series

Additional information about M.P.H. program career development offerings can be found at <u>medschool.vanderbilt.edu/mph/current-students/career-development</u>.

Health and Wellness

See Vanderbilt University Student Resources in the Life at Vanderbilt chapter of this catalog.

Conflicting Faculty Roles

In addition to the information about faculty and educator roles in the Education at the Vanderbilt University School of Medicine chapter of this catalog, M.P.H. track directors are responsible for avoiding conflicts of interest when assisting students in identifying faculty members for their mentoring committee.

Other Program Policies

Program Evaluation

The purpose of evaluation in the M.P.H. program is to provine timely information that can be used to determine the effectiveness of program's curriculum and teaching ance difficulty, to determine whether the program is accomplishing its goals. The evaluation process supports continuous improvement of all program components. All students, faculty members, and staff ruembers have a role in identifying needs and implementing strategies for improvement.

In the M.P.H. program, evaluation activities include, but are not limited to:

- Course evaluations
- Practicum and thesis evaluations
- Interprofessional education (PE) evaluations
- Student assessment data
- Exit surveys and exit interviews
- Admissions and graduate outcomes data

Course evaluations, practicum evaluations, IPE evaluations, and thesis evaluations include sections for the evaluation of faculty course instructors, teaching assistants, practicum site supervisors, IPE preceptors, thesis advisors, mentors, and relevant administrators. Specific feedback from these evaluations is reviewed by the program director, the Curriculum Committee, and the relevant faculty member or individual with the goal of improvement.

In addition, feedback from faculty course instructors, practicum site supervisors, IPE preceptors, thesis advisors, mentors, and relevant administrators is elicited on how the program leadership can better support them.

Data from evaluation activities are compiled on a semester or annual basis and distributed to the program leadership and Curriculum Committee for review. Responsible individuals and/or committees summarize data. Areas of improvement are addressed with action plans and measurable goals to assess progress toward improvement. Updates on progress toward improvement are discussed at subsequent meetings.

Student Engagement

Students have formal and informal opportunities to participate in program-level policy- and decision making.

Students are selected to serve on the program's Advisory, Curriculum, and Diversity Committees during their

M.P.H. training. Committee members are expected to attend and participate in committee meetings. Students interested in serving as committee members should contact their track director and request to be considered.

Each class has a student class representative who serves as a liaison between the students and the M.P.H. program leadership. The class representative is also responsible for coordinating events and activities and sharing information with their classmates. Information about the position and election procedures can be found in the M.P.H. Student Handbook located at <u>medschool.vanderbilt.edw/mph</u>.

With respect to policy and decision making in the School of Medicine, non-M.D. degree programs with enrollment of ten or more may have one student representative on the Honor Council. Rising second-year M.P.H. students nominate and vote to select an Honor Council representative to serve for one year. More information, including the Honor Council bylaws, can be found in the Education at the School of Medicine chapter above.

Leave of Absence

Students who wish to interrupt their study must request a leave of absence in writing from the program director. Students may consult with Vanderbilt University Student Access Services (<u>vanderbilt.edu/student-access/</u>) when contemplating a leave of absence, and program administrators may consult with student access services when evaluating a request for leave of absence. The program director will provide a decision regarding the request. A one-time leave of absence may be granted for a maximum of one year for students seeking a master's degree.

Students taking a leave of absence are responsible for meeting with the program director prior to the leave in order to plan for their course work and timeline for successful degree completion following their return. Students who do not register for classes before the ending date of a leave of absence may be discrepiled and required to request reinstatement to the program. The maximum time allowed to complete the degree is four years, unless there are unusual circumstances which merit an extension of this limit.

Attendance

Students are required to attend all class sessions, unless his requirement is specifically waived by the course director. The course instructor may choose to make an exception for a student with extenuating circumstances. The student should contact the instructor to request an exception before the anticipated absence.

Student Work Policy

It is recommended that students work no more than therety hours per week during academic terms. Students should contact their track director to discuss increasing their work hours.

Transportation

During their time in the M.P.H. program, students may participate in experiential learning activities at sites located a distance from the Vanderbilt University campus. Students are responsible for their own transportation to and from sites for educational experiences, including all costs associated with that travel. The maximum distance from the Vanderbilt University campus that students may be required to drive to reach off-site placements is generally 35 miles.

Master of Science (Applied Clinical Informatics)

Program Overview

The Department of Biomedical Informatics at Vanderbilt University offers a two-year M.S. (Applied Clinical Informatics) (M.S.-A.C.I.) degree program. At many institutions, the role of clinical informatics leaders (known as clinical informaticians) has evolved from introducing electronic health records and practice transformation techniques to the effective evaluation and improvement of patient outcomes. Increasingly, local improvements must be integrated into accountable-care organizations, clinically integrated networks, and other inter-organization collaborations that emphasize both quality improvement and cost reduction. These factors create a profound need for trained informatics professionals from a variety of clinical and nonclinical disciplines who share a deep theoretical and practical understanding of the care process, informatics concepts, and the changing social, organizational, and economic context in which health care is delivered.

Vanderbilt's M.S. (Applied Clinical Informatics) is designed to develop leaders who are prepared to advance the science and practice of clinical informatics. The M.S.-A.C.I. program is designed for clinicians who desire rigorous, practical informatics training (e.g., board-certified and non-boarded physicians, nurses, pharmacists) and professionals from a wide range of disciplines (e.g., information technology, public health, health care policy, business management, research informatics) who contribute and collaborate to promote safe, efficient, and effective health care.

Program Mission/Goals/Objectives

The objective of the program is to provide innovative clinical informatics e fucation for working professionals in the health care field, with graduates assuming leadership roles in the application and innovation of clinical informatics nationally.

The M.S.-A.C.I.'s goal is to develop clinical informations who are capable of developing and leading innovative applications of information technology and information systems that address clinical, research, and public health priorities.

Standing Program Committees

Admission and Promotion Committee

The Admission and Promotion Compettee is responsible for reviewing applications for the M.S.-A.C.I. program, for inviting applicants for a personal or phone interview, and for making recommendations of candidates for admission to the program.

In the spring term, the Admission and Promotion Committee is charged with making recommendations to the program director regarding progress, promotion, or graduation of students.

The Admission and Promotion Committee is appointed by the program director and consists of three to five program leaders (one of whom is the program director). Scott Nelson, Chair. Josh Peterson, Yaa Kumah-Crystal, and Dara Mize.

Advisory and Curriculum Committee

The Advisory and Curriculum Committee (ACC) is charged with development and oversight of the M.S.-A.C.I. program curriculum. It also provides oversight of the evaluation and planning efforts for the program, including review of attainment of stated goals and objectives. The committee facilitates the long-range planning efforts of the program and provides other guidance to the program as requested. The ACC consists of all M.S.-A.C.I. course directors, and DBMI vice chair for educational affairs. The ACC meets once per year, or more often as needed.

Program's Major Facilities

The M.S.-A.C.I. program office and meeting rooms are located on the 14th and 15th floors of the 2525 West End Avenue building, which is also where the main offices of the Department of Biomedical Informatics are located. The M.S.-A.C.I. is primarily an online program. M.S.-A.C.I. students are required to complete synchronous course

requirements via video conferencing on Thursday evenings from 5:00–8:00 p.m. CST each week. The program also requires students to attend a one-to-two-day, in-person session every semester at the 2525 West End Avenue location.

Admission

Admission Requirements

Applicants must hold a bachelor's, master's, or doctoral degree. At least two years of relevant, post-undergraduate professional experience, education, or training is strongly preferred. GRE, MCAT, or other pre-professional equivalent test scores are strongly recommended. The TOEFL exam is required for applicants whose primary language is not English.

Applicants are not required to have formal training in computer science or a related discipline, but they need to demonstrate a strong interest and aptitude in clinical informatics.

Students without a computational background are encouraged to take at least one introductory-level course in computer science before entering the program.

Application Process

To apply for the M.S.-A.C.I. program, candidates must submit an online application and all supporting materials by February 15 (standard deadline). New students may matriculate only in the fall semester. Applications from highly qualified candidates who apply after the deadline will receive consideration, as long as a completed application is submitted no later than April 30.

Online applications are submitted at apply.vanderbilt.edu/apply

Program to which you are applying: Medicine-Non Mix

Program: Master of Science in Applied Clinical Internatics

Degree: MSACI

Complete information about the application process is available or line at <u>medschool.vanderbilt.edu/biomedical-informatics/msaci.</u>

Admission Offer and Acceptance

Admission decisions are made on an engoing basis once all required documents have been received and an application is ready to be assessed. Applicants who are admitted to the program receive an email communication from the program director with further instructions and a deadline to accept the offer of admission.

Transfer Students/Credits

The M.S.-A.C.I. program does not accept transfer students.

Non-degree-seeking Students

The M.S.-A.C.I. program does not allow non-degree-seeking students to enroll in M.S.-A.C.I. courses.

Visiting Students

The M.S.-A.C.I. program does not allow visiting students.

Degree Requirements

Requirements to Earn Degree

The program provides a 36 credit hour curriculum in 21 months, with a course work intensive first year followed by a second year devoted to a capstone project.

Length and Delivery of Program

The normal time frame for completion of required course work for the M.S.-A.C.I. is 21 months. The maximum time frame for completion of this degree is three years.

Curriculum

The curriculum emphasizes a deep theoretical and practical understanding of the care process, informatics concepts, information technologies, computer science, and the changing social, organizational, and economic context in which health care is delivered. This understanding is developed through course work, over 240 hours of practicum experience that uses real health information technology data and systems and health care contexts, and a mentored capstone project.

Didactics

Expert faculty who comprise the largest biomedical informatics department in the U.S. lead nine M.S.-A.C.I. courses, which include the core content for health professionals intending to apply for the American Board of Medical Specialties Clinical Informatics Certification or the emerging certification programs in Health Informatics:

- Introduction to Clinical Informatics
- Health Information Systems and Applications
- The Health System
- Clinical Information Systems
- Clinical Decision Support
- Clinical Workflow
- Data Standards
- Information System Lifecycle
- Management and Organizational Change

Practicum Experience

20.20 Stalo A practicum experience requires a minimum of 240 clock hours, to be completed during year 2. The practicum requirement can be satisfied in highly flexible ways, e.g., at VONC, at home institution, or at other sites (with M.S.-A.C.I. program approval). The trainee must be consedded (i.e., assigned to participate as a member) in an interdisciplinary team that is addressing a significant clinical informatics challenge. This includes attending regular team meetings and participating in analysis of issues, planning, and implementation of recommendations from the team. The interdisciplinary teams must include physicians, nurses, other health care professionals, administrators, and information technology/system personnel, as appropriate.

Capstone Project

A required capstone project running timoughout the program provides students with knowledge and skills required to design and conduct applied resear in studies to evaluate the efficacy of informatics applications in the clinical environment. Based on personal career objectives and informatics challenges that they identify in practica, the capstone project may be completed as a cohort, a sub-cohort group, or individually, depending on its design and the needs of our learners. The project begins in the first year and continues in the second year. Each student selects a Capstone Project Committee, which includes a committee chair (a DBMI faculty member), a practice mentor (someone within the student's home department or organization), and the M.S.-A.C.I. capstone course director.

Course List

A full list of program courses is provided in this catalog under "Courses of Study."

Tuition, Fees, and Financial Aid

2020/2021

The following university costs are included with tuition:

- professional liability insurance
- student health service
- verifications

Academic Year 2020/2021 Tuition

Tuition, 1st year	\$46,732
Tuition, 2nd year	13,352
Hourly Rate	1,669

The total estimated cost of attendance for a first year student is \$82,986. The estimated cost of attendance for a second-year student is \$40,384.

The M.S.-A.C.I. is a distance education program. The total estimated costs of attendance are based on costs of living in Nashville, Tennessee, but many M.S.-A.C.I. students live in other locations with varying costs of living. Please consult the link below for additional details.

(See medschool.vanderbilt.edu/financial-aid/master-of-science-in-applied-clinical-informatics-cost-of-attendance.)

Payment of Tuition and Fees

Students registered for a full-time course load (eight hours or note for fall and spring and six hours or more for summer) are billed at the block tuition rate for the term in which they are enrolled. Students registered for less than a full-time course load (seven hours or fewer in the fall and spring or five hours or fewer in the summer) are billed at the hourly tuition rate for the term in which they are enrolled. Certain courses are designated to trigger full-time enrollment (and block tuition billing) even though the number of credits carried by the course is fewer than eight.

Please refer to the School of Medicine Tuition Fees, and Financial Aid chapter of this catalog for more information about university costs and School of Medicine fees. Additional information can be found at *vanderbilt.edu/stuaccts*.

Student Assessment

Grades

The M.S.-A.C.I. program follows School of Medicine policy for grades. See the Academic Policies for All School of Medicine Programs chapter of this catalog for more information.

Non-didactic courses are gradea using Pass/Fail grading.

Grade Grievance Procedure

Students should seek redress of a problem with a grade as soon as possible after receiving the grade and in no case later than four weeks after the grade is released. Students with a problem should confer directly with the course director. Every effort should be made to resolve the problem fairly and promptly at this level. If the student cannot resolve the problem through discussion with the course director, the student should request an appeal by writing (email is acceptable) to the program director within two weeks of speaking with the course director. (The course director also should be included on the request for appeal.) In cases where the course director is also the degree program director, the appeal should be made to the assistant dean of health sciences education or his/her designee. If resolution is not achieved by the program director/assistant dean of health sciences education, the case is referred to the senior associate dean of health sciences education or his/her designee, who makes the final decision. At each level of review, the course's assessment practices are reviewed and the individual student's situation taken into account.

Practicum Assessment

The practicum experience requires that the trainee is embedded (i.e., assigned to participate as a member) in an interdisciplinary team that is addressing a significant clinical informatics challenge. This includes attending regular team meetings and participating in analysis of issues, planning, and implementation of recommendations from the team. The interdisciplinary teams may include physicians, nurses, other health care professionals, administrators, and information technology/system personnel, as appropriate. The student will be graded (Pass/Fail) by the practicum course director after each rotation, based on assessments by rotation leaders.

Progress and Promotion

Periodic Reviews

In the spring term, the Admission and Promotion Committee is charged with making recommendations to the program director regarding progress, promotion, or graduation of students.

Satisfactory Academic Progress and Good Standing

All students who maintain at least a 3.0 GPA and have earned at least a B- in all course work practica, are considered to be making satisfactory academic progress. M.S.-A.C.I. students must register each fall, spring, and summer semester with no breaks in registration to remain in good standing except in cases of approved leave of absence.

Graduation

Promotion Committee Endorsement

In the spring term, the Admission and Promotion Committee is charged with making recommendations to the program director regarding progress, promotion, or graduation of students

Allowance for Delaying Graduation

Graduation may be delayed beyond the normal time required to complete for formal remediation or approved leave(s) of absence.

Formal Remediation and Propation

Formal Remediation Plan

Students who receive a grade of C+ of poorer in academic courses may be required to remedy the grade as specified in a formal remediation plan. Possible remedies include re-examination or course/practica repetition. Credit may be given on the basis of re-examination or satisfactory repetition of the course/practica work, but the original grade remains on the record and may be counted in the computations as cause for dismissal, if additional poor performance occurs.

Probation

Students who do not successfully complete a formal remediation plan may be placed on probation. Students who fall below an average of 3.0 are placed on probation for one semester. If the student's performance does not improve during the semester, the program director, the vice-chair for educational affairs, and the department chair will decide whether to dismiss the student or to allow the continuation of probation. If, at the end of the second semester, the student's grade point average remains below 3.0, the student is advised to withdraw or face dismissal from the program.

Dismissal

The M.S.-A.C.I. program follows School of Medicine policy for formal remediation, probation, dismissal, and appeals. See the Academic Policies for All School of Medicine Programs chapter of this catalog for more information on these topics.

Student Support and Advisory Services

Academic and Career Advisory Resources

The program director has an open door policy for all students in the M.S.-A.C.I. program.

Health and Wellness

See Vanderbilt University Student Resources in the Life at Vanderbilt chapter of this catalog.

Other Program Policies

Program Evaluation

The M.S.-A.C.I. performs course evaluations at the end of each term. These evaluations are sent to all students enrolled in didactic courses. Course evaluations cover important course quality indicators, including level of difficulty, course structure/organization, instructor effectiveness, and text quality, and they also give students an opportunity to provide overall feedback.

Leave of Absence

Students who wish to interrupt their study must request a leave of absence in writing from the program director. The written request must outline the nature of the requested leave and provide the starting and ending dates for the of absence. Students may consult with Vanderbilt University Student. Access Services (vanderbilt.edu/student-access/) when contemplating a leave of absence, and program administrators may consult with student access services when evaluating a request for leave of absence. The program director will provide a written decision regarding the request.

A one-time leave of absence may be granted for a maximum period of one year, as long as the student is in good academic standing. Students taking a leave of absence are responsible for meeting with the program director prior to the leave in order to plan for their course work and time line for successful degree completion following their return. Students who do not register for classes before the ending date of a leave of absence may be disenrolled from the program and required to request reinstatement.

Attendance and Leave

All students are expected to attenue ach class session (online and face-to-face). Students must notify the instructor if they will miss a class session. It is the responsibility of the student to obtain class notes and assignments. For significant absences, such as missing greater than two classes per semester, a remediation plan must be submitted to the course director and program director.

Student Work Policy

M.S.-A.C.I. students are allowed to work full time as long as students can meet program expectations and degree requirements.

Master of Science in Clinical Investigation

Program Overview

The Master of Science in Clinical Investigation (M.S.C.I.) program trains investigators in the techniques and processes used in clinical and translational research. This program provides a direct, mentored experience in clinical and translational investigation and, through didactic work, provides trainees with a strong foundation in study design, biostatistics, biomedical ethics, human genetics, drug and device development, and genomics. Graduates compete for grants such as the NIH K23, VA Career Development Award, NIH R01, and major foundation grants. More information is available online at *medschool.vanderbilt.edu/msci/*.

Program Mission/Goals/Objectives

Mission

The mission and objective of the M.S.C.I. program is to train investigators in the techniques and processes utilized in clinical and translational research. The means to accomplish this mission include didactic coursework, a mentored experience in clinical investigation, and career path development, which culminates with the completion of a final project.

Goals

To cultivate the following:

Outstanding Academician:

- Researcher, mentor
- Clinician/educator, teacher
- Administrator, patient advocate, policy maker

Industry:

- Knowledgeable about molecular biology, pharmacology, and genomics
- Gifted clinical researcher
- Able to move with the speed of commerce

Objectives

- Train investigators in the echniques and processes utilized in clinical and translational research.
- Provide trainees, through didactic courses and a mentored experience in clinical investigation, a strong
 foundation in the core skills and methods necessary for success in clinical and translational research. Such
 skills include the following:
 - Biostatistics and experimental design
 - Biomedical ethics
 - Issues in the drug discovery process
 - o Data management
 - Medical and grant writing, and
 - o Scientific communication skills
- Strengthen Vanderbilt's pre-eminent leadership role in the development of future leaders in clinical and translational research.
- Benefit society by training and nurturing biomedical scientists whose efforts will improve human health.

Standing Program Committees

M.S.C.I. Admission Committee

The M.S.C.I. Admission Committee annually reviews candidates for admission by gauging the quality of the candidate's research proposal, career objectives, and the primary mentor's commitment to the candidate's career

pathway and trajectory. The M.S.C.I. program director and associate director serve as ex officio reviewers, and the M.S.C.I. program manager acts as the convener.

Evan Brittain, Richard Ho, J. Matthew Luther, Todd Rice, Ashley Shoemaker.

M.S.C.I. Promotion Committee

In the event an M.S.C.I. candidate does not submit a peer-reviewed manuscript or major federal or foundation grant application as the M.S.C.I. final project, the M.S.C.I. Promotion Committee reviews the submitted master's thesis. In addition to the M.S.C.I. leadership team, the M.S.C.I. Promotion Committee includes:

Prince Kannankeril, Ingrid Mayer, Pratik Pandharipande, Alan Storrow.

Executive Advisory Committee

The Executive Advisory Committee provides strategic insight to the national and international clinical and translational research communities for the Master of Science in Clinical Investigation program. The M.S.C.I. Executive Advisory Committee meets triennially during the spring. The composition of the EAC includes the M.S.C.I. Program leadership and:

John A. Oates, Chair. Gordon Bernard, Robert Dittus, Susan Guttentag, Katherine E. Hartmann, Larry Marnett, Tommy Wang, Consuelo Wilkins. Nancy Brown, ex officio; Senior Associate Dean of ONSE, ex officio.

M.S.C.I. Curriculum Committee

The M.S.C.I. Curriculum Committee ensures the quality of the curriculum and program development based on the needs for educated and trained clinical and translational scientists. The M.S.C.I. Curriculum Committee meets ad hoc. In addition to the M.S.C.I. leadership team, the M.S.C.I. curriculum Committee includes:

Joey Barnett, Kelly Birdwell, Tina Hartert, Leora Horn, Quin 1 Wells.

Program's Major Facilities

The M.S.C.I. program office is located on the second level of the Annette and Irwin Eskind Family Biomedical Library and Learning Center, 2209 Garland Avenue, in 150 n 230. The classrooms are located in Rudolph A. Light Hall, 2215 Garland Avenue.

Admission

Admission Requirements

Eligible candidates for the M.S.C.I. program include:

- Board-eligible physicians arrolled in a fellowship program at Vanderbilt or Meharry Medical College
- Vanderbilt or Meharry resider is with protected time for research
- Vanderbilt medical students with protected time for research after the third year of medical education,
- Vanderbilt faculty members with the consent of their department chairs
- Postdoctoral Ph.D.'s anticipating a career in clinical and translational research
- Ph.D. candidates in the School of Nursing anticipating a career in patient-oriented research, and Scholars
 external to Vanderbilt/Meharry will be considered based on the availability of a suitable mentor within
 Vanderbilt and the related professional background of the candidate.

Application Process

Candidates should submit an application that includes biographical information, references, career goals, and a specific proposal for a clinical and translational research project. The research proposal must identify the candidate's mentor. Applications will be judged on the quality of the science proposed, on the commitment of the mentor to the career development of the candidate, and on the overall impact of the training program on the applicant's career development. The application deadline is February 28.

Candidates must be in good standing with their home department at all stages during admission and remain in good standing with the home department and the M.S.C.I. program throughout matriculation.

Required Application Materials

1. The electronic application system may be accessed at:

apply.vanderbilt.edu/apply/

Area of Study: Medicine-Non MD Program: Clinical Investigation

- Letter from mentor documenting commitment to the candidate's career development. Please include a copy of the mentor's curriculum vitae.
- 3. Three letters of recommendation (may include mentor).
- 4. Letter from division director or department chair assuring 80 percent protected time for research.
- 5. Research Plan: The three-to-five-page proposal should describe specific aims, background and significance, experimental methods, procedures, and long-term objectives. Research Plans exceeding the five-page limit will be returned. Be sure to provide a title for your project.
- 6. Curriculum vitae of the applicant.

Statement of Purpose.

- 7. Statement of how this proposed research plan fits into your career objectives.

 You may upload your research plan, curriculum vitae, and career statement in the application section labeled
- 8. Letter stating confirmation of tuition payment throughout matriculation from responsible person or department on official letterhead.
- 9. Undergraduate and medical school transcripts. Official transcripts must come directly from the issuing institution, not the candidate.

Candidates submitting official transcripts from international institutions should refer to the Office of the University Registrar's guidelines at <u>registrar.vanderbilt.edw/a cademic-resords/external-degree-verifications.php</u>. International students with questions about the prior degree verification process may contact the Office of the University Registrar.

Please send official e-Scripts or official electronic transcripts to: CDM@vanderbilt.edu

Mail official transcripts to: Vanderbilt CDM PMB 407833 2301 Vanderbilt Place Nashville, TN 37240-7833

Selection Criteria, Offer, and Acceptance

Proposals will be evaluated on the following criteria:

- Proposals must outline clinical and translational research that is hypothesis driven and mechanistic.
- Performance of the project must be feasible within a two-year period.
- Project mentors must have extramural research grant funding that is assured for the duration of the project.
- Sponsoring departments will be expected to guarantee that 80 percent of the candidate's professional time will be devoted to the goals and objectives of the M.S.C.I. program.

Transfer Credits

The M.S.C.I. program allows matriculated students to transfer equivalent graduate-level courses taken up to two years prior to admission into the Vanderbilt M.S.C.I. program. Only courses taken at accredited institutions will be considered; a maximum of 9 credit hours are allowed for transfer into the M.S.C.I. program. Determination of equivalence will be made by the program director in consultation with the course director.

Non-degree-seeking Students

Non-degree-seeking enrollees (special students) are often individuals who enroll in a course to determine if the

Vanderbilt M.S.C.I. program is a good fit for their academic needs and career trajectory. The cost of tuition for a non-degree-seeking student is the established per credit hour for the academic year. The purchase of textbooks, software, and other research supplies is the responsibility of the non-degree-seeking student.

Auditing M.S.C.I. courses is not allowed.

Visiting Students

Scholars external to Vanderbilt/Meharry will be considered based on the availability of a suitable mentor within Vanderbilt and secured funding.

Degree Requirements

Requirements to Earn Degree

- Candidates for the M.S.C.I. must complete 35 semester credit hours of the core course work.
- Completion of a final project in the form of a submission ready, extramural grant or an original article for publication in a peer-reviewed journal is also required.
- Students who are unable to complete a grant or manuscript may submit a thesis. The thesis should include a brief introduction explaining why a grant or manuscript could not be submitted. No oral pre-entation is required. The thesis should include a brief statement of the student's role in the work to be described in the research report and a 10-to-15-page report outlining the hypothesis tested, background and significance of the work, the experimental approach and methods, data analysis/sample size calculations, a tricipated results and pitfalls, results to date, interpretation of results, discussion of results, and future plans. The thesis is reviewed and approved by the Promotion Committee.

Length and Delivery of Program

The program typically takes two years (five academic terms) to complete. The maximum time to degree is six years.

Core courses are provided in two formats:

- 1) Intense courses that meet three hours each day (e.g. 100 a.m. to 11:00 a.m.) for four weeks
- 2) Courses that can be offered less intensively (two to four hours a week for several months).

The course schedule is designed to maximize protected time for clinical and translational research.

Curriculum and Tracks

Candidates must complete 35 credit hours of didactic coursework covering the essentials of study design, biostatistics, ethics, drug development, and data analysis. It is expected that coursework comprises 20 percent of the candidate's time commitment.

Mentored Research Apprenticeship

The core of the M.S.C.I. program is the completion of a mentored research project. The research must have a clinical or translational orientation and involve direct measurements on patient-derived data or the use of investigational therapeutic or diagnostic techniques. The mentor must be an established physician-scientist with experience in clinical and translational research. Use of the Vanderbilt University Clinical Research Center is encouraged. The research project accounts for 80 percent of the candidate's commitment to the program.

Master's Final Project

The candidate submits a manuscript to a peer-reviewed journal, provides a completed proposal for a federal or major foundation grant, or develops a master's thesis based on his or her research project. Completion of the thesis requirement is evaluated by the M.S.C.I. Promotion Committee.

Other Degree Requirements

Career Path Development: In addition to the formal curriculum, a monthly seminar series, "Clinical Scientist Career Seminars," permits candidates to meet successful clinical and translational researchers. Topics of discussion include academic "rules of the road," time management, promotion/tenure issues, grants management, and authorship. Candidates hone their scientific communication skills through a presentation at the annual Translational Research forum conducted in the fall. The directors host networking events with the candidates, clinical investigators, mentors, and visiting scientists.

Course List

A full list of program courses is provided in this catalog under "Courses of Study."

Tuition, Fees, and Financial Aid

2020/2021

The following university costs are included with tuition:

- professional liability insurance
- · student health service
- verifications

Academic Year 2020/2021 Tuition

Tuition, 1st year \$39,96
Tuition, 2nd year 1998
Hourly rate

The total estimated cost of attendance for a first-year student is \$76,214. The estimated cost of attendance for a second-year student is \$47,012.

(See medschool.vanderbilt.edu/financial-ai V naster-of-scerice-in-clinical-investigation-cost-of-attendance.)

Payment of Tuition and Fees

Students registered for a full-time course load (eight hours or more for fall and spring and six hours or more for summer) are billed at the block turion rate for the term in which they are enrolled. Students registered for less than a full-time course load (seven hours or fewer in the fall and spring or five hours or fewer in the summer) are billed at the hourly tuition rate for the term in which mey are enrolled. Certain courses are designated to trigger full-time enrollment (and block tuition billing) even though the number of credits carried by the course is fewer than eight.

Please refer to the School of Medicine Tuition, Fees, and Financial Aid section of this catalog for more information about university costs and School of Medicine fees. Additional information can be found at *vanderbilt.edu/stuaccts*.

Student Assessment

Grades

Students in the Master of Science in Clinical Investigation program will be evaluated in each course. Letter grades, consistent with grading policy established in the School of Medicine Academic Policies - Grading section of this catalog, will be given by the course director, based on attendance, class work, homework, test results, and final exams.

Only courses with a grade of B- or better will count toward the M.S.C.I. program requirements. Courses for which a grade of C+ or lower is awarded will need to be retaken.

Master's research, research extension, and case studies courses are graded on a pass/fail scale and are not considered in calculation of GPA.

Grade Grievance Procedures

Students should seek redress of a problem with a grade as soon as possible after receiving the grade and in no case later than four weeks after the grade is released. Students with a problem should confer directly with the course director. Every effort should be made to resolve the problem fairly and promptly at this level. If the student cannot resolve the problem through discussion with the course director, the student should request an appeal by writing (email is acceptable) to the program director within two weeks of speaking with the course director. (The course director also should be included on the request for appeal.) In cases where the course director is also the degree program director, the appeal should be made to the assistant dean of health sciences education or his/her designee. If resolution is not achieved by the program director/assistant dean of health sciences education, the case is referred to the senior associate dean of health sciences education or his/her designee, who makes the final decision. At each level of review, the course's assessment practices are reviewed and the individual student's situation taken into account.

Progress and Promotion

Periodic Reviews

Candidates will meet annually with the M.S.C.I. program director, or designee, for a 15-minute check-in to review progress. Year 1 candidates will meet during the spring term and year 2 candidates will meet during the fall term.

Satisfactory Academic Progress and Good Standing

A cumulative grade point average of at least B- is required for graduation. A semester everage of at least B- is required to remain in good academic standing. A student whose cumulative grade point average falls below B- may be placed on probation for one semester. If at the end of the semester the grade point average is still below B-, the student may be dismissed from the program based on unsatisfactory academic performance.

Graduation

Promotion Committee Endorsement

The subsequent step in the graduation process is a review and approval of the student's thesis by the M.S.C.I. Promotion Committee.

Allowance for Delaying Graduation

It is anticipated that all students vill complete the graduation requirements by the end of the fifth semester of enrollment. Graduation may be delayed by formal remediation of course work or an approved leave of absence.

In the case of any potential delays, the student is allowed to extend the graduation date by six months, twice (total of one year). In unusual circumstances (including, but not limited to health problems, change of jobs, move to another institution), an additional extension up to one year will be considered by program leadership. During a period of extension, the student will be enrolled in the Research Extension course, a status that incurs no tuition costs.

Program Commencement

The university holds its annual Commencement ceremony following the spring semester. Degree candidates must have completed successfully all curriculum requirements and have passed all prescribed examinations by the published deadlines to be allowed to participate in the ceremony. A student completing degree requirements in a summer or fall semester may participate in Commencement the following May, and ordinarily the degree will be conferred at the end of the term in which requirements are completed. Any student unable to participate in a Commencement ceremony will receive his or her diploma by mail.

Formal Remediation and Probation

Formal Remediation Plan

A student may be required to engage in a process of formal remediation if a need to improve performance or progress is identified (i.e., course grade or examination results that indicate student struggles to or fails to grasp

basic learning objectives or core competencies). In such cases, the student works with the M.S.C.I. program director to develop an individualized plan and timeline for remediation.

Probation

A student may be placed on academic probation if the student's cumulative grade point average falls below B-, or their course grades include any failures. If at the end of the semester of academic probation the grade point average is still below B-, the student may be dismissed from the program based on unsatisfactory academic performance.

Students placed on probation are notified through a letter from the program director that outlines the reasons for the probation; the requirements and recommendations for addressing deficiencies; the conditions for removal of probation, including an expected time frame; and actions that will be taken if conditions are not met.

Students placed on probation for any reason will be required to complete a specific remediation plan that has been approved by the program director. The remediation plan may include requirements for the student, such as regular meetings with advisers, elimination of extracurricular activities that may be interfering with satisfactory academic progress, etc.

Students may appeal to the senior associate dean for health sciences education for reconsideration of the decision to place the student on probation.

All students on probation will be reviewed by the program director at least once each semester to determine whether satisfactory academic progress has been made. At that time the program director may take the following actions:

- 1. Remove probation: Probation may be removed if students have satisfic orily addressed deficiencies, even if this is before the time frame originally designated by the program director and the actionic progress review committee.
- 2. Continue probation: Progress is being made.
- 3. Recommend dismissal: Performance continues to be unsatisfactory

Written notification is provided to the student regarding the outcome of this review.

Probation is considered an adverse action and may be reported in future graduation verifications and other requests for information.

Dismissal

The M.S.C.I. program follows School of Medicine policy for formal remediation, probation, dismissal, and appeals. See the Academic Policies for All School of Medicine Programs chapter of this catalog for more information on these topics.

Eligibility to Reapply

If a student withdraws from the M.S.C.A program, reentry is possible only through the application process.

Student Support and Advisory Services

Academic Advisory Resources

Edge for Scholars
The Editor's Club
Office of Research
Office of Research Support Services
Clinical Research Boot Camp training workshops
Institutional Review Board
CRC Research Skills Workshops Series
Department of Biostatistics Clinics
Center for Science Communication
StarBRITE
REDCap
Survey Research Shared Resource

Vanderbilt Institute for Clinical and Translational Research (VICTR) Research Support Services **Qualitative Research Core**

Career Advisory Support

Clinical and Translational Career Development Vanderbilt Institute for Clinical and Translational Research (VICTR) Edge for Scholars Newman Society Women on Track Office of Faculty Affairs Translational Bridge Society The Partnership in Actively Retaining Talented Early-career Researchers Office of Sponsored Programs

Health and Wellness

VUMC Faculty and Staff Health and Wellness VU Employee Assistance Program
The Partnership in Actively Retaining Talented Early-career Researchers
Other Program Policies

Program Evaluation
Program evaluation for Magazia

Program evaluation for M.S.C.I. is performed with four different metrics:

- 1. Student course evaluations, administered by the M.S.CI. program for every course offered in the program at the end of the term.
- 2. After student graduation, successful job placement is assessed.
- 3. After student graduation, successful publication of peer-reviewed manuscripts is assessed.
- 4. After student graduation, grant funding from federal and major foundations is assessed.

Specific feedback from course valuations is viewed by the faculty member responsible for the course and the program director with the goal of improverants in the presentation of course material during the next offering of the course.

Other materials are evaluated by the program director and subsequently by the faculty with the aim of providing overall program feedback, which helps direct program modifications and improvements. These evaluations occur on an annual basis.

Leave of Absence

A student may request a leave of absence from school for any reason (personal, medical, maternity/paternity, research, dual degree, etc.), subject to the approval of the program director. The student must submit a written request to the program director, outlining the nature of the requested leave and providing the starting and ending dates. Students may consult with Vanderbilt University Student Access Services (vanderbilt.edu/student-access) when contemplating a leave of absence, and program administrators may consult with student access services when evaluating a request for leave of absence.

The program director may grant the student a leave of absence for up to one year, as long as the student is in good academic standing. Prior to leave, a plan for re-entry into the curriculum and meeting requirements for graduation should be outlined with the program director.

A student on leave of absence may request an extension of the leave beyond one year, subject to the approval of the program director. The student must submit a written request outlining the nature of the requested extension and providing a new ending date. A request for extension of a leave of absence must be submitted to the program

director at least three months before the ending date of the approved leave. Requests may be made for additional extensions using the process outlined above.

Upon return from LOA, the student must complete and update immunization records and all other compliance requirements.

Attendance and Leave

All students are expected to attend each class session. Students should notify the instructor should they knowingly have to miss a class. It is the responsibility of the student to obtain class notes and assignments. Penalty for non-class attendance is at the discretion of the instructor and/or the program director

Honors and Awards

All honors and awards are contingent upon available funds to support the award. Part-time students are not eligible for honors and awards.

- **M.S.C.I. Hazinski.** Merit scholarship in honor of Dr. Thomas Hazinski; 50 percent tuition scholarship after the use of the employee tuition benefit, if eligible.
- M.S.C.I. Diversity. Merit scholarship for URM scholars (underrepresented in medicine), 50 percent tuition scholarship after the use of the employee tuition benefit, if eligible.
- M.S.C.I. CTSD (Clinical and Translational Scientist Development). Merit scholarship for emerging physicianscientists who demonstrate a commitment to pursue clinical and translational science and research along with a clinical practice; 50 percent tuition scholarship after the use of the employee tuition benefit, if eligible.



School of Medicine Dual Degree Programs and Policies

M.D. Dual Degree Programs

For all M.D. dual degrees, except the M.D./Ph.D., the first three years are normally spent in the medical school program. Ideally, students apply for dual degree status before enrolling in either degree program. However, M.D. students may elect to apply for admission to a recognized dual degree program at any time during their first three years in the medical school. Students who apply for admission to the medical school during their first year in another recognized dual degree may also be considered for dual degree status.

In most cases, after year three of the M.D. curriculum, students begin work on their other degree program. Depending on the other program, students may complete the second degree before returning to the medical school. The dual degree program allows students to reduce the period of time required to complete each degree separately, usually eliminating one full year of study.

Due to the blended nature of dual degree experiences, participating students are expected to abide by the School of Medicine Honor Code and to maintain the professional standards of the M.D. degree while participating in the alternate degree program, in addition to complying with any standards established by that alternate program. If a student is concerned that expectations between programs may be in conflict, s/he should confer with the associate dean for medical student affairs.

M.D./Ph.D. (MSTP)

The Medical Scientist Training Program is a dual endeavor between the Vanderoll University School of Medicine and the Vanderbilt University Graduate School. A single application is made to the M.D./Ph.D. program by indicating M.D./Ph.D. degree on the AMCAS application to Vanderbilt University School of Medicine and completing the MSTP secondary application.

The MSTP allows both dual and alternating enrollment in the School of Medicine and the Graduate School. Trainees are required to fulfill all of the requirements for both the M.D. and the Ph.D.; however, since some competencies for the M.D. are met by the graduate school experience, it is possible for MSTP students to complete the M.D. program in a total of three years. Requirements for successful completion of the Ph.D. are the same for all students at Vanderbilt, and the Ph.D. thesis must be successfully defended prior to reentry into medical school for the final year of training. Most MSTP students will begin their final year of medical school in early July or earlier to complete the Immersion Phase of their M.D. training.

M.D./J.D.

Students must apply separately to both the vanderbilt University School of Medicine and the Vanderbilt Law School and be accepted by both programs to pursue the dual M.D./J.D.

Students in the dual M.D./J.D. program have the opportunity to complete both degrees in six years.

M.D./M.S. in Biomedical Informatics

Students must apply separately to both the Vanderbilt University School of Medicine and the Vanderbilt Department of Biomedical Informatics and must be accepted by both programs to pursue the dual M.D./M.S. in biomedical informatics.

Students in the dual M.D./M.S. in biomedical informatics program have the opportunity to complete both degrees in six years.

M.D./M.Div. and M.D./M.T.S.

Students with interest in medical and divinity degrees have the opportunity to enroll in one of two dual degree programs. Students must apply separately to the Vanderbilt University School of Medicine and the Vanderbilt Divinity School and be accepted by both to pursue the M.D./M.Div. (M.D./Master of Divinity) or the M.D./M.T.S. (M.D./Master of Theological Studies).

Students in the dual M.D./M.Div. program have the opportunity to complete both degrees in six years. Students in the dual M.D./M.T.S. program have the opportunity to complete both degrees in five years.

The master of divinity is a professional degree and pre- pares students for the practice of ministry. This program has a required field education component as part of the master of divinity degree requirements. In this program, students carry 15 credit hours per semester while in the Divinity School.

M.D./M.Ed.

Education is an integral part of medicine. The word "doctor" comes from the Greek word meaning "teacher." Whether a student chooses a career in research or clinical practice, there always will be a need to teach students, patients, and col-leagues. Students who choose the M.D./M.Ed. dual degree program may be interested in patient education or in a career in an academic center working in medical education. They also may be interested in leadership positions at the national level that interface with health policy and education. Education will be a large part of prevention in future medical practice.

Students must apply separately to both the Vanderbilt School of Medicine and Peabody College of education and human development and be accepted by both programs to pursue the dual M.D./M.Ed. Students in the dual M.D./M.Ed. program have the opportunity to complete both degrees in five years.

M.D./M.P.H.

Vanderbilt University School of Medicine (VUSM) offers a five-year M.D./M.P.H. dual degree program for students who want to better understand and address health issues on a population level. M.D./M.P.H. students are able to contextualize health and understand the determinants of health. In addition, students gain the research skills needed to engage in academic research.

Professionals with M.D./M.P.H. degrees may have interest in developing enhanced skills in the following areas: prevention, health literacy, education and advocacy, policy analysis and development, evidence-based practice, academic research, quality improvement, monitoring and evaluation, health services research, health disparities, leadership and management, and/or clinical research.

Students in the dual M.D./M.P.H. program have the opportunity to complete both degrees in five years. Students must apply separately to the M.D. program and the M.P.H. program in the School of Medicine and be accepted by both programs to pursue the dual M.D./M.P.H. Typically, Vande bilt M.D. students apply to the M.P.H. program in the fall of their second or third year of medical studies. Students select one of the M.P.H. program's track concentrations (epidemiology, global health, or dealth policy) at the time they submit their M.P.H. application. Before a dual degree student can matriculate in the M.P.H. program, they must be in good academic standing with the M.D. program and receive approval or their plan of study from the M.P.H. program director.

Students in the M.D./M.P.H. dual degree program must complete each degree program's requirements before receiving each degree. The M.P.H. requires 42 callemic credit hours of course work, which include didactic core and track-specific courses, as well as courses associated with the public health practicum and culminating experience.

Dual degree students spend a minimum of four terms focused on M.P.H. required course work. Students typically complete most or all of the required 42 credit hours during these four terms. The summer term focuses on either the public health practicum or the culminating experience, and it may also include didactic courses.

The M.D. program's Research Immersion Phase may be completed before matriculating in the M.P.H. program, and/or it may be integrated with the M.P.H. program's culminating experience requirements. Integration of the research immersion with the M.P.H. degree should be planned in advance with input from both the M.D. and M.P.H. programs.

Additional information may be found at *medschool.vanderbilt.edu/mph/md-mph*

M.D./MBA

Students must apply separately to both the Vanderbilt University School of Medicine and Vanderbilt Owen Graduate School of Management and be accepted by both programs to pursue the dual M.D./MBA degree. Students in the dual M.D./MBA program have the opportunity to complete both degrees in five years. The first three years are spent in medical school. Students spend their fourth year at the Owen School and then spend the fall semester of year five in medical school and the spring semester of year five at the Owen School.

M.D./M.A. in Medicine, Health, and Society

In 2008, the Vanderbilt University Faculty Senate approved a Master of Arts degree in medicine, health, and society (MHS). The proposal for this fully interdisciplinary degree originated from the Vanderbilt University Center for Medicine, Health, and Society (CMHS), which was established in 2003. The goals of CMHS are to promote the study of health and health care in their social, cultural, and historical contexts, and to explore the interface of bioscience, technology, and the humanities.

In addition to educating outstanding clinicians, Vanderbilt University School of Medicine is committed to developing future leaders and scholars in medicine. We recognize that the current challenges facing health and health care demand leaders and scholars in many areas related to medicine. The M.A. in MHS allows selected students to extend their scholarly interests in interdisciplinary areas, although prior work in one of those areas is not required. The MHS degree provides students with additional knowledge and research experience to prepare them for academic careers focused on the political, social, economic, and cultural contexts of the practice of medicine, as well as on biomedical ethics, patient-provider relationships, and health policy.

Students must be accepted by both the Vanderbilt University School of Medicine and the Graduate School, and acceptance to one program does not ensure acceptance to the other. Dual degree students are able to enter the M.A. program after any year of medical school. If students choose to begin their M.A. studies after the fourth year, they are allowed to delay graduation until after completion of both degrees, as long as they are officially enrolled in the dual degree program. Requirements for the M.D. are the same as those for non-dual- degree students. Students have the opportunity to complete both degrees in five years.

M.D./M.S.C.I.

The Vanderbilt Master of Science in Clinical Investigation program trains investigators in the techniques and processes utilized in clinical and translational research. Through a formal nentered research program combined with didactic work, the program provides trainees with a strong foundation in study design, biostatistics, biomedical ethics, genomics, and drug and device development. There are a number of electives, including but not limited to advanced epidemiology, epigenetics, data management, and big data that allow trainees to get more in-depth involvement in a specialized area. A critical component of the M.S.C.I. program is a direct, mentored experience during the training period, and beyond. Hands-on research involvement and continued exposure to the clinical and translational research environment are major requirements of the M.S.C.I. program. Graduates successfully compete for grants such as the K23, VA CDA, R01, and major foundation grants.

Candidates must apply separately to 'no M.D. and its M.S.C.I. programs in the School of Medicine and be accepted by both programs to pursue ne dual M.D. /M.S.C.I. Candidates should identify a qualified faculty member willing to serve as the candidate's nenter prior to application to the M.S.C.I. program. The M.S.C.I. program director provides assistance with selecting a qualified faculty mentor. Prior to matriculation in the M.S.C.I. program, the M.D./M.S.C.I. dual degree candidate must be in good academic and financial standing with Vanderbilt University School of Medicine.

The M.S.C.I. requires 35 acaden coredit hours of course work, which includes a didactic core, as well as a mentored research apprentices bip and a final project. The M.D. program's Research Immersion Phase may be completed before matriculating in the M.S.C.I. program, and/or it may be integrated with the M.S.C.I. program's requirements. Candidates should plan this time with input from both the M.D. and M.S.C.I. programs. Students in the dual M.D./M.S.C.I. program have the opportunity to complete both degrees in five years.

Other Dual Degree Programs

M.P.H. (Global Health)/M.Ed. (International Education Policy and Management)

Students interested in the M.P.H. program's Global Health track and the M.Ed. in International Education Policy and Management program typically complete both degrees in three years of study, or seven academic terms.

Students must apply and be accepted separately to both the M.P.H. program in the School of Medicine and the M.Ed. program in Peabody College of Education and Human Development.

The M.P.H. requires 42 hours of academic credit which include didactic core and track-specific courses, as well as courses associated with the public health practicum and culminating experience. Dual degree students spend a minimum of three terms (fall, spring, and summer) enrolled in the School of Medicine with the M.P.H. as their

primary degree program. During these three terms, they complete 36 or more credit hours of required M.P.H. course work, including the public health practicum during the summer term.

Additional information about the M.Ed. (International Education Policy and Management) can be found at peabody.vanderbilt.edu/programs/international-education-policy-and-management-med.

M.P.H. (Global Health)/M.A. (Latin American Studies)

The dual M.P.H./M.A. (Latin American Studies) program allows students interested in the M.P.H. program's Global Health track and the M.A. in Latin American Studies program to complete both degrees in three years of study or seven academic terms.

Students must apply and be accepted separately to both the M.P.H. program in the School of Medicine and the M.A. in Latin American Studies program in the Graduate School.

The M.P.H. requires 42 hours of academic credit which include didactic core and track-specific courses, as well as courses associated with the public health practicum and thesis. Dual degree students spend a minimum of three as the parent M.P. oe found at terms (fall, spring, and summer) enrolled in the School of Medicine with the M.P.H. as their primary degree program. During these three terms, they complete 36 or more credit hours of required M.P.H. course work, including the public health practicum during the summer term.

Additional information about the M.A. in Latin American Studies may be found at as.vanderbilt.edu/clas/graduate-programs/ma-latin-american-studies.

School of Medicine Certificate Programs

The School of Medicine offers graduate certificate programs to its students who wish to gain focused expertise in a specific area. Each program has its own admission and completion requirements. Students must submit an "Intent to Enroll" form to document their intention to pursue a certificate, as well as other documentation as needed. Permission of the degree program director and the certificate program director are required to pursue a certificate.

Biomedical Ethics

This certificate is designed to enable doctor of medicine students to graduate with a high level of competence in analyzing and resolving ethical issues that they will face in practice and equip them to provide leadership to their colleagues, to the profession, and to the public in biomedical ethics.

Curriculum

This certificate is offered to students in the School of Medicine. Its curriculum consists of three elements:

- 1. An interdisciplinary graduate seminar, Healthcare Ethics—Theory and Practice (IDIS 7222).
- 2. A tailored Research Immersion to focus on the student's special research interests within ethics, including options such as selecting a topic within a clinical specialty (for example, pediatrics, internal medicine, surgery, or psychiatry). Projects may combine empirical and conceptual work with mentorship provided by designated mentors within the ethics, education, policy, and society area of the M.D. program Immersion Phase Inquiry Program. The graduate seminar described above is part of the M.D. Immersion Phase Inquiry Program.
- 3. An apprenticeship with the Clinical Ethics Consult Service which is offered as an M.D. degree Immersion course. The Ethics Consult Service of the Center for Biomedical Ethics and Society provides formal consultation to VUMC hospitals and conducts a wide range of educational programs in ethics for faculty, staff, fellows, residents, students, and others.

The graduate seminar, the Immersion phase relea ch project, and the Immersion phase consult apprenticeship may be taken separately, but completion of the Certificate in Piomedical Ethics requires successful completion of all three components. More information can be found at medical-ethics/.

Global Health

The certificate promotes training opportunities, research, and learning focused in global health. The need for individuals who are able to work with diverse international populations continues to rise. Through certificate course work, students gain necessary skills and knowledge for working with international populations, particularly when operating in low-resourced setting. Students in Vanderbilt graduate or professional degree programs who fulfill all requirements are granted a Griduate Certificate in Global Health upon receipt of their degrees. Students in the M.P.H. program's Global Health track are not eligible to receive this certificate.

Certificate Requirements (12 credit hours total)

- 1. Core Course (choose one—additional courses may be taken for 3 elective credits each)
 - Foundations of Global Health (fall semester course)
 - Fundamentals of Global Health (offered online in varying semesters)
 - Essential Skills in Global Health (spring semester course)
- 2. Elective Courses—at least 9 credit hours in additional global health course work
 - These courses may be a combination of global health courses or other approved courses that have relevance to global health, including the following offered through VUSM
 - ISC: Global Health (3 credits)
 - AE in Global Health (3 credits)
 - Research immersion in Global Health area (6 credits)
 - Quality improvement project (3-6 hours)
 - ACE: Shade Tree Elective (3 credits)

- ACE: Spanish Language Peds Clinic (3 credits)
- Pandemic Medicine ISC (global health track) (3 credits)
- Case Studies in Tropical Diseases course (1 credit, online during the summer)
- Case Studies in COVID-19 course (1 credit, online during the summer
- Students may individually tailor and/or design electives in consultation with faculty mentors. Practicum, thesis, research immersion, and individual learning courses that have relevance to global health may be approved for certificate credit.
- · All courses for this certificate must be taken for graduate credit and involve global health content.
- 3. To initiate this certificate, submit the "Intent to Enroll" form (http://is.gd./GCGH_intent_to_enroll). Note: Your academic adviser or program director must sign this form.
- 4. To complete and receive this certificate, submit the Certificate Application (http://is.gd./GCGH_certificate_approval). This application should be submitted at least two months prior to graduation.

More information can be found at medschool, vanderbilt, edu/certificate-programs/global-health/.

Health Equity

The CDC states that "Health equity is achieved when every person has the poportunity to attain his or her full health potential and no one is disadvantaged from achieving this potential because of social position or other socially determined circumstances." (cdc.gov/chronicdisease/healthequity/ncex.htm) A growing, critical, and specific body of knowledge elucidates the complex underpinnings of health equity, which include both upstream and downstream factors. Socioeconomic (upstream) factors are shaped by the saucures, systems, environments, politics, policies, and distribution of money, power, and resources at global national, and it call levels. Individual (downstream) factors include behavior, lifestyle, gender, identity, genetics, family history, and use of/access to health care.

If society is to make progress toward achieving heal h equity, a cadre of physician leaders must be cultivated that understands these factors and forces, and possesses skills to intervere at the individual, system, and/or community level to impact meaningful change. The VUSM Certificate in health Equity is offered to doctor of medicine students who wish to deepen their knowledge and expertise in order to embark on leadership careers in this area.

Curriculum

The Certificate in Health Equity requires the following course work (all required courses are offered through the School of Medicine):

- 1. Foundations in Health Equity (FHE)
 - FHE I: Two-week course covering foundational concepts and skills offered twice each year during the second year of medical school.
 - FHE II: Monthly evening sessions during Immersion Phase during which students work with faculty facilitators to apply foundational concepts in discussing patients they encounter in health care settings.
- 2. Complete at least two additional courses in health equity and related disciplines. The following courses count toward this requirement:
 - ACE Panel-based Care in a Working-Learning Health System (WLHS)
 - ACE: Population Health in a WLHS
 - ACE Shade Tree Elective
 - ACE: Spanish Language Peds Clinic
 - ACE: Primary Care if taken at community-based locations, such as Siloam, Matthew Walker, and Neighborhood Health
 - ISC: Community Healthcare—Patients, Populations, and Systems of Care
 - ISC: Global Health
 - ISC: Health Systems Science in a Working-Learning Health System
 - ISC: The Opioid Epidemic (in development)
 - AE: Global Health
 - AE: Student Hotspotting

Please contact the VUMC Office of Health Equity regarding questions about courses that may meet the requirement at OHEinfo@vumc.org.

- 3. Immersion Experience in Health Equity (minimum two months in length):
 - Mentored experience with individualized learning goals
 - May be related to clinical care, research, public health, or community health
 - Students may use required research immersion blocks to satisfy this requirement
 - Projects can be used to satisfy Foundations of Healthcare Delivery (FHD) Quality Improvement requirement (requires FHD course director approval)

Doctor of Medicine students interested in pursuing the Certificate in Health Equity may learn more at *medschool.vanderbilt.edu/certificate-programs/health-equity*.

Lesbian, Gay, Bisexual, Transgender, and Queer (LGBTQ) Health

LGBTQ patients experience disparities in access to and quality of care, leading to preventable, adverse health outcomes including elevated risk for specific chronic diseases and increased rates of suicide and depression. The Certificate in LGBTQ Health is designed to teach Vanderbilt doctor of medicine students how to address these disparities, improve the health of LGBTQ patients, support education around LGBTQ health, and foster research on the optimal ways to care for LGBTQ patients and families.

The Certificate in LGBTQ Health comprises three elements:

- 1. **Research Immersion in LGBTQ Health.** Students select a research to pic within the realm of LGBTQ health. This may include selecting a topic within a clinical specialty, for example, additional medicine, infectious disease, psychiatry, or surgery. Projects may combine empirical and conceptual work with mentorship provided by designated mentors.
- 2. **LGBTQ Health in Inter-professional Practice or Sex Sexuality, and Sexual Health Elective.** Students choose from one of these two interdisciplinary courses focusing on sexual health in the general population and the specific health care needs of sexual and gender renorities in addition to the basic sciences underlying the pathophysiology of health in these populations (e.g., HPV injection, HPA dysregulation with chronic stress), clinical specialties highlighted in the course regulate pediatries and adolescent medicine, OB/GYN, psychiatry, and internal medicine with content threads from ethess, medico-legal health care, human development, and chronic care.
- 3. Capstone Project. Each student completes a capstone project related to LGBTQ health. This may include development of patient education materials, providing a community or staff training, or implementation of a quality improvement project. The capstone is expected to enable students to demonstrate proficiency and acquired knowledge in the area of LGLTQ health.

Each element may be taken separately, but completion of the Certificate in LGBTQ Health requires successful completion of all three elements. More information can be found at <u>medschool.vanderbilt.edu/certificate-programs/lgbtq-health/</u>.

Neurodevelopmental Disabilities

The Neurodevelopmental Disabilities (NDD) certificate program provides an opportunity for Vanderbilt doctor of medicine students to receive substantial education and training in the field of neurodevelopmental disabilities. As participants in the Vanderbilt Consortium LEND* program (VCL), medical students work with approximately 30 other students, residents, and fellows from sixteen professions at eight institutions to learn about culturally-sensitive, patient-and family-centered, interprofessional care for children and youth with special health care needs, including autism, intellectual disability, cerebral palsy, learning disabilities, behavior problems, and genetic syndromes that are associated with NDD.

The program provides an intensive (more than 300 hours), two-semester interprofessional training experience which includes:

- Rigorous weekly online core curriculum on NDD with occasional evening classes,
- A monthly evening leadership seminar series,

Care navigation practicum in which students assist patients and families in navigating the care they receive while learning about social determinants of health and community-based services,

- Clinical experiences in various interprofessional hospital-based, community-based, and public health clinics,
- Interprofessional group projects, and
- A broad list of activities from which the trainees can tailor their experiences based on their professional goals and aspirations.

At the completion of this experience, the students will have the requisite knowledge, skills, and attitudes to assume leadership roles in the field of NDD and to provide interprofessional, patient- and family-centered, community-coordinated, culturally competent, and empirically-based services to individuals with NDD and their families.

Participants receive tuition assistance in the amount of \$7,500. Successful completion of the VCL program also meets the VUMC Foundations for Healthcare Delivery requirement for an interprofessional experience during the Immersion Phase and LC5-LC8 of the VUMC Learning Communities requirements during the Immersion Phase.

Archived Medicine

Archived Medicine

School of Medicine Doctor of medicine students interested in pursuing the certificate in neurodevelopmental disabilities may learn more at the VUSM NDD Certificate webpage: medschool.vanderbilt.edu/certificate-programs/neurodevelopmentaldisabilities/

*National LEND program website:

http://www.aucd.org/template/page.cfm?id=6 Vanderbilt Consortium LEND program website:

http://vkc.mc.vanderbilt.edu/vkc/lend/

Courses of Study

This listing describes coursework offered by The School of Medicine toward the following degree programs: Doctor of Medicine, Doctor of Audiology, Doctor of Medical Physics, Master of Education of the Deaf, Master of Genetic Counseling, Master of Science (Speech-Language Pathology), Master of Science in Medical Physics, Master of Science in Clinical Investigation, Master of Public Health, and Master of Science (Applied Clinical Informatics). Courses in the School of Medicine are offered in semester, modular, and year-long formats. Courses leading to the M.D. do not carry credit hours; other programs use the traditional credit hour designation.

The university reserves the right to change the arrangement or content of courses, to change texts and other materials used, or to cancel any course on the basis of insufficient enrollment or for any other reason.

DOCTOR OF MEDICINE

Courses leading to the Doctor of Medicine*

*Glossary of Terms available at medschool.vanderbilt.edu/md-gateway/glossary-of-terminology/

Anesthesiology

ANES 5310. Basic Clinical Anesthesiology. Students will become a unite val part of var anesthesia care team model (attending anesthesiologist and resident) at VUMC. Working side by-side with this care team, students will learn and actively participate in the perioperative management of adult patients presenting for surgical procedures and diagnostic or therapeutic interventions requiring anesthetic care and management. Students will participate in preoperative assessment, risk stratification, development and execution of anesthetic plan (including induction of anesthesia, airway management, maintenance of anesthesia, and emergence), and immediate postoperative care of patients. This rotation will provide a hands-on, continually monitored and mentored experience. At the conclusion of this two-week elective rotation, students will be able to take and perform a focused anesthesia history and physical, evaluate airway anatomy for ease or difficulty of airway management, and demonstrate valuable skills of mask/bag ventilation, intubation, and LMA placement. A ditionally prough designated lectures, assigned textbook, selected journal readings, and hands-on clinical experiences, students will be acquainted with the pharmacology and physiology of anesthetic induction and maintenance agents, neuromuscular blocking drugs, vasoactive substances, local anesthetics, and opioid and non-opioid analgesics. Students will assess and interpret physiologic data from both non-invasive and invasive conformance agents, implementation of interventions to correct physiologic and hemodynamic perturbations.

ANES 5315. Perioperative Neurosciences: The Brains of the Operation. The overall goal of this elective is to have students apply their knowledge of anatomy, physiology, and pharmacology to the presentation and management of common neurological disorders. The students will have dedicated orientation and didactic sessions to review their experience and knowledge. Each will have a set of self-study exercises which will be reviewed with their dedicated mentor. Students will participate as active team members in several settings including the neuro care unit (NCU) and in the operating rooms with the neuro anesthesia and surgical teams. At the end of the two-week rotation, the students will demonstrate a focused history and physical exam of a neurological patient. They will be able to state the pathophysiology of the most common presenting neurological conditions such as raised intracranial pressure, seizures, or strokes including common methods of diagnosis. They will be able to present the patient and, based on their knowledge of CNS physiology, formulate a basic plan for medical or surgical management. In addition, students will understand how the care of these patients (nursing, monitoring, and pharmacology) differs from other medical conditions and the role of each specialty in the care of these patients.

ANES 5610. ACE: Perioperative Medicine and Surgical Home. This course is designed to emphasize the concepts of coordinated perioperative medicine and enhanced recovery after surgery (ERAS). Evidence-based guidelines, optimization/standardization of perioperative care, and multimodal strategies to decrease postoperative morbidities are key components of ERAS. The student will function as integral part of the Perioperative Anesthesia Consult Service and learn fundamental aspects of anesthetic care that maximize perioperative pain control and reduce morbidity and healthcare costs related to cardiac, pulmonary, renal, endocrine, PONV complications or

surgical site infections. The student will have an opportunity to be involved in the preoperative, intraoperative, and postoperative management of surgical patients on ERAS pathways.

ANES 5611. ACE: Advanced Clinical Anesthesiology. This ACE will define the role of Anesthesiology as a Perioperative Medicine Specialty in which students will gain broad understanding of the perioperative management of patients across all age groups undergoing surgical procedures. Course content will emphasize the following principles: preoperative assessment, development and execution of an anesthetic plan (including induction of anesthesia, airway management, maintenance of anesthesia, and emergence), and management of acute pain. Students will become an integral part of an anesthesia care team model (attending anesthesiologist and resident). Working side-by-side with this care team, students will learn and actively participate in the anesthetic management of patients presenting for surgical procedures and diagnostic or therapeutic interventions.

ANES 5701. AI: Anesthesiology for OMFS. To be determined.

ANES 6100. Special Clinical Study-Vanderbilt. Each student arranges an independent study with a mentor and completes a period of clinical work. Approval required.

ANES 7100. AWAY ACE: Anesthesiology. Each student arranges an independent study with a mentor and completes a period of clinical work away from Vanderbilt. Approval required.

ANES 7150. Special Research Study-Non-VU. Each student arranges in independent study with a mentor and completes a period of research work away from Vanderbilt. Approval required.

Dermatology

DERM 5790. ACE: Clinical Dermatology. This clinical experience will be in the outpatient clinic setting and the inpatient consultation setting with direct faculty interaction. The location of clinic assignments will be in the VU Dermatology Clinic at Vanderbilt One Hundred Oaks and the Dermatology Clinic at the Nashville VA Hospital. There will be participation in weekly conferences specifically for the rotators on the clerkship. The didactic lectures during the month will focus on the identification, treatment, and management of common dermatologic diseases. The clinical experience will reinforce the lectures plus give insight into the role of the dermatologist as a consultant for less common and difficult to treat conditions.

DERM 6100. Special Clinical Study: Dermatology, VU. Each student arranges an independent study with a mentor and completes a period of clinical work. Approval required.

DERM 7100. AWAY ACE: Dermato ogy. Each student arranges an independent study with a mentor and completes a period of clinical work way from Vanderbilt. Approval required.

Emergency Medicine

EM 5315. Emergency Medicine Elective. This elective will provide a two-week snapshot into the approach to any event or circumstance that threatens loss of life, injury to person or property, or human suffering. Students will be introduced to critical situations in the actual emergency department while learning the important skills required for patient stabilization and assessment. At the conclusion of the elective, students will understand and gain comfort in their future roles as physicians in any emergency situation in or out of the hospital setting. They will understand emergency care while extrapolating their current beliefs regarding emergency care to situations in the hospital setting and in the surrounding community. Students will apply problem-based strategies and teamwork to patient care, using the introductory principles in emergency medicine. They will practice an evidence-based approach and engage in teamwork to enhance their knowledge and skills in treating victims of cardiopulmonary and traumatic emergencies.

EM 5325. Bedside Ultrasonography in the Emergency Medicine Department. Students will be introduced to point-of-care ultrasonography with specific emphasis on its use in the acute care setting. Students will learn about sonography both through web-based resources and videos as well as during weekly didactic sessions. In addition,

students will spend several shifts in the Emergency Department each week both observing and performing point-of-care sonography under the guidance of the Director and Assistant Director of Emergency Ultrasound, Emergency Ultrasound Fellows, and Emergency Medicine residents. At the conclusion of the two-week elective rotation, students will be able to describe the appropriate use and application of point-of-care sonography in multiple clinical scenarios. They will be able to recognize normal and pathologic ultrasound images of several core applications. They will acquire the necessary technical skills to operate the ultrasound machine and to obtain images for several important studies including FAST (Focused Assessment with Sonography in Trauma), cardiac, abdominal aorta, renal, and soft tissue.

EM 5330. Prehospital Emergency Medicine: Overview of EMS, Wilderness, Event, and Mass Casualty Emergency Med. In this introduction to prehospital emergency medicine, elective students will experience the full range of EMS - from systems management in the Vanderbilt Communications Center to individual patient care in ambulance ride alongs. Through riding with Nashville Fire paramedics and physician directors, observing medical control calls, participating in quality improvement meetings, and reviewing prehospital medicine landmark literature, students will develop an understanding of the physician role in prehospital medical systems. Didactics and hands-on simulation will also cover disaster, wilderness and event medicine. This course is designed for students interested in emergency medicine and its subspecialties.

EM 5950. ACE: Emergency Medicine. "Is there a doctor on the plane?" Emergencies happen in all specialties and even in life. The 4 week Emergency Medicine ACE will introduce the student to emergency medicine and the initial management strategies for common life threatening emergencies. Students will develop an approach to common undifferentiated patient complaints and a practical skill set in: acid-base emergencies/ tasic airway management, electrocardiogram interpretation, and electrolyte emergencies. Students will also complete Basic Life Support (BLs) and Advanced Cardiac Life Support (ACLS) training. During the veck, there are daily didactic sessions as well as procedure labs and high fidelity simulations. Clinical shifts are spread across a variety of practice settings (adult and pediatrics) and offer a broad exposure. Students work closely with emergency medicine faculty and residents to identify sick patients and develop differential diagnoses and management plans. Students also have the opportunity to participate in procedures and trauma resuscitations. Fulfills the acrue care course requirement.

EM 5955. ACE: Enhanced Experience in Energency Me (icine. The goal of this course is to provide students with an intensive emergency medicine (EM) experience. Students will have increased responsibilities for the assessment and management of patients presenting for acute care and will work a schedule of emergency department (ED) shifts more typical of an EM intern, including days, evenings, overnights, and weekends. This course offers an intensive experience designed to provide students with increased responsibilities for the assessment and management of patients seeking acute care. Students are integrated into the emergency medicine health care team and schedule. During the course, itudents assume ownership for the overall care of their assigned patients for the entire continuum of their ED course, including transitions of care. In a closely supervised setting, students will experience the roles and responsibilities of an intern on the team.

EM 6100. Special Clinical Sandy Vanderbilt. Each student arranges an independent study with a mentor and completes a period of clinical work. Approval required.

EM 7100. AWAY ACE: Emergency Medicine. Each student arranges an independent study with a mentor and completes a period of clinical work away from Vanderbilt. Approval required.

EM 7150. Special Research Study-Non-VU. Each student arranges an independent study with a mentor and completes a period of research work away Vanderbilt. Approval required.

Family Medicine

FM 7100. AWAY ACE: Family Medicine. Each student arranges an independent study with a mentor and completes a period of clinical work away from Vanderbilt. Approval required.

Global Health

IGHM 5240. Foundations of Global Health. This course introduces students to key topics, concepts and methods in global health, examining determinants of complex issues and exploring multi-dimensional approaches and interventions with a particular emphasis on low resource settings. Health and developmental issues across nations and cultures that require collective (partnership-based) action are highlighted by an interdisciplinary faculty using didactic, interactive and practical elements of instruction. At the conclusion of the course, students should be able to discuss research and evaluation methodologies commonly used in the field, identify key global health questions and design suitable projects that address the questions. This course is a requirement for the Global Health Certificate. First and second year. Fall.

IGHM 5241. Essential Skills in Global Health. This course introduces students to core research, field tools, assessment and implementation techniques, and evaluation methodologies used commonly in the field of global health. Various theories and practices that are commonly used to analyze issues and intervene in global health are explored. A key objective of the course is to examine determinants of global health and development from an interdisciplinary vantage point. Health and developmental issues across nations and cultures that require collective (partnership-based) action are highlighted. The course is taught by an interdisciplinary faculty and external resource persons using didactic, interactive and practical elements of instruction. First and second year. Spring.

IGHM 5242. Informatics for Global Health Professionals. This course serves as an introduction to medical informatics with an emphasis on global health care settings. As global health bridges both patient care and public health, so informatics in this context covers both patient-based information systems and public health information systems. International cooperation on health information system issues has resulted in both extensive knowledge repositories and a powerful set of tools and techniques that can be used by practitioners and researchers. The module consists of lectures with discussion and analysis as well as hands on instruction with some software applications and electronic resources. This course may be taken as credit toward the Global Health Certificate. First and Second Year. Fall.

IGHM 5244. Ethics in Global Health. This course provides in overview of ethical issues and standards in global health, particularly with respect to ethics in international research. Its aim is to provide students in the health professions and others interested in global health with a framework in which to recognize, examine, resolve, and prevent ethical conflicts in their international work. Fix ough readings, lectures and discussion, students will explore diverse historical and contemporary international perspectives on the concepts of ethics and health as well as formulating recommendations for prevention and resolution of ethical conflicts related to global health. This course may be taken as credit toward the blobal Health Certificate. First and Second Year. Spring.

IGHM 5247. Case Studies in COVID: 1. The course will introduce students to the emergence of SARS-CoV-2 in a case study format with student group discussion facilitated by faculty and trainees who have substantial front-line medicine training and experience. This is a unique opportunity to study a pandemic in real-time and to understand how newly published scientific that are applied in a rapidly changing landscape. Faculty members present representative case reports and read interactive discussions on pathophysiology, epidemiology, disease transmission, clinical presentation, differential diagnosis, diagnosis, and management (NOTE: Course content also to cover important prevention (i.e. PPE, novel therapeutics) as well as public health containment and control aspects) including pandemic specific issues faced by resource-replete as well as resource-constrained settings. This course will focus on the COVID-19 pandemic with specific reference/comparison to other relevant pandemics/serious infections (i.e. influenza, SARS, and MERS). This course is designed for public health, medical, and nursing students who wish to obtain an overview of what is known as well as what is evolving rapidly amid this global COVID-19 pandemic. Non-clinical graduate students in other disciplines who have advanced medical/clinical vocabularies will also find this course of interest.

IGHM 5249. Case Studies in Tropical Diseases. This course will introduce tropical diseases and parasitology in a clinical case study format with student group leadership that is facilitated by faculty with substantial front-line tropical medicine training and experience. Written case protocols will be presented by faculty members and Infectious Disease fellows/Internal Medicine residents who will lead an interactive discussion involving pathophysiology, clinical presentation, differential diagnosis, diagnosis and treatment. This course may be taken as credit toward the Global Health Certificate. First and Second Year. Spring.

IGHM 5250. Global Health Politics and Policy. Global Health Politics and Policy introduces core global health problems facing the world's populations today and examines the efforts taken to improve health at a global level. It focuses on the social and political movements of global health issues and how these forces created and shaped global health policy both in the U.S. and among the G8 nations from 2000-2011. First and Second Year. Spring.

IGHM 5272. Fundamentals of Global Health: Addressing Global Health Disparities. This elective course is designed for graduate students interested in global health and will consist of seven units: Introduction to Global Health, Health Disparities, Health Care Delivery Systems, Evidence-based Practice, Non-communicable and Communicable illnesses, Trauma and Violence and Effective, Ethical Models for Global Health Engagement. The course will focus on best practices for allocating scarce resources and engaging in interdisciplinary global health work with diverse communities from a cultural, ethical and clinical perspective. Students will engage in learning through readings, synchronous and asynchronous discussions, case studies and written assignments. This course is designed for students interested in caring for and empowering underserved populations locally and abroad.

IGHM 5280. Local Applications of Global Health. This is an elective course designed for graduate students interested in the local context of global health applications. This course will consist of weekly discussions led by interdisciplinary experts in global health, within and outside of VU. Topics will focus on interdisciplinary innovations that alleviate health disparities in diverse settings locally and abroad. Students will engage in learning through readings, attendance and participation in discussion and debates at weekly seminars and assignments. This course is designed for students interested in reciprocity in global health and caring for enderserved populations locally and abroad, and builds on a diverse base of prerequisite knowledge in interdisciplinary fields pertaining to health, social justice, sustainable development, and working in interd sciplinary across.

IGHM 5284. Planetary Health, Policy and Social Justice. This is an elective course designed for students interested in exploring the intersections between primary care, planetary realth and climate change (according to WHO, currently the greatest threat to global health), social justice and policy. The causes of climate change and the resulting primary, secondary and tertiary impacts on people and communities will be examined through the lens of global health and policy. Students will work with local agencies to develop evidence-based and targeted adaptation and mitigation strategies as well as policy-based colutions, at in corporating science and engineering, political science and policy, law and economics as well as nursing and medicine to address healthspan disparities related to climate change and social vulnerability.

Interdisciplinary Studies

IDIS 0720. Meharry Medical College Circ Clerkship Visiting Experience. Meharry Medical College third-year students participate in a predetermined short-term core clerkship experience.

IDIS 0731. Working-Learning Health System. This course is taken by non-Vanderbilt students participating in the interprofessional working-learnin; health system (WLHS) program.

IDIS 5001. CASE - Clinical Application of Scientific Evidence. The research curriculum is a four-year thread. Students will be introduced to a career as a physician-researcher and receive training and hands-on experience in several critical areas of importance to success in research. This will be accomplished through a series of didactic lectures focused on introduction to important skills and traits of physician-researchers, shadowing and interviewing physician-researchers and processing the information to tell a story through a film documentary and related curriculum. First year.

IDIS 5002. Discovery. Students will engage in activities which further develop understanding of research process while supporting exploration of research opportunities that may be pursued during the Immersion Phase. The course begins with an overview of general research areas in which students can participate. Additional course meetings include topics related to mentoring, ethics and professionalism, regulatory training, and scientific communication.

IDIS 5003. Innovation Activism. This course is designed for MD students in the MIDP program, and will blend the engineering strategies of house of quality with voice of the customer to enhance the active observation aspect of

innovation acuity. While engaged in the 2nd year clinical clerkships, the students will identify opportunities for innovation in the patient, provider and/or system they observe in the clinic. Students will complete preliminary steps of the design process for projects that will be further developed in the third year MIDP Innovation Design Experience and Application Lab.

IDIS 5015. Interprofessional Continuity Clinic 1: Vanderbilt Program in Interprofessional Learning (VPIL). The Vanderbilt Program in Interprofessional Learning (VPIL) is a longitudinal continuity clinic experience where students work and learn together as members of an interprofessional team. This is the first year of a two-year experience. Medical students accepted into the program are assigned to teams of health professions students earning degrees in advanced practice nursing, pharmacy and social work. The teams work alongside their assigned clinical preceptors in order to deeply understand the many factors - biological, social, psychological, economic and cultural that impact patient health and wellbeing, as well as system factors that impact how our health care teams and clinics function on a daily basis. The program launches with a week-long summer immersion. Throughout the academic year, student teams work and learn together in clinics, seminars and simulated learning activities. Program goals include: cultivate respectful professionals, nurture self-directed workplace learners, prepare leaders who contribute to a collaborative-practice-ready workforce, integrate the patient care experience with health professions knowledge, and improve the health care delivery system by integrating systems knowledge with patient care. Participation in VPIL allows for medical students to waive credit in specified areas of Foundations of Health Care Delivery (FHD). Specific graduation requirements can be found at https://medschool.vanderbilt.edu/vpil/

IDIS 5016. Interprofessional Continuity Clinic 2: Vanderbilt Program in Interprofessional Learning (VPIL). The Vanderbilt Program in Interprofessional Learning (VPIL) is a longitudinal continuity clinic experience where students work and learn together as members of an interprofessional learn. This is the second year of a two-year experience. Medical students accepted into the program are assigned to teams of health professions students earning degrees in advanced practice nursing, pharmacy and social work. The teams work alongside their assigned clinical preceptors in order to deeply understand the many factors—biblogical, social, psychological, economic and cultural that impact patient health and wellbeing, as well as system factors that impact how our health care teams and clinics function on a daily basis. Throughout the academic year, student teams work and learn together in clinics, seminars and implement a quality improvement project. They will present their project as part of a Capstone event that completes the program. Program goals include: chrisvate respectful professionals, nurture self-directed workplace learners, prepare leaders who contribute to a confacorative practice-ready workforce, integrate the patient care experience with health professions knowledge, and improve the health care delivery system by integrating systems knowledge with patient care. Participation in VPIC, allows for medical students to waive credit in specified areas of Foundations of Health Care Delivery (FIID). Specific graduation requirements can be found at https://medschool.vanderbilt.edt

IDIS 5028. Human Blueprint and Archivecture. This course is designed to familiarize students with the structures, biomolecules, and processes that constitute life, human health, and disease at the molecular, cellular, and tissue level. Course materials will previde a mechanistic foundation for the medical curriculum that will help equip students with skills necessary to adapt to the practice of medicine in the future. Human Blueprint and Architecture will employ a coordinated and integrated approach to teaching underlying principles of biochemistry, cell and tissue biology, genetics, and pathology with an emphasis on medical conditions. Students also will be introduced to basic principles of anatomy and pharmacology in order to lay foundations for studies on organ systems and disease treatment. In order to provide a broad range of materials and relate molecular and cellular processes to the study of human disease, the course will utilize multiple learning modalities, including large group sessions, case-based learning (CBL) sessions, team-based learning (TBL) sessions, laboratory sessions, and interactive patient-oriented clinical case presentations. The course will be integrated with all other learning activities in the Foundations of Medical Knowledge phase. Required. First year.

IDIS 5032. Microbes and Immunity. This course familiarizes students with the etiology, risk factors, epidemiology, diagnosis, pathogenesis, clinical characteristics, prevention and treatment of common microbial and immune diseases. The course content includes a discussion of the soluble factors and cells that make up the immune system and how these different components contribute to health and disease in a variety of situations. It also provides an overview of the pathogenic bacteria, viruses, fungi, protozoa and parasites. Finally, the course includes several topics that prepare students for the Homeostasis class of the Foundations in Medical Knowledge Phase. The

course consists of lectures, case-based small group discussions, case-based intermediate size group discussions, laboratory sessions, and optional problem and review sessions. Required. First year.

IDIS 5033. Learning Communities-Foundations of Medical Knowledge. The Learning Communities FMK course seeks to maximize medical student learning related to student development as professionals. Helping students build an appropriate image of the medical profession and skill set related to functioning within the healthcare environment are the essential foundation for future success. Development as professionals involves knowledge, skills and attitudes related to students' practice as well as the environment within which the practice will occur. The longitudinal nature and trusting environment created within the Learning Communities fosters student professional development, specifically addressing personal areas of metacognition and reasoning, ethics, service, and leadership, as well as the knowledge and understanding of the broader healthcare environment and payment. The academic sessions will be developmentally appropriate as the students mature through the phases, as well as effectively integrated with other course and clerkship efforts. In sum, the Learning Communities will provide the nurturing environs to maximize student development as professionals.

IDIS 5038. Homeostasis. This course is designed to teach students the normal anatomic, molecular, biochemical, and physiologic features of the cardiovascular, pulmonary, renal and blood systems. Course content will provide a framework for an understanding of the pathology and pathophysiology of diseases that affect these homeostatic systems as well as their diagnosis (laboratory and imaging), and therapy (pharmacologic and nonpharmacologic). A multidisciplinary approach will allow integration of pathobiology, clinical manifestations, and therapy in a comprehensive manner. The course will utilize a variety of teaching modal ties that include case-based learning, team-based learning, lectures, laboratory sessions focused on the gross and microscopic anatomy and pathology, and technology-based modalities and simulations. Learning will be in the context of clinical medicine in order to prepare students for the next phase of their education in the clinical setting. The course will be integrated with all other learning activities in the Foundations of Medical Knowledge Phase. Required Lirst year.

IDIS 5048. Foundations of Health Care Delivery 1: Continuity Cinical Experience. Foundations of Health Care Delivery 1: Continuity Clinical Experience is a longitudinal clinical experience where individual students are integrated into a clinic to learn about the clinical care team, clinic selting, and develop skills to care for individual patients while learning about the larger care-delivery system Course activities including clinical experiences and didactics, will address the following goals: 1. Prepare professionals with systems-level skills necessary to provide care that is safe, effective, patient-centered, timely, efficient, and equitable. 2. Integrate health systems sciences with clinical care. 3. Cultivate respectful professionals

IDIS 5055. Foundations of the Profession The goal of this course is to provide students with an understanding of the historical and social context of the practice of medicine. Through assigned readings, lectures, small group discussions and simulations, students will gain an appreciation for the core values and ethical principles that guide the profession's relationship with society and the physician's relationships with patients. They will also explore some of the contemporary challenges facing physicians today, including the need to improve health care disparities, quality, and safety. First year

IDIS 5058. Endocrine, Digestion, and Reproduction. This course is designed to familiarize students with the normal anatomic, molecular, biochemical, and physiologic features of the endocrine, digestive and reproductive systems. Course content will provide a framework for an understanding of the pathology and pathophysiology of diseases that affect these systems as well as their diagnosis (laboratory and imaging) and therapy (pharmacologic and nonpharmacologic). The role of nutrition in normal homeostasis as well as disease will be included. Pregnancy from implantation to delivery as well as its complications will also be learned. A multidisciplinary approach will allow integration of pathobiology, clinical manifestations, and therapy in a comprehensive manner. The course will utilize a variety of teaching modalities that include case-based learning, team-based learning, patient interviews, lectures, laboratory sessions focused on the gross and microscopic anatomy and pathology, and technology-based modalities and simulations. Clinical context will be emphasized in order to prepare students for the next phase of their education in the clinical setting. The course will be integrated with all other learning activities in the Foundations of Medical Knowledge Phase. Required. First year.

IDIS 5068. Brain, Behavior, and Movement. The Brain, Behavior, and Movement module provides an overview of contemporary neuroscience and introduction to neuropsychiatric disorders. The format of the module includes

lectures, lab exercises, small group discussions, and case presentations and discussions. In conjunction with Physical Diagnosis, skills training includes the psychiatric interview and neurological exam. The module emphasizes a basic understanding of the anatomy, physiology, and pharmacology of the central and peripheral nervous systems and the pathophysiological underpinnings of neuropsychiatric disorders. The course provides the foundations of Neurology and Psychiatry. This course is a module within the Foundations of Medical Knowledge Phase. Required. First year.

IDIS 5100. ACE: Primary Care Medicine, VU. All immersion phase students will have a required four-week unit in an ambulatory primary care setting, and this course fulfills that requirement. Students will choose an experience in outpatient pediatrics, internal medicine, family medicine, or internal medicine/pediatrics. Practice sites include ambulatory clinics at Vanderbilt or within the Nashville-area community. Assistance with placement is provided.

IDIS 5150. AWAY ACE: Primary Care Medicine. All immersion phase students will have a required four-week unit in an ambulatory primary care setting, and this course fulfills that requirement. Students will choose an experience in outpatient pediatrics, internal medicine, family medicine, or internal medicine/pediatrics. Practice sites include ambulatory medicine or pediatric clinics. Students may arrange a primary care experience outside of Nashville, subject to the approval of the course directors. The clinic experience is supplemented by a home visit to follow-up on a patient seen during the ambulatory clinic experience. Assistance with placement is not provided, and students are also responsible for ensuring that proper affiliation agreements are in place for this rotation.

IDIS 5200. MSTP Seminar Series. This elective is open to students in the Medical Scientist Training Program only.

IDIS 5201. Foundations of Biomedical Research I. The major goals of this course for MSTP students in their first year of Medical School are to help them to gain familiarity in reading primary research literature, including utilization of statistical analyses, and to aid the students in selection or a diesis mentor and in understanding of appropriate expectations for both mentor and mentee. These goals will be accomplished in a casual setting through interactions with potential MSTP-eligible faculty and lao members, consultation with faculty advisors, and primary literature discussions. Students will be assessed based upon course participation. Open to students in the Medical Scientist Training Program only. First year.

IDIS 5202. Foundations of Medical Research IV. The purpose of this course is to prepare MSTP students for the biomedical research phase of training. The course objective is to develop skills for physician-scientist trainees in critical evaluation of the research literature and formulating high-impact research questions. For second year students the course will be tailored to the individual interests of the students and their research mentors, with particular emphasis on examining scientific papers specific to the students' field of research. Open to students in the Medical Scientist Training Program only Second year.

IDIS 5215. Foundations of Wealth Care Delivery 2: Clinical Systems of Care. Foundations of Health Care Delivery 2: Clinical Systems of Care is a course designed to introduce students to the larger health care systems. Students will engage in idactics and experiential learning to develop a deeper understanding of the systems involved in practicing within a mesosystem and macrosystem. Students will learn principles of patient safety, experience a variety of settings of care, learn about safe transitions of care, optimizing health care value, and learn about the role and function of clinical informatics and health information technology. Through these experiences, students will address the following goals: 1. Prepare professionals with systems-level skills necessary to provide care that is safe, effective, patient-centered, timely, efficient, and equitable. 2. Integrate health systems sciences with clinical care. 3. Cultivate respectful professionals.

IDIS 5220. PLAN. This course introduces students to the basic concepts and principles of research and their application to clinical practice and population health in preparation for their Research Immersion. The course provides the necessary research skills and competencies to develop a basic but complete and structured research proposal for the upcoming Research Immersion experience. The Pathway2PLAN process (completed during the FCC Phase during the Discovery course) is required for admittance into the PLAN course. Approval required.

IDIS 5233. Learning Communities-Foundations of Clinical Care. The Learning Communities FCC course integrates with the student's clerkship experiences and builds on the students' experiences Learning Communities FMK. Prior efforts addressed important professional development topics such as metacognition, clinical reasoning, ethics, leadership, and healthcare delivery. The Learning Communities FCC course connects these theoretical concepts and discussions with the practical and experiential learning of the students during their clerkship rotations. Students meet in College-based groups for discussion and reflection with the College Mentors, as well as in clerkship-based groups with ethics faculty for deeper exploration of ethical issues specific to each clerkship. In sum, the Learning Communities FCC course will continue to provide nurturing environs to enhance student development as professionals by allowing for the exploration of the practical application of previously learned concepts.

IDIS 5310. CiM Multi-Specialty Elective. Throughout this two-week elective, students will shadow attending and resident physicians of their choosing in various specialties and subspecialties. The purpose of the course is to introduce students to various fields of medicine in an effort to aid in their specialty selection in the fourth year of medical school. A list of attending physicians in various specialties will be provided by the Student Representatives of Careers in Medicine (CiM). Enrolled students will be responsible for contacting physicians and scheduling their shadowing experiences over the two-week period. Two weeks prior to the beginning of the elective, a meeting with the course director(s) will outline the process for scheduling these experiences and expectations for the elective. Shadowing experiences with faculty members outside the CiM-provided list may be arranged with prior approval from the course director. At the end of the elective, students will participate in a profession development workshop and an individual exit counseling session with the Assoc. Dean for Medical Student Affair to discuss their clinical experiences and their progress towards choosing a specialty. Students will chedule shad wing experiences for nine days of the elective and attend the professional development workshop and the exit counseling session. Shadowing of one physician is limited to a maximum of three days. Enrolled students will sain it their shadowing schedule to the course director(s) prior to the start of the elective for approval. The professional development workshop will address topics such as CV writing and public speaking. At the conclusion of the two-week rotation, students will be familiar with the schedules, daily activities, patient populations, and consultations in several specialties. The shadowing experience and exit counseling session with the Assoc Dear for Medical Student Affairs will provide students with information that will aid their specialty selection and CV.

IDIS 5314. Critical Thinking and Logic in Medicine. Critical Thinking, logic and reasoning play a fundamental role in everyday patient care as well as research design in corpretation and application. While development and application of evidence based medicine is caucial to advancement of all aspects of clinical practices, it is of little significance without sound critical thinking and logic reasoning. Students will join anesthesiologists and/or Intensivists in the operating rooms and ICU from 7.30 to 12:00 every other day throughout the elective period. Didactics about the principals of citieal thinking in medical practice and other similar high intensity environments will be offered in form of lectures discussion groups and simulations. Pre acquired knowledge in the field of anesthesia and critical care is not required Poblem solving skills development will be based on concept of critical thinking and asking the right question. Pesources to acquire needed knowledge to apply in problem solving will be provided to students and will consist mainly electronic resources available on the internet and intranet followed by physicians practicing in the respective fields. At the conclusion of the two-week elective rotation, students will be able describe and apply principal of critical thinking and reasoning to patient care. Application of logic and reasoning to individual patient care as well as generating the relevant hypothesis on which future literature search and study design should answer. While problems in anesthesiology and critical care will serve as examples, the understanding, concepts and resources will be generalizable to all fields of medicine. Objective pre- and post-course evaluation will given to track learning and help in improving the course for future students. A subjective evaluation will also be collected from each student. Students will receive feedback at the end of each clinical exposure (2 days) on the elective and at the conclusion of the post-course evaluation. The course will be graded on a pass/fail basis. Students should report to MCE 3161 on their first day.

IDIS 5316. Medicine and Media. As the interest in science and medical news grows and more media outlets exist to report and analyze such news, the need will increase for medical professionals who are skillful at using media of all types to convey information. An understanding of various facets of how science and medical news are produced and reach the public may be gained through working with Vanderbilt communications professionals engaged in reaching the public with such news. Students in this elective will join various units of Vanderbilt's Communications team, both as observers and participants, in order to learn some of the fundamentals of medical and health communications at a major academic medical center. These opportunities will include, but not be limited to, local

and national media relations; getting hands-on experience with medical journalism by researching and writing a press release or a story for the VUMC Reporter or other Medical Center publications; working with the social media team to learn about the uses of media such as Facebook and Twitter to convey news, as well as health and wellness information; working with the Division's web team to learn about the presentation of news and information via the web; receiving a more institution-wide perspective by working with the editors of Research@Vanderbilt, our website devoted to research news; and working with VUMC faculty who are frequently called on by the press to convey health information to the public. The students will also be assigned readings and viewings that provide context to the daily hands-on experience. At the conclusion of the two-week elective, students will be able to interview one or more sources and write a publishable news story on biomedical research or a health topic; understand the daily interactions between the local and national media and a medical center such as Vanderbilt that seek to influence both public health and its national reputation via media relations; and understand the key role of social media in the modern media environment. Students will also have the opportunity to become more skilled at being interviewed and accurately conveying information, even in a challenging environment. Additionally, the students will have an understanding of some of the key differences in professional assumptions between media professionals and science professionals.

IDIS 5327. Adult Communication Disorders. This two-week elective will offer students an opportunity to focus on adult communication disorders. Students will be provided didactic coursework in the relevant areas and will observe and, when appropriate, participate in surgical, medical, and clinical care of affected patients. Students will join an interdisciplinary team of clinicians, scientists, and physicians to serve and investigate adult patients who exhibit acquired communication or vestibular disorders as a result of damage to the central or peripheral nervous system. Acquired neurogenic disorders commonly are associated with stroke, dementia, Parkinson's disease, Lou Gehrig's disease, tumor, and traumatic brain injury, which result in a hasia, dysachtia, and apraxia of speech. The most commonly diagnosed vestibular disorders include benign paraxysmal positional vertigo (BPPV), labyrinthitis or vestibular neuritis, Meniere's disease, secondary endolymphetic hydrops, and perilymph fistula, which result in a range of difficulties including vestibular disturbance and difficulties with calance and falls. Students will spend a portion of their time with the Neurogenics Team and a pertion of their time with the Vestibular Team. Care providers from the departments of Hearing and Speech 3ciences, Neurology, Physical Medicine and Rehabilitation, Trauma, and Otolaryngology will participate in this elective.

IDIS 5329. Pediatric Communication Disorders. This two week elective will offer students an opportunity to focus on pediatric communication disorders. Students with be provided didactic coursework in the relevant areas and will observe and, when appropriate, participate in surgical, medical, and clinical care of affected patients. Students will join an interdisciplinary team to serve and in extigate pediatric patients who exhibit hearing loss, dysphagia (a feeding and swallowing disorder, or Autism Spectrum Disorder (ASD). ASD includes Autism, Pervasive Developmental Disorder, not otherwise specified and is characterized by a disturbance of normal neural organization and connection resulting in impaired social interaction and communication. Students will spend a portion of their time with the cochlear implant and hearing aid teams, a portion of their time with the dysphagia team, and a portion of their time with the ASD team. The Hearing Loss Team will consist of audiologists, surgeons, speech-language pathologists, and a number of other individuals who work with these children. Clinical and surgical observations will take place in various clinics within the Bill Wilkerson Center and in the Otolaryngology Clinic at Children's Hospital. The Dysphagia Team will consist of otolaryngologists and speech-language pathologists, and a number of other professionals who work with these children. Clinical and surgical observations will occur within the Complex AeroDigestive Evaluation Team (CADET) Clinic. The ASD Team will consist of care providers and scientists from the departments of Psychiatry, Psychology, Developmental Pediatrics, Hearing and Speech Sciences, Neuroscience, and a number of other individuals working with these children.

IDIS 5330. Critical Thinking and Logic in Medicine. Critical Thinking, logic and reasoning play a fundamental role in everyday patient care as well as research design, interpretation and application. While development and application of evidence based medicine is crucial to advancement of all aspects of clinical practices, it is of little significance without sound critical thinking and logic reasoning. Students will join anesthesiologists and/or Intensivists in the operating rooms and ICU from 7:30 to 12:00 every other day throughout the elective period. Didactics about the principals of critical thinking in medical practice and other similar high intensity environments will be offered in form of lectures, discussion groups and simulations. Pre acquired knowledge in the field of anesthesia and critical care is Not required. Problem solving skills development will be based on concept of critical thinking and asking the right questions. Resources to acquire needed knowledge to apply in problem solving will be

provided to students and will consist mainly electronic resources available on the internet and intranet followed by physicians practicing in the respective fields. At the conclusion of the two-week elective rotation, students will be able describe and apply principals of critical thinking and reasoning to patient care. Application of logic and reasoning to individual patient care as well as generating the relevant hypothesis on which future literature search and study design should answer. While problems in anesthesiology and critical care will serve as examples, the understanding, concepts and resources will be generalizable to all fields of medicine Objective pre and post course evaluation will be given to track learning and help in improving the course for future students. A subjective evaluation will also be collected from each student. Students will receive feedback at the end of each clinical exposure (2 days) on the elective and at the conclusion of the post-course evaluation. The course will be graded on a pass/fail basis. Students should report to MCE 3161 on the first day. [0]

IDIS 5335. Aerospace Medicine Elective, USAF. This course provides an overview of flight and operational medicine introducing students to unique patient populations and occupational exposures. Field experiences include visits to a fire station, hypobaric chamber, and an incentive flight. Students will visit the National Museum of the U.S. Air Force, exploring past and present airframes in the USAF inventory. Finally, an outdoor mass casualty triage exercise will be conducted at the National Center for Medical Readiness at Calamityville.

IDIS 5340. Introduction to Business of Medicine. This elective rotation is designed to give a medical student an introduction the business aspects of healthcare. The goal of this course is to have students begin to get an appreciation of how modern healthcare and business intersect. Whether in a small single provider clinic or a large academic medical center, core business principles are used to manage and deliver quality healthcare. Specifically, this rotation will focus on the business principles of: healthcare economics, operations, leadership, strategy, and finance. We will use a combination of didactic lectures, outside reading, and direct mentor shadowing to give students exposure to these business topics. By the end of the rotation, a student should be able to: describe key concepts within each of the five business topics, discuss specific examples of bow these topics are applied in the delivery of healthcare, and have a basic understand of government insurance products and policies, and how they relate to healthcare delivery.

IDIS 5351. Foundations of Health Equity I. This course covers bealth equity foundational concepts and skills during the second year of medical school.

IDIS 5500. USMLE Step 1 Independent Study. This course requires students to undertake a two-month period of independent study for Step 1 of the United States Medical Licensing Exam. This course is required prior to advancing into Immersion phase reculrements.

IDIS 5610. AE: Med School 101. Students will develop and conduct "Med School 101", a 3-week course for gifted high school students as part of Vanderbilt University's Program for Talented Youth (PTY). The course begins early in the spring semester, when third-year to dents can participate in optional training at the Center for Teaching. Later in the spring, under the direction of the Senior Associate Dean for Health Sciences Education, students create a curricular plan, develop teaching sessions and arrange for other teaching sessions and clinical experiences. Finally, students implement the course during the first full three weeks in July.

IDIS 5613. ISC: Critical Illness. Regardless of a student's individual specialty choice, each will be called upon to provide competent care for critically ill patients during their residency training. The successful management of critically ill or injured patients requires a thorough understanding of physiology, pathophysiology, and pharmacology. By combining targeted teaching with hands-on experiences in different ICUs across the medical center, Critical Illness will deepen knowledge of the anatomy, physiology, pathophysiology, imaging, biostatistics, ethics, microbiology, neuroscience, nutrition science, pharmacology, and behavioral medicine inherent in critically ill patients. In the first week, all students will be immersed in Critical Care Skills Week, a highly regarded simulation-based learning experience that prepares students to understand the basic principles of recognition and early treatment of the critically ill patient. All students will spend a week caring for patients in one of the following ICUs: Medical, Surgical, Burn, Neurologic, Cardiovascular, or Pediatric ICU. The other 2 weeks will be spent in learner-focused case-based education facilitated by ICU faculty, ICU radiology and palliative care sessions, additional patient-centered experiential learning opportunities and hands-on workshops in ICU-specific technical skills such as airway management, ventilator manipulation, and chest tube placement.

IDIS 5614. ISC: Community Healthcare Patients, Populations and Systems of Care. In Community Healthcare, students will be equipped to effectively address predictors of poor health on an individual level, and to engage healthcare systems in ways that promote meaningful change. Students will move beyond an investigation of the social determinants of health to provide individualized patient care and engage the healthcare system. Regardless of the field students decide to enter, they will encounter vulnerable populations of patients and should be equipped to address patient needs in ways that promote healing. Foundational science topics will include population health, health policy, health determinants, community engagement, systems engineering, public health, organizational management, health ethics, resource utilization, implementation science, behavioral science, and communication science. The course is comprised of clinical experience in a safety net clinic, seminar sessions with local and national experts to facilitate skill development, two projects with presentations that integrate core concepts, and journal club participation with a presentation. The course will equip students with a "portable toolkit" of skills that can be used in any field of practice in any location. This course qualifies for primary care credit.

IDIS 5618. ISC: Global Health. In this international clinical rotation, students have a unique opportunity to gain a deep understanding of diseases in resource-constrained settings through the lens of population science. epidemiology, public health, health systems, health policy, and other issues related to international development. Students spend the entirety of the course at one of Vanderbilt's partner sites in locations around the world, including but not limited to Guatemala, Jordan, Kenya, and Peru (students may also propose an alternative site). Clinical sites range from urban teaching hospitals to rural clinics and often include associated community health outreach programs. Once on-site, students participate in a variety of rotations ranging from one to four veeks that are designed based on both the student's interests and the mentorship and resources available at the site. During the rotation, students complete weekly online modules that introduce key concepts in global health and related foundational sciences. Foundational science topics include population health science, public health, pathology and pathophysiology (for both infectious diseases and non-communicable diseases), natrition science, epidemiology, and health systems sciences (other foundational science areas could be covered depending on the site). The course is taught through interactive digital lectures; readings from peer reviewed purnals; on-site exposures to patients, health systems, and communities; and distance mentoring sessions with vanderbilt faculty. In the month prior to departure, students complete online pre-departure modules as well a attend two pre-departure orientation sessions to prepare for immersion. Students have the opportunity to hope for ign language skills and to develop lasting partnerships in a cross-cultural setting with our international colleagues.

IDIS 5620. ISC: Clinical Cancer Medicine. Cancer is the second leading cause of death worldwide, accounting for 8.8 million deaths in 2015. The World health Organization estimates that the number of new cancer cases and cancer deaths will increase by 50% and 60%, respectively, within the next 20 years. Although in the United States, the overall cancer death rate has declared, the number of cancer survivors has increased and is expected to rise to 19 million people by 2024. Physicial s practicing in any specialty can expect to care for patients, with significant comorbidities, who have cancer or are cancer carvivors. As a result, all medical students should understand the basic mechanisms driving the most compact cancers, relevant treatment strategies, treatment toxicities, and outcomes. This course will provide a unique educational opportunity where medical and graduate students work together to explore the foundational principles of cancer biology and how that information is leveraged for personalized patient care. Foundational science topics are broad and include anatomy, physiology, histology, biochemistry, cell biology, genetics, molecular biology, immunology, pathology, radiobiology, and toxicology. Students will actively participate in the multidisciplinary approach necessary for the optimal care of cancer patients through clinical experiences and tumor board meetings. The small class size allows us to tailor integrated clinical experiences with students' professional preferences and/or goals. Students will also gain an understanding of patients' expectations and the importance of a broad fund of knowledge in addressing complex clinical problems.

IDIS 5621. ISC: Cardiovascular Disease. The course will expose the student to a broad range of cardiovascular diseases, focusing on foundational science as well as clinical topics that are applicable to students going into any specialty in which they will care for patients with cardiovascular diseases. Foundational science topics will include cardiovascular physiology and hemodynamics, electrophysiology, anatomy, histology, and pharmacology. All students will participate in a core series of didactics and workshops, but will be allowed to choose clinical experiences in cardiology, cardiothoracic surgery, vascular surgery, and cardiothoracic anesthesia. Clinical care will occur in a variety of settings including the wards, intensive care unit, operating room, outpatient clinics, and diagnostic laboratories. The course will provide flexibility to allow the interested student to have experiences in at

least two clinical specialties. In addition, the curriculum is designed to encourage teamwork and knowledge sharing through interactive conferences and work groups.

IDIS 5622. ISC: The Skinny on Obesity - What Every Physician Should Know. Rates of obesity are rising all around the world and, as physicians we confront it daily regardless of our specialty. Whether clinicians or surgeons, general practitioners or specialists, pediatricians or internists, researchers, educators, administrators, public health professionals and even in our own families and circles of friends, the issue of obesity will be a near daily encounter. For most of us, obesity management will not be the primary focus of our job, but we can still play a key role in the prevention and care of unhealthy weight and its comorbidities. This course is designed for 3rd and 4th year medical students in an immersion format, combining mentored clinical experiences with additional organized learning opportunities. It is four weeks in length, offered at 6 points during the academic year, and incorporates up to five students in each offering. In this course students will have the opportunity to prepare for how they can effectively address obesity in their anticipated area of practice. They will have the opportunity to participate in a variety of interdisciplinary patient care settings, which range from general to subspecialty, from medical to surgical, and from clinical to research to community. Through these clinical experiences and additional learning activities, students reinforce their knowledge of this disease, build skills in its management, and contribute to the prevention and treatment of obesity.

IDIS 5623. ISC: Getting Hooked - Addiction. Addiction is a highly prevalent, chronic brain disease that affects nearly every organ system in the body. A leading cause of morbidity and mortality, addiction is preventable and treatable, but only about 10% of those affected receive appropriate treatment. Patients vir. Problems related to addiction may present for care in any setting across the health care system. It is therefore essential for all physicians to be well versed in the basic principles of addiction medicine. This 4-week course will be an opportunity to synthesize the neuroscience of addiction with clinical skills in assessment and treatment of addictive disorders. The primary goals of the course are to train future physicians: to recognize addiction as a chronic brain disorder; to effectively screen for substance use disorders in varied clinical settings: (a) treat or refer patients for specialized treatment as indicated; and to consistently approach patients with addiction with compassion and respect. In addition, this course serves as an opportunity to return to the foundational medical knowledge underlying the pathophysiology and treatment of addictive disorders and integrate this knowledge with clinical care. Key concepts of foundational medical knowledge will be reviewed including neuroanatomy, mechanisms of neurotransmission, pharmacology, epidemiology, and cell biology as they relate to addiction medicine. Students will use online modules and independent study for instruction on foundational medical knowledge and in-class time will be focused on discussion and integration of the material with clinical experience.

IDIS 5624. ISC: Diabetes Melitics. Diabetes melitus is a worldwide pandemic. One in twelve United States adults now suffers from the disease, and in the near ruture this number will likely increase to one in ten. Physicians in any specialty/subspecialty can expect to care for patients with diabetes, especially because patients with diabetes have higher rates of hospitalization, surgical complications, cardiovascular disease, infection and other morbidities. Therefore most, if not all, physicians in training should be competent in basic treatment of diabetes in the inpatient and outpatient settings and understand the current and future areas of research and medical practice as related to diabetes. This course is designed to teach our medical students how to care for the patient with diabetes mellitus, regardless of their specialty of choice, as well as to understand the basic science, social effects, bearing on public health, and human impact of this disease. Additionally, biomedical research in diabetes involves many fields of research such as cardiovascular disease, physiology, molecular biology, genetic medicine, cell biology, and neuroendocrinology. As a medical center whose goal is to train future researchers and leaders in medicine, Vanderbilt must offer experiences in diabetes patient care and research to its students. This immersion will include components of clinical training as well as an academic project exploring the limits of current scientific knowledge about diabetes care and treatment.

IDIS 5625. ISC: Clinically Applied Immunology. The human immune system impacts every subspecialty in medicine. An understanding of normal and pathologic immunity is critical for physicians to provide the highest quality patient care. This Integrated Science Course (ISC) teaches immunology in a highly clinically applied manner using a variety of topics and subspecialties. Areas of clinical focus include autoimmune diseases, food and drug allergy, opportunistic infections, transplantation, genetic immunodeficiencies, and commonly encountered medications used for suppressing the immune system. Opportunity exists for deeper clinical dives into each of these areas. During the course, students spend time in a variety of clinical settings tailored in part to meet their specific

clinical interests. Clinical engagement during the ISC occurs in a variety of areas including allergy/immunology, gasteroenterology/inflammatory bowel disease, infectious diseases, rheumatology, and solid organ/stem cell transplantation. The course employs a variety of learning formats-including didactic lectures, team-based learning, journal club and case discussions, and online learning modules-to fulfill learning objectives focused on understanding the clinical applications and relevance of immune-related diseases. After completing this course, students will have i) a framework of immunologic knowledge to apply to a variety of disease processes in their future careers, ii) clinical facility with the uses and complications of immunosuppressive medications, and iii) the ability to diagnose and initiate treatment of common opportunistic infections.

IDIS 5626. ISC: Medical Imaging and Anatomy. Imaging is an essential component of the diagnosis and treatment of disease across all fields of medicine. Every physician interacts with medical imaging both in emergent and non-emergent settings. Therefore, each student requires knowledge of the utility, indications, acquisition, interpretation, limitations, and risks of medical imaging. Furthermore, it is crucial that physicians understand how imaging affects patient care and management and how it fits into the larger healthcare delivery system. This course will strengthen and expand upon prior learning in anatomy, embryology, pathophysiology, and neuroscience, and introduce students to radiobiology and radiation effects, imaging physics, imaging ethics, and radiologic pharmacology. The course will consist of "general" components for all students and "selective" components in one of the following: Chest & Body Imaging, Musculoskeletal Imaging, or Neuroimaging. Opportunities to individualize the course include gross anatomy lab, reading room experience, and student presentations. Self-paced recorded lectures and modules will accompany live lectures, small group discussions, and clinical exposure to medical imaging in Diagnostic and Interventional Radiology. Additionally, students will get have on experience in basic ultrasound scanning technique. After this course, students will feel confident with key anatomy, be able to make "do-not-miss" imaging diagnoses, and be able to use imaging more safety and appropriately.

IDIS 5627. ISC: Injury, Repair, and Rehabilitation. In the US, injuries are the leading cause of death among persons ages 1-44 years of age, which results in more deaths than non-communicable diseases and infectious diseases combined. In this course, students will be exposed to the configuration of injury, repair, regeneration, and rehabilitation through the multidisciplinary viewpoints of emergency medicine, trauma surgery and associated surgical subspecialties, such as anesthesia, hematology & transfusion medicine, physical & occupational therapy and speech-language pathology. Students will spend octions of the clinical experience on the trauma service supplemented by rotations through rehabilitative, recovery and palliation settings. Didactics will focus on shock, hemostasis and thrombosis, wound healing and regereration of skin, bone and nerves, nutrition, acute and chronic pain management, speech-language pathology, age and co-morbid factors, brain injury, case-based learning across the continuum from acute to long-te in recovery, as well as palliative care and death. Integrated foundational sciences are anatomy, epidemiology, ethics, immunology, implementation science, neuroscience, nutrition sciences, pathology, pathophysiology, phar nacology, cadiobiology, social sciences, system sciences. Following experiential anatomic learning and practice, successful widents will obtain four-year American College of Surgeons Advanced Trauma Life Support (ATLS) certification (except in section 6, when students will audit the ATLS course but not receive certification), as well as a rail the Advanced Surgical Skills Exposure for Trauma (ASSET); both courses are coordinated using the facilities of the Program for Advanced Anatomy and Simulated Skills (PASS) and the Center for Experiential Learning and Assessment (CELA). This course will serve as a prerequisite to the Advanced Clinical Experience in Trauma.

IDIS 5628. ISC: Infectious Diseases. A WHO report warns that infectious diseases are spreading more rapidly than ever before and that new infectious diseases are being discovered at a higher rate than at any time in history. This elective is for students with an interest in learning more about how to diagnose and treat patients with infectious disease. Students will also learn how to use antibiotics appropriately and manage the complications of HIV and other chronic infections. The diversity of patient population will afford the student a breadth of experience in evaluating and managing patients with infectious diseases. In this clinic-driven experience, students are placed in clinical experiences in various settings including inpatient, outpatient and laboratory medicine and are introduced to key topics and concepts in infectious diseases including symptoms, diagnosis, treatment, vaccines, and antibiotic stewardship. Methods to establish an etiologic diagnosis and rational use of antibiotics are emphasized. Foundational science topics include Epidemiology, Immunology, Microbiology, Virology, Pathology and Pathophysiology. The course is taught through online modules, lectures, clinic exposures to patients, team-based learning, and case presentations.

IDIS 5629. ISC: Sexual Health and Medicine. This course will vastly deepen students' knowledge of sexual medicine and reproduction, focusing on the foundational science as well as clinical experiences that will provide students with the knowledge they need to care for patients of all ages. Students will pursue these topics far deeper than what is taught in second year clinical clerkships. Foundational science topics will be addressed in a series of team based learning activities that will integrate foundational science with relevant clinical experience. This course will integrate the anatomy, physiology, pathophysiology and pharmacology of sexual function and reproduction with the clinical skills necessary to interview and assess patients in these areas of medicine. Students will become familiar with a core set foundational published literature and pursue one area more deeply leading to a brief paper. At the completion of this course, students will thoroughly understand the mechanisms of sexual function and reproduction and should be able to assess sexual development, sexual dysfunction, and fertility and to develop an appropriate and sensitive treatment plan. Students should be able to approach patients about the sensitive topics of sexual health, function, identify and reproduction with knowledge, compassion and cultural sensitivity

IDIS 5630. ISC: Healthy Aging and Quality Dying. Regardless of specialty choice, all physicians will encounter aging and death among their patients, family members, and selves. In the Healthy Aging and Quality Dying ISC, students will take care of both aging and dying patients in a variety of settings ranging from inpatient geriatric wards, outpatient geriatrics primary care clinics, nursing homes and assisted living facilities, and selected subspecialty settings. Didactics will delve into the foundational sciences of the epidemiology of aging, the physiology of aging and its clinical implications (e.g. falls, delirium and cognitive impairment, immune senescence, drug selection/dosing), communication skills, ethics at the end of life, systems based care, and behavioral sciences in order to answer meaningful clinical questions. By expanding knowledge in these foundational sciences through small group discussions, case studies, and simulation exercises, students and improve quality of life based on what is most important to their patients.

IDIS 5631. ISC: Emergency Care: Cell to System Science. Regardlers of one's chosen specialty, all physicians interact with the emergency department (ED)-maybe as a specialist on can or as a primary physician referring patients to the ED. The Emergency Care ISC will bring you from the cellular level to the system level. By delving into core pharmacologic principles you will develop an approach to the care of an acutely poisoned patient. Through task trainers and cadaver based procedure labs you will deep in your knowledge of procedural anatomy and perform emergency and resuscitative procedures. Additionally, by feating the physics of ultrasound, you will be able to enhance your musculoskeletal exams and perform ultrasound guided procedures while analyzing the cost and safety benefits of point of care ultrasound. All physicians need to work as part of a team. The ability to lead and function in a team is even more essential in high-stakes situations, such as managing a mass casualty incident. You will explore the core concepts of teamwork and apply them to the evaluation of acutely ill or injured patients. Finally, the ISC will deepen your understanding of systems of emergency care and the role of the ED in the healthcare system and the hospital. Students will have the opportunity to observe at the Vanderbilt Communications Center, ride on Nashville Fire ambulances, work shifts in the adult and pediatric emergency departments, perform bedside ultrasounds on ED patients during dedicated ultrasound scanning shifts, and participate in multiple simulation experiences. This course mee is the acute care requirement.

IDIS 5633. Learning Communities IMM. The Learning Communities-Immersion course builds on prior efforts addressing student professional development that occurring in earlier Learning Communities courses. Students continue to explore vital issues of their development as professionals with further readings and small group discussions within the nurturing College environment. The sessions are designed in a developmentally appropriate manner to maximize discussions and learning based on the clinical experiences of the students. The Learning Communities-IMM course provides the environment for students to focus on further honing their own skill sets regarding ethics, cognition and leadership prior to graduation and the beginning of residency training.

IDIS 5634. ISC: The National Opioid Crisis: Pain, Policy and Addiction. This course aims to increase the fundamental understanding of pain physiology, pain psychology, and pain treatment, with added emphasis on the opioid system, opioid epidemic, and addiction. It is a joint project of the departments of anesthesiology, psychiatry, and pharmacology. At the end of this course you will have a deeper knowledge of the neurobiology of acute and chronic pain, how it informs management decisions, and the tools used to implement pharmacologic and non-pharmacologic treatment options. You will also acquire knowledge of the neurobiology of addiction, how it is treated, and how to empower patients to make more informed health decisions. Finally, this course will teach you

motivational interviewing skills, which are useful in the management of patients with chronic pain and substance use disorder, and in giving agency to patients in many other clinical settings.

IDIS 5635. ISC: High Value Care: In Policy and Practice. The cost of healthcare is an issue that affects everyone on both a population as well as individual level. Additionally, despite spending far more money in the United States on healthcare, our health outcomes are often no better and, in many cases, worse that other industrialized countries. This has led to an increased interest in high value care and its role in our healthcare system. This course aims to increase understanding and application of value metrics in health care, with a special emphasis on integrating value into clinical decision-making. Students will study value-based care through both a general medical lens as well as from the ethics, administrative, and health policy perspectives. At the end of this course, students will have a deeper understanding of how value is quantified in medicine and will have honed the crucial skill of incorporating value information and pretest probabilities into their diagnostic workups. Students will also be better prepared to act as high-value care change makers as they enter residency, having studied value-based care hospital practices as well as through interactions with utilization management and complex care teams.

IDIS 5636. ISC: Pandemic Medicine. According to the CDC, a pandemic refers to an epidemic that has spread over several countries or continents, usually affecting a large number of people. In this course, students will explore many aspects of pandemic medicine from the individual patient to the population at large, and from diagnosis and treatment to healthcare system-wide preparation and response. The course will explore important aspects of the healthcare response to the global COVID-19 pandemic including SARS-CoV 2 virology and epidemiology, COVID-19 pathophysiology, non-COVID-related pandemic medicine, vaccine development, emergency preparedness, ethics of limited resources, and leadership and professionalism in difficult times. The course will utilize a variety of educational strategies including case-based learning utilizing Zoom, small group discussions, written reflections, and simulation. In the clinical component of the course, students will interact remotely with patients via the COVID hotline and/or assisting patients with peparation for Tolehealth visits.

IDIS 5651. Learning Communities IMM Unit 1: Medical Error. Predical errors threaten the moral sense of self of the physician. All physicians commit errors, some of them costly in terms of increased patient morbidity and mortality while others are just nagging reminders of our professional limitations. Learning how to respond to one's own errors in responsible and healthy ways, and considering how to best provide leadership through our response to others' errors are important in practicing medicate success fully and maintaining one's ethical equilibrium. This session will explore the ethical challenges and implications in addressing this developmentally important issue for becoming mature practitioners of medicate.

IDIS 5652. Learning Communities IMM Unit 2. Lifelong Learning. Change is ubiquitous in healthcare making continuous adaptation necessary for clinicians to provide the best possible care to their patients. Developing the capabilities of a Master Adaptive Learner will provide future physicians with strategies for learning in the healthcare environment and for managing change more effectively. The concept of a Master Adaptive Learner combines adaptive expertise with an approach to learning based on self-regulation. Learners will explore an evidence-based model for the Master Adaptive Learner that provides a shared language and scaffolding to facilitate exploration and conversation about both successes and struggles during the learning process.

IDIS 5653. Learning Communities IMM Unit 3: Situation Leadership and Diagnosing. All leadership situations are not equal. Trying to lead all followers in every situation in the same manner does not demonstrate effective leadership. Being able to target leadership style to the developmental level of the follower(s) improves the productivity of the follower(s) while also eliminating frustration for all involved. This session will allow students to explore concepts related to the Situational Leadership II model and its application.

IDIS 5654. Learning Communities IMM Unit 4: Change Management. Most people hate change. People will often work very hard to maintain the status quo even in the face of mounting evidence that change is necessary. The most successful leaders are able to effectively guide their followers through periods of change, both large and small. Too often change efforts fail because all of the focus is on what to change without any explicit consideration and planning regarding how to manage the change. In this session, students will explore change management models from the business literature and consider applications to the medical arena.

- **IDIS 5655. Learning Communities IMM Unit 5: Priority Setting.** Highly effective leaders are able to focus their energy and efforts on selected projects to allow for the maximum benefit, while avoiding being pulled in multiple different directions. Effective leaders are able to clearly articulate their guiding principles and focus that allows them to say "yes" to projects that align with their goals and mission, while saying "no" and avoiding projects that do not align. This session builds on the Time Management session during the LC-FMK course. Students will explore the impact of clearly set priorities and develop their own professional vision statements.
- **IDIS 5656.** Learning Communities IMM Unit 6: Sustaining Well-Being in Medicine. While the epidemic of burnout and moral injury among practicing physicians is well-established, institutions and healthcare systems have found ways to empower physician well-being and sustain meaning in medicine throughout the course of a career. This session will explore the literature currently available on strategies and interventions that can prevent burnout and improve well-being. Additionally, students will engage the mentors in discussion regarding practical strategies that can be employed now and in years to come.
- **IDIS 5657.** Learning Communities IMM Unit 7: Dealing with Ambiguity. No one likes uncertainty, especially not physicians who often feel like they must have "all of the answers". Ambiguity and uncertainty often lead to stress and decreased satisfaction among practicing physicians. Developing strategies to manage uncertainty are essential for physicians in their leadership as well as in their practice of medicine.
- IDIS 5658. Learning Communities IMM Unit 8: Leading and Managing Vp. Many includuals early in their journey to becoming leaders are confronted with the question "Is it possible to lead well when I am not the one in charge?" "Ninety-nine percent of all leadership occurs not from the top but from the rinddle of an organization." There are well described characteristics and actions involved with being a good follower, as well as for "leading up" from a position lower in a leadership hierarchy. Becoming a good follower and developing the skills to lead from the middle can greatly impact an individual's leadership success.
- **IDIS 5714. FHD: Patient Safety.** Students will create virtual presentations of their projects to improve quality of care /patient safety from their clinical microenvironment. Students val discuss strategies for sustaining change and will suggest next steps for continued improvement.
- **IDIS 5715. FHD: Quality Improvement & Patient Safety Advanced-track.** Students will demonstrate knowledge of the ability to analyze their clinical micro ystem using systems-level tools, identify an area for improvement, then propose and enact a change, collect data and reflect on results. Students will also understand the basis of sustaining change and will suggest next steps for continued in provement.
- **IDIS 5716. FHD: Quality Improvement.** Students will demonstrate knowledge of the ability to analyze their clinical microsystem using systems-level tools, identify an area for improvement, then propose and enact a change, collect data and reflect on results. Students will also understand the basis of sustaining change and will suggest next steps for continued improvement.
- **IDIS 5722. FHD: Interprofessional Education 2**. Students will integrate knowledge of their own role and roles of other team members to appropriately assess and address health care needs of patients. They will work collaboratively with other team members, seeking out other professionals for consultations in order to formulate an interprofessional care plan for mutual patients.
- **IDIS 5741. Health Care Delivery Immersion I.** Health Care Delivery Immersion I serves as an introduction to the Immersion Phase and teaches students details about population and community health, chronic disease management and prevention in addition to skills for addressing communication barriers in complex patient care interactions.
- **IDIS 5742. Introduction to Core Entrustable Professional Activities.** This intersession is dedicated to providing additional preparation for the advanced patient care responsibilities in which students may engage in the fourth year. The focus is on "Core Entrustable Professional Activities for Entering Residency" as outlined by the Association of American Medical Colleges.

IDIS 5743. Health Care Delivery Immersion II. This intersession builds on student experience in the Immersion Phase by preparing students for working in an interprofessional health care team and practicing advanced communication skills to deal with difficult patient conversations.

- **IDIS 5744. Health Care Delivery Immersion III.** This intersession introduces students to the concepts of health care economics and policy issues pertinent to caring for patients in a large macrosystem, including details about the Affordable Care Act and payers such as Medicare, Medicaid, and private insurance.
- **IDIS 5751. FHD: Quality Improvement 1.** Students will analyze their clinical microsystem using systems-level tools such as fishbone diagramming and flowcharting, and identify an area for improvement.
- **IDIS 5752. FHD: Quality Improvement 2.** Students will propose a change to their clinic microenvironment and enact that change, collect data and reflect on their results.
- **IDIS 5753. FHD: Quality Improvement 3.** Students will understand the basis of sustaining change and will suggest next steps for continued improvement.
- IDIS 5755. Clinical Preceptorship Program -- Foundations of Healthcare Delivery (CPP-FHD). MSTP students will complete Advanced Communication (AC) 1 & 2, Interprofessional Education (PE) 1, & Population Health and Prevention (PHP) by completing readings, online didactic modules, clinical assignments within the CPP course, and selected CELA experiences. Topics covered will include health literacy/numeracy, communicating medical errors, facilitating shared decision making, the health care professions, and population health. All requirements must be complete prior to graduation. Completion of the Graduitic material and project work will total approximately 16-20 curricular hours. Course will be listed on the transcript as part of the CPP and will be graded as pass/fail.
- **IDIS 5761.** Business and Entrepreneurship 1. In this course, student will work closely with other Vanderbilt departments, labs, centers, and groups to connect with the best entrepreneurship programming across the University, and beyond when appropriate. Special attention will be given to addistry level innovation activities to encourage a diffusion of the culture of design thinking, integrating the near of people, the possibilities of technology. This course is a compliment to the MIDP Idea Lab Circleal capstone course allowing for the continued stagegating of testing model, communication of design, and business planning. This course is part 1.
- **IDIS 5762.** Business and Entrepren wiship 2. In this course, students will work closely with other Vanderbilt departments, labs, centers, and groups to connect with the best entrepreneurship programming across the University, and beyond when appropriate. Special attention will be given to industry level innovation activities to encourage a diffusion of the culture of design thinking integrating the needs of people, the possibilities of technology. This course is a compliment to the MIDP Idea Lab clinical capstone course allowing for the continued stagegating of testing model, communication of design, and business planning. This course is part 2.
- **IDIS 5781. FHD: Quality Imprevement 1.** Students will analyze their clinical microsystem using systems-level tools such as fishbone diagramming and flowcharting, and identify an area for improvement.
- **IDIS 5782. FHD: Quality Improvement 2.** Students will propose a change to their clinic microenvironment and enact that change, collect data and reflect on their results.
- **IDIS 5783. FHD: Quality Improvement 3.** Students will understand the basis of sustaining change and will suggest next steps for continued improvement.
- **IDIS 5800. Industry Immersion.** Industry immersion experience will offer fourth-year MIDP students the opportunity to be exposed to innovation within the non-academic health care industry. Students will understand the environmental pressures industry faces regarding a more immediate product and process-associated time horizon. MIDP students will experience first-hand knowledge of company cultures and will turn new contacts into mutually beneficial long-term relationships. Problem solving within industry will help develop their mindset for and experience in design thinking.

IDIS 5821. AI: Telehealth. The telehealth AI will provide individualized experiences using currently available, HIPPA-compliant technology to engage students in direct-to-patient telehealth visits in various specialties. Students will have the opportunity to take ownership for certain aspects of the telehealth visit such as discussing orders with providers, performing medication reconciliation, and counseling patients on using telehealth services and patient portals. The telehealth AI will be used as an alternative AI during times of pandemic/extraordinary circumstances that limit the availability of students to be physically present in the clinical setting.

IDIS 5851. Foundations of Health Equity IIa. By participating in this course, students will advance their core knowledge, skills, and attitudes related to health equity, and apply these to patients they have encountered in clinical settings.

IDIS 5852. Foundations of Health Equity IIb. By participating in this course, students will advance their core knowledge, skills, and attitudes related to health equity, and apply these to patients they have encountered in clinical settings.

IDIS 5925. AE: WikiMed. "Imagine a world where all people have access to high quality health information clearly written in their own language" - Wikipedia co-founder Jimmy Wales Have you used Wikipedia to access health-related information? Chances are that your patients have! What about medical wikis such as Radiopaedia, HemOnc.org, Orthobullets, or Wiki Journal Club? A "wiki" is a website on which users collaboratively contribute and modify content and structure. Students in the WikiMed elective will go be a journey to better understand one of the most widely used platforms for health information in the world. In one month, you will make meaningful and valuable contributions to topics of interest on both Wikipedia and a nedical wiki. By the end of the month, you will have the tools to effectively contribute medical content to these collaborative placforms. We'll kick off with a two-day mandatory in-person introduction to editing wikis. The remainder of the elective will be independent, with virtual participation through weekly Work-in-Progress sessions, where students will touch base with peer reviewers, course directors, and librarians.

IDIS 5930. AE: Preparation for Internship. This course will provide students with essential knowledge and skills to enter internship (of any discipline) with confidence. Informed by interviews with residents and program directors, the curriculum will cover common clinical problems managed by interns and will review most frequently-used medications. Workplace challenges, advanced communication tasks and teaching skills will also be addressed. The course utilizes a variety of methods, including fecture, small group and panel discussion, as well as skills labs and simulation.

IDIS 5935. AE: Career Exploration. The Career Exploration Advanced Elective is an interdisciplinary 4-week elective offered to 3rd year stude its and returning MSTP students during their immersion phase. This elective is designed for students who remain undecided about their specialty after completing clerkships, with the goal of offering students additional exposure to various specialties and providing further insight into potential career paths. Students will rotate through 2-4 clinical settings of their preference, with each rotation lasting 1-2 weeks (e.g. four 1-week rotations, two 2-week rotations, or a combination of 1- and 2-week rotations). At the end of the elective, students will meet one-on-one with the Dean of Students to discuss their experiences on the elective, receive career advising, and review their CV and/or personal statement (see additional resources on the CiM website). Students will be asked to keep a log of their rotations (dates and supervising attendings and/or residents), write a reflection on their experiences, and complete brief pre- and post-elective surveys. Please note that this Advanced Elective will not count for clinical credit.

IDIS 5940. AE: Student Hotspotting. This track is designed for students with a strong interest in health equity, health disparities, complex care, and social determinants of health. On a team of 4-8 interprofessional students, students will work with a panel of patients who have complex care needs over the course of the year. Together, students will work to provide NON-clinical support as a patient advocate in collaboration with the Post-Acute/Care Navigation Team and possibly other teams/programs. Formal learning is conducted through a required orientation, monthly journal clubs, monthly check-in meetings, and a final capstone presentation. Topics covered include but are not limited to motivational interviewing, trauma-informed care, harm reduction/readiness to change, conducting home visits, social resources in Nashville, and provider resilience. Please see application for more details. Journal clubs and team check-ins will occur, on average, every other Wednesday evening from 7:00-8:30 pm.

IDIS 5941. AE: Student Director of Hotspotting. This track is designed for students with a strong interest in teaching and leadership, particularly for individuals with a strong interest in health equity, health disparities, complex care, and social determinants of health. On a team of 2-4 interprofessional students and with faculty directors, student leaders will work to coordinate and facilitate the Student Hotspotting elective. Leadership responsibilities will include but are not limited to scheduling, putting together & organizing student orientation, teaching a foundational content seminar during orientation, facilitating team-facilitator check ins, maintaining a database of useful resources, meeting with administration & staff (as needed), meeting with and organizing guest speakers, and tracking student cohort member progress throughout the course (for a full list of responsibilities, see application). Journal clubs and team check ins will occur, on average, every other Wednesday evening from 7:00-8:30 pm.

IDIS 5945. AE: Leadership in Medicine: A Developmental Journey. The highly interactive course targets the development of leadership knowledge and skills that will be specifically applicable to leadership during the student's residency training, while also being beneficial to their time at VUSM and post-residency career. The course will involve a mixture of case-based discussions, readings, small group projects, and leadership experiences.

IDIS 6007. Innovation Design Experience and Application Lab. This course is designed for MD students in the MIDP Program who have completed the Innovation Activism course. It takes the place of the Research Immersion for traditional MD students. Students will learn to take clinical challenges identified in the Innovation Activism course through the engineering design process from deployment of prototype to final design and clinical adoption. Students may work in teams comprised of other MIDP students, other engineers or engineering students, and clinicians. Solutions designed in this lab may be further developed from the business and regulatory perspectives in the two MIDP Integrated Science Courses. This lab will begin in September of third year and last at least three months.

IDIS 6010. Research Immersion.

IDIS 6100. Special Clinical Study - Vanderbilt. Each student arranges an independent study with a mentor and completes a period of clinical work. Approval required.

IDIS 6150. Special Research Study - VU. Exceptudent arranges an independent study with a mentor and completes a period of research work. Approvar required

IDIS 6200. Special Study Non-Clinical Each student arranges an independent study with a mentor and completes a period of medically relevant work. Approval required.

IDIS 6300. Full-Year Research. Students enrolled in this full-year research course are participating in various research activities including Vanderbilt Medical Scholars, Howard Hughes Medical Institute Research, Sarnoff Cardiovascular Research Program, o. Fogerty International Research Scholars Program. Approval required.

IDIS 6305. Full-Year Service Learning. Students enrolled in this year-long course are participating in an activity of medical service to the community. Approval required.

IDIS 7001. Research Immersion: AWAY. This course is appropriate for a student who has been approved to complete the research project with a mentor at another institution. This is allowed only with approval of all of the following: Associate Dean for Medical Student Affairs, Assistant Dean for Physician-Scientist Training, the student's Research Director, and agreement of non-Vanderbilt mentor.

IDIS 7100. AWAY ACE: Interdisciplinary. Each student arranges an independent study with a mentor and completes a period of clinical work away from Vanderbilt. Approval required.

IDIS 7150. Special Research Study-Non VU. Each student arranges an independent study with a mentor and completes a period of research work away from Vanderbilt. Approval required.

IDIS 7222. AE: Ethics in Health Care: Theological and Philosophical Perspectives. [MD cross-listing for DIV 7222] This course examines a broad range of theological and philosophical methods for dealing with ethical

questions as they arise in contemporary American healthcare. We will read influential texts from Protestant and Catholic Christianity, Jewish thought, contemporary Anglo-American philosophy, as well as classic texts from the virtue traditions. Our aim is to apply the teachings of these texts to a range of practical issues, including issues at the beginning and end of life, questions that arise in routine patient care, and major policy issues in health and health care. We will probe the dialectic between practice and theory, being attentive to their reciprocal influences. A major aim of the seminar is to gain critical purchase on the tools that various theological and philosophical traditions provide as guides to thinking and action, and to assess their uses and limits. A second major agenda is to become more critically aware of our own moral intuitions and assumptions.

Medical Education and Administration

MADM 5750. AE: Students as Teachers. The goal of this course is to prepare immersion phase medical students to become effective teachers as residents. The course offers a longitudinal didactic program, bringing the cohort together throughout the year to discuss general teaching strategies, educational theory and to review educational literature (the need for flexibility in scheduling is recognized). This is combined with an opportunity to enhance proficiency in one specific teaching environment by participating in the delivery of a particular course or program in the general curriculum. Students will practice teaching skills, gain an appreciation for evidence-based teaching techniques, and receive mentoring and feedback from established educators.

MADM 5761. AE: Student Director of Students as Teachers. Students in this course serve as year-long student directors of the Students-as-Teachers advanced elective. Under faculty guidance, student directors learn principles of course development and management, to include: establishing learning objectives, determining and scheduling an appropriate mix of learning & assessment activities, posting a syllabiles, upkeep of the online learning management system, communicating with students enrolled in the course, updating the faculty course director(s), and tracking student participation. (Student directors will not assign final grages to peers)

MADM 5771. AE: Student Director of Shade Tree. Students in this course serve as year-long student directors of ACE: Shade Tree Clinical Service Learning. Under faculty guidance, student directors learn principles of course development and management, to include: establishing learning objectives, determining and scheduling an appropriate mix of learning & assessment activities, posting a syllabus, upkeep of the online learning management system, communicating with students enrolled in the course, updating the faculty course director(s), and tracking student participation. (Student directors will not assign final grades to peers)

Medicine

MED 5012. Physical Diagnosis. The introduction to clinical medicine course for second year students. Emphasizes interviewing skills, acquiring a medical database, and performing a comprehensive physical examination. Utilizes a mentor system with groups of four students assigned to two faculty tutors who will guide them through history taking, patient examinations, and write-ups. Includes lectures, practical sessions, and patient encounters. Second year.

MED 5016. Diagnostics and Therapeutics. This required course is offered during the clerkship year of the curriculum. The goals of the course are to teach techniques in clinical decision making, with an emphasis on many factors that may impact the clinician's approach to the presenting complaint, e.g. pretest probability, risks, and costs of studies; to give the students an understanding of the laboratory and radiographic tools used to work through a differential and arrive at a diagnosis; and to impart a basic understanding of treatments rendered for common disease processes that they will encounter. The full-time introductory segment at the beginning of the clerkship year will be followed by weekly exposure through the year to online modules and small group activities that delve into specific presenting complaints with explicit discussion of how the clinician works through each of these clinical problems and treats the final diagnosis. Foundations of Clinical Care phase.

MED 5020. Medicine Core Clerkship. Second-year medical students participate in an eight-week, inpatient clinical clerkship under the aegis of the Department of Medicine, utilizing the clinical services of the Vanderbilt and VA hospitals. It is believed that learning is most vivid through direct experience with patients, obtaining histories, and doing physicals and laboratory studies, and that it is amplified by reading and intensive contact with members of

the teaching staff and house staff. Students are given considerable responsibility under close supervision of the teaching staff. Six weeks of the clerkship is devoted to inpatient experience. This is further divided into three rotations; one general medicine, one subspecialty medicine, and a final that may be either general or subspecialty. Each student is assigned to a faculty/resident team and functions as an apprentice physician with graded responsibility for the evaluation and management of patients admitted to the medicine service. Students participate in clinical and teaching activities of the service, including daily attending rounds, morning report, noon conferences, Grand Rounds. Students receive student directed curricular content in the form of weekly core lectures, weekly "chalk talks" and clinical case conferences. In addition, students meet on a regular basis with an assigned Master Clinical Teacher to undergo supervised histories, physicals, and presentation with directed feedback and coaching.

MED 5302. Cardiovascular Physiology. Students will review cardiovascular physiologic principles in the setting of a high volume clinical cardiac MRI lab. Students will have the opportunity to interview patients, auscultate cardiac murmurs, review relevant records such as ECG/blood pressure measurements/heart rhythm strips; and then correlate physical exam findings and patient history with high resolution MRI imaging in a wide variety of cardiovascular pathologies. The cardiac MRI lab reviews an average of 6-8 cases a day, with cardiac conditions ranging from normal findings; atrial fibrillation; ischemic, nonischemic, and hypertrophic cardiomyopathies; congenital cases (both pre and postsurgical); pulmonary hypertension; cardiac transplant; stress testing; and cardiac valvular diseases. A relevant cardiovascular physiologic principle will be reviewed at the beginning of each day. The physiology concepts to be reviewed will be selected depending on significance to the cases on the MRI schedule. At the conclusion of this fun and engaging two-week elective rotation, students will have reinforced their knowledge of cardiovascular physiology by combining a review of the pertinent concepts with clinically relevant and patient-oriented cardiovascular imaging cases. The combination of concept review applied to real time clinical cardiovascular imaging will strengthen the knowledge of cardiovascular physiology in a unique and unforgettable way. This elective course will provide a unique and compelling preparation for the cardiology intern year.

MED 5304. Integrative Medicine. Students in this two-veck elective will participate in helping patients develop and implement treatment plans for lifestyle and behavior change through the Vanderbilt Center for Integrative Health (VCIH). The VCIH cares for the whole person - mind, body, and spirit. Using the resources of the clinic, including health coaching, the students will develop their own personal plan for wellness. They will also learn the management of chronic pain and complex chronic disease working with a multi-disciplinary team. This will include exposure to clinical consults (medical and acupuncture), therapeutic movement classes, chronic pain skills groups, and group nutrition coaching. Students will also participate in a weekly multi-disciplinary case conference. At the conclusion of the elective, students will be able to take an integrative medicine patient history with emphasis on the patient's perspective and experience of disease/illness and relevant psychosocial history; identify and describe the patient's capacity for behavioral change inchoing barriers and readiness to change; assist patients in developing a personalized plan of care; explain integration medicine treatment plans by citing appropriate medical literature; participate in inter-professional care to develop skills in interacting with other health professionals to develop integrative health plans for patients, demonstrate understanding of relevant neuroscience research including neuroplasticity, biomechanic, adaptive behavior patterning, biopsychosocial model, and treatment plans for patients with chronic pain (e.g. rheumatologic conditions, cancer, physical trauma, neurological disease) and frequent comorbid psychological conditions (e.g. depression, anxiety, post-traumatic stress disorder); and explain the role of central sensitization in chronic pain.

MED 5306. Prevention of Ischemic Events. This two-week elective will cover the outpatient management of cardiovascular risk, ranging from diagnosis and appropriate control of co-morbidities such as dyslipidemia, hypertension, and diabetes, to the appropriate risk assessment strategy including non-invasive vascular evaluations, to tailored interventions addressing lifestyle and medications. At the conclusion of the two weeks, students will be able to appropriately identify and diagnose cardiovascular risk factors and co-morbidities and determine the strategy for full cardiovascular risk assessment, including performing non-invasive imaging tests, positioning the patient in a definite ten-year and lifetime cardiovascular risk category, and developing a management plan including proper lifestyle and pharmacologic interventions based on guidelines, evidence, and standard of care approaches.

MED 5308. Critical Care Medicine. This course is an introduction to the field of critical care medicine. Students in this rotation are expected to become familiar with the physiology and pathophysiology of critical illness and the care of the critically ill patient. Additionally, they will be expected to integrate basic knowledge of pharmacology and

physiology with clinical care and decision-making across two or more ICUs. An early exposure to the breadth of critical care is imperative for every physician in training, as throughout their career they will be expected to recognize life threatening illness and injury and know the indications for providing care. Additionally, it is important to know the long term sequelae associated with critical illness and the socioeconomics of critical care. The students will be expected to attend ICU rounds and to follow the care of 1-2 patients assigned to them who are admitted to the ICU. In addition, they will be assigned to select faculty daily to present their patient. This will require them to understand the physiology and pathophysiology of the disease process to present a working differential diagnosis. They will also be expected to attend daily teaching sessions with the select faculty based on a pre-determined schedule. This includes synthesizing information from the electronic medical record, the bedside nurses, the consulting physicians, and the primary team.

MED 5312. Clinical Rheumatology. This is an outpatient service rotation designed to immerse the student extern in the evaluation and care of patients with a wide variety of rheumatic diseases. Special emphasis is placed on the patients with rheumatoid arthritis and lupus; however, all of the inflammatory and degenerative connective tissue disorders will be seen and reviewed. There is daily contact with several rheumatologists as well as the entire staff of the Arthritis Center at Vanderbilt Hospital (physical therapy, occupational therapy, patient educator, etc.) The student will observe patient evaluations and treatment methods and will be expected to perform some new patient assessments. At the conclusion of the elective, students will know the most practical and cost effective means of efficiently planning evaluations and treatments. This rotation is especially valuable to students considering primary care and orthopaedics.

MED 5314. Introduction to Palliative Care. Students will rotate through Vanderb. Medical Center under the supervision of palliative care specialists. Students will work with the enure multic sciplinary team during this rotation with the goals of learning to apply the fundamentals in pain and symptons management, communication at the end of life, care of the dying patient, and basics of hospics care. Students will rotate on the consultative services and the palliative care unit during the two-week block. Students will gain exposure to patients throughout the hospital from all disciplines of medicine assisting in sympton management, advanced care planning, and hospice. The medical director for palliative care at Vanderbilt University will supervise and evaluate the students on the basis of the six clinical core competencies as delineated by the ACGME. Creative structuring will allow students to make modifications to the rotation to meet individual meds. At the conclusion of the elective, students will be able to gather data as it relates to palliative care; demonstrate use of an interdisciplinary team to optimize patient care; evaluate and manage common symptoms in palliative care; identify goals of care through communication with families and patients in order to develop a plan of care that includes the patient's wishes, medical situation, and code status; recognize signs and symptoms of impending death; and identify different aspects of suffering in palliative care patients.

MED 5322. HIV Medicine. Students will get a comprehensive look at the care of HIV patients by experiencing indepth the complexities of HIV in both the inpatient and outpatient world. The elective involves spending one week at the Vanderbilt Comprehensive Care Clinic (VCCC- Vanderbilt's outpatient HIV clinic), followed by one week on the inpatient Rogers Infectious Dissass service (the inpatient service which serves the majority of HIV-infected individuals). Students will have the opportunity to take histories and perform physical exams, presenting their findings to the attending provider or nurse practitioner. Content will include lectures, readings, and small group discussions on 'hot topics' in HIV. Concepts such as AIDS in the global context, treatment-as-prevention, and preexposure prophylaxis will be addressed in these formats, with a focus on epidemiology, pharmacology, study design, ethical issues, etc. In addition, students will spend time with various members of the HIV care team, including an HIV pharmacist, dietician, clinical pharmacy RNs, case managers, and the clinical trials team highlighting the multidisciplinary nature of HIV care with a focus on pharmacology, nutrition, adherence, psychosocial issues, and clinical trials implementation. Students will attend case conferences and will round with the inpatient Infectious Diseases nurse liaison and case manager. At the conclusion of the two-week elective, students will be able to construct or formulate a history from someone living with HIV infection, with a focus on the important physical exam findings, social information, and laboratory values from each patient; describe basic pathogenesis and basic virology of HIV infection; discuss fundamentals about HIV treatment; demonstrate a familiarity with the evidencebased, multidisciplinary approach to HIV care; and explain some of the recent breakthroughs in HIV care and some of the challenges facing the epidemic from a global perspective.

MED 5324. Team-Based Geriatric Care. In this two-week elective, students will join a team of attending, resident, and interdisciplinary team members on the Vanderbilt Acute Care for Elderly (ACE) Unit in the mornings. Experiences will include diagnosis and management of geriatric syndromes including falls, delirium, dementia, and transitions of care. Students will become acquainted with several patients and present them on rounds. Afternoons will consist of geriatric primary care and consult clinics with exposure to geriatric medication management, chronic illness, and home and community-based services. In the second week students will round mornings with the VA Geriatric Evaluation and Management Unit Team, following and presenting selected patients and contrasting VA with Medicare resources. Afternoons will consist of VA Geriatric Consult and Primary Care Clinics, including a new Patient-Centered Aligned Care Team with a patient-centered medical home model. Relevant handouts and orientation materials will be provided, and students will participate in the ongoing Geriatrics and Palliative Care didactic series with rotating residents. At the conclusion of the course, students will be able to perform a functional assessment, contribute to an interdisciplinary team meeting, appreciate the clinical decision tree concept while managing patients with multi-morbidity states, and have an awareness of the array of community and institutional resources required to successfully manage transitions of care for frail elderly.

MED 5326. Health Promotion - Dayani Center. This two-week elective is for students interested in health education and health promotion in primarily outpatient rehabilitation programs. Students will observe and participate in the Cardiac and Pulmonary Rehabilitation Programs at the Dayani Center. Additionally, they may elect to spend a portion of this elective in the areas of Physical Therapy, Lymphedema, Nutrition, and Medical Fitness. The format of the elective is direct patient observation. Students may observe graded exercise testing and discuss with staff. At the conclusion of the elective, students will know the fundamental principles of health promotion and understand lifestyle management of common cardiovascular diseases.

MED 5328. Clinical Medicine Sub-Specialties. In this two-week elective students will work with sub-specialists in clinics of their choosing in the Department of Medicine. Students will have the responsibility of evaluating patients, presenting patients to the attending, and then devising a management plan with the attending. Students are responsible for arranging the clinic half days (minimum 10) all days per 2 week period) with attendings to be approved by the Course Director. At the conclusion of the elective, students have an understanding of the outpatient presentation and management of sub-specialty patient problems, will provide an efficient patient work-up, and will have familiarity with the care provided to patient in the output at out clinical setting.

MED 5332. Problems in Hematology. This 2 week elective will offer students an introduction to some unique problems that are often encountered in hematology and the principles of how they are managed. The list includes bone marrow failure states, thrombotic and hemorrhagic conditions, transfusion medicine, and hematologic neoplasms including lymphoma, icukemia, and myeloma. Students will spend one week on the malignant hematology inpatient service during which they will be given patients to follow and present during rounds. They will participate in formulating a plan of care emphasizing hematologic issues including transfusion needs, antibiotics, therapeutic options, prognosic survivorship, end of life care and the role of palliation and hospice. Didactics will focus on the diagnosis and management of patients with hematologic cancers. Students will also have the opportunity to spend time in Hematology, blood bank, and hematology subspecialty clinics of their choice ranging from benign to malignant hematology and stem cell transplant. At the conclusion of the two-week elective, students will have a basic understanding of some of the unique questions often asked in hematology. They will also have a better understanding of what is involved in devising and recommending a therapeutic plan from the hematology perspective.

MED 5336. Young Women's Health. This elective will offer students a two-week rotation in the Adolescent and Young Adult Health Outpatient Clinic at 100 Oaks with an Adolescent Medicine attending and residents. This clinic has a patient population that is about 70% female and sees a large number of visits for menstrual and gynecologic issues. Patients are evaluated for primary and secondary amenorrhea, menorraghia, dysfunctional uterine bleeding, and dysmenorrhea. Patients are routinely counselled on initiation of contraception and are screened for sexually transmitted infections. Students will have the opportunity to observe patient encounters with the resident and/or attending and then as they feel more comfortable see the patient first and present them to the attending in order to jointly form a plan of care for that patient. At the conclusion of the two-week elective rotation, the student will be able to take a thorough menstrual history and formulate a brief assessment and plan based on presenting complaints/concerns. The student will also feel comfortable taking a sexual history and become more comfortable

with various contraceptive options. In addition, the student will review the adolescent specific laws on confidentiality as they pertain to young women's health issues.

MED 5610. ACE: Clinical Nephrology. This experience is designed to give the immersion phase student significant experience in practical clinical nephrology and prepare him or her for future house staff training. Students will participate in daily rounds on either the Vanderbilt Nephrology Service, ESRD service, or transplant service, or the VA nephrology service. Students will also have the option of spending time in the nephrology and dialysis clinics to gain more experience. Patients with various clinical disorders including fluid and electrolyte abnormalities, acid-base disturbances, glomerular diseases, and disturbances of renal function, including acute and chronic renal failure, will be seen and discussed. Students will have the opportunity to perform renal consults and present patients to the rest of the rounding team. Frequently, the nephrology service is requested to perform emergency consultation which requires acute hemodialysis or acute plasmapheresis. Students may participate in these acute consultations, assist with acute dialysis catheter placement, and develop an understanding of renal emergencies and their treatment.

MED 5611. AI: Medicine, VU. A student may serve as an acting intern on the Vanderbilt general medicine service, with direct supervision by an attending and upper level resident. Acting interns may carry up to 6 patients and may perform up to 3 admissions and 2 ICU transfers daily. Patients assigned will be selected for their teaching value, and the student will be expected to function as a member of the team at a supervised intern level for patient management and communication with other healthcare providers. This will include preparing the admission history and physical examination, entering orders, writing daily progress notes, presenting patients on daily work rounds, caring for a near intern-level patient census and coordinating discharge planning. This format provides an excellent opportunity to evaluate and manage patients with a wide variety of interesting disease processes and allows the acting intern to take more responsibility in the care of his/her patients in preparation for intern year.

MED 5613. ACE: Critical Care, VU. This course is a four-veek experience in multidisciplinary critical care medicine from the perspective of internal medicine. The student will be expected to fulfill much of the role of a junior level house officer, but will be closely supervised by interns, residents, and a senior critical care fellow, as well as a critical care attending. The unit is a very active critical care facility which manages a wide variety of medical emergencies using extensive monitoring and support ecupment. The emphasis is on pulmonary disease, infection, and renal dysfunction, but covers all expects of trical illness, including endocrinology, nutritional support, cost containment, and ethical issues. reaching founds are given daily, and these are supplemented with didactic lecture-discussions several days each we k. Fulfills the acute care course requirement.

MED 5616. AI: Medicine, VAlia. This Acting internship on the Veterans Administration Hospital medical wards allows students to work in concert with the house staff team (assistant resident, intern, and one or two third-year medical students). The acting intern will be assigned new patients each admitting day and will be responsible for their care under the direction of the assistant resident. The acting intern's patients will not be worked up by the regular intern. The student will be expected to attend all of the functions and keep the same hours as the house staff. This should provide an intensive experience in ward medicine.

MED 5619. AI: Critical Care, VAH. This acting internship in the MICU/CCU at the Department of Veterans Affairs Hospital is intended to expose medical students to a variety of important diagnostic and management issues in critical care medicine. The student should have prior general ward experience in medicine and surgery. The student will function in the combined MICU/CCU as an acting intern under the supervision of a medical resident, a pulmonary/cardiology fellow, and both a pulmonary/critical care and a cardiology attending. The student will actively participate in both general medical intensive care and cardiac intensive care rounds. The student will have an every-third-night in-house call schedule and will work directly with residents and interns. Students will take primary responsibility for patient assessment, documentation and order entry. Students may have a higher patient census than in prior ICU rotations and will assume increasing responsibility for patient care as the month progresses. During the rotation, the student will learn how to evaluate complex critically ill patients and formulate diagnostic and therapeutic plans. The student will become familiar with the principles and techniques of invasive and non-invasive monitoring. Major areas which are stressed include cardiopulmonary pathophysiology, crisis management, ICU and CCU pharmacology, airway management and mechanical ventilation, fluid/electrolytes management, nutritional intervention, and ICU ethics. By the end of the rotation, the student should be comfortable in the initial assessment and treatment and ongoing care of the most common ICU/CCU admitting problems and will be prepared

for residency ICU rotations. Fulfills the acute care course requirement. VA system access is required. Students cannot take this course if they have not received VA access at least 2 weeks before the course starts.

MED 5620. ACE: Gastroenterology, VU. The adult gastroenterology rotation offers a broad experience in the evaluation and management of adult patients with gastrointestinal disorders such as inflammatory bowel disease, gastrointestinal bleeding, pancreatitis, jaundice, abdominal pain, the use of enteral feeding, and swallowing abnormalities. The rotation would include evaluation of hospitalized adult patients and rounds with the inpatient gastroenterology consultation service at Vanderbilt Medical Center. Students would function as a gastrointestinal consultant, participate actively in inpatient rounds, and participate in teaching conferences sponsored by the division. There would also be exposure to gastrointestinal endoscopic techniques throughout this rotation.

MED 5623. AI: Cardiology. A student may serve as an acting intern on the Vanderbilt inpatient cardiology services, with direct supervision by an attending and upper level resident. Acting interns may carry up to 6 patients and may perform up to 3 admissions and 2 ICU transfers daily. Patients assigned will be selected for their teaching value, and the student will be expected to function as a member of the team at a supervised intern level for patient management and communication with other healthcare providers. This will include preparing the admission history and physical examination, entering orders, writing daily progress notes, presenting patients on daily work rounds, caring for a near intern-level patient census and coordinating discharge planning. This format provides an excellent opportunity to evaluate and manage patients with a wide variety of interesting disease processes and allows the acting intern to take more responsibility in the care of his/her patients in preparation for internity ear.

MED 5624. AI: Medicine, Hospitalist. A student on this rotation is expected to rerve as an acting intern with direct supervision from a hospitalist. The acting intern is expected to carry up to 6-8 parients at a time by the end of the rotation (they should start the rotation with a lower census). They may admit up o 3 patients per day and accept up to 2 ICU transfers per day. Students are expected to have the experience of carring for hospitalized internal medicine patients with high quality, efficient care. Student will practice taking a lastory, presenting patients to their attending, responding to urgent issues, entering orders, communicating with patients and consultants, and planning for discharge. This experience will allow students to have riore autopolity, take more responsibility for their patients and prepare for intern year.

MED 5625. ACE: Endocrinology. This course is designed to give our medical students exposure to the myriad of endocrine disorders seen by the faculty in the Vanderbil Division of Endocrinology, Diabetes and Metabolism. It is intended to give medical students the opportunity to evaluate patients with different endocrine disorders, with a focus on physical exam findings, laboratory data, and radiological data. In addition, medical and surgical management of these disorders vill be taught. Diductics will supplement the clinical experience and include pathophysiology of these disorders. Both diabetes mellitus and non-diabetes endocrinopathies, including thyroid, pituitary, bone, calcium metabolism and adrenal disorders, will be incorporated into this course.

MED 5655. ACE: Geriatric Medicine. The intent of this course is to provide students with an advanced educational experience in geriatric medicine. Students will gain familiarity with multiple geriatric syndromes: polypharmacy, gait instability, dementia, fragility, pain management, pressure sores, incontinence, osteoporosis; appreciation for continuity of care across different levels of care; and the ability to differentiate between normal aging and disease processes. Students' knowledge of ethical issues will also be enhanced including patient autonomy, driving, elder abuse, and advance care planning. Students will also be able to identify and use community resources effectively, assess and treat multiple geriatric syndromes, organize management of multiple acute and chronic diseases simultaneously, and communicate sensitively and effectively with older persons and caregivers. VA system access is required. Students cannot take this course if they have not received VA access at least 2 weeks before the course starts.

MED 5656. AI: Geriatric Medicine. A third of patients admitted to the hospital are > 65 years-old. Older adults are complex due to physiologic changes of aging, multimorbidity, polypharmacy, and goals which often value function and independence over longevity. This AI immerses students on the Acute Care for the Elderly Unit on 7-round wing to learn how to provide age-friendly healthcare. Age-friendly healthcare is guided by an essential set of evidence-based practices utilizing the 4Ms framework-mobility, medications, mentation, and what matters most. Students will work closely with an attending geriatrician, housestaff, the geriatric pharmacist, and the interdisciplinary team to master the 4Ms and develop an effective and efficient approach to caring for older adults.

MED 5680. ACE: Infectious Diseases. Students will participate as part of the inpatient infectious diseases consultation service for at least two weeks of their rotation. They will be active participants in the initial evaluation, management, and follow-up of patients on the consult service. They should gain competence in diagnostic skills and in the management of infected patients, including the choice and use of antibiotic therapy. Special emphasis will be placed on understanding the epidemiology, pathophysiology, and natural history of infectious diseases. Students will also have a comprehensive experience in the care of HIV patients by participating in both the inpatient and outpatient settings. This portion of the experience will involve spending time at the Vanderbilt Comprehensive Care Clinic (Vanderbilt's outpatient HIV clinic) and/or the inpatient Rogers Infectious Diseases service (the inpatient service that serves the majority of HIV-infected individuals). While in these settings, students will spend time with many members of the HIV care team, including pharmacists, dieticians, clinical pharmacy nurses, case managers, and others to better appreciate the multidisciplinary care needed to address medical comorbidities, medication adherence, psychosocial issues, and other issues pertinent to HIV-infected individuals. Learning opportunities in the course will include live sessions in the form of core content lectures, grand rounds, and/or small groups; online lectures; and recommended readings. Core infectious diseases and HIV/AIDS topics will include antibiotic selection and pharmacology; skin and soft tissue infections; endocarditis; opportunistic infections; HIV antiretroviral therapy; and others.

MED 5691. AI: Cardiac Critical Care. During the acting internship in Critical Care Cardiology, students will actively participate in the management of patients hospitalized in the Cardiovascular Intensive Care Unit. Duties will include the management of patients with (1) cardiogenic shock and acute heart failure, (2) complicated myocardial infarction, (3) complex percutaneous coronary and valvular intervention, (4) palmonary arterial catheters and continuous hemodynamic monitoring, (5) ventricular support devices (6) mechanical ventilation, and (7) cardiac arrhythmias. The student will work closely with the on-call nedical resident and CVICU fellow and be expected to write admission and daily progress notes and present patients followed on daily work rounds to the entire team. The rotation will provide a significant "hands-on opportunity" for medical students to participate in the management of critically ill patients. Students will be expected to assume the role of the intern, carrying multiple patients and accepting increased responsibility for their care in order to prepare them for residency. This will be a more robust experience than prior critical care rotations

MED 5700. ACE: Shade Tree Clinical Service Learning. The Shade Tree Clinic Community Health Experience offers a profound and rich exposure to primary and specialty care medicine in a resource-limited setting at a sub-internship level of responsibility. This course is a longitudinal ACE during the Immersion Phase for senior medical students. The Shade Tree Clinic Community Health Experience is an opportunity to develop clinical case management skills in the context of complex social determinants of health. Students are exposed to community resources needed to provide holistic care to vulnerable patients. They also gain creative, critical thinking skills necessary to confront challenges faced in a resource-limited context. Participating students have the opportunity to (1) enhance clinical patient care skills, (2) mentor and teach junior students, and (3) participate in didactic/skill sessions for advancement of clinical advocacy, and leadership skills. Students will be expected to schedule 20 clinic shifts throughout the course and complete a final project (or equivalent), which may include leadership and/or staff roles. Clinical skills and knowledge will be assessed incrementally throughout the course.

MED 5730. ACE: Cardiovascular Diagnostics. This course will emphasize the development of skills in EKG interpretation and cardiovascular physical diagnosis. In addition, students will become familiar with the full spectrum of cardiovascular imaging modalities. The aim will be to appreciate their relative strengths and weaknesses as well as indications, techniques, and interpretation. The student will see patients in consultation with cardiology faculty at Vanderbilt and the Nashville VA Medical Center. Regular bedside physical diagnosis rounds will be held with senior Vanderbilt faculty. The student will also be instructed in the use of a heart sound simulator which has been demonstrated to improve diagnostic skills. There will be didactic sessions on EKG interpretation and cardiovascular imaging (including stress testing, nuclear cardiology, echocardiography, coronary angiography, and cardiovascular MR). Finally, weekly conferences to attend include: Clinical Cardiology (2), Echocardiography, Nuclear Medicine, and Cardiology Grand Rounds.

MED 5735. ACE: Palliative Care. Students will rotate through VUMC, the VA Hospital, and community hospice agencies under the supervision of palliative care specialists. Students will follow their own patients and work with an interdisciplinary team (IDT). This opportunity will allow students to learn and apply the fundamentals in pain and symptom management, how to communicate at the end of life, care of the dying patient, and hospice criteria.

Students will spend roughly two weeks with the VUMC consult service, one week at the VUMC Palliative Care Unit, and one week at the VA. They will also work several days with community hospice members, child life specialists, chaplains, case managers, social workers, and nurses. At VUMC and the VA Hospital, students will work with the inpatient consultative team and see patients throughout the hospital from all disciplines of medicine assisting in symptom management, advanced care planning, and hospice information. During their time with hospice, they will accompany members of the IDT on home visits and learn more about their various roles in end of life care. The palliative care physicians and nurse practitioners will supervise and evaluate the students on the basis of the six clinical core competencies as delineated by the ACGME. Creative structuring will allow students to make modifications to the rotation to meet individual needs.

MED 5740. ACE: Pulmonary Consult. This course consists of seeing all pulmonary consultations at VU Hospital, presenting the cases to conferences and rounds, participating in pulmonary laboratory testing, fiberoptic bronchoscopy, and cardiopulmonary exercise testing, and attending joint pulmonary conferences. Case mix includes chronic obstructive pulmonary disease, pulmonary renal syndromes, vasculitis, sleep apnea, pulmonary nodules, infectious and non-infectious pulmonary infiltrates.

MED 5760. ACE: Rheumatology. Time will be spent primarily in the rheumatology clinic at the Vanderbilt clinic and the VA Hospital (VAH). Students will have an opportunity to be involved in the consultation from the hospital with the rheumatology team at VUMC and VAH. Students will have an exposure to several clinics with different rheumatologists each day, and they will observe patient evaluations and treatments. Materials for study will be given. There will be an expectation from a student to perform patient assessment especially in terms of history taking and physical examination focusing on rheumatology. Students will have an opportunity to attend all rheumatology conferences, in both clinical and research meetings.

MED 5780. ACE: Medical Oncology. This advanced clinical experience will provide the student with a broad overview of inpatient clinical oncology. Inpatient exposure will be centured at Vanderbilt Hospital, where the student will assist in the evaluation of new oncology service admissions and new consultations. The student will make morning rounds and present new cases to the oncology attending.

MED 5781. ACE: Telehealth Oncology. The telehealth ACE will provide individualized learning experiences using currently available, HIPPA-compliant technology to engage students in direct-to-patient telehealth visits in various specialties. Students will have the opportunity to interact with patients and their families during all aspects of the telehealth visit. The telehealth ACE will be used as an alternative ACE during times of pandemic/extraordinary circumstance, that limit the availability of students to be physically present in the clinical setting.

MED 5782. ACE: Medicine Telehealth. The telehealth ACE will provide individualized learning experiences using currently available, HIPPA-compliant technology to engage students in direct-to-patient telehealth visits in various specialties. Students will have the opportunity to interact with patients and their families during all aspects of the telehealth visit. The telehealth ACE will be used as an alternative ACE during times of pandemic/extraordinary circumstances that limit the availability of students to be physically present in the clinical setting.

MED 5785. ACE: Hematology-Oncology. The goal of this course is to introduce students to the core concepts of hematology, how they are applied to patient care in the inpatient and outpatient care setting, and how various components including clinical hematology, hematopathology, blood banking, and coagulation medicine interplay to provide comprehensive hematologic care. Students will have 2 weeks of hands on experience in the management of hematologic disorders in the inpatient setting. The remaining 2 weeks will be spent in the ambulatory clinic setting, inpatient consults and laboratory exposure.

MED 5825. ACE: Medical Ethics. This course is designed as a capstone experience in ethics, building upon the ethics components in FMK and FCC. The core activity will be participation in the activities of the clinical ethics consultation service provided to Vanderbilt Medical Center by the faculty of the Center for Biomedical Ethics and Society. Activities during this 4-week ACE will include directed readings in areas related to the consult work, attendance at conferences, lectures, case reviews and additional work in ethics of special interest to the student's future residency training. The course will fulfill the immersion course requirement for the Certificate in Bioethics,

although being a candidate in the Certificate Program is not a requirement for taking this course. Discussion with Dr. Joe Fanning, the Director of the Clinical Ethics Consult Service is strongly recommended prior to enrollment.

MED 6100. Special Clinical Study: Medicine, VU. Each student arranges an independent study with a mentor and completes a period of clinical work. Approval required.

MED 7100. AWAY ACE: Medicine. Each student arranges an independent study with a mentor and completes a period of clinical work away from Vanderbilt. Approval required.

MED 7150. Special Research Study: Medicine, VU. Each student arranges an independent study with a mentor and completes a period of research work away from Vanderbilt. Approval required.

MED 7200. AE: Global Health. This four-week AE is an extension of the Global Health ISC and aims to provide clinical experience in the care of patients in low- and middle-income countries (LMICs), most often in resource-constrained environments. Students assess the most common health problems encountered at the site, the usual treatment protocols, and how management differs from that in the U.S. or other developed countries. Students learn how treatment and treatment decisions are influenced by local contexts, policies, and cultural components. In this AE, students mindfully and ethically draw on their 'resourcefulness' to navigate the various constraints of working in resource-constrained settings. The hospital or clinic site is arranged by the student and approved by course director. Approval can be facilitated by Vanderbilt faculty involvement at the site. Students may elect to combine clinical work with language immersion studies (such as Spanish). If the intended location is on the State Department Travel Alert List, additional approval is required. Students are responsible for covering all of their personal expenses associated with the course and travel, but small amounts of funding may be available.

Neurology

NEUR 5020. Neurology Core Clerkship. The rotating students of the second-year class are alternately assigned to two 2-week (total=4 weeks) rotating blocks of clinical neurology impatient and outpatient experience. Students are given direct responsibility for the evaluation and care of patients under the supervision of house staff and faculty. This exposure is intended to provide the students with an approach to patients with diseases of the central, peripheral, and autonomic nervous systems and skeletal mascles. At the end of the rotation, students will take the NBME exam. Departmental recognition is given to the highest NBME score. Exposures to other areas of neurology can be arranged; talk to the clerkship director. Second year.

NEUR 5315. Movement Disorders/Deep Brain. Students must complete the Neurology clerkship prior to this elective. The overall goal of this elective is to immerse students in the evaluation and treatment of patients with movement disorders with a focus on these treated with deep brain stimulation. Students will spend time with these unique patients from diagnosis to advanced stages. The elective will include brief didactics on the most commonly followed disorders including Perkinson's disease and Essential Tremor. Clinical time will be spent in the Neurology clinic diagnosing and medically treating patients. Students will be involved in the selection of patients for surgical intervention and observe key components of pre-surgical evaluation. In the operating room, student will participate in all stages of deep brain stimulation (DBS) surgery from the Neurology, Neurosurgery, and Neurophysiology perspectives. Students will assist with post-operative DBS programming. Students may also attend the multi-disciplinary DBS conference, which occurs once a month, if the course overlaps with the timing. At the end of the two-week rotation, the student will feel confident in the presentation, examination, diagnosis, and treatment options for patients with movement disorders. Students will be expected to demonstrate a focused history and neurologically focused physical exam and will be able to articulate the indication for DBS, expected benefit, and potential risks.

NEUR 5612. ACE: General Neurology. Students will participate in a four-week general neurology advanced clinical experience that will have a flexible schedule to allow students to pursue specific interests. The schedule will be individually tailored through discussion/planning with the ACE director and involve participation in the following venues: outpatient clinic, general inpatient neurology service and adult neurology consult service. Students may choose to spend all four weeks in one venue or put together a combination of two or three venues.

NEUR 5620. ACE: Stroke. Students will participate in a four-week stroke advanced clinical experience that will involve inpatient, outpatient and procedural activities. The main venue of participation will be the inpatient stroke service where students will be responsible for carrying a census of patients (presenting on rounds), going to and assisting with stroke alerts, and participating in the education of clerkship students on the service. Students will also have the opportunity to go to stroke clinic and the angiogram suite to learn about and observe diagnostic angiograms and intra-arterial procedures. Students will also attend the weekly multidisciplinary cerebrovascular conference, and spend time with the Neuro ICU team. Students will be expected to stay for overnight call at least two times during the four-week rotation.

NEUR 5650. AI: Stroke. Students will participate in a four-week stroke acting-internship that will involve inpatient, outpatient and procedural activities. The main venue of participation will be the inpatient stroke service where students will take primary responsibility for patients at the level of an intern. They will also go to and assist with stroke alerts, and participate in the education of clerkship students on the service. Students will also have the opportunity to go to stroke clinic and the neurovascular suite to learn about and observe diagnostic angiograms and intra-arterial procedures. Students will also attend the weekly multidisciplinary cerebrovascular conference, and spend time with the Neuro ICU team. Students will be expected to stay for overnight call at least three times during the four-week rotation.

NEUR 6100. Special Clinical Study-Vanderbilt. Each student arranges an independent stady with a mentor and completes a period of clinical work. Approval required.

NEUR 7100. AWAY ACE: Neurology. Each student arranges an integral ent study with a mentor and completes a period of clinical work away from Vanderbilt. Approval required.

NEUR 7150. Special Research Study-Non-VU. Each student arranges an independent study with a mentor and completes a period of research work away from Vanderbilt. Approval required.

Obstetrics and Gynecology

OBGN 5020. OB/GYN Core Clerkship. Each member of the second-year class is assigned to the obstetrics and gynecology service for five-and-one-half weeks. Vandering University Hospital. Each student will spend two-and-one-half weeks on the obstetrical rotation. While on the maternal-fetal service this will include daily attending rounds and involvement with the maternal-transport service. Students will also be assigned to the perinatal group practice service. In addition to being involved on It bor and delivery, students will help manage obstetric patients who are followed in the Vanderbild Clinic. Each student will spend two-and-one-half weeks on gynecology. Each student will spend one-half day per week in continuity clinic, one-half day in colposcopy clinic, and one-half day in clinical transaction project. Daily teaching rounds are conducted by the GYN oncologists. The general gynecology service provides exposure to the medical and surgical management of patients seen at the Gynecology Clinic. The two-week rotation at Baptist Hospital provides excellent exposure to operative gynecology and to gynecology in the private practice setting. In addition, students are encouraged to observe surgical cases performed by the reproductive endocrinology service. The five-and-one-half-weeks rotation provides a broad based introduction to the discipline of obstetrics and gynecology. Included in the rotation is a lecture series given by the faculty covering general obstetrics, high-risk obstetrics, gynecologic oncology, reproductive endocrinology, and general gynecology.

OBGN 5610. ACE: Community Practice in Women's Health (at Northcrest). The student will be exposed to the unique and wide array of care provided in the outpatient clinical setting in a rural and community obstetrics and gynecology practice. Students will actively participate in the assessment and management of patients with the ability to tailor their experience to cases of interest. Students will be expected to develop a plan of care and implement this plan. Students will also be exposed to common outpatient procedures like colposcopy, IUD management, vulvar biopsies. By the end of the rotation, students should be familiar with annual and preventive medicine, contraception management, management and treatment of abnormal uterine bleeding, routine obstetric care, common endocrinopathies, surgical management of common gynecological problems, and others.

OBGN 5615. ACE: Family Planning. The Family Planning Advanced Clinical Experience aims to expose, educate, and empower students on the practical and philosophical intersections between medicine and reproductive justice. At the conclusion of this rotation, students will be well educated and experienced in contraceptive methods, early pregnancy management, and evidence-based abortion care. Students will also learn about the impact that social and societal limitations can have on the provision of evidence-based care.

OBGN 5620. AI: Maternal Fetal Medicine. During this rotation, the student receives advanced experience in highrisk obstetrics designed to gradually provide the student with a sense of responsibility and ownership for the patients under his/her care similar to that of our first year residents. Students help to direct both the antepartum and postpartum care of patients with preterm labor, PPROM, and pregnancy-induced hypertension. By the end of the rotation, the student is responsible for daily documentation including admission/discharge/daily progress notes, supervised order entry, and patient cross-cover reporting to the resident team. The student is expected to be familiar with the main complications of pregnancy, be confident in delivering directed and concise patient assessments and treatment plans, and have mastered the mechanisms of normal labor and delivery. Specific learning activities include daily morning obstetrical teaching rounds; attendance at resident didactics; participation in resident OB emergency simulation training when available, and overnight call on labor and delivery suite. Learning resources include one-on-one interactions with the obstetrical house staff and attendings, access to current obstetrical texts and journals, and teaching conferences.

OBGN 5630. ACE: Maternal Fetal Medicine. During this rotation, the student receives a dvalced exposure to the practice of outpatient high-risk obstetrics. Students will help to direct the outpatient and pectum care of women with common complications of pregnancy, including preterm labor, pre-gestational diabetes, chronic hypertension, PPROM, and preeclampsia. By the end of the rotation, the student should be farmly are with common complications of pregnancy and be confident in delivering directed and concise patient assessments and treatment plans. Outpatient learning activities include attendance in MFM return OB and consult clinics, with additional time spent in diabetes clinic, and obstetrical ultrasound. The student will develop and complete an individualized learning plan during the rotation that may involve some inpatient training opportunities. OB simulation training exercises will be utilized at the beginning and end of the rotation in order to assess student knowledge, communication skills, and procedural competencies. The student will meet with faculty preceptor(s) it to 2x/week to review specific cases related to learning plan objectives.

OBGN 5635. ACE: Clinical Obstetrics. This course is designed to be a focused experience on labor and delivery to give students more experience in basic management of obstetric patients. This course will familiarize the student with the physiology of labor and delivery. Students will be expected to work with the team learning cervical exams, basic ultrasound assessment, and delivery skills. They will also work with the team in the operating room learning skills for cesarean delivery. The student will also follow postpartum patients with the residents and attendings. An individualized curriculum will be planned which will include experience on days and nights with the team on labor and delivery and in triage. The student will be expected to assist with teaching the FCC students on the rotation as well. The student should finish this experience with confidence to complete tasks required of an intern on their labor and delivery rotation.

OBGN 5645. AI: Operative Gynecology. Operative Gynecology seeks to integrate didactic and interactive teaching, consultative and inpatient management experience, benign gynecologic operative experience, and focused independent study to gain greater appreciation for and confidence in managing the following: 1) clinical presentation, 2) diagnostic evaluation, 3) clinical or surgical management, and 4) short or long term follow-up of common gynecologic problems. It also seeks to prepare the learner to function at the level of a Gyn intern prepared to competently perform core activities listed in the Learning Objectives.

OBGN 5655. ACE: Gynecologic Oncology. During this rotation, the student receives training in the management of gynecologic oncology patients. The student participates in the evaluation and treatment of patients, gaining experience in surgery, colposcopy, pathology, chemotherapy, and radiation techniques. The student will be primarily responsible for 2-3 inpatients at any given time under the direct supervision of the resident on service. By the end of the rotation, the student should be familiar with the staging of different gynecologic malignancies, common treatment modalities, and important prognostic factors affecting survival. In addition, the student will be exposed to the immediate postoperative care of the acutely ill patient. Specific learning activities include pre- and postoperative

care of the oncology surgical patient, assistance in the operative cases on the service, and attendance in the private clinics of the oncology attending.

OBGN 5660. ACE: Female Pelvic Medicine and Reconstructive Surgery. During this rotation the student receives training and practical experience in the diagnosis and management of pelvic floor defects and dysfunctions. The student will participate in preoperative evaluation, surgery, and post-operative follow-up of operative cases. In addition, there will be exposure to conservation treatment including pelvic floor rehabilitation and insertion/management of pessaries. History and physical exam of pelvic floor defects are also emphasized.

OBGN 5665. ACE: Operative Gynecology. Operative Gynecology seeks to integrate didactic and interactive teaching, general and specialty clinic experience, outpatient and inpatient management experience, and focused independent study to gain a more in depth appreciation for clinical presentation, diagnostic evaluation, clinical or surgical management, and short or long term follow-up of common gynecologic problems.

OBGN 6100. Special Clinical Study-Vanderbilt. Each student arranges an independent study with a mentor and completes a period of clinical work. Approval required.

OBGN 7100. AWAY ACE: Obstetrics/Gynecology. Each student arranges an independent study with a mentor and completes a period of clinical work away from Vanderbilt. Approval required.

OBGN 7150. Special Research Study-Non-VU. Each student arranges an independent study with a mentor and completes a period of research work away from Vanderbilt. Approval required.

Ophthalmology and Visual Sciences

OPH 5320. Introduction to Ophthalmology. Students will join a team of attending and resident physicians on the Ophthalmology service at Vanderbilt Hospital. Ophthalmology involves working as a consultant and primary care physician to patients both in the hospital and in the clinics. Reasons for consultation requests vary, but common requests include retinal disease, glaucoma, infectious diseases, thomas, and congenital anomalies. There will be six choices of subspecialty services on which the soldent may rotate over the two weeks. These include retina, glaucoma, cornea, oculoplastics, neuro-ophthalmology, onsults, and pediatrics. At the conclusion of the two-week elective, students will be able to take an ophthalmology bistory and physical examination, arrive at a diagnosis, and understand treatment plans. Additionally, students will have familiarity with evidence-based approaches to care and the role of an ophthalmology surgeon in a teaching hospital.

OPH 5610. ACE: Ophthalmology. Ophthal nology is a wonderful specialty, combining both medical and surgical care of the eye and the peri-ocular structures. The ACE will allow medical students to participate in care delivered at the Vanderbilt Eye Institute, the Na. wille Veterans' Affairs Hospital and the Vanderbilt University Hospital's inpatient and emergency room. Through shadowing attendings and performing ophthalmic exams, it is expected at the conclusion of the ACE a medical student will be able to (1) perform a basic slit-lamp examination and a dilated fundus examination with a direct ophthalmoscope, (2) have a working understanding of the major etiologies of vision loss in the United States, including cataracts, glaucoma, age-related macular degeneration, diabetic retinopathy and amblyopia, and (3) accurately diagnose common ophthalmic issues, including corneal abrasions, conjunctivitis and acute-angle closure glaucoma. Additionally, the societal impact of loss of vision on a person's activities of daily living, the reestablishment of independence following restoration of sight and the evolving role of the ophthalmologist providing this care should be appreciated by the medical student.

OPH 5622. ACE: Ophthalmology II. Ophthalmology is a wonderful specialty, combining both medical and surgical care of the eye and the peri-ocular structures. The ACE will allow medical students to participate in care delivered at the Vanderbilt Eye Institute, the Nashville Veterans' Affairs Hospital and the Vanderbilt University Hospital's inpatient and emergency room. Through shadowing attendings and performing ophthalmic exams, it is expected at the conclusion of the ACE a medical student will be able to (1) perform a basic ocular history (2) perform a basic slit-lamp examination and a dilated fundus examination with a direct ophthalmoscope, (3) have a working understanding of the major etiologies of vision loss in the United States, including cataracts, glaucoma, age-related macular degeneration, diabetic retinopathy and amblyopia, and (4) accurately diagnose common ophthalmic issues, including corneal abrasions, tearing, conjunctivitis, superficial foreign body, ptosis and (5)

accurately diagnose ophthalmic emergencies such as chemical burns, acute-angle closure glaucoma, central retinal artery occlusions, and various ocular traumas. Students will also be able to identify those ophthalmologic conditions that require consultation and referral. Additionally, the societal impact of loss of vision on a person's activities of daily living, the reestablishment of independence following restoration of sight and the evolving role of the ophthalmologist providing this care should be appreciated by the medical student.

OPH 6100. Special Clinical Study-Vanderbilt. Each student arranges an independent study with a mentor and completes a period of clinical work. Approval required.

OPH 7100. AWAY ACE: Ophthalmology. Each student arranges an independent study with a mentor and completes a period of clinical work away from Vanderbilt. Approval required.

OPH 7150. Special Research Study-Non-VU. Each student arranges an independent study with a mentor and completes a period of research work away from Vanderbilt. Approval required.

Oral & Maxillofacial Surgery

OMFS 5700. ACE: Oral and Maxillofacial Surgery. Oral and maxillofacial surgery is the clinical discipline that focuses on the management of diseases, deformities, injuries, and defects of the oral and fa in structures. With elements of dentistry, medicine, anesthesia, and surgery, the ACE provides exposure to a wide array of clinical conditions ranging from lesions and conditions of the oral cavity, odo no govic head and neck infections, cleft palate, oral/facial reconstruction, total temporomandibular joint replacement complex facial fractures to congenital and acquired deformities of the jaws and facial bones. Students will be active participants in clinical and didactic activities. Practice-based learning and systems-based practice methods will be emphasized. Students will have the opportunity to (1) enhance their fund of knowledge in clinically relevant overlapping areas of dentistry/oral surgery and medicine, (2) improve their working understanding of head and neck reconstruction, and (5) participate in the delivery of clinic-based ambulatory anesthesia. Students will be expected to take facial trauma call.

OMFS 5701. AI: Oral and Maxillofacial Surgery. The Acting Internship focuses on the management of diseases, deformities, injuries, and defects of the oral and facial scructures. With elements of dentistry, medicine, anesthesia, and surgery, the AI provides exposure to a wide at any of clinical conditions ranging from lesions and conditions of the oral cavity, odontogenic head and neck infections, cleft palate, oral/facial reconstruction, total temporomandibular joint replacement, complex facial fractures to congenital and acquired deformities of the jaws and facial bones. Students will be active participants in clinical and didactic activities. Practice-based learning and systems-based practice methods will be emphasized. Students will have the opportunity to (1) enhance their fund of knowledge in of diseases, injuries, and congenital and acquired deformities of the oral and maxillofacial regions, (2) improve their working understanding of head and neck anatomy, (3) review common infections of the oral and head and neck region and principles of surgical and pharmacologic infection management, (4) learn fundamental principles of head and neck reconstruction, (5) apply principals of facial trauma patient evaluation and facial fracture management, (6) participate in the delivery of comprehensive ambulatory oral surgical services, and (7) participate in the delivery of clinic-based ambulatory anesthesia and in the management of simulated anesthetic emergencies. Students will be expected to take facial trauma call. For students in the Oral Surgery Residency program only.

Orthopaedic Surgery and Rehabilitation

ORTH 5325. Pediatric Sports Medicine. Students will spend time with various attendings in the pediatric orthopaedic, sports medicine, and adolescent clinics at Vanderbilt. They will also attend the sports medicine fellows lecture series and a sports event if available during the rotation. They will be expected to read Hoppenfeld's text - Physical Exam of the Spine and Extremities. Upon completion of the rotation, the students will be expected to understand the diagnosis and management of pediatric fractures, concussion, and overuse injuries. Students will perform a physical exam of the spine and extremities.

ORTH 5611. ACE: General Orthopaedics. This course provides hands-on exposure to all aspects of orthopaedic surgery. The student will be able to integrate medical and surgical knowledge in the care of patients with musculoskeletal diseases in both inpatient and outpatient settings. Emphasis will be placed on initial evaluation, preoperative and postoperative management as well as intraoperative surgical procedures. Students will act as part of a multi-disciplinary team during this course. Students are also allowed to share the call experience where they are independently providing casting and splinting care and patient evaluations. Exposure to musculoskeletal oncology and adult orthopaedics is incorporated. Didactic sessions are held for one hour each morning prior to surgical cases or clinic during which the student will be able to integrate medical and surgical knowledge in the care of patients.

ORTH 5621. ACE: Enhanced Experience in Orthopaedic Subspecialties. This course provides hands-on exposure to pediatric orthopaedic care and orthopaedic oncology care. The student will be able to integrate medical and surgical knowledge in the care of pediatric orthopaedic patients as well as orthopaedic oncology patients in both inpatient and outpatient settings. Emphasis will be placed on initial evaluation, preoperative and postoperative management as well as intraoperative surgical procedures. Students will act as part of a multi-disciplinary team during this course. Students are also allowed to share the call experience where they are providing casting and splinting care and patient evaluations. Didactic sessions are held for one hour each morning prior to surgical cases or clinic during which the student will be able to integrate medical and surgical knowledge in the care of patients.

ORTH 5622. ACE: Enhanced Experience in Orthopaedics. This course provides hands on exposure to orthopaedic care of spinal and upper extremity injuries and disorders. The student will be able to integrate medical and surgical knowledge in the care of orthopaedic patients with spinal and upper extremity injuries and disorders in both inpatient and outpatient settings. Emphasis will be placed on initial evaluation, preoperative and postoperative management as well as intraoperative surgical procedures. Studens will act as part of a multi-disciplinary team during this course. Students are also allowed to share the call experience; where they are providing casting and splinting care and patient evaluations. Didactic sessions are held for one nour each morning prior to surgical cases or clinic during which the student will be able to integrate medical and surgical knowledge in the care of patients.

ORTH 6100. Special Clinical Study-Vande bil. Each student arranges an independent study with a mentor and completes a period of clinical work. Approval required.

ORTH 7100. AWAY ACE: Orthophedics. Each student arranges an independent study with a mentor and completes a period of clinical work a way from Variderbilt. Approval required.

ORTH 7150. Special Research Study Vol. Each student arranges an independent study with a mentor and completes a research project away from Vanderbilt. Approval required.

Otolaryngology

OTO 5310. Introduction to Otolaryngology. Students will join the attendings, fellows, and residents on the Head and Neck Division of the Department of Otolaryngology. This service provides surgical care for patients with benign and malignant tumors of the head and neck, including tumor resection and reconstruction, as well as airway reconstruction. It is a busy service which carries the largest inpatient census in our department. Students will see patients in the office and hospital setting, intra-operatively and post-operatively. Students will also have the opportunity to work with our speech pathologists and physical therapists as well. Students will participate in our weekly multi-disciplinary tumor board to better understand both surgical and non-surgical management of head and neck tumors. At the conclusion of the two weeks, students will be able to take a directed history, perform a basic head and neck examination, and observe and understand the basic surgical approaches to tumors of the head and neck. They will also understand basic reconstructive options for head and neck defects. Most importantly, they will understand the multi-disciplinary approach to patients with head and neck cancers.

OTO 5315. Introduction to Laryngology. The human larynx is a very complex instrument and one that enables us to communicate with each other through speaking and song, as well as protecting our airway from aspiration during

deglutition. We recognize each other through our voices and our unique, individual sound helps to define who we are. Technological advances allow us to study the larynx real time in the office and help us to offer patients highly specialized, individualized treatments based on the results of these studies. In this two-week elective, students will participate in the management of patients with disorders affecting the larynx and upper aerodigestive tract, including dysphonia, breathing difficulties, and dysphagia. Students will work with a team of the attending, fellow, and resident physicians from the Vanderbilt Voice Center in both clinic and operating room settings. In the clinic, students will learn the specialized evaluation of the patient with a vocal, breathing, or swallowing complaint. Diagnosis and treatment of common laryngological disorders will be presented and discussed. The student will also interact with and observe the voice speech and language pathologists and vocal pedagogues that complete the multidisciplinary team of the Voice Center. These practitioners provide both diagnostic support and behavioral treatment for patients. Students will be exposed to diagnostic procedures, specifically indirect laryngoscopy and laryngeal videostroboscopy. In the operating room, students will observe endoscopic treatment of a variety of common laryngeal, upper airway, and esophageal disorders. These disorders may include benign vocal fold lesions, vocal fold paralysis, upper airway stenosis, and cervical esophageal stenosis. At the conclusion of the two-week rotation, students will be able to take a specialized laryngological history; perform a complete head and neck examination; discuss common disorders affecting the larynx, upper airway, and cervical esophagus; and describe the treatment of common disorders affecting the larynx, upper airway, and cervical esophagus.

OTO 5325. Clinical Rhinology. In this elective, students will have the opportunity to learn about nasal and sinus disorders and their relationship to diseases of the respiratory tract. Students will learn the pathophysiology of sinus disease and how nasal and sinus anatomy interact with allergy and other in munological diseases to affect the entire airway. The students will also learn how nasal anatomy affects patients in their ability to function in everyday life. The students will accompany the surgeon to the operating room to observe how o descopic sinus surgery is performed. The elective will also include benign and malignant diseases of the sinuses and skull base. Students will focus on the anatomy of the skull base and the various pathologies seen clinically. Students will spend time with the skull base surgeon in both a clinical setting and the operating swite. Students will follow the patient from the time of surgery to the first post-operative appointment. In the clinic, students will learn about nasal and sinus endoscopy; CT and MR scans of the paranasal sinuses and skull base physiology and bacteriology of the nose and sinuses and the close relationship with the lungs and pulmonary function, and medications available to treat nasal and sinus disorders. Students will also observe the allergis immunologist. At the end of the two-week rotation, students will be knowledgeable of the common presenting lymptom of assal and sinus disorders, and the anatomy and pathophysiology of nasal, sinus, and skull base disease. They will be able to read sinus CT and MR scans, and will be able to present a case concerning the presenting symptoms and diagnostic factors of a case and the available treatment paradigms.

OTO 5335. Introduction to Neurotologic Surgery. Neurotology is a subspecialty of otolaryngology (ENT) that deals with the evaluation and treatment of disorders of the ear, including adult and pediatric hearing loss, intracranial tumors, vertigo, facial nerve disorders, and complex infections of the ear. The specialty is multi-disciplinary and interacts frequently with other otolary ngology specialists and faculty and staff in neurosurgery, neurology, audiology, speech and language pathology, deaf education, physical therapy, and others. Students will participate in all aspects of the diagnosis and management of patients with neurotologic disorders. In the operating room students will be able to participate in and observe complex procedures such as cochlear implants, acoustic neuroma surgery, tympanic membrane reconstruction, stapedectomy, mastoidectomy and eradication of the ear, and vestibular surgery. Students will participate as members of our cochlear implant team, learning basic and advanced audiologic testing, cochlear implant evaluations, team assessment and integration, surgery, and post cochlear implant evaluation. Students will be able to participate in the activation of the cochlear implant, seeing adults and children hear for the first time. At the conclusion of the two -week rotation, students will be able to perform a specialized ear history and complex head, neck, and neurotology exams. They will be familiar with the disorders of the ear, including infections, hearing loss, vertigo, tinnitus, and intracranial tumors of the ear including meningioma, acoustic neuroma, and facial nerve disorders; the systems based practice involving multi-disciplinary care of neurotologic disorders, including working with the cochlear implant and surgical teams; surgical procedures involved with treating patients with complex otologic disorders; and the appropriate surgical set up, procedure, and equipment.

OTO 5340. Introduction to Facial Plastic and Reconstructive Surgery. Facial plastic and reconstructive surgery is an integral part of the training in Otolaryngology-Head and Neck Surgery. The face is the cornerstone of a

person's identity. Facial expression implies a revelation about the characteristics of a person, a message about something internal to the expresser. The goal of facial plastic and reconstructive surgery is to restore, maintain, or enhance a patient's facial appearance. Students will participate in the management of patients with disorders affecting the face. Students will work with both attending and resident physicians from the division of Facial Plastic Surgery in both the clinic and the operating room. In the clinic, students will learn the specialized evaluation of the patient with congenital, malignant, traumatic, and medical conditions affecting various components of the face. Diagnosis and treatment of common facial disorders will be presented and discussed. Considerations of facial aesthetics will also be reviewed. In the operating room, students will observe treatment of a variety of common nasal, auricular and cutaneous disorders. These disorders may include facial fractures, nasal deformities, facial defects, and facial paralysis. At the conclusion of the two-week rotation, students should be able to take a specialized history pertinent to facial deformities; perform a complete head and neck examination; discuss common disorders affecting the nose, external ears, eyelids, lips, and facial skin; and describe the treatment options of common disorders amenable to facial plastic surgery.

OTO 5625. ACE: Otolaryngology. The Otolaryngology ACE is a surgical and medical course that offers immersion into the oldest medical speciality in the United States. This course deals with disorders of the ear, nose, and throat and involves the Head and Neck/Laryngology, Pediatric Otolaryngology, Rhinology/Plastic Surgery, and Otology services. Rotations provide the clinical complexity of various head and neck pathologies and explores medical and surgical treatment plans. The course will focus on the diagnosis, treatment, and management of many speciality specific disorders as well as primary care problems associated with pediatric and adult patients in the ambulatory, inpatient and operating room setting. Rotators will encounter disorders including ear disease and hearing loss, head and neck cancer, voice and communication disorders, obstructive sieep apnea, and airway abnormalities. The outpatient setting will enhance and reinforce a thorough head and neck examination, including the ear exam, and foster development of an Otolaryngologic assessment and plan. Additionally, students will be able to be involved with the inpatient otolaryngology team and aid in and observe operating room procedures. Students will have a unique look into the complexities of this speciality and become involved with the multi-disciplinary approaches to treatment with other team members including audiologists, speech pathologists, radiologists, pulmonary and gastroenterology physicians.

OTO 5626. ACE: Enhanced Experience in Ordaryngology. The Enhanced Experience in Otolaryngology ACE is a surgical and medical course that offers a deeper immers on into Otolaryngology for students pursuing careers in Otolaryngology. This course deals more deaply with disorders of the ear, nose, and throat. It may involve participation on the Head and Neck/Opcology, Laryngology, Pediatric, Rhinology, General, Plastic Surgery, Otology and Veterans Affairs services. Rotations provide the clinical complexity of various head and neck pathologies and explore medical and surgical treatment plans. The course will focus on the diagnosis, treatment, and management of many specialty specific discovers for both pediatric and adult patients in the ambulatory, inpatient and operating room setting. Students will have increased clinical responsibilities and individuation of their experience based on career interests. Students will encounter disorders including ear disease and hearing loss, head and neck cancer, voice and communication disorders, head and neck/facial reconstruction, obstructive sleep apnea, neck masses, and airway abnormaties. The outpatient setting will enhance and reinforce a thorough head and neck examination, including the ear exam, and foster development of an Otolaryngologic differential diagnosis with an assessment and plan. Additionally, students will be able to be involved with the inpatient otolaryngology team and aid in and observe operating room procedures and perioperative care. Students will have a unique look into the complexities of this specialty and become involved with the multi-disciplinary approaches to treatment with other team members including: audiologists, speech pathologists, radiologists, pulmonologists, gastroenterologists and sleep medicine physicians.

OTO 6100. Special Clinical Study-Vanderbilt. Each student arranges an independent study with a mentor and completes a period of clinical work. Approval required.

OTO 7100. AWAY ACE: Otolaryngology. Each student arranges an independent study with a mentor and completes a period of clinical work away from Vanderbilt. Approval required.

OTO 7150. Special Research Study-Non-VU. Each student arranges an independent study with a mentor and completes a period of research work away from Vanderbilt. Approval required.

Pathology

PATH 5310. Pathology as a Career. Physician practice in the field of pathology takes place within a diverse range of sub-disciplines under the general divisions of Anatomic Pathology (AP) and Clinical Pathology/Laboratory Medicine (CP). The goal of this elective is to offer an introductory experience whereby students can participate in and observe the daily activities of multiple practice settings in both AP and CP. Opportunities exist for exposure in the areas of surgical pathology, cytopathology, autopsy pathology, hematopathology, molecular diagnostics, transfusion medicine, clinical microbiology, and clinical chemistry, among others. Attendance at intradepartmental educational conferences and relevant multidisciplinary clinical conferences will be strongly encouraged. At the completion of the rotation students will have a working understanding of the general role the pathologist plays within the greater context of patient care and will have gained insight toward consideration of pathology as a potential career choice.

PATH 5620. ACE: Anatomical Pathology. This four week Advanced Clinical Experience is designed to provide in-depth exposure to the practice of anatomic pathology via a mixture of services and is an ideal way to gain additional insight into the field for both those students considering pathology as a career and those who plan to pursue clinical specialties which frequently make use of pathology services. Depending on specific student interest and service availability, the setting for this clerkship may include the sub-specialty-oriented surgical pathology service at VUMC, the general surgical pathology service at the TVHS VA Hospital, the cyop thology service at VUMC, the pediatric surgical pathology service at Monroe Carrell Jr. Children's Hospital and the autopsy pathology service at VUMC. Emphasis is placed on introducing the student to the me hods of so cimen processing, evaluation and diagnosis in anatomic pathology with a particular focus on the clationship that a atomic pathologists maintain with clinical colleagues in the context of patient care efforts. Opportunities will exist for students to see a range of specimen types from fine needle aspiration biopsies to multi-(rgan resections at a full autopsies. Students will work closely with pathology residents and fellows and will participate in a variety of tasks including pathologist performed biopsies, intra-operative consultations, gross specimen evaluation and selection of histologic sections for microscopic review. Additionally students will preview microscopic slides and dictate draft reports for selected cases and will subsequently participate in case review, arcillary test ordering/evaluation and final case sign out with the attending pathologist. Students will be expected a attending pathologist. Students will be expected a attending pathologist. in anatomic pathology as they occur.

PATH 5630. ACE: Clinical Pathology Chaical pathology (also known as Laboratory Medicine) includes diverse laboratory services that provide diagnostic testing for all areas of medical practice. Services include transfusion medicine/blood bank, clinical chemistry, special or emistry (including toxicology), hematology and urinalysis, special hematology (bone marro v and lymph node analysis), coagulation, microbiology, virology, molecular infectious disease, molecular genetics, cytogenetics, and immunopathology (including flow cytometry). The student may rotate in one or multiple labs with training individualized according to their interest and future plans. Training consists of a mixture of observation and both didactic and case-based learning. At the end of the rotation, the student will have an understanding of efficient use and interpretation of diagnostic and monitoring tests in the areas of the lab through which the student has rotated.

PATH 5650. ACE: Clinical Microbiology. Medical microbiology is the subspecialty of pathology concerned primarily with the laboratory diagnosis, treatment, and control of infectious diseases. Medical students with an interest in medical microbiology, pathology, or infectious diseases may elect to do a rotation in medical microbiology. Formal training in medical microbiology at VUMC is administered by the Department of Pathology, Microbiology, and Immunology and consists of an integrated program of experiential and theoretical education in the laboratory diagnosis and management of infectious diseases. The program is designed to provide concurrent training in the technical, mechanistic, consultative, managerial, administrative, and pedagogical aspects of clinical microbiology throughout the pathology residency period. Thus, medical students and pathology residents are placed in a learning environment that synthesizes the spectrum of clinical microbiology precepts within the daily routines and reinforces fundamental interconnections between clinical infectious diseases, microbial pathogenesis, and laboratory diagnostic approaches. Further harmonization of concepts in medical microbiology is achieved via consistent, direct mentoring of trainees by program faculty, medical student and resident participation in conferences covering relevant topics in infectious diseases and diagnostic microbiology, and progressive increases in trainee responsibility commensurate with experience. The goal of individual rotations is to foster a detailed understanding by trainees of the biochemical, molecular, genetic, analytical, and engineering principles of contemporary testing

methodologies and link these insights to the pathophysiology, clinical presentation, therapy, and prevention of microbial diseases.

PATH 5680. AE: Forensic Pathology. Join the Nashville Medical Examiner's Office for a month-long elective in one of the most fascinating areas of medicine, forensic pathology. Observe and participate in death-scene investigations, autopsies, and courtroom testimony. Learn about the important function a medical examiner's office plays in the protection of the public health of our community. This elective is not just for those who are interested in pathology, but also for all medical students who want to see how disease and trauma affect the human body. Prerequisite: Third year core clerkships. Fourth year students only.

PATH 6100. Special Clinical Study-Vanderbilt. Each student arranges an independent study with a mentor and completes a period of clinical work. Approval required.

PATH 7100. AWAY ACE: Pathology. Each student arranges an independent study with a mentor and completes a period of clinical work away from Vanderbilt. Approval required.

PATH 7150. Special Research Study-Non-VU. Each student arranges an independent study with a mentor and completes a period of research work away from Vanderbilt. Approval required.

Pediatrics

PED 5020. Pediatrics Core Clerkship. Each member of the second year class is assigned to Pediatrics for five and one-half weeks. Three and one-half weeks are spent on the Vanderbilt Children's F ospital inpatient pediatric wards. Students participate in all phases of diagnosis and treatment of a vide variety of illnesses of children and infants. Two and one-half weeks of the clerkship includes work in pediatric clinics or Meharry Hospital or community sites. Besides teaching rounds on the wards and nursery, student lectures are it sld three times a week. Grand rounds are held weekly and chief resident rounds are held each Thursday.

PED 5310. Adolescent Medicine. Students will participate in an outpatient Adolescent and Young Adult Health Clinic with residents and faculty. The Adolescent clinic serves patients with a variety of health care needs including primary care, acute care, sports medicine, gype cological and contraceptive care, behavioral health, and eating disorders. Students will have the opportunity to see patients first and then work closely with faculty members to develop a care plan. Students can anticipate working in multidisciplinary teams and spending time with a variety of providers. Students can also expect to participate in didactic and case based learning sessions throughout the course. The goal of this elective is to fan inarize students with the scope of adolescent health care. At the conclusion of the two-week elective, students will be able to take a complete and confidential psychosocial and gynecological history on adolescent patients. Additionally, students should be able to perform a focused physical exam and develop a patient plan of care in conjunction with the attending.

PED 5315. Pediatric Diabetes in Clinical and Research Setting. Students will join a team of attending and fellow physicians and scientists as they learn about management and discovery in pediatric diabetes. The management of diabetes in children occurs at the intersection of medical and support services. The care is managed by physicians, nurses, social workers, child life specialists, and psychologists. Within this intersection of care, the team is also dedicated to improving the management of diabetes through research. The goal of this short course is to introduce the students to this intersection. Students will participate in the initial evaluation and teaching of a patient with new onset diabetes, will be precepted in diabetes continuity clinic, and will attend clinical visits with dietitians, social workers, and psychologists. As an extension of this clinical exposure, students will learn about clinical research by attending our clinical research team meeting, receiving training in patient consent, and observing clinical trial visits. Students will also learn about the basic science of diabetes by participating in design, execution, and interpretation of research in the lab setting. At the conclusion of the elective, students will understand the presentation and management of diabetes through the contributions of a diverse provider team, the impact of diabetes on children and their families, and the opportunities for changing the course of diabetes through research from bench to bedside and back.

PED 5325. Physiology and Pathophysiology of the Newborn. This two-week elective will be scheduled for students who will be welcomed to the Neonatal Intensive Care Unit on the fourth floor of the Children's Hospital.

The course will be a mix of didactic talks and readings as well as patient evaluations focused on the physiology and pathophysiology of oxygen delivery and gas exchange. The student will learn the principles of evaluation and treatment of a variety of cardiorespiratory disorders including respiratory failure, hyaline membrane disease, pneumonia, sepsis, various congenital heart diseases, and congenital malformations. The student will also be learning ventilation management and blood gas analysis and the basics of fluid, electrolyte, and nutrition management. These physiologic principles are universally applicable and not limited to neonatology. At the conclusion of the elective, students will be able to list five pathophysiologic mechanisms for hypoxic respiratory failure; interpret blood gases determining alveolar minute ventilation, acidosis status, and ventilatory means to correct abnormalities; write fluid electrolyte and parenteral nutrition orders demonstrating understanding of the reason behind including each component; and will understand the basics of physical examination and evaluation of the newborn infant and correlate the observations with the pathophysiology.

PED 5330. Pediatric Hematology-Oncology. Students will have a broad exposure to pediatric hematology-oncology on this rotation. The rotation is two weeks in length and will be inpatient both weeks. During the inpatient rotation, students will join a team of residents, fellows, and attending physicians on the pediatric hematology-oncology service at Vanderbilt Children's Hospital. Students will attend rounds and will see a broad range of both pediatric oncology and hematology diagnoses. Common reasons for oncology admissions are workups for possible oncology diagnoses, new diagnoses initiating treatment, chemotherapy administration, complications from treatment, and palliative care/death and dying. Common reasons for hematology admissions are diagnosis and management of bleeding disorders, workup for anemia and/or thrombocytoperia, and management of the complications of sickle cell disease. Students will also be able to participate in inpatient consults that will give additional exposure to hematologic/oncologic problems. At the conclusion of the two yeek elective, students will be able to do a history and physical examination on an oncology patient in the inpation, setting. Students will also be able to formulate a differential diagnosis for a new patient referral, both in hematology and oncology. Students will have an overall appreciation for the varied patient populations seen in pediatric nematology-oncology from both the family and the physician/medical team perspectives. Students will also have a broad exposure to the field of academic pediatric hematology-oncology.

PED 5331. Pediatric Stem Cell Transplantation. Students will have a broad exposure to pediatric stem cell transplant on this rotation. Students will do a two week rotat on that includes both the inpatient and outpatient settings. During the inpatient time, students will join a team of fellows and attending physicians on the pediatric stem cell transplant service at Vanderbilt Children's Hospital. Students will attend rounds and will see a patient at all stages of stem cell transplant (pre-, peri- and post) for troad range of both pediatric oncology and nonmalignant diagnoses. Common reasons for admissions on this service are stem cell transplantation, complications from treatment, and palliative care/de id. and dying. During the outpatient time, students will attend all pediatric stem cell transplant clinics. Clinic opportunities are vast and will include exposure to patients who are being considered for stem cell transplant, post-transplant sick vasts, and hospital follow-up. New referrals will also be seen. At the conclusion of the two-week elective, students will be able to do a history and physical examination on a stem cell transplant patient in both the inpatient and outpatient settings. Students will also be able to formulate a differential diagnosis for presenting signs and symptoms and to understand which patients are considered stem cell transplant candidates. Students will have an overall appreciation for the varied patient populations seen in pediatric stem cell transplantation from both the family and the physician/medical team perspectives. Students will also have a broad exposure to the field of academic pediatric stem cell transplantation.

PED 5335. Obesity Across the Life Stages: Before Breast Feeding to Bariatrics. Obesity is a condition of high prevalence worldwide. Most medical providers encounter it or one of its many co-morbidities on a daily basis. Its etiology is complex, with risk and disease development beginning before birth and progressing across the lifespan. In this elective students will be exposed to the evolution of this disease across these life stages, highlighting clear opportunities for prevention and treatment. Students will participate in a variety of clinical settings, which range from general to subspecialty, and from medical to surgical. Through these clinical experiences and a core of didactics, students will learn key points of intervention such as maternal nutrition (obstetrics), breastfeeding (newborn nursery lactation consultation), obesity treatment (multidisciplinary pediatric and adult weight management clinics, bariatric surgery), and management of its co-morbidities (lipid and endocrinology clinics). At the conclusion of the two-week elective, students will understand how obesity evolves across the lifespan, identifying opportunities for prevention and treatment; how to perform an obesity-specific assessment of patients of all ages through history taking, physical exams, and data interpretation; and how the multidisciplinary nature of

treatment options can be approached through interpersonal interactions with patients, families, and members of the clinical teams.

PED 5340. Pediatric Patient and Family Engagement Consultation Service. This elective involves working with a multidisciplinary consultation team devoted to engaging pediatric patients and their families in managing their health through educational interventions and health information technologies. Consultations focus on understanding the health-related needs of the families of hospitalized pediatric patients and developing strategies to meet those needs based on patient and parental characteristics, capacities, and preferences. With each new consultation, students will independently evaluate the patient and family, present the case to a multi-disciplinary team, explore resources to address their health-related needs, and work with the family to implement the proposed solutions during hospitalization. Medical students will work with a variety of pediatric providers in the inpatient and acute care settings, and they will learn to educate and support families with new diagnoses and chronic illnesses using apps, the My Health at Vanderbilt patient portal, or other technologies and educational tools. At the end of this rotation, the student will have an appreciation of the broad array of health-related needs that challenge the families of ill children, an understanding of the concept of patient activation and its role in patient and family engagement, and familiarity with use of education and health information technologies in the promotion of health and management of disease. Students will have unique opportunities to learn about a broad array of barriers to optimal care, to gain experience with assessing and managing social determinants of health, and to impact directly the care of the families involved in the consultations.

PED 5345. Pediatric Cardiology. Students participating in this two-week elective will be exposed to the breadth of services offered by the medical and surgical teams caring for children with congenital and acquired heart conditions. Selected faculty members and at times senior cardiology fellows will provide did care and clinical insight relative to their area of expertise. Such areas include but are not limited to porinvasive imaging (echocardiography, MRI), cardiac catheterization, and electrocardiography- the primary areas whereby cardiac structure, hemodynamics and rhythm are assessed. The goal is to provide consistent core dialectics and readings, supplemented with an introduction to basic cardiac assessment in the outpatient and impatient rettings. Students will be afforded an opportunity to observe the interaction of multiple team numbers working toward the optimal patient care plan using a variety of diagnostic and imaging modalities. At the conclusion of the elective, students will have acquired a basic understanding of how abnormalities of cardiac seneture and function impact the well-being of the pediatric patient through the care continuum. Though many principles are pediatric-specific, common concepts are shared with adult medicine as well. Students will also understand basic cardiac assessment in the infant, child and adolescent, primarily in the outpatient setting including history, physical exam, and appropriate use of diagnostic studies.

PED 5395. Pediatric Special Study. Supervised 2-week special clinical study in Pediatrics.

PED 5611. AI: Pediatric Medicine. The Pediatric Acting Internship is a course designed to give students a more robust experience of serving as an active member of the inpatient pediatric ward teams. Students will assume intern responsibilities with the supervision and countersignature of notes and orders by upper level residents, as well as participate in daily teaching conferences. Students will be assigned a number of long day shifts and a series of night shifts, with a maximum of four days off during the four week period. Patient assignments will be at the level of a census closer to that of an intern to provide increased responsibility and ensure readiness for residency. In order to ensure the strong clinical experience which characterizes this course, each position is built into the pediatrics house staff rotational schedule. Therefore, the pediatric service relies heavily on each student who is accepted into this course. We ask that each student consider his/her enrollment as a strong commitment to serve; add/drops will not be permitted.

PED 5612. ACE: Adolescent Medicine. Adolescent Medicine is a unique subspecialty in pediatrics in that it combines both primary care with consultative care for adolescents and young adults ages 12 to 22 years of age. During this ACE students will have the opportunity to learn comprehensive care of the adolescent using both a primary care and a multidisciplinary team approach. Students will have the ability to function within the Adolescent/Young Adult Clinic and will be exposed to a multidisciplinary team which includes a social worker, nutritionist and psychiatrist in conjunction with an adolescent medicine physician. At the end of the course, students will feel comfortable performing a complete psychosocial assessment of an adolescent using the HEADDSS assessment tool. They will have the opportunity to provide primary and basic gynecologic care for adolescents to include (1) how to perform a sports clearance exam; (2) how to take an appropriate menstrual history and screen for

menstrual disorders; (3) how to take an appropriate sexual history; (4) how to counsel an adolescent on contraception. Students will also gain experience in the care of adolescents/young adults with eating disorders and major depression. Evaluations will be based on the student's ability to take a complete and appropriate history/physical and develop a cohesive and appropriate treatment plan. This course will fulfill the primary care requirement.

PED 5615. ACE: General Pediatric Neurology. Students will participate in a four-week pediatric neurology advanced clinical experience with a flexible schedule that will allow students to pursue specific interests. Given student interests, the schedule will be individually tailored through discussion/planning with the ACE director and involve participation in the following venues: outpatient pediatric neurology clinic and the inpatient teams encompassing pediatric neurology, pediatric epilepsy, and critical care. Consider enrolling in the Pediatric Epilepsy ACE as well.

PED 5620. ACE: Pediatric Epilepsy. Pediatric Epilepsy Advanced Clinical Experience (PEACE) is an exciting multi-disciplinary specialty that encompasses pediatric neurology, neurosurgery, neuroradiology and neuropathology. Patients present with seizure onset ranging from birth into young adulthood. While due to many etiologies, most patients do well with standard medications achieving excellent seizure control. However, a substantial subset requires additional evaluations as well as dietary or surgical approaches. PEACE students will function within inpatient and outpatient clinical teams, as well as participate in divisional teaching conferences and also learn basic EEG reading skills. PEACE students will (1) deepen their understanding mechanisms causing epilepsy in children, (2) learn the basic principles of EEG reading and medical management of epilepsy in children, and (3) participate in multi-disciplinary evaluations of patents with epilepsy and participate in neurosurgical assessments and procedures. Also consider enrolling in General Ped Neurology ACE:

PED 5625. ACE: Patient and Family Engagement Consult. Sti dents in this course will participate in patient and family engagement consultations for children and adults admitted to the plonroe Carell Jr. Children's Hospital at Vanderbilt (VCH) and Vanderbilt University Hospital. The purpose of this ACE is to provide the student with an understanding of the importance of patient and caregiver ongagement for optimal health and healthcare, knowledge about the developmental process of patient and caregiver activation, and experience with recommending educational and technological interventions to promote engagement and next health-related needs. Participation in inpatient consultations will facilitate training in promoting engagement in pediatric and adult patients with a wide variety of clinical diagnoses. Didactic experiences that will reinforce the patient care experiences include our weekly multidisciplinary Patient and Family Engagement Consultation Team Meeting, weekly Biomedical Informatics Seminar, and clinical conferences relevant to the patients being seen in consultation.

PED 5635. ACE: Pediatric Hen atology/Pacology. Once students have finished this ACE, they will have a better understanding of the pathology, treatment and survival of common childhood cancers. They will also gain experience in working up and treating are mias and bleeding disorders. These objectives are accomplished through a combination of inpatient time and curpatient time. Half of the course will be on the inpatient service where the students will be expected to follow their own patients, present on rounds, write daily progress notes, and prepare a short 10-15 minute discussion of a patient of interest. The student should also participate in walk rounds with the fellow and faculty for more informal discussion. The other half of the course will be in the outpatient clinic. While there, the student will see both new patients and patients returning for therapy. The student will take a history from the family, perform a physical exam, interpret lab tests, present these patients to the faculty, and write notes. The student will also have the opportunity to attend "specialty" clinics to see a group of patients with a focused set of problems (for example sickle cell clinic).

PED 5680. ACE: Pediatric Cardiology. The advanced clinical experience in pediatric cardiology is a four week course that aims to expose medical students to the broad spectrum of cardiac disease in children. The students will spend two weeks on the inpatient service getting exposure to acute cardiac disease and their care during perioperative period. Students will be responsible examining patients, presenting in rounds, and participating in the team care of the patients. An additional two weeks will be spent focusing on the outpatient side of cardiology. The student will participate in a variety of different cardiology outpatient clinics. Throughout the experience, the student will have the opportunity to accompany the inpatient cardiology fellow on inpatient consults. There will also be opportunity to watch cardiac catheterizations, watch a cardiac surgery, and spend time in the echocardiography laboratory.

PED 5690. ACE: Pediatric Endocrinology. Pediatric Endocrinology is a wonderful sub specialty of Pediatrics which involves studying about and caring for patients who have abnormalities involving hormonal regulation of basic body systems. Students will study physiology, pathology, molecular biology, genetics and pharmacology during the time they care for these patients. Some examples of endocrine disorders they will be expected to learn about will include: growth and pubertal disorders, disturbances in calcium homeostasis, hypo and hyperthyroidism, adrenal disorders, some disorders of sexual development and common disorders of glucose regulation. Students will also learn about how to manage acutely ill pediatric diabetes patients in the hospital setting and they will learn the fundamentals of chronic, out-patient diabetes management. Under the supervision of the endocrine attending physician, students will see patients in the out- patient endocrine and diabetes clinics, and they will be an integral part of our ward team on the inpatient Endocrine service.

PED 5710. ACE: Pediatric Gastroenterology. The Pediatric Gastroenterology Advanced Clinical Experience (ACE) provides exposure to a broad range of gastrointestinal, nutritional, and liver diseases in both the inpatient and ambulatory settings. Students will have the opportunity to observe and participate in outpatient evaluations of infants and children referred to the pediatric gastroenterology clinic under the direct supervision of faculty attending pediatric gastroenterologist, attend endoscopic procedures, participate in inpatient pediatric gastroenterology inpatient care and consults, and attend scheduled divisional didactic conferences. The rotation provides students with experience in the workup of common pediatric symptom complexes such as abdominal pain, vomiting, diarrhea, jaundice, and many other common complaints, as well as the opportunity to participate in multidisciplinary care of complex gastrointestinal disorders such as inflammatory bowel disease and chronic liver disease. Attendance in the endoscopy suite allows familiarity with esophagogastroduodenoscopy, colonoscopy, polypectomy, and rectal suction biopsy. The rotation will include core reading on the pathophysiology and man gement of important gastrointestinal diseases such as inflammatory bowel disease, biliary atresia, and short bowel syndrome. The student will prepare one in-depth talk on a gastrointestinal topic of their choice and receive feedback from the attending on the content and delivery.

PED 5720. ACE: Pediatric Nephrology. Pediatric Nephrology is an exciting specialty that functions at the intersection of renal physiology, pathology, anatomy, genetics, pharmacology, and immunology. Students who participate in this Advanced Clinical Experience vall actively participate in the evaluation and management of patients who demonstrate the consequences of sizerations in [en]] development and the genes that direct development. Students will have the opportunity to see in repatients and outpatients with acute and chronic alterations in renal physiology including these with cute kidney injury, hypertension, glomerulonephritis, and chronic kidney disease in addition to those with congenital abnormalities of the kidney and urinary tract. Advanced understanding of renal physiology and pathophysiology will be an asset in any career path, because the kidney controls homeostasis for the entire body.

PED 5730. AE: Child Abuse Pediatric Medicine. Child Abuse Pediatrics is a pediatric subspecialty dealing with the medical evaluation, diagnosis, and treatment of abused and/or neglected children. Students will be a part of the Child Abuse Evaluation and Response Team based at Monroe Carrell Jr. Children's Hospital at Vanderbilt. In addition to participating in medical evaluations of children referred due to concerns of possible abuse and/or neglect, students will also be able to observe court testimony, attend forensic interviews, and participate in multidisciplinary meetings with DCS and law enforcement. Students will be expected to 1) learn how to perform a basic child abuse evaluation, including taking a thorough history and performing a full physical exam with photodocumentation, 2) learn the importance of injury biomechanics, and 3) gain an understanding of the biopsychosocial aspects of child abuse and neglect.

PED 5740. ACE: Pediatric Pulmonary Medicine. We welcome students interested in greater exposure to pediatrics in the context of pediatric pulmonary medicine. The purpose of this ACE is for students to gain expertise in the clinical evaluation of pulmonary disease in infants, children, and adolescents through experiences in the hospital and the outpatient clinic. Students will have the opportunity to participate in bronchoscopies and also in specialized multi-disciplinary clinics in cystic fibrosis, aerodigestive disease, pulmonary hypertension, and interstitial lung disease. The Division's weekly didactic conferences will reinforce the patient care experiences.

PED 5750. ACE: Pediatric Rheumatology. Students will participate in the evaluation and care of children referred to the pediatric rheumatology program at Vanderbilt Children's Hospital. The experience will involve direct interactions with patients and their families in both the inpatient and outpatient settings. Students will also have the

opportunity to participate in divisional conferences in which patient cases and radiographic studies are discussed, and recent journal articles are reviewed. Over the course of the month, the student will gain an understanding of the presenting symptoms, exam findings, and laboratory studies of autoimmune diseases in children, as well as current treatment strategies. Through these clinical experiences, the student will gain insight into the impact of chronic disease on children and their families. The clerkship will also afford the student a unique opportunity to gain experience with the fundamentals of the musculoskeletal exam, which has broad application outside of rheumatology. Prerequisite: Pediatrics 5020. Fourth year.

PED 5760. ACE: Spanish Language Pediatric Clinic. Demographics in the USA are changing and Latinos are now the fastest and largest growing minority group in the United States. Students need to be prepared to provide effective care to Spanish speaking population. This ACE offers student the opportunity to function within the Primary care pediatric clinic as they participate in well-child visits and acute visits for Spanish speaking families, as well as exposes students to community resources that are targeted to this population. The course will focus on 1) enhancing students fluency in Spanish, 2) learning appropriate medical terminology for developmental screening, anticipatory guidance, and explaining disease processes, 3) learn about immigrant experience (Immigration process, Barriers to access to care, Education and Culture), and 4) Explore various views of disease within this population, including alternative health beliefs, use of alternative medicines and therapies, and traditional interaction with medical professionals. In addition student will be expected to participate in a small project.

PED 5800. ACE: Developmental Pediatrics and Genetics. The combined Developmental Pediatrics and Genetics ACE will blend two specialties that are important in all facets of Pediatric Medicine. "This course is primarily an outpatient experience that allows students to observe, assess, and participate in diagrasing children with developmental and genetic concerns. Students will work within interprofessional earns and have the opportunity to learn the roles of other medical providers that their patients might work with including therapists, psychologists, genetic counselors, nurse practitioners, and dieticians. During the genetics portion of the course, students will assist in diagnosis and managing children with complex genetic discases. Students will have the opportunity to (1) deepen their knowledge of genetic conditions including dysms; phology, bio normal genetics, single gene disorders, and chromosomal disorders, (2) assess family histories, (3) participate in the medical intake that can help lead to a diagnosis, and (4) learn resources they can use throughout their career when working with patients with genetic conditions. During the developmental pediatrics portion of this jourse, students will start to become familiar with typical and atypical courses of childhood development. The goal of this rotation is to teach medical students how to (1) take a developmental history, (2) assess how a child is functioning currently, (3) understand interventions that are likely to help the child make developmental p ogress and (4) be familiar with certain developmental disabilities that are common in our society, including Autism Spectrum Disorders, Attention Deficit Hyperactivity Disorder (ADHD) and Down Syndrome.

PED 5815. AI: Neonatology. Neonatologists care for newborns with a wide variety of conditions, ranging from prematurity to surgical conditions, infections to congenital cardiac disease, and respiratory distress to genetic disorders. Students in this rotation will work in the Children's Hospital Neonatal Intensive Care Unit on the Red Team. The Red Team cares for policits primarily with congenital heart disease, surgical and genetic disorders. This team does not attend deliveries. The AI will provide care for 3-5 patients with a wide range of conditions. The AI will be expected to pre-round on all patients, write orders and assist with TPN orders, review X-rays and lab results and contact and interact with consultants. He or she will be required to write History and Physicals, Daily Progress Notes, and Discharge Summaries. This is a high intensity AI with very complex and sick infants and is only recommended for the highly motivated and extremely responsible AI with an interest in neonatal medicine. It is best suited for the student considering a career in neonatology or pediatric critical care or another pediatric subspecialty. Schedule is 6am-6pm six days per week. There is no overnight call. Days off are scheduled with team members upon starting the rotation. Daily multi-specialty rounds starts with both cardiology and NICU attendings at 8:30am. Required lectures are Monday, Wednesday and Thursday mornings at 7:45-8:15am and weekly simulation sessions are generally on Fridays 7:45-8:30am. Topics which will be covered and which the AI must read about include: respiratory distress syndrome, ventilator management, surgical conditions in the newborn, congenital heart disease in the newborn, nutrition of the premature infant, apnea of prematurity, jaundice and anemia in the newborn. The AI must set up biweekly review with his or her NICU attending at beginning of rotation to review written notes and daily performance. He or she will also be required to give a weekly brief talk to the team on a relevant topic of choice. Recommended reading is Fanaroff and Martin's Neonatal-Perinatal Medicine, which is available through the digital library. Volume 2 contains the conditions by organ system.

PED 5830. ACE: Pediatric Emergency Medicine. Pediatric Emergency Medicine physicians need to be prepared to care for minor ailments to life-threatening events. The Pediatric Emergency Department rotation will expose students to a wide variety of patient pathology in a fast paced setting. Students will simultaneously obtain a history and perform a physical exam on pediatric patients from newborn to adolescence. Under the direct supervision of attendings, fellows and senior residents, students will exercise critical thinking and develop differential diagnosis, management and disposition for pediatric patients presenting with medical illnesses, surgical workups, traumatic injuries and psychiatric issues. The course will focus on common infectious diseases, pediatric surgical/orthopaedic emergencies and toxicology emergencies. The student will increase their communication skills with children, families, consultants and emergency medicine staff. Students will participate under supervision in common procedures in pediatric emergency medicine such as suturing, sedation, and splinting of extremity injuries. Students work fourteen 8 hour shifts which may include weekends and overnights. Students may also participate in weekly fellow conferences as well as journal clubs and simulation scenarios. Fulfills the acute care course requirement.

PED 5910. ACE: Pediatric Infectious Diseases. The Pediatric Infectious Diseases (PID) Advanced Clinical Experience (ACE) provides students the opportunity to evaluate and participate in the management of children with a wide range of suspected or proven infectious diseases. The PID rotation allows the learner to gain experience in the workup of common symptom complexes such as prolonged fever, joint pain / limp, respiratory illnesses, rash, and many other common pediatric presentations. The rotation also provides valuable experience in the pharmacology and pharmacodynamics of antimicrobial agents, as well as the proper use and potential adverse effects of these commonly prescribed drugs. The rotation will include core reading on the path physiology and management of infectious diseases such as meningitis, osteomyelitis, and pneumonia. Students will actively participate in the evaluation and management of children on the PID service in both the ambulatory and inpatient settings.

PED 5990. ACE: Pediatric Critical Care. Pediatric Critical Care is an exciting specialty that cares for the sickest patients from birth into young adulthood. The Pediatric Intensive Care Unit (PICU) and the Pediatric Cardiac Intensive Care Unit (PCICU) both offer unique blends of physiology (pharmacology and pathology in disease processes ranging from to sepsis, respiratory failure, and traumatic train injury to congenital heart disease and its repair. Students will have the opportunity to function within the FICU and/or PCICU clinical teams, as well as participate in divisional teaching conferences. The course will focus on enhancing student clinical practice-based learning skills. Students will have the opportunity to (1) despen understanding of the complex pathophysiology of critically ill children, (2) learn the basic principles of multidisciplinary management and resuscitation of critically ill children, and (3) review common diseases seen in a bury pediatric critical care unit. Additionally, students will be expected to stay for overnight call at least four time, during the four-week rotation. This course will fulfill the acute care requirement.

PED 6001. Vanderbilt Consortium LEND (VCL) Core Curriculum Modules 1. The primary formal education portion of the VCL is the core currical weekly modules and in-person core curriculum seminars at the end of each unit. Each weekly module or the LEND Moodle contains objectives, required readings or other activities, and several questions. Students, including the medical student(s) in this certificate program, are assigned to interprofessional groups of six to seven trainees, and each group submits group answers to the questions at the end of each week. On a rotating basis, each week one of the trainees serves as a group leader to maintain group accountability and productivity. For each question in the module, one trainee writes a draft response, then a second trainee reviews and edits the response. The leader compiles and formats all edited responses, provides an opportunity for the group to edit the entire answer set, and then uploads the answer set to the LEND Moodle by the deadline. The following week the faculty facilitators for the module provide feedback to the group within the documents submitted and uploads the document with the feedback into the module forum. All groups can review the feedback provided to every group. At the end of every given unit of study, there is an in-person seminar facilitated by expert LEND faculty. These seminars provide an opportunity for the interprofessional groups to work together to apply what they learned from the weekly modules to clinical cases. Anonymous peer assessments are completed at the end of each semester to maintain individual accountability and to provide feedback on leadership skills, communication skills, and professionalism. This blended educational experience combines online, asynchronous, and team-based assignments with in-person, case-based interprofessional teamwork to provide a rigorous comprehensive curriculum in neurodevelopmental disabilities.

PED 6002. Vanderbilt Consortium LEND (VCL) Core Curriculum Modules 2. The primary formal education portion of the VCL is the core curriculum: weekly modules and in-person core curriculum seminars at the end of each unit. Each weekly module on the LEND Moodle contains objectives, required readings or other activities, and several questions. Students, including the medical student(s) in this certificate program, are assigned to interprofessional groups of six to seven trainees, and each group submits group answers to the questions at the end of each week. On a rotating basis, each week one of the trainees serves as a group leader to maintain group accountability and productivity. For each question in the module, one trainee writes a draft response, then a second trainee reviews and edits the response. The leader compiles and formats all edited responses, provides an opportunity for the group to edit the entire answer set, and then uploads the answer set to the LEND Moodle by the deadline. The following week the faculty facilitators for the module provide feedback to the group within the documents submitted and uploads the document with the feedback into the module forum. All groups can review the feedback provided to every group. At the end of every given unit of study, there is an in-person seminar facilitated by expert LEND faculty. These seminars provide an opportunity for the interprofessional groups to work together to apply what they learned from the weekly modules to clinical cases. Anonymous peer assessments are completed at the end of each semester to maintain individual accountability and to provide feedback on leadership skills, communication skills, and professionalism. This blended educational experience combines online, asynchronous, and team-based assignments with in-person, case-based interprofessional teamwork to provide a rigorous comprehensive curriculum in neurodevelopmental disabilities.

PED 6003. Vanderbilt Consortium LEND (VCL) Leadership Seminars 1. The Leadership Series fosters development of effective leadership competencies by providing opportunities for students to read research-based leadership, business administration and management, and organizational psychology hierature that they would not be exposed to in their primary professional training. They glean leadership skills in each other the material in the required readings; discussing case scenarios in their interprofessional groups; practicing communication skills, advocacy, negotiation skills, and conflict resolution through to e playing and group discussions; and applying the knowledge and skills taught in the leadership seminar to a per sonal or professional situation. LEND faculty members in each group also provide training in leadership by modeling leadership skills as well as sharing their personal leadership experiences during the evening sem pars and in heir responses to the trainees' critical reflections. Content for each monthly Leadership Seminar on the LND Moodle contains learning objectives and required readings or other activities that are completed before each two-hour evening seminar. Readings are chosen from the seminal leadership, business and management of a nizational psychology, and neuroscience literature. Students, including the medical student(s) in this certificate program, are assigned to interprofessional groups of six to seven for the Leadership Seminars; the groups are different than the Core Curriculum groups so the trainees have experience working in different interprofessional teams. Each team is facilitated by two LEND faculty from diverse professions, and each session is each the LEND director. The formats for the evening seminars include small group case-based discussions, role-playing, and large group debriefs and discussions. After each session, each trainee applies the concepts or principles taught in the session to a scenario in her or his personal or professional life and writes a one-page critical reflection paper on which a faculty member provides feedback.

PED 6004. Vanderbilt Consortium LEND (VCL) Leadership Seminars 2. The Leadership series fosters development of effective leadership competencies by providing opportunities for students to read research-based leadership, business administration and management, and organizational psychology literature that they would not be exposed to in their primary professional training. They glean leadership skills by teaching each other the material in the required readings; discussing case scenarios in their interprofessional groups; practicing communication skills, advocacy, negotiation skills, and conflict resolution through role playing and group discussions; and applying the knowledge and skills taught in the leadership seminar to a personal or professional situation. LEND faculty members in each group also provide training in leadership by modeling leadership skills as well as sharing their personal leadership experiences during the evening seminars and in their responses to the trainees' critical reflections. Content for each monthly Leadership Seminar on the LEND Moodle contains learning objectives and required readings or other activities that are completed before each two-hour evening seminar. Readings are chosen from the seminal leadership, business and management, organizational psychology, and neuroscience literature. Students, including the medical student(s) in this certificate program, are assigned to interprofessional groups of six to seven for the Leadership Seminars; the groups are different than the Core Curriculum groups so the trainees have experience working in different interprofessional teams. Each team is facilitated by two LEND faculty from diverse professions, and each session is led by the LEND director. The formats for the evening seminars include small group case-based discussions, role-playing, and large group debriefs and discussions. After each session, each trainee

applies the concepts or principles taught in the session to a scenario in her or his personal or professional life and writes a one-page critical reflection paper on which a faculty member provides feedback.

PED 6005. Vanderbilt Consortium LEND (VCL) Care Navigation 1. In this course learners in the VCL learn about the health care system, community services, and the social determinants of health in individuals with NDD by providing care navigation throughout the academic year to a small panel of patients seen in a local clinic. The experience will include conducting navigation interviews with the families, home visits, clinic visit, and identification of local resources that can help patients with neurodevelopmental disabilities and their families.

PED 6006. Vanderbilt Consortium LEND (VCL) Care Navigation 2. In this course learners in the VCL learn about the health care system, community services, and the social determinants of health in individuals with NDD by providing care navigation throughout the academic year to a small panel of patients seen in a local clinic. The experience will include conducting navigation interviews with the families, home visits, clinic visit, and identification of local resources that can help patients with neurodevelopmental disabilities and their families.

PED 6100. Special Clinical Study-Vanderbilt. Each student arranges an independent study with a mentor and completes a period of clinical work. Approval required.

PED 7100. AWAY ACE: Pediatrics. Each student arranges an independent study with a mantor and completes a period of clinical work away from Vanderbilt. Approval required.

PED 7150. Special Research Study-Non-VU. Each student arranges an independent study with a mentor and completes a period of research work away from Vanderbilt. Approva required.

Physical Medicine and Rehabilitation

PMR 5310. Principles of Physical Medicine & Rehal ilitation. This course is designed to provide exposure to the practice of physical medicine and rehabilitation (PM&F) with an emphasis on musculoskeletal and neurological rehabilitation. Many of these patients have had acute illness, figures, surgical procedures, and prolonged hospitalization and require inpatient and/or outpatient rehabilitation. The student will be asked to participate in a series of introductory lectures as well as rounds, clinics, and case discussions. The attending physician on the PM&R service will define participation, in patient care. The student will be expected to participate in the evaluation of individuals with significant impairment and disability such as spinal cord injury, traumatic brain injury, stroke, amputations/complex fractures, munique trauma and general debility. Outpatient clinics are available to expose students to the long-term problems which these patients encounter. At the conclusion of the two weeks, students will be able to take a PM&R oriented history; per orm a physical examination with an emphasis on functional status and disability; formulate rehabilitation goals; and understand the importance of rehabilitation as part of the post-acute care continuum.

PMR 5611. ACE: Introduction o PM&R. Hands-on exposure to the practice of physical medicine and rehabilitation (PM&R) with an emphasis on musculoskeletal and neurological rehabilitation is offered in this course. Many of our patients have had acute illness, trauma, surgical procedures, and hospitalization and the student will have an opportunity to follow the patients post-acutely. The primary responsibility is the care of those patients with spinal cord injury, stroke, amputations/complex fractures, multiple trauma, traumatic brain injury, and general debilitation. The attending physician on the PM&R Service will define participation in patient care. The student will be expected to [1] participate in the evaluation, functional diagnosis, and treatment of individuals with significant impairment and disability who require long-term hospitalization to achieve maximal independence and [2] Integrate medical and surgical knowledge in the care of patients in the hospital for rehabilitation and in the outpatient clinic. Additionally, adult and pediatric outpatient clinics are available to expose students to the long-term problems which these patients encounter.

PMR 5615. AI: Physical Medicine and Rehabilitation. This Acting Internship will include hands-on exposure to the practice of physical medicine and rehabilitation (PM&R) with an emphasis on musculoskeletal and neurological rehabilitation. Many of our patients have had acute illness, trauma, surgical procedures, and hospitalization. The student will have an opportunity to follow the patients post-acutely. The primary responsibility is the care of adult and pediatric patients with spinal cord injury, stroke, amputations/complex fractures, multiple trauma, traumatic

brain injury, and general debilitation. The attending physician on the PM&R Service will define participation in patient care. The student will be expected to [1] Participate in the evaluation, functional diagnosis, and treatment of individuals with significant impairment and disability who require long-term hospitalization to achieve maximal independence. [2] Integrate medical and surgical knowledge in the care of patients in the hospital for rehabilitation and in the outpatient clinic. Additionally, adult and pediatric outpatient clinics are available to expose students to the long-term problems, which these patients encounter.

PMR 7100. AWAY ACE: Physical Med & Rehab. Each student arranges an independent study with a mentor and completes a period of clinical work away from Vanderbilt. Approval required.

PM 7100. AWAY ACE: Preventive Medicine. Each student arranges an independent study with a mentor and completes a period of clinical or research work. Approval required.

Psychiatry

PSYCH 5020. Psychiatry Core Clerkship. Basic goals of this clerkship which includes psychiatry clinical rotations are to learn the fundamental techniques of psychiatric assessment, differential diagnosis, and treatment intervention. Activities include direct patient care and clinical rounds in the company of assigned faculty. The five 1/2-week placements include Vanderbilt University Hospital, Vanderbilt Psychiatric Hospital at Vanderbilt (Adult/Adolescent/Child). Second year.

PSYCH 5310. Introduction to Addiction Psychiatry. This two-yeak elective will offer students an opportunity to join a team of physicians on the Addiction Psychiatry service at Vancerbilt Psychiatric Hospital (VPH). The clinical team will be caring for patients admitted to the hospital for de oxification, diagnosis, and psychiatric stabilization and treatment planning. As substance use disorders often co-occur with depression, bipolar illness, organic brain disorders, and anxiety disorders (especially post-traumatic stress disorders, sometimes with sexual and eating disorders), the addiction psychiatry experience will expose students to a variety of common psychiatric problems. Students will be interacting with inpatients, learning about detox fictuion protocols, as well as seeing patients in follow up outpatient addiction clinics. Students may sit in on a eatment groups for opiate dependent patients and attend a nearby Narcotics Anonymous support nexting. At the conclusion of the elective, students will be able to take a psychiatric history, perform a mental status examination, and know the basics of case formulation. Additionally, students will have familiar to with evidence-based approaches to care, understanding the role of an addiction psychiatrist as well as how addiction may present to physicians practicing in many specialties of medicine and surgery.

PSYCH 5601. AE: Contagion of Distress: Social Determinants, Experience, Resiliency & Mental Health in a Pandemic. The COVID-19 pandemic las challenged our experience of illness at an individual level as well as a population level. The intensity of social and emotional changes forces us to consider the impact of a contagious disease on not only physical health but also on mental health. The pandemic emphasizes social determinants of health and the inequities regarding mental health that influence clinical risk and outcome. This course will explore current information regarding COVID 19 as well as an historical pandemic, Encephalitis Lethargica, that occurred at the same time as the 1918 Influenza pandemic and was instrumental in challenging the divide between mental health and physical health. We will review the mental health implications of a pandemic with consideration of the neurobiology of inflammatory disease on neuropsychiatric function as well as the impact of health care disparities on outcome of mental health for individuals and the community. The students will discuss both the direct and indirect impact of a pandemic on mental health with consideration of risk associated with social and financial challenges during the pandemic. Students will participate in journal clubs, case-based learning, and use of vignettes, videos, and readings from book chapters to discuss the intersection of mental health, physical health, and societal factors in the context of a pandemic.

PSYCH 5620. ACE: Neuropsychiatry. This advanced clerkship (elected after completing rotations in both neurology and psychiatry) is an introduction to clinical practice and research at the interface of psychiatry and neurology. Under supervision, the student will examine patients with psychiatric and neurologic diseases affecting emotions, such as temporolimbic epilepsy, frontal lobe lesions, strokes in the non-dominant hemisphere, or degenerative conditions such as Alzheimer's Disease, Parkinson's Disease, vascular dementia, and Huntington's

Disease. Readings will focus on the neurology of emotion, including functional neuroanatomy, experimental neuropsychology, and electrophysiology. The student may participate in research protocols involving quantitative behavioral assessment, autonomic measures, and structural and metabolic imaging of the brain. Each experience in this clerkship is unique and will be tailored to the specific interests of the student. Consequently, we can only accept one student per rotation.

PSYCH 5625. ACE: Child and Adolescent Psychiatry Consult-Liaison. This advanced clerkship is an introduction to clinical practice as a consultation liaison psychiatrist working with children and adolescents. Under supervision, the student will examine patients with psychiatric diseases complicating pediatric management including delirium, catatonia, anxiety and mood disorders both complicating pediatric illness and mimicking pediatric illnesses (somatoform disorders), management of chronic pain in collaboration with the pediatric pain team, acute stress and post-traumatic stress disorder on the trauma service and in the intensive care unit, and psychiatric consultation regarding eating disorders. Readings will focus on the neurobiology of trauma and the neurobiology of the interface between emotions and physical disorders. The student may participate in research studies if available at that time.

PSYCH 5629. ACE: Inpatient Child & Adolescent Psychiatry. Students will provide inpatient psychiatric care for children and adolescents aged 4 to 18. Students can expect to see a varied range of ages, diagnoses, and presenting complaints including depression, anxiety, psychotic disorders and autism. Students will join a multidisciplinary team working with nursing, social work, and mental health specialists to treat acute mental illness. The primary goals of treatment include comprehensive diagnosis, pharmac plogic management, development of treatment plans, and implementation of behavior management protocols. Family meetings occur twice weekly to support safe transition to outpatient care

PSYCH 5635. ACE: Emergency Psychiatry. In the Psychietric Treatment Unit the student will see a broad range of acute psychiatric and neuropsychiatric disorders. Common y encountered conditions include delirium, dementia, depression, suicide attempts, capacity evaluations, agitation management, altered mental status, conversion disorder, addictions, and somatoform disorders. This is similar to the population on the Consultation-Liaison service, but with greater acuity and a focus on disposition. The student will work closely with the primary resident providing coverage with supervision to the team by the attending. Student, will also see psychiatric consults in the VUMC Emergency Department and OBGYN triage. Patients will be above the age of 18.

PSYCH 5639. AI: Inpatient Child and Adolescent Psychiatry. Students will provide inpatient psychiatric care for children and adolescents aged 4 to 18 in a multidisciplinary setting. This course offers the opportunity to take full ownership for patient care in direct cellaboration with the attending physician. Students will carry a case-load of patients intended to prepare them for their fature role as residents. Duties will include completion of daily documentation including admission/discharge/daily notes, order entry, and patient cross-cover. Students can expect to see a varied range of ages, diagnoses, and presenting complaints. Feedback will be provided to ensure readiness for residency.

PSYCH 5641. ACE: Inpatient 7 reatment of Psychosis. Psychosis (i.e., delusions, hallucinations, disorganized thought and behavior) is a cardinal feature of several psychiatric disorders. This advanced clinical experience gives the student hands-on exposure to inpatient treatment of patients with psychotic disorders. Students will work closely with resident and attending physicians to develop differential diagnosis and treatment plans. Treatment in this inpatient setting centers on stabilization of acute and severe illness. Students will be responsible for following several patients. Assigned readings supplement patient care experiences.

PSYCH 5645. ACE: Adult Psychiatry Consult-Liaison. The Adult Psychiatry Consultation Service at VUMC provides psychiatric services for a broad range of patients with psychiatric and neuropsychiatric disorders in the context of medical, surgical, and obstetric (and other) inpatient settings at Vanderbilt University Hospital and Stallworth Rehabilitation Hospital. Our service is one of the busiest in the country and offers an opportunity to see the intersection of psychiatric conditions with medical illness. Commonly treated conditions include delirium, dementia, depression, anxiety, suicide attempts, substance withdrawal, conversion disorder, somatic symptom disorder, and factitious disorder. Regardless of the diagnosis, we also help with agitation management and capacity evaluation. The sub-intern will become an integral part of the team, with assigned primary focus on the care of a

discrete set of patients, and will be directly supervised by Psychosomatic Medicine fellows and Psychiatry attendings. A practical focus on areas of special interest to the student may be arranged.

PSYCH 5655. AI: Addiction Psychiatry. Alcohol and other substance use disorders are extremely common in primary care and across a broad range of medical specialties. These conditions lead to direct medical and psychiatric co-morbidity, predispose to a host of associated conditions (e.g. cancer, cirrhosis, physical and emotional trauma, infections, and mood disorders), and complicate management of medical and surgical conditions. The mission of this AI in substance use disorders is to help provide future physicians with the fundamental clinical skills necessary to properly diagnose, treat, and refer patients with substance abuse disorders.

PSYCH 6100. Special Clinical Study-Vanderbilt. A variety of opportunities are available for clerkships and electives in the Department of Psychiatry that can be combined, especially where daily continuous patient care is not essential to work flow. In addition to the standard rotation sites, other experiences can be arranged. Two or three experiences can be combined within a single elective month. These may include a mixture of areas within and outside the listed standard electives, such as forensics, geriatric psychiatry, and brain imaging research. Opportunities will be arranged to meet the interests of the individual student, potentially blending topics to provide exposure to two to three of these areas. Faculty approval is recommended at least two months prior to the start of the month's rotation in order to develop a plan optimal to meeting the student's interests. Approval required.

PSYCH 7100. AWAY ACE: Psychiatry. Each student arranges an independent study with amentor and completes a period of clinical work away from Vanderbilt. Approval required.

PSYCH 7150. Special Research Study-Non-VU. Each student at ranges an independent study with a mentor and completes a period of research work away from Vanderbilt. Approva required.

Radiation Oncology

RADO 5315. Introduction to Radiation Oncology. This elective is designed to introduce students to the field of radiation oncology. This will require approximate (y \cdot 0) hours per week. No nights or weekends. Students will be paired with attending/resident pairs which will be assigned on a daily basis by the chief resident. With each new patient, the student will be expected to go in to see the patient first and obtain a basic history and physical. This will be presented to the resident who will then review these andings directly with the attending. The team (resident/attending/student) will then fiscuss treatment options with the patient and formulate a treatment plan. At the conclusion of this course students will be able to take a focused oncologic history, perform a pertinent exam, and understand the basics of diagnosic, staging, and treatment options for cancer patients. They will learn about the multidisciplinary nature of oncologic care

RADO 5620. ACE: Radiation Oncology. This 4 week clinical rotation in radiation oncology is designed for students who are interested in purtuing a career in radiation oncology. Students are integrated into the clinical workflow. They are assigned to work one on one with individual attendings covering all aspects of radiation oncology including malignancies of the head and neck, lung, breast, gastrointestinal, gynecological, prostate and brain. Students work with radiation oncology residents in the initial evaluation of patients, formulation of treatment, supervision of treatment, and follow-up evaluations. Students will learn indications and techniques for radiation therapy. With each new patient, the student will be expected to go in to see the patient first and obtain a basic history and physical. This will be presented to the resident who will then review these findings directly with the attending. The clinical team (resident/attending/student) will then discuss treatment options with the patient and formulate a treatment plan. At the conclusion of this course students will be able to take a focused oncologic history, perform a pertinent exam, and understand the basics of diagnosis, staging, and treatment options for cancer patients. They will learn about the multidisciplinary nature of oncologic care. At the end of the rotation students are required to give an oral presentation at the departmental teaching seminar.

RADO 5621. ACE: Enhanced Experience in Radiation Oncology. TBA

RADO 6100. Special Clinical Study-Vanderbilt. Each student arranges an independent study with a mentor and completes a period of clinical work at Vanderbilt. Approval required.

RADO 7100. AWAY ACE: Radiation Oncology. Each student arranges an independent study with a mentor and completes a period of clinical work away from Vanderbilt. Approval required.

RADO 7150. Special Research Study-Non-VU. Each student arranges an independent study with a mentor and completes a period of research work away from Vanderbilt. Approval required.

RAD 5310. Introduction to Interventional Radiology. Students will join a team of attending, fellow and resident physicians on the Interventional Radiology service at Vanderbilt Monroe Carrel Children's Hospital (VCH). Interventional Radiology involves working as a consultant to the physicians who are caring for patients admitted to the hospital as well as performing a multitude of outpatient procedures. Reasons for consultation requests vary, but some of the more common ones include arteriography, CT-guided biopsy of lesions, implantation of infusion devices, and external drainage of infectious processes. With each new consultation request, students will have the opportunity to research the patient using StarPanel and then present the case to the team during morning rounds. The student will then be able to perform a history and physical on patients as they get prepared for their procedure. The student will then participate in the procedure and provide follow-up care as needed with the supervision of the resident and attending physicians. At the conclusion of the two-week elective rotation, students will be able to understand the role Interventional Radiology plays in the care of both inpatients and outpatients. They will have a basic understanding of the breadth of procedures offered, and the indications, complications, and post procedural care for the most common procedures. Additionally, the students will have familiarity with evidenced-based approaches to care.

RAD 5315. Intro to Diagnostic Radiology. The course will provide stude its with a broad exposure to the various sub-specialties of radiology and will provide focused training on basic chest x-ray interpretation. The students will spend each day in a different sub-specialty reading room within the department. The students will sit with the faculty, fellows, and residents on the service and observe them interpreting the various studies that are read or performing the various procedures that are done. For each reading room, here will be a series of 5 or so "check-offs" which consists of bits of information that student must learn in mat reading room (for example, "What is the appropriate follow-up of an incidentally-discovered pul nonary notale?"). At the conclusion of the elective, students will know the various imaging modalities and the role they play in the diagnosis of disease and management of patients; the numerous procedures performed by "adiologists and their role in patient care; and how radiologists participate as active members of multidisciplinary health (are teams in caring for patients. Students will develop skills and confidence in the interpretation of pain chest x-rays, particularly for common and major abnormalities.

RAD 5320. Musculoskeletal & Emergency Radiology. Students will spend two weeks in the musculoskeletal/ emergency radiology reading roon. It's a builing place where MSK-subspecialty trained radiology faculty, MSK fellows, and radiology residents interpretain culoskeletal studies and selected studies performed in the Emergency Department, as well as provide consultation services to a variety of physicians (emergency, trauma team, general surgery, orthopaedic surgery, infectious diseases, internal medicine, rheumatology, etc.). Students will be exposed to a broad spectrum of musculo releast pathology including trauma, athletic injuries, arthritis, infection, neoplastic conditions, expected post-operative changes, and post-operative complications. Imaging modalities will include conventional radiographs, Magnetic Resonance Imaging, Computed Tomography and, possibly, ultrasonography. Students will have the opportunity to observe interventional procedures such as fluoroscopically-guided arthrography and CT/US-guided biopsies. In addition to daily teaching at the PACS monitors using live cases, there will be didactic lectures/ case presentations written specifically for this course focusing on trauma, sports injuries, arthritis, and the basics of musculoskeletal neoplasms. The advantages and limitations of the various modalities utilized will be emphasized. The didactic component of the elective will be further enhanced by daily noon radiology conferences. The course will be of particular interest to students contemplating careers in radiology, orthopaedic surgery, sports medicine, and emergency medicine; however, any student interested in learning more about the musculoskeletal system or radiology is encouraged to attend. At the conclusion of the two-week elective rotation, students will be able to accurately describe fractures, have an organized approach to diagnosing arthritis, recognize significant athletic injuries on MRI, have a basic understanding of the concept of aggressiveness of musculoskeletal neoplasms, and have an understanding of the strengths and limitations of the modalities used by radiologists in diagnosing a variety of conditions.

RAD 5610. ACE: Diagnostic Radiology. Students will rotate through all diagnostic subspecialties in radiology, getting a broad exposure to various pathologies and imaging modalities. Each student will have plenty of latitude to tailor the course to his/her academic interests and career goals. For example, a student going into orthopaedic surgery would be free to spent most of the rotation in the musculoskeletal division, while a student going into OB/GYN would be free to spend most of the rotation on ultrasound. Some exposure to all subspecialties is required, however. The purpose of this course is to acquaint medical students with the fundamentals of diagnostic imaging and to highlight optimal imaging pathways for various clinical conditions. The course is designed to be relevant and suitable for all medical students, regardless of their ultimate career choice or interests; this course is not designed solely for students interested in pursuing a career in radiology. Besides getting daily instruction in the reading rooms by faculty, fellows, and residents, students will be engaged in a number of other educational activities. Students will watch Radiology faculty lecture podcasts on various topics, take online quizzes, attend live lectures presented by radiology residents, attend daily Radiology noon conferences, solve weekly unknown case challenges, and participate in at least one PBL (Practice Based Learning) exercise during the course. The course has a pre-test and a final exam.

RAD 5630. ACE: Pediatric Radiology. This course will introduce the student to the principles of diagnostic imaging in a children's hospital setting. The student experience consists of interactive reading room sessions covering all diagnostic imaging modalities, such as radiography, fluoroscopy, computed tomography (CT), MRI, and subspecialities such as neuroradiology, interventional radiology (IR), and nuclear medicare. The students have the opportunity to attend radiology teaching conferences and interdisciplinary conferences which highlight imaging. We offer a variety of self directed activities outside the reading room, such as recommended reading assignments, learning modules, and teaching files. The successful student will learn the radiologist role in the care of the patient and how to interact with radiologists, as well as the appropriate work up of common pediatric conditions. The importance of the clinical question in the role of choosing the best and most appropriate diagnostic imaging studies is emphasized.

RAD 5640. ACE: Neuroradiology. The month will allow a broad exposure to the field of neuroradiology with a strong focus on review of clinically relevant neuroanatory. The primary role of the student will be as an observer, working alongside residents, fellows and faculty as imaging studies are interpreted and procedures are performed. Students will be responsible for delivering a single informal pre-entation during the month. Prerequisite - ISC: Medical Imaging and Anatomy or ACE: Diagnostic Radiology

RAD 5650. ACE: Adult Interventional Radiology. Interventional Radiology is an exciting, fast paced, advanced specialty performing minimally invasive procedure, on virtually every organ in the body. This course provides an immediate immersion into the daily life of an IR. You will be involved in every aspect of treating patients, including outpatient clinic visits, researching and working up the patient the day of the procedure, presenting the patient in morning rounds, consenting and performing physical exams, scrubbing in on the procedure, admitting and post procedural care, inpatient rounds, and long term follow-up. You will also have the option to visit other specialty areas of IR, including Pediatric IR, the One Hundred Oaks Vein Center, and read CTA/MRA with our noninvasive vascular specialists. You will or required to research and present one case report while on the service. The typical day lasts from 7 am to 6 pm and there are no call responsibilities. Typical procedures include angioplasty and stent placement in the arteries and veins, embolization of bleeding, embolization of tumors, uterine fibroid embolization, bronchial artery embolization, gonadal vein embolization, chemo-embolization, percutaneous treatment of tumors (ablation), placement of nephrostomy, biliary, gastrostomy, venous catheters, and TIPS.

RAD 5710. ACE: Visiting Diagnostic Radiology. The Visiting Diagnostic Radiology Elective in diagnostic radiology is designed for medical students interested in pursuing a career in radiology. The goals of the course are to acquaint medical students with the fundamentals of diagnostic imaging and to highlight optimal imaging pathways for various clinical conditions. Students will rotate through several diagnostic subspecialties in radiology and get a broad exposure to various pathologies and imaging modalities. Daily instruction will be provided by faculty, fellows, and residents.

RAD 6100. Special Clinical Study-Vanderbilt. Each student arranges an independent study with a mentor and completes a period of clinical work at Vanderbilt. Approval required.

RAD 7100. AWAY ACE: Radiology. Each student arranges an independent study with a mentor and completes a period of clinical work away from Vanderbilt. Approval required.

RAD 7150. Special Research Study-Non-VU. Each student arranges an independent study with a mentor and completes a period of research work away from Vanderbilt. Approval required.

Surgery

SURG 5020. Surgery Core Clerkship. This is the second year clinical core rotation. For ten weeks each student in the second-year class is assigned to the surgical divisions of Vanderbilt University Hospital or Nashville Veterans Administration Medical Center. Under the direction and supervision of the staff, the student takes histories, does physical examinations and assists the staff in the diagnostic evaluation and clinical management of assigned patients. Half of each student's period of clinical work is in general surgery. The other five weeks of the clinical assignment provide two (2) rotations to the specialty services in Anesthesiology (VAH), Cardiothoracic (VUH, VAH), Interventional Radiology (VUH), Neurosurgery (VUH), Ophthalmology (VUH), Orthopaedic Surgery (VUH), Otolaryngology (VUH), Pediatric Surgery (VUH), Plastic Surgery (VUH), Renal Transplant (VUH), Urology (VUH), Vascular Surgery (VUH), and Trauma (VUH). These rotations provide exposure to a variety of patients with problems in general surgery and in the specialty fields of surgery. Members of the staff hold teaching sessions daily. Students go with their patients to the operating rooms where they are observers and assistants. An integral part of this clerkship is the core lecture series in surgery. Students will be assigned faculty preceptors for small group discussions. Second year.

SURG 5305. Practical Skills for Medical Students. To become a competent region physician, both a sound knowledge base and a basic competency in several practical skills are necessary. Practical skills such as venipuncture, intubation, IV starts, and IO catheterization are a large part of day-to-day life as a resident, and can increase your utility as a medical student. In addition, graduating medical students are expected to have basic procedural skills upon day 1 of internship, as stated by the AAMC's EPA 12 (perform general procedures of a physician). In this course, students will spend 2 weeks Larning through classroom didactic lectures, simulations in CELA, and rotations with nurses and resident physicians to gain hands-on experience in a variety of practical skills. This course is designed for second-year medical students regardless of prior practical experiences in the clerkships.

SURG 5315. Introduction to Plastic Surgery. It this two-week elective, students will be exposed to the broad spectrum of plastic surgery including pediatric plastic surgery (cleft lip and palate, major craniofacial surgery, and other congenital and acquired an malies), hand surgery, microvascular surgery, burn surgery, reconstructive surgery of the extremities, and breast, head, and neck reconstruction. They will also have the opportunity to be exposed to cosmetic plastic surgery including facial rejuvenation, breast enhancement and reduction, and other body contouring procedures. At the end of the rotation, students will have a much greater knowledge and appreciation of the role that plastic surgery plays in patient care.

SURG 5320. Cardiac Surgery Mechanical Support. This will be a two-week elective in the CVICU focusing on advanced mechanical support in cardiac surgery. The students will be given patients who are undergoing mechanical support which may include a left ventricular assist device, Impella, ECMO, etc. Students will round with the team and present these patients. After rounds they will receive hands-on simulator training and review echocardiography images on cardiac surgery patients. Lectures will discuss the types of mechanical devices and hemodynamic assessment with pulmonary artery catheters and echocardiography. If for some reason there are no mechanical devices, students will care for the most complex patients in the ICU. At the conclusion of the elective, students will understand the different types of mechanical support, know advanced cardiac physiology, understand basic transesophageal and transthoracic echocardiography, have experience using echocardiography on a simulator, and will be able to present on extremely complex cardiac surgery patients.

SURG 5325. Fundamentals of Spine Surgery. Students participating in this elective will have an in-depth exposure to the diagnosis and surgical management of spine disorders. Students will spend several days each week in the neurosurgical operating room, observing and participating in cases ranging from the treatment of degenerative disorders to spinal tumors and spine trauma. Emphasis will be placed on learning key anatomic and surgical

concepts that optimize patient outcomes. Students will also spend time with neurosurgery faculty in the outpatient clinic setting and develop practical experience with physical examination, clinical diagnostics, and treatment decision making. Student will participate in inpatient rounds, consults, and conferences such as the multidisciplinary spine conference and journal club. Much of the students' learning will occur in a case-based manner through exposure to individual patients, but didactic instruction will include several key readings and interactive discussion. At the conclusion of the two-week elective, students will understand the basic paradigms used in the treatment of common spine disorders and the principles of basic neurologic exam of the spine patient. They will be familiar with the assessment of common neuroimaging and with key anatomic, physiologic, biomechanical, and oncological principles used to treat these disorders as well as non-operative strategies employed in both outpatient and emergency settings.

SURG 5330. Brain Tumors: A Surgical Perspective. This elective will offer an introductory exposure to the multidisciplinary approach used to treat patients with brain tumors. Students will spend several days each week in the neurosurgical operating room, observing and participating in cases including open and endoscopic resections of gliomas, metastases, meningiomas, and skull base tumors. They will have the opportunity to review the pathology specimens with the neuro-pathologists and attend the neurosurgical brain tumor clinic as well as the neuro-oncology and radiation oncology clinics. Students will participate in teaching rounds on the neurosurgery brain tumor service, sit in on discussions between faculty and patients, and attend conferences such as brain tumor board and journal club. In addition to case-based learning, students will read several key readings and discuss these with faculty. At the conclusion of the two-week elective, students will understand the basic paradigms used in the treatment of common brain tumors. They will be familiar with surgical techniques used to treat brain tumors, and they will gain insight into the multidisciplinary aspect of oncology and techniques for communicating difficult news to patients.

SURG 5335. Pediatric Neurosurgery. Students participating in this electine will have an introductory exposure to the surgical treatment of neurologic disorders in children from infuncy through adolescence. Each day will begin with attendance at morning report, where overnight consults and upcoming cases are discussed. Students will spend several days each week in the neurosurgical operating from observing and participating in cases including resection of brain tumors, epilepsy surgery, and treatment of hydrocephalus, spine disorders, and trauma. Students will also spend time seeing patients in the clinic; participating in inpatient rounds and consults; sitting in on discussions between faculty, patients, and families; and attending conferences such as pediatric brain tumor board and journal club. In addition to case-based learning, students will mad several key readings and discuss these with faculty. At the conclusion of the two-week elective, students will understand the basic paradigms used in the treatment of common neurologic disorders in children. They will be familiar with surgical techniques used to treat these disorders, and they will become familiar with non-operative strategies employed in both the outpatient and critical care settings and techniques for to minunicating difficult news to patients.

SURG 5612. AI: Surgery, VAH. Students in the Acting Internship in Surgery at the Veterans Affairs Hospital will spend time on the General Surgery Service. Students will function in a supervised environment and be expected to fulfill the role of a surgical intern. These roles include caring for their own patients, engaging family member, communicating with allied health providers, documentation, writing orders, executing initial consultation, and having a role in the conduct of ore rations. Students will be exposed to the full range of clinical activities of each of these services, and they will also have the opportunity to participate in preoperative evaluation, intraoperative management, and postoperative care. The student will actively participate in a weekly clinic. Each service has a full complement of conference activities, which the student will attend. There will be close observation of the student's activities by the house staff and the attendings. Weekly feedback will be provided for reflection. Students will have in-house overnight call at least four times during the four-week rotation, and participate on morning ward rounds Saturday and Sunday twice during the four weeks. Workups, progress notes, and clinic notes will be read and feedback provided for the student's reflection and improvement. The strengths of this AI on VA Surgery include the residents and attendings, the active role of the student, the breadth of clinical exposure, and the personal coaching provided. VA system access is required to VA computers, CPRS (ie EMR), order entry, General Surgery shared folders, and imaging systems. Students cannot take this course if they have not successfully enabled VA access at least 2 weeks before the course starts.

SURG 5613. ACE: Surgery, VAH. Students rotating on surgery at the Veterans Affairs Hospital will spend time on the general surgery service. Students will be exposed to the full range of clinical activities of each of these services, and they will also have the opportunity to participate in preoperative evaluation, intraoperative

management, and postoperative care. The student will actively participate in a weekly clinic. Each service has a full complement of conference activities, which the student will attend. There will be close observation of the student's activities by the house staff and the attendings. Weekly feedback will be provided for reflection. Students will have in-house overnight call at least four times during the four-week rotation and participate on morning ward rounds Saturday and Sunday twice during the four weeks. Workups, progress notes, and clinic notes will be read and feedback provided for the student's reflection and improvement. The strengths of this ACE on VA Surgery include the residents and attendings, the active role of the student, the breadth of clinical exposure, and the personal coaching provided. VA system access is required. Students cannot take this course if they have not received VA access at least 2 weeks before the course starts.

SURG 5614. ACE: Surgery Critical Care. The Surgical Critical Care Advanced Clinical Elective provides students with a multidisciplinary approach to care of the critically ill surgical patient. The units are very active critical care facilities with state-of-the-art monitoring and support technology. The course content emphasizes a physiologic approach to the care of critically ill general, vascular, transplant, geriatric, oncology, and emergency surgical patients. Students will gain experience with invasive hemodynamic monitoring, mechanical ventilation, enteral/parenteral nutrition, surgical infectious disease, and management of vasoactive medications. Topics such as cost containment, resource utilization, and medical ethics are an integral part of daily intensive care management. The patient care service consists of a surgical or anesthesia attending physician, a surgical critical care fellow, midlevel surgical/anesthesia residents, and surgical interns. Other staff available in the unit includes clinical pharmacists, respiratory therapists, and nurse practitioners. Teaching rounds are made each moning with didactic lectures and case-discussions Monday-Thursday. Friday morning attendance of surgical grand rounds and resident teaching conference is mandatory. A course syllabus containing management protocols and educational objectives is provided to all registrants. Evaluation of the student's performance is based on chiral knowledge, basic science application, integration into the team, and progression in learning throughout rotation. Mid-rotation and final evaluations of each student will be conducted by the critical care attendings, critical care fellow assigned to the unit, and the course director. This course fulfills the acute care requirement.

SURG 5615. ACE: Vascular Surgery. The field of Vascular Surgery has been markedly transformed over the last two decades, fueled by an explosion of technological advancement, research-supported clinical science development, and cross-disciplinary collaboration. Students and led in this ACE will experience a hands-on introduction to this rapidly evolving field by immersing the reselves into the Vascular Surgery team at Vanderbilt Hospital. The engaged student can look for ward to the prospect of caring for patients in the inpatient and outpatient settings, where he or she will learn about the various surgical manifestations and functional burdens imposed by atherosclerotic disease, aneurysmal the se, diabete, mellitus, and inherited disorders of the vascular and hematologic systems. As part of the care team, students may be asked to field consult requests from our affiliated services, and will have the opportunity to join the surgical staff in the operating theater to experience both open and endovascular surgery. By the end of this course, it is our sincere hope that the students develop an interest in pursuing a career in vascular surgery, or at least have a sound knowledge base that will help in the care of all aspects of adult medicine.

SURG 5617. ACE: Colon and Pectal Surgery. The Colorectal Surgery ACE focuses on the care of patients suffering from diseases and disorders of the colon, rectum and anus. This includes such diseases as colorectal cancer, anal cancer, inflammatory bowel disease, diverticulitis, colon polyps, and benign anorectal conditions. The goal of the rotation is to broaden the student's understanding about the pathophysiology, clinical presentation, work-up and treatment of common colorectal diseases. The students will be exposed to all aspects of the care of the patient including evaluation in the clinic, pre-op teaching, operative management, post op care and discharge. Students will see a variety of surgical techniques including laparoscopic, open, and robotic cases as well as advanced endoscopic procedures and anorectal cases. Students will function as part of the colorectal team and will be assigned patients that they will follow throughout the duration of their hospital stay. They will be expected to participate on rounds as well as attend/present at the weekly colorectal surgery conference.

SURG 5618. ACE: Hepatobiliary. The hepatobiliary and liver transplant surgery rotation includes the full spectrum of benign and malignant disease of the liver, pancreas and bile ducts. This service allows exposure for rotating students to complex hepatobiliary anatomy and pathophysiology, including liver failure. Unique to this rotation is the opportunity to participate in organ procurements, a very popular operation amongst surgical students. Abdominal organ procurement offers unparalleled anatomic exposure to the abdomen and pelvis. Rotating students

will participate directly in these operations and they have the right of first refusal on each procurement. As there is ample opportunity to see these operations, a waiting list is compiled for other students to travel for these operations, which are often off site. Students will have the opportunity to function as an integral member within the surgical resident clinical teams, as well as attend weekly clinics and teaching conferences, including Hepatobiliary Conference, Liver Transplant Selection Committee and Liver Team Walk Rounds. The course will focus on enhancing student clinical practice-based learning skills. Students will have the opportunity to (1) deepen their understanding of the complex anatomy and pathophysiology of the liver, (2) learn the basic principles of multidisciplinary management of liver failure, (3) review the differential diagnoses and therapeutic strategies for the liver mass and (4) understand the numerous complications seen after hepatobiliary and liver transplant procedures. Additionally, students will not be expected to stay for overnight call on a rotating schedule. However, given the emergency nature of procurements and transplants, after hour effort is common, as dictated by the on-call attending and resident staff.

SURG 5619. AI: GI/Lap Surgery. The AI rotation of the GI/Lap service will expose the student to a broad variety of general surgical and advanced laparoscopic procedures. The student will be integrated into the four resident teams and will be expected to fully participate in activities-patient rounds, duties in the operating room, and all educational conferences. If desired, the student can choose to focus their clinic or OR time on a subset of the practice such as bariatric surgery, laparoscopic foregut surgery, or advanced endoscopic procedures and the faculty who perform them.

SURG 5620. ACE: Neurological Surgery. Neurosurgery is a fast-paced, challenging field dedicated to the comprehensive treatment of critically ill patients with neurologic disease. It is an incredibly diverse specialty, incorporating treatment of children and adults suffering from CNS tumors, cerebrovascular disease, movement disorders, spine disorders, peripheral nerve diseases, and trauma. Fach student will spend their 4 weeks rotating through the 4 different neurosurgical services to gain a broad exposure to the field. Students will take part in the care of inpatients, the workup of consults, and the technical aspects of a variety of bedside and operative procedures. They will also attend several outpatient clinics and take overnight call with the junior resident on a Q4 schedule. Students will participate in career development sessions designed to prepare them for the residency application process and will give several short presentations to the clinical teams and the department throughout the rotation.

SURG 5621. ACE: Post-Surgical Critical Care. This A \nearrow E will expose medical students to care of a broad range of postoperative surgical critical care patients, including condiothoracic, neurosurgical, otolaryngical, orthopaedic, vascular, and general surgical patients. This course furfills the acute care requirement. VA system access is required. Students cannot take this course if they have not received VA access at least 2 weeks before the course starts.

SURG 5623. ACE: General Surgery, STH. General and Vascular Surgery require broad diagnostic and patient care skills, in additional to technical expertise. The student pursuing any surgical specialty should have advanced experience in managing the wide spectrum of surgical pathology and comorbid conditions seen on a tertiary surgical service. This course offers additionar exposure to pathology in disease processes ranging from to sepsis, respiratory failure, renal failure, wound i sues, as well as end of life and palliative care. Students will have the opportunity to work with multiple attending preceptors and be a part of surgical resident teams, as well as participate in general surgery and multidisciplinary vascular and surgical oncology conferences. The course will focus on enhancing student clinical practice-based learning skills. Students will have the opportunity scrub on a wide variety of operations and take overnight call with experienced surgical residents, exposing them to the intricacies of patient care on a one on one basis. Students will be expected to stay for overnight call at least four times during the fourweek rotation.

SURG 5627. ACE: Enhanced Experience in Neurosurgery. This course in neurosurgery is intended to provide students with an enhanced experience in the field of neurosurgery. Each student will rotate two weeks on two different neurosurgical services to gain a broad exposure to the field. Students will take part in the care of inpatients, the workup of consults, and the technical aspects of a variety of bedside and operative procedures. They will also attend several outpatient clinics and take overnight call with the junior resident on a Q4 schedule. Students will attend specialty specific conferences, Grand Rounds, Journal Club, and Chief Case Conference.

SURG 5628. AI: Hepatobiliary. The hepatobiliary and liver transplant surgery rotation includes the full spectrum of benign and malignant disease of the liver, pancreas and bile ducts. This service allows exposure for rotating

students to complex hepatobiliary anatomy and pathophysiology, including liver failure. Unique to this rotation is the opportunity to participate in organ procurements, a very popular operation amongst surgical students. Abdominal organ procurement offers unparalleled anatomic exposure to the abdomen and pelvis. Rotating students will participate directly in these operations and they have the right of first refusal on each procurement. As there is ample opportunity to see these operations, a waiting list is compiled for other students to travel for these operations, which are often off site. Students will have the opportunity to function as an integral member within the surgical resident clinical teams, as well as attend weekly clinics and teaching conferences, including Hepatobiliary Conference, Liver Transplant Selection Committee and Liver Team Walk Rounds. The course will focus on enhancing student clinical practice-based learning skills. Students will have the opportunity to (1) deepen their understanding of the complex anatomy and pathophysiology of the liver, (2) learn the basic principles of multidisciplinary management of liver failure, (3) review the differential diagnoses and therapeutic strategies for the liver mass and (4) understand the numerous complications seen after hepatobiliary and liver transplant procedures. Additionally, students will not be expected to stay for overnight call on a rotating schedule. However, given the emergency nature of procurements and transplants, after hour effort is common, as dictated by the on-call attending and resident staff. AIs additionally participate in the service much as PGY1 interns do with the exception that they are closely supervised for order writing and procedures. They are also given priority for elective cases and procurements over students in the ACE. However, since interns on this rotation do not often go to the OR for elective cases and this course as an acting internship is designed to empower the student to act as an intern on the service, operative experience is a secondary objective.

SURG 5630. ACE: Cardiac Surgery. The cardiac surgical service deals with congental and acquired heart disease, pulmonary vascular disease, and anomalies of the arterial and versus systems in the chest in both pediatric and adult patients. Students will have the opportunity to evaluate patients in the chine with complex vascular, valvular, and cardiac lesions and understand their anatomy and physiology. They will be introduced to cardiac ECHO, cardiac MRI, CT scans of the chest, and cardiac catheterization by the attending surgeon. They will follow the patient to the operating room where they will participate in the surgical repair and to the CVICU and step-down unit for postoperative care. In the CVICU the student will be introduced to the evaluation of hemodynamic parameters; use of vasopressors, dilators and antiarrhyth rics; postoperative pacing, ECHO and ventilator management. During the four-week course the student may get the opportunity to participate in an aortic dissection repair, ventricular assist device insertion, cardiac transplant, or organ retrieval.

SURG 5632. ACE: Thoracic Surgery. The Vanderbilt Thoracic Surgery Advanced Clinical Experience will introduce students to preoperative work up, easic tooracic surgery operative skills, and postoperative care of general thoracic surgery patients. Students will have the exportantly to participate in open, minimally invasive and robotic procedures as well as the busy lung transplant program. Students will be able to expand on previously learned surgical techniques with highligh's including exportantities to suture in the OR and chest tube placement.

SURG 5660. ACE: Pediatric Surgery. The Pediatric Surgery Advanced Clinical Experience will allow students to hone their clinical skills in accurate history taking, clinical assessment of children, developing an appropriate differential diagnosis and potential plan. Students will participate in the operative management of these same patients and follow their post-operative progress until discharge. Students will have the opportunity to (1) improve their knowledge of the common pathologies encountered in a pediatric surgical practice, (2) broaden their understanding of the surgical management of these problems, and (3) gain first-hand experience with the depth and breadth of a clinically busy pediatric surgical service. During the rotation students will spend time with the team in clinic at least once per week, in the operating rooms, on the wards with the interns and physician extenders and seeing new consults with the team. Additionally, ACE students will be expected to stay for overnight call at least 3 times during a 4-week rotation with at least 1 day over a weekend.

SURG 5665. AI: Pediatric Surgery. The Pediatric Surgery Acting Internship will focus on honing the students clinical skills in accurate history taking, clinical assessment of both acute and chronically ill neonates and children, developing an appropriate operative (or non-operative) plan, participation in the operative management of these patients and following their post-operative progress until discharge. The AI student will have the opportunity to (1) improve their knowledge of the common and uncommon pathologies encountered in a pediatric surgical practice, (2) broaden their understanding of the operative and non-operative management of these problems, (3) gain first-hand experience with the depth and breadth of a clinically busy pediatric surgical service and (4) mentor younger students. During the rotation students will spend time with the team in clinic, in the operating rooms, on the wards

and seeing new consults on their own. Additionally, AI students will be expected to stay for overnight call at least 4 times during a 4-week rotation with at least 2 over a weekend.

SURG 5670. ACE: Surgical Oncology and Endocrine Surgery. The Advanced Clinical Experience (ACE) in Surgical Oncology and Endocrine Surgery offers students a broad and detailed clinical experience in the treatment of malignancies. Emphasis will be on the multidisciplinary management of a variety of malignancies including those of the liver and biliary tract, pancreas, gastrointestinal tract, retroperitoneum, breast, skin and soft tissue and endocrine systems. Students will be active participants both in the inpatient (including the operating room and floor) and outpatient settings and participate in several educational conferences including multidisciplinary tumor board, surgical oncology conferences and others and Vanderbilt University Hospital. Students will be expected to take overnight call four times during the four-week rotation.

SURG 5675. AI: Surgical Oncology and Endocrine Surgery. The Acting Internship (AI) in Surgical Oncology and Endocrine Surgery provides students with a broad but detailed clinical experience in the diagnosis and treatment of solid organ malignancies. Emphasis will be on the multidisciplinary management of a variety of malignancies including those of the liver and biliary tract, pancreas, gastrointestinal tract, retroperitoneum, breast, skin and soft tissue and endocrine systems. Students will be active participants both in the inpatient (including the operating room and floor) and outpatient settings and participate in several educational conferences including multidisciplinary tumor board, surgical oncology conferences and others and Vanderbilt University Hospital. Students will be expected to take overnight call four times during the four-week rotation. Highlights of the AI experience in Surgical Oncology will include increased responsibility with the goal of preparing the student for surgical internship, including being primarily responsible for their own patients, answering pages, writing orders under the supervision of residents, working up and presenting patients both in the inpatient and outpatient setting, and taking call which will include cross-covering of other services.

SURG 5680. ACE: Plastic Surgery. Plastic surgery is a broad field with subspecialties that include craniofacial, microsurgery, hand, breast reconstruction, burn, and aesthetics. Plastic surgeons treat patients of all ages and work on almost every part of the body from head to toe. During this advance clinical experience, you will have the opportunity to learn about the diagnosis and management of a wide variety of reconstructive and aesthetic problems. Learning opportunities with faculty and residents are abundant and you will get plenty of experience in both the operating room and the clinics..

SURG 5685. AI: Plastic Surgery. This acting internship is intended to provide an immersive experience into caring for pre-operative and post-operative plastic surgery patients. Students will work closely with the plastic surgery faculty, fellows and nursing teams to care for the patients on each of our services. This acting internship will provide students with the tools to serve as an intern covany surgical service by building skills in surgical floor care, pre-operative evaluation, and medical management of surgical patients.

SURG 5840. ACE: Trauma. The rauma ACE allows students to follow injured patients from the moment they arrive until discharge. This in raudes management in all settings, ICU, floor, clinic and the option of time in the comprehensive traumatic brain injury clinic. Students will be introduced to high-level procedure-based situations including central venous access, tube thoracostomies, bronchoscopy, advanced suturing techniques and operative management of the trauma patient. Expectations will focus on the complex management of patients including coordination of care with other subspecialties, identifying and managing critical care issues such as ventilator management, massive resuscitation efforts, complexities of organ failure and sepsis, end-of-life decisions and organ donation. Opportunities for both day and night coverage will allow the student to obtain a complete understanding of the field of trauma (the #1 cause of death for all patients age 1-45). This course fulfills the acute care requirement.

SURG 5850. AI: Trauma. The trauma AI allows students to follow injured patients from the moment they arrive until discharge. This includes management in all settings, ICU, floor, clinic and the option of time in the comprehensive traumatic brain injury clinic. Students will be introduced to high-level procedure-based situations including central venous access, tube thoracostomies, bronchoscopy, advanced suturing techniques and operative management of the trauma patient. Expectations will focus on the complex management of patients including coordination of care with other subspecialties, identifying and managing critical care issues such as ventilator management, massive resuscitation efforts, complexities of organ failure and sepsis, end-of-life decisions and organ

donation. Opportunities for both day and night coverage will allow the student to obtain a complete understanding of the field of trauma (the #1 cause of death for all patients age 1-45). This course fulfills the acute care requirement.

SURG 5930. AE: Preparation for Surgical Internship. The goal of this course is to arm fourth year medical students entering a surgical specialty with the skills and understanding needed to hit the wards as a resident. The curriculum for the course has been developed by the American College of Surgeons in conjunction with the Association for Surgical Education and Association of Program Directors in Surgery. These activities and sessions include mock pages, bedside procedures, operative anatomy using cadaveric dissections, basic open and laparoscopic skills, airway management and simulation scenarios, and will be led by some of Vanderbilt's best clinical teachers. At the end of the course, students should feel prepared to enter a surgical internship and understand their own strengths and weaknesses as they prepare for surgical training.

SURG 6100. Special Clinical Study-Vanderbilt. Each student arranges an independent study with a mentor and completes a period of clinical work. Approval required.

SURG 7100. AWAY ACE: Surgery. Each student arranges an independent study with a mentor and completes a period of clinical work away from Vanderbilt. Approval required.

SURG 7150. Special Research Study-Non-VU. Each student arranges an independent study with a mentor and completes a period of research work away from Vanderbilt. Approval required.

Urologic Surgery

UROL 5310. Reconstructive Urology. Students will join a team of attendings, fellows, and residents on the Reconstructive Urology service at Vanderbilt Hospital and Coor Springs Surgery Center. Students will participate in the operating room, clinics, outpatient procedures, didactics, and inpatient management for the Reconstructive Urology service. Common issues encountered and treated on this service include incontinence, urethral stricture disease, erectile dysfunction, Peyronie's disease, voiding dysfunction, pelvic organ prolaspe, and neurogenic bladder. At the conclusion of the two-week electric rotation, and entry will be able to take a focused urologic history and physical, understand the basics of evaluation and management of Reconstructive Urology issues, and appreciate the medical and surgical modalities utilized to diagnose and treat these patients. Additionally, the students will gain a familiarity with the use of evidence-based medicine as it applies to Reconstructive Urology.

UROL 5640. ACE: Urology. This ACE will encompass the care of the surgery patients admitted to the Urology service. The student will be experted to function as a member of the team at a supervised level for patient management and communication with other lealthcare providers. This will include preparing the admission history and physical examination, entering orders, writing daily progress notes, presenting patients on daily work rounds, participating in surgical procedures, and coordinating discharge planning. Students will be additionally be given opportunity for outpatient experiences in the clinics. Students will be expected to participate in select weekend rounds and assist with triage of consults for the inpatient service.

UROL 5641. ACE: Urologic Oncology. This Urologic Oncology Subspecialty ACE will encompass the care of the inpatient surgery patients seen by the urologic oncology team. The student will be expected to function as a member of the team at a supervised level for patient management and communication with other healthcare providers. This will include performing inpatient and outpatient oncologic urology consultations, entering orders, writing daily progress notes, presenting patients on daily work rounds, participating in surgical procedures related to urologic oncology, and coordinating discharge planning. Students will be expected to participate in select weekend rounds as well as outpatient clinic. In the last week of the rotation, the student is expected to give a 10-minute presentation to the faculty, fellows, and residents on an interesting topic encountered during their rotation.

UROL 5642. ACE: Endourology and Minimally Invasive Urology. This Endourology and Minimally Invasive Surgery Subspecialty ACE will encompass the care of the inpatient and outpatient surgery patients managed by the Endourology, Stones, and MIS (robotic and laparoscopic surgery) team. The student will be expected to function as a member of the team at a supervised level for patient management and communication with other healthcare providers. This will include performing inpatient and outpatient consultations, entering orders, writing daily progress notes, presenting patients on daily work rounds, participating in surgical procedures related female pelvic

medicine and reconstructive urology, and coordinating discharge planning. Students will be expected to participate in select weekend rounds as well as outpatient clinic. In the last week of the rotation, the student is expected to give a 10-minute presentation to the faculty, fellows, and residents on an interesting topic encountered during their rotation.

UROL 5643. ACE: Reconstructive Urology. This Reconstructive Urology and Pelvic Medicine Subspecialty ACE will encompass the care of the inpatient and outpatient surgery patients seen by Reconstructive Urology team including both male and female patients. The student will be expected to function as a member of the team at a supervised level for patient management and communication with other healthcare providers. This will include performing inpatient and outpatient consultations, entering orders, writing daily progress notes, presenting patients on daily work rounds, participating in surgical procedures related female pelvic medicine and reconstructive urology, and coordinating discharge planning. Students will be expected to participate in select weekend rounds as well as outpatient clinic. In the last week of the rotation, the student is expected to give a 10-minute presentation to the faculty, fellows, and residents on an interesting topic encountered during their rotation.

UROL 5644. ACE: Pediatric Urology. This Pediatric Urology Subspecialty ACE will encompass the care of the inpatient and outpatient surgery patients seen by the pediatric urology team. The student will be expected to function as a member of the team at a supervised level for patient management and communication with other healthcare providers. This will include performing inpatient and outpatient pediatric urology consultations, entering orders, writing daily progress notes, presenting patients on daily work rounds, participating in surgical procedures, and coordinating discharge planning. Students will be expected to participate in select weekend rounds. In the last week of the rotation, the student is expected to give a 10-minute presentation to the faculty (1) llows, and residents on an interesting topic encountered during their rotation.

UROL 6100. Special Clinical Study: Urology, VU. Each studen arranges in independent study with a mentor and completes a period of clinical work. Approval required.

UROL 7100. AWAY ACE: Urology. Each student arr inges an independent study with a mentor and completes a period of clinical work away from Vanderbilt. Approval required.

HEARING AND SPEECH SCIENCES

Audiology

Courses leading to the Doctor of Audiology

AUD 5216. Introduction to Billing and Coding for Audiology Services. This course is an overview of coding and compliance requirements for billing in an audiology practice. Topics include: managed care terms, insurance contracting, billing terminology, Aedicare, Medicaid, CPT, ICD 9, ICD 10, HCPCS, and modifiers. Spring Semester, [1].

AUD 5227. Anatomy and Physiology of Hearing Mechanisms. A comprehensive description of the anatomy and physiology of the peripheral and central auditory systems in normal and impaired populations. Includes a clinically oriented review of neuroanatomy focused on the major sensory and motor pathways. Fall. [3]

AUD 5233. Neuroscience. A comprehensive introduction to the field of neuroscience from important molecules to cell function, neural systems, and cognition. Topics include the physiology of nerve cells, the sensory systems of vision, audition and touch, the motor system, sleep, consciousness, speech, and sexual behavior. Coverage of clinical topics includes the chemical basis of the psychoses, diseases of the brain, and repair mechanisms after brain injury. Spring. [3]

AUD 5303. Hereditary Hearing Loss. Hereditary aspects of hearing loss in infants, children, and adults. Genetic bases of hearing loss, modes of inheritance, characteristics of syndromic and non-syndromic hearing losses. Collaboration with geneticists and genetic counselors. Recent developments and issues in evaluating and managing patients with genetic hearing loss. Summer. [2]

AUD 5310. Measurement of Hearing. The theory and practice of hearing measurement, with emphasis on routine clinical and screening audiometric techniques, testing environment, audiometric standards and calibration, applied impedance measurements, and interpretation of audiometric tests. Fall. [4]

- **AUD 5318. Educational Audiology and Aural Habilitation for Children.** A survey of approaches to aural rehabilitation for children. Specific focus will be on intervention for children with hearing loss in educational and other habilitative settings. Spring. [3]
- **AUD 5325. Pediatric Audiology.** A survey of methods and procedures used in the evaluation of the auditory function and management of neonates, infants, and young children. Includes identification and intervention procedures. There will be review of special populations of children with hearing loss. Fall. [3]
- **AUD 5328. Psychoacoustics.** Psychoacoustic theory and methods. Auditory perception in normal hearing and hearing impaired subjects. Spring. [3]
- **AUD 5332. Pathology of the Auditory System.** A study of pathologies involving the peripheral auditory system arising from genetic factors, disease, and trauma, with emphasis applied to presenting signs/symptoms, and medical/audiological management. Fall. [3]
- AUD 5337. Auditory Clinical Electrophysiology. This course will cover basic concepts in electrophysiological and electromagnetic recordings (e.g., electrode types/uses, far and near field recording, volume conduction, dipole sources). Recording of both near and far-field electrical responses em tted by peripheral and central nervous system will be studied. Recording techniques and interpretation of conventional clinical cycled potentials (e.g., electrocochleography, auditory brainstem response, sonomotor responses, electrocochleography) will be covered. Special topics will include: audiometric applications of these evoked potentials (e.g., for infant hearing screening and special needs populations, and intraoperative neurophysic logical monitoring). There will be extensive laboratory practica conducted within and outside the classropin. Spring [3]
- **AUD 5339. Amplification I.** Background and development of the design of hearing aids, ear mold acoustics, electroacoustic characteristics, performance standards and measurement techniques, clinical selection and evaluation procedures. Co-requisite: AUD 5340. Spring [2]
- **AUD 5340. Lab: Amplification I.** Lab ratory that stresses instruction and practice in basic hearing aid techniques including Otoscopic examination, ear impressions, electroacoustic evaluation and probe microphone techniques. Corequisite: AUD 5339. Spring [1]
- **AUD 5345. Amplification II.** Advanced topics in amplification including advanced probe microphone techniques, single and multi-channel compression systems, analog and digital signal processing, and current and emerging prescriptive and fitting verification methods. Fall. [3]
- **AUD 5346. Vestibular Sciences I.** This course offers an in-depth approach to the basic assessment of the dizzy patient. Subject matter will include; where the vestibular system assessment falls in the audiology scope of practice, detailed anatomy and physiology of the peripheral and central vestibular, ocular motor, and postural control systems; bedside testing, introduction to both electrical and video techniques for recording the vestibulocular reflex; case history and bedside assessment of the dizzy patient, and the technique and interpretation of video and electronystagmography. Students will be expected to conduct practica outside the classroom. Fall. [3]
- **AUD 5347. Vestibular Sciences II.** This course will focus on the description of advanced assessment techniques including whole body, yaw axis sinusoidal harmonic acceleration testing and step testing, and techniques for the assessment of the otolith system including on and off-axis centrifugation, and both cervical and ocular vestibular evoked myogenic potentials. A module will be taught on the topic of peripheral and central disease and disorders affecting the vestibular system. Embedded in this module will be a section describing the multidimensional assessment of falls risk, disequilibrium of aging and the medical/surgical and non-medical management (i.e., vestibular rehabilitation) of vestibular system impairments. A final module will focus on how results of the vestibular test battery form predictable patterns. Students will be expected to conduct practica outside the classroom. Prerequisite: successful completion of Vestibular Sciences I. Summer. [3]

- **AUD 5350. Vestibular Sciences III:** Sensory and Motor Control of Posture. This course will cover the neural mechanisms of postural control. Multisensory integration and biomechanics that contribute to static and dynamic posture will be explored. Normal and abnormal development, aging, and learning will be presented. The effects of pathology on postural control will be discussed. Technology including computerized dynamic posturography will be used to demonstrate concepts. Prerequisite: Successful completion of Vestibular Sciences I and II, or permission from the instructor. Fall. [2]
- **AUD 5353. Amplification III and Special Topics in Hearing.** Selection and evaluation of auditory prostheses for listeners with hearing loss. Industrial audiology including testing, training, and intervention protocols. A discussion of noise levels, OSHA guidelines, noise-induced hearing loss, and hearing protection in work and leisure activities. Evaluation and treatment of tinnitus Spring. [3]
- **AUD 5354.** Cochlear Implants. This course covers basic principles of electrical stimulation of neural tissue, cochlear implant design, as well as the history of cochlear implants. Further it will cover current issues in the medical, audiological, speech/language, and educational management of adults and children with cochlear implants emphasis on multidisciplinary team function. Prerequisite: AUD 5318. Spring. [3]
- AUD 5355. Clinical Externship. Graded pass/fail. Fall, Spring. Summer. [3]
- AUD 5357. Internship / Externship: Audiology Specialty Track. A three-week, intensive full-time clinical placement during the month of May in an audiology specialty area to meet the student. Individual interests and needs. Summer, Spring. [2]
- AUD 5359. Audiometric Instrumentation and Calibration. An introduction to fundamental concepts in electronics and computer science and to instrumentation used in the hearing clinic or research laboratory for producing, measuring, and analyzing audio signals. Standards and procedures for calibration measurements, with practical hands-on experience. Fall [3]
- AUD 5361. Family-Centered Counseling and Interviewing. Examines the helping relationship in the clinical process, counseling theory relative to audiology process, and principles and methods of effective clinical interviewing and counseling. Summer. [2]
- AUD 5365. Business and Financial M. nagement. An overview of accounting practices, marketing, and operations management as they relate to management of an audiology practice. Topics discussed include financial reporting, budgeting, pricing, billing and coding, regulatory issues, and human resource management. Students are required to design an audiology practice and levelop a business plan as part of this course. Spring. [3]
- **AUD 5367. Professional Issues and Ethics for Audiologists.** Examines professional issues in audiology including malpractice, quality improvement, marketing, credentialing, diversity, and legislation. Emphasis will be given to issues of ethics and clinical integrity in the practice of the profession of audiology. Fall. [2]
- **AUD 5368. Clinical Research Design and Statistical Analysis.** Covers reliability, internal and external validity of group study designs, single subject designs, basic descriptive and inferential statistics, core measures in epidemiology, and conventions for reporting statistics. Summer. [3]
- **AUD 5369. T35 Research Course.** This course is part of the NIH-NIDCD T35 Research Traineeship Program in the Department of Hearing and Speech Sciences. This course will encompass the research traineeship activities in individual laboratories, lectures, and group discussions related to rigor and reproducibility in science, responsible conduct in research, and key issues important to research career and practices. Students will present and lead a journal discussion relevant to the research they are working on in their respective laboratories, report on research activities, and participate in research discussions. Summer [6].
- **AUD 5374. Overview of Intraoperative Monitoring.** A basic introduction to intraoperative neurophysiologic monitoring, including observation time in the operating room.

AUD 5580. Introduction to Clinical Case Conference. This course introduces students to the weekly case conference where clinical case studies will be presented. Fall. [1]

AUD 5581. Capstone I. Capstone projects may take several forms including research-based investigations, evidence-based position papers, business plans, critical literature reviews with applications to clinical problem solving, grant proposals, development of clinical protocols based on published research findings, etc. In Capstone I, students will identify an appropriate capstone committee and define their capstone projects and submit and defend a capstone proposal. Fall, Spring, Summer. [3]

AUD 5582. Capstone II. In Capstone II, students will complete their capstone project. The capstone project culminates in an oral defense of a formal manuscript which has been submitted to the student's capstone committee. Fall, Spring, Summer. [3]

AUD 5583. Practicum and Clinical Case Conference. This course includes attendance at weekly case conferences where clinical case studies will be presented (Fall and Spring Only). The grade for this class will include clinical performance, case conference presentations (when assigned), and case conference attendance (when scheduled). Fall, Spring, Summer. [3]

AUD 5584. Independent Practicum. This course allows students to continue work toward degree requirements. Fall, Spring, Summer. [0]

AUD 5585. Practicum and Clinical Case Conference. This course includes attendance at weekly case conferences where clinical case studies will be presented (Fall and Spring Only). The grade for this class will include clinical performance, case conference presentations (when assigned), and case conference attendance (when scheduled). Fall, Spring, Summer. [3]

Education of the Deaf

Courses Leading to the Master of Education of the Deat

MDE 5207. American Sign Language I. This introductory course includes basic communication skills of American Sign Language and "contact" language (e.g., normanual markers, fingerspelling, numbers, basic vocabulary, classifiers), the sign system commuum, culture implications, and media resources available. Open to all Hearing and Speech students. Requires faculty approval. Fall only. [3]

MDE 5208. American Sign Language II. This is an intermediate course in American Sign Language that includes an in-depth look at the linguistics of ASL (e.g., morphology, syntax, phonology, and semantics) and current readings and research in the field. Prerequisite: (no 3-credit, college level course in ASL. Requires faculty approval. Spring only. [3]

MDE 5308. Language and Literacy in Children with Hearing Loss. This course presents an overview of normal language acquisition and the challenges imposed by a hearing loss. A variety of methods and materials to develop oral and written language and reading will be included. Practical methods of assessment, supportive strategy development, and curricular adaptations for children with hearing loss will be explored. Summer [3]

MDE 5312. Psychology and Culture of the Deaf. Presentation and discussion of significant historical and current issues relating to the deaf population. Primary focus will be on psychological development, educational/methodological models, and deaf culture. Although the principal focus is on the psycho/social and cognitive/intellectual development of deaf individuals through the lifespan, a general survey of other areas of exceptionality is made with emphasis on the implications for the deaf child with additional disabilities and/or special needs. Spring [2]

MDE 5320. Introduction to Amplification for Infants and Children. Designed for deaf education and speech-language pathology students. Current issues and trends in conventional amplification for infants and children. Selection, fitting, verification, and validation of traditional amplification options will be addressed including directional vs. omnidirectional microphones, analogue vs. digital instruments, monaural vs. bilateral fittings, and

real-ear measures vs. functional aided gain. Hearing aid retention, maintenance, and troubleshooting techniques are addressed. Fall [1-2]

MDE 5322. Children with Hearing Loss & Additional Disabilities. A survey of methods, procedures, and observational techniques used in the identification and evaluation of children with physical, cognitive, and/or emotional disabilities. An interdisciplinary perspective informs the course with particular attention to identifying characteristics of special populations that are atypical of children with hearing loss. Summer [3]

MDE 5354. Cochlear Implants. This course covers basic principles of electrical stimulation of neural tissue, cochlear implant design, as well as the history of cochlear implants. Further it will cover current issues in the medical, audiological, speech/language, and educational management of adults and children with cochlear implants - emphasis on multidisciplinary team function. Prerequisite: AUD 5318. Spring. [2]

MDE 5356. Internship/Externship: MDE/Specialty Track. A three-week, intensive, full-time clinical or classroom placement during the month of May in an auditory-oral environment designed specifically to meet the student's individual interests and needs. Summer, Spring [2]

MDE 5358. Field Experience in Deaf Education. Students will develop appropriate skills for providing services to children with hearing loss in group settings; will collaborate with professionals in audiology and speech/language pathology; will plan sessions for family-centered intervention emphasizing communication development or plan lessons; will prepare or review individual family service plans (IFSPs) of individual education plans (IEPs); will assess speech, language, listening, cognitive, motor, and social development of children; and will evaluate effectiveness of services. Fall, Spring, [3] Summer [2]

MDE 5372. Seminar in Deaf Education. Supports student development of organizational skills that will facilitate the completion of requirements for the master's degree in education of the deaf and the transition from graduate school to a profession in deaf education. Emphasis is placed on the development of a professional portfolio, a review of certification requirements, and skill development in job searching including resume writing and interviewing skills. Spring [3]

MDE 5390. Curriculum and Methods for De of Childron Presentation and discussion of current issues, methods, and materials involved in providing success for educational programming for children with hearing loss both in special programs and in inclusionary seeings. This includes the adaptation of regular curriculum and instructional procedures for students with hearing impairments. Focus is on assessment of academic skills and individualizing instruction. Students gain practical experience in planning, carrying out, and evaluating lessons and are exposed to a variety of educational materials and methods. Spring [3]

MDE 5392. Teaching Children with He ring Loss to Listen and Speak: Early Childhood Development. Theories of and methods for developing auditory perception and spoken language skills in deaf and hard-of-hearing children. The purpose of this course is to increase students' skills in assessing and developing speech, auditory functioning, and phonologic awareness in deaf and hard-of-hearing children in early childhood development. Fall [2]

MDE 5393. Educational Assessment for Children with Hearing Loss. The purpose of this course is to introduce students to effective assessment tools and strategies specifically for children with hearing loss. Students will become familiar with state testing protocols, and accommodations and modifications necessary for student success. 2 credit hours, Spring.

MDE 5394. Educational Programming and Service Delivery for Children with Hearing Loss. The course will include planning, execution, and evaluation of Individualized Education Plan (IEP) parent meetings as they relate to young children with hearing loss. The focus of this class will be on two child/family case scenarios. Students will work in multidisciplinary teams to develop and implement IEPs to be conducted in the Center for Experiential Learning and Assessment (CELA). Finally students will review videotaped sessions of each case scenario to reflect upon their role and responsibilities as members of the IEP team. 1 credit hour, Summer.

MDE 5584. Independent Practicum. This course allows students to continue work toward degree requirements. This course is graded pass/fail. Fall, Spring, Summer [0]

MDE 5585. Independent Study and Readings in Deaf Education. Independent Study and Readings in Deaf Education. Fall, Spring, Summer [1-3]

Speech-Language Pathology

Courses leading to the Master of Science (Speech-Language Pathology)

- **SLP 5235. Physiological Bases of Communication I.** Term 1 the bases of speech production and perception relative to neuroanatomy, anatomy, physiology, acoustics, and acoustic correlates and sound features. Neural mechanisms of speech and language will be related to overall structure and function of the nervous system. Neurologic conditions related to speech and language disorders are surveyed. Fall [3].
- **SLP 5236.** Physiological Bases of Communication II. Term 2 the bases of speech production and perception relative to neuroanatomy, anatomy, physiology, acoustics, and acoustic correlates and sound features. Neural mechanisms of speech and language will be related to overall structure and function of the nervous system. Neurologic conditions related to speech and language disorders are surveyed. Spring [1].
- **SLP 5240.** Introduction to Clinical Practicum. This course is for first year, first semester MS-SLP graduate students. Topics covered will include professionalism, safety issues, components of therapy session and time management, data collection, behavior management, learning objectives/goal setting, implementing treatment plans, treatment approaches for various diagnoses. This course is graded pass/f in Fall [1]
- SLP 5280. Child Language Impairments I: Nature. This course is the lirst in a time-course sequence on child language impairment. The focus of this course is on the characteristics of children with primary as well as secondary language impairment. Students will read the primary research literature (a) to learn skills for comprehending and interpreting the research literature, and (b) to gain knowledge on the linguistic and non-linguistic skills of subgroups of children with language impairment and children at risk for academic failure. In addition, an overview of the Individuals with Disabilities Education Act is provided. The lab component develops basic skills in language sample analysis. Fall. [2]
- **SLP 5281.** Child Language Impairments IIa Assessment. The primary focus is assessment of developmental and academic oral language skills, birth through high school, with a secondary focus on reading, writing, and intellectual assessment. Assessment measures include developmental scales, commercially published norm-referenced measures, criterion-referenced instruments, research-validated experimental measures, and progress monitoring tools. In addition, students gain knowledge and skills in collaborating with families and teachers on assessment of children's linguistic abilities. Students develop knowledge and skills to select and implement appropriate assessment instruments, to interpret assessment findings for differential diagnosis and IDEA eligibility, for determination of child and family strengths and needs, and to apply assessment findings for describing present level of performance, writing IEP/IFSP goals and objectives, and planning intervention. The lab component of this course will focus on application and practice of assessment measures and interpretation of assessment findings for families and teachers. Part A of the course focuses on developing students' knowledge of child language assessment methods. Fall [1]
- SLP 5282. Child Language Impairments IIb: Assessment. The primary focus is assessment of developmental and academic oral language skills, birth through high school, with a secondary focus on reading, writing, and intellectual assessment. Assessment measures include developmental scales, commercially published norm-referenced measures, criterion-referenced instruments, research-validated experimental measures, and progress monitoring tools. In addition, students gain knowledge and skills in collaborating with families and teachers on assessment of children's linguistic abilities. Students develop knowledge and skills to select and implement appropriate assessment instruments, to interpret assessment findings for differential diagnosis and IDEA eligibility, for determination of child and family strengths and needs, and to apply assessment findings for describing present level of performance, writing IEP/IFSP goals and objectives, and planning intervention. The lab component of this course will focus on application and practice of assessment measures and interpretation of assessment findings for families and teachers. Part B of the course focuses on application of child language assessment methods. Spring [1]

- **SLP 5283.** Child Language Impairments III: Intervention. This course is the third in a three-course sequence on child language impairments. The focus is evidence-based interventions that develop linguistic skills, primarily preschool through high school. The primary focus is on oral language skills, but literacy skills will be addressed as well (emergent literacy, decoding, spelling, reading comprehension, written expression). Intervention methods will include direct interventions with children as well as collaborative interventions delivered in conjunction with teachers and families. Students will learn to comprehend and interpret intervention research, to apply research to practice and explain the evidence base for specific clinical decisions, and to understand IDEA as it relates to school-based intervention. The lab component of the course focuses on the implementation of specific intervention strategies, procedures, and programs. Spring. [2]
- **SLP 5301.** Acoustics and Perception of Speech and Speech Disorders. An examination of the processes of speech production, acoustics, and perception. Emphasis on relevant literature and research techniques in speech science. Fall. [3]
- **SLP 5304.** Child Language Acquisition. The components and processes of normal language development. Relations between language acquisition and social and cognitive aspects of child development as well as literacy development. Survey of developmental psycholinguistic research. This course is appropriate for graduate students with or without previous coursework in language development. Fall. [3]
- SLP 5305. Clinical Principles and Procedures. Presentation and demonstration of clinical principles and procedures applicable in communication sciences and disorders. Fall. [2]
- **SLP 5311. Stuttering.** Significant research in the field of stuttering, with emphasis on etiology and therapy. The management of fluency disturbances. Spring. [3]
- **SLP 5314. Articulation Disorders and Clinical Phonetics.** The etiology, evaluation, and management of articulatory defects in children and adults. Prerequisite: consent of instructor. Fall. [3]
- **SLP 5316. Motor Speech Disorders.** A study of the nature and restment of the adult and childhood dysarthrias and dyspraxias of speech. Management of infants and young children at neurological risk for developing motor speech disability. Rights of the severely communicatively disabled Spring. [2]
- **SLP 5317. Traumatic Brain Injury.** P. the physiology of traumatic brain injury in children and adults; unique and common sequelae, the evaluation and treatment of cognitive/communicative deficits, and special problems of the population. Prerequisite 5300 or 5331 or consent of instructor. Summer. [2]
- **SLP 5319. Dysphagia.** The study of the normal and disordered swallow in pediatric and adult populations. Anatomy and physiology, videofluoroscopic and other assessment procedures, as well as various treatment alternatives and techniques are included. Fall. [3]
- **SLP 5323.** Communication in Antism Spectrum Disorders. The course addresses basic theories and principles associated with communication assessment of and intervention for children with Autism Spectrum Disorders. Auditory characteristics, causative factors, classroom structure, behavior management, communication strategies, social and peer interaction, and family-focused practices are also reviewed. This class also will provide an overview of typical social, play, and linguistic development compared to the features and behavioral characteristics of autism spectrum disorders (ASD). Fall [2]
- **SLP 5324. Feeding and Swallowing Disorders in Children.** This course focuses on the assessment, diagnosis, and management of dysphagia in children including the role of the speech-language pathologist and multidisciplinary and family-centered, family-supported management. Prerequisite: SLP 5319. [1]
- **SLP 5326. Speech Disorders in Craniofacial Anomalies.** The etiology, diagnosis, and management of speech defects associated with craniofacial anomalies, with major emphasis on cleft palate. Summer. [1]
- **SLP 5331. Aphasia.** The study of aphasia in adults, including the neuronanatomical basis, etiologies, symptomatology, assessment, differential diagnosis, and treatment. Spring. [3]

SLP 5335. Augmentative and Alternative Communication. This course will cover the theory, rationale, and methods for use of augmentative and alternative communication (AAC) systems with patients with physical, intellectual, and/or cognitive disabilities. Students will be exposed to various low- and high-technology AAC systems and learn how and when to apply each in the treatment of patients with complex communication needs. Fall. [2]

- **SLP 5336. Voice Disorders.** Theories of voice production, with emphasis upon underlying mechanisms that cause vocal defects. Procedures for group and individual management. Summer. [2]
- **SLP 5338. Research Methods in Communicative Disorders.** Research techniques and procedures. Analysis of research examples from the literature. Study of design of experiment, data collection, statistical analysis, and presentation of research findings. Fall. [1]
- **SLP 5355.** Clinical Internship/Externship. Sequence of clinical practicum placements over five semesters for speech-language pathology majors in clinical track. Designed to meet supervised practicum requirements for eventual certification by American Speech-Language-Hearing Association. Sequence of initial part-time internship placements in campus and other local facilities, followed by a full-time externship placement at one of many selected sites throughout the country or abroad. Spring, Summer [6]
- **SLP 5357. Professional Issues in Communication Disorders.** Examines various professional issues within the fields of speech-language pathology and audiology. For example, ethics, malpractice, quality improvement, marketing, reimbursement, multicultural sensitivity, and federal legislation. Spring [1]
- **SLP 5360.** Voice Specialty Track Acute Care Experience. This course is designed to expose students to clinical practice in an acute care setting as it pertains to voice and upper a rway disorders. Students will observe diagnosis and treatment of communication and swallowing disorders in patients with laryngectomy and other head and neck cancers, in patients with tracheostomy and on ventilators, and with other populations as available. Students will have the opportunity to provide some direct patient care. This course is graded pass/fail. Summer. [1]
- SLP 5361. Family-Centered Counseling and Incerviewing. Examines the helping relationship in the clinical process, counseling theory relative to speech-language particles and principles and methods of effective clinical interviewing and counseling. Spring [1]
- **SLP 5378. Seminar in Medical Speech Pathology.** This advanced seminar will discuss the scope of medical speech pathology with emphasis on the practice of speech-language pathology as it impacts health status across the continuum of care. In this course, students will have the opportunity to explore the scope of medical speech pathology across the continuum with attention to special topics such as pharmacology and brain imaging. There will be a focus on interprofessional roles and practice. The concept of competency and specialty practice will also be addressed. Standards of evidence-based practice will evaluated as they apply to this sphere of practice.
- **SLP 5388. Independent Study/P.eadings in Speech Pathology.** Independent Study/Readings in Speech Pathology. Fall, Spring, Summer [1-3]. Varies.
- **SLP 5391.** Advanced Voice Research and Rehabilitation. This advanced seminar will discuss historical and current research in the assessment and treatment of voice disorders. Emphasis will be placed on understanding the theoretical basis of clinical practice in voice and applying standards of evidence-based practice to evaluating therapeutic methods. Prerequisites Enrolled as master's degree student in Hearing and Speech Sciences Program. This course is graded pass/fail. Fall [1]
- **SLP 5397. Speech-Language-Literacy Seminar.** Course limited for enrollment to graduate speech-language pathology masters students who are enrolled in the School Speech-Language Pathology Specialty Track. Topics vary each semester; a two-year curriculum of topics prepares students for school-based practice of speech-language pathology.
- **SLP 5583. Practicum and Clinical Case Conference.** This course includes attendance at weekly case conferences where clinical case studies will be presented (Fall and Spring Only). The grade for this class will include clinical

performance, case conference presentations (when assigned), and case conference attendance (when scheduled). Fall, Spring, Summer. [1]

SLP 5584. Independent Practicum. This course allows students to continue work toward degree requirements. This course is graded pass/fail. Fall, Spring, Summer. [0]

SLP 5587. Advanced Clinical Practicum/Case Conference. This course includes attendance at weekly case conferences where clinical case studies will be presented. It reflects additional load of clinical training. The grade for this class will include case conference attendance as well as clinical performance and attendance. Prerequisite: 4 credits of SLP 5583. Spring [3]

SLP 7999. Master's Thesis Research. Master's Thesis Research. This course is graded pass/fail. Fall, Spring, Summer [1]

MEDICAL PHYSICS

Courses leading to the Doctor of Medical Physics and the Master of Science in Medical Physics

Diagnostic Radiology

RAMD 5301. Medical Physics Seminar I. Topics in medical imaging, lechniques and applications. Fall, Spring. [1]

RAMD 5313. Clinical Diagnostic Physics. Instrumentation and application of physics to clinical diagnostic imaging procedures including radiographic and fluoroscopic x ray, CT, MRI, paclear medicine, and ultrasound. Fall. [3]

RAMD 5317. Laboratory In Clinical Diagnostic Physics. Laboratory In the application of principles, techniques, and equipment used in radiographic and fluoroscopic x-ray, CT MHI, nuclear medicine, and ultrasound. Fall. [2]

RAMD 5331. Physics of Medical Imaging. Physical, mathematical, and signal processing concepts associated with medical image formation and analysis. Introduction to techniques used to generate medical images using ionizing radiation, non-ionizing radiation, and sound waves. Medical imaging modalities to be discussed include general radiography, Computed Tomography, Nuclear Medicine (SPECT and PET), Magnetic Resonance, and Ultrasound.

RAMD 5340. Clinical Diagnostic Physics I Instrumentation and application of physics to clinical diagnostic imaging. Emphasis placed on projection x ray methods as well as computed tomography. Coursework includes an applied laboratory with hands-on experience with relevant equipment. [4]

RAMD 5350. Clinical Diagnostic Physics II. Instrumentation and application of physics to clinical diagnostic imaging. Emphasis will be placed on Ultrasound, Nuclear Medicine, Positron Emission Tomography and Magnetic Resonance Imaging. Coursework includes an applied laboratory with hands-on experience with relevant equipment.[4]

RAMD 5390. Master's Independent Study (Diagnostic). Introductory problem solving topic in diagnostic medical physics including data taking, analysis, and write-up. [1-2]

RAMD 5391. Medical Physics Diagnostic Practicum I. Experience and training in a diagnostic physics clinical setting; instrumentation methodology, calibration, and quality assurance. This course also includes diagnostic radiology patient interaction, clinical conference attendance, and review of imaging techniques in radiology. [1-4]

RAMD 5392. Medical Physics Diagnostic Practicum II. Experience and training in a diagnostic physics clinical setting; instrumentation methodology, calibration, and quality assurance. This course also includes diagnostic radiology patient interaction, clinical conference attendance, and review of imaging techniques in radiology. [1-4]

RAMD 5393. Doctoral Independent Study I. Advanced problem solving topic in diagnostic medical physics including literature survey, data taking, analysis, and manuscript submission. [1-3]

RAMD 5394. Doctoral Independent Study II. Advanced problem solving topic in diagnostic medical physics including literature survey, data taking, analysis, and manuscript submission. [1-3]

RAMD 5395. Medical Physics Clinical Rotations I. Advanced experience and clinical training in a diagnostic radiology department setting; instrumentation (methodology and calibration), quality assurance, and problem solving. For third- and fourth-year doctoral students. Fall, Spring, Summer. [3-6]

RAMD 5396. Medical Physics Clinical Rotations II. Advanced experience and clinical training in a diagnostic radiology department setting; instrumentation (methodology and calibration), quality assurance, and problem solving. For third- and fourth-year doctoral students. Fall, Spring, Summer. [3-6]

RAMD 5397. Medical Physics Clinical Rotations III. Advanced experience and clinical training in a diagnostic radiology department setting; instrumentation (methodology and calibration), quality assurance, and problem solving. For third- and fourth-year doctoral students. Fall, Spring, Summer. [3-6]

RAMD 5401. Medical Physics Seminar II. Topics in medical imaging, techniques and applications. [1]

Therapeutic Radiology

RAMT 5201. Anatomy and Physiology for Medical Physicists. Overview of physiology at cellular, organ and system levels, including normal function of human body and some clinical man festations of human diseases focusing on oncology. Upon completion of the course, students will be able to describe the normal structure, function and organization of the human body and develop an inderstanting of the anatomy and physiology of major organ systems of the body: endocrine, cardiovascular respiratory, lyraphatic & immune, urinary, reproductive, digestive, nervous, skeletal, muscular, integumentary and immune.

RAMT 5248. Radiation Biophysics. Response of mammalian cells and systems to ionizing radiation, the acute radiation syndromes, carcinogenesis, genetic effects, and redobiological basis of radiotherapy. Fall. [2]

RAMT 5301. Medical Physics Seminar I. Radio herapy treatment techniques and current methodologies in clinical therapy physics. Fall. [1]

RAMT 5304. Radiation Interactions an Losimetry. Theory and instrumentation of ionization measurements of high-energy photon and electron beams. Methods of radiation absorbed dose calculations for photons, neutrons, and charged particles. Fall. [3]

RAMT 5310. Introduction to Cinical Applications & Radiation Protection of Therapy & Diagnostic Imaging Physics. Introduction to the applications of radiation therapy physics in the clinical environment, elements of radiation protection in both radiation therapy and diagnostic imaging settings as they apply to health care professionals and the general population, and regulatory issues facing health care professionals in modern radiology and radiation oncology clinics. [3]

RAMT 5311. Clinical Therapy Physics I. Instrumentation and application of physics to clinical radiotherapy procedures, equations for absorbed dose calculations, phantoms, methodologies in computerized treatment planning, and introduction to the special techniques of IMRT, RAPID ARC, and stereoradiosurgery. Fall. [3]

RAMT 5312. Clinical Therapy Physics II. Photon and electron beam algorithms for dosimetry calculations. Methodologies in three-dimensional treatment planning with specific applications to radiotherapy. Spring. [3]

RAMT 5314. Clinical Therapy Physics: Lab I. Introductory laboratory applications of physics to clinical radiotherapy procedures, experience with equipment in a modern clinical radiotherapy environment, and methodology and techniques for the verifications of simulated clinical procedures. [2]

- **RAMT 5315.** Clinical Therapy Physics: Lab II. Advanced laboratory applications of physics to clinical radiotherapy procedures, experience with radiotherapy physics equipment including measurement of absorbed dose using multiple dosimetry systems and techniques for the quality assurance verification of special radiotherapy clinical procedures. [2]
- **RAMT 5316.** Brachytherapy Physics. Instrumentation and applications of physics to clinical brachytherapy procedures, equations for absorbed dose calculations including TG#43, methodologies in computerized treatment planning, and introduction to special techniques. [3]
- **RAMT 5320.** Leadership, Management, and Ethics for Medical Physicists. This course provides (1) an overview of ethical issues faced by practicing medical physicists, (2) an introduction of leadership philosophies that may be utilized when managing a clinical practice or technical team and (3) general professional and entrepreneurial life skill useful in the field of medical physics.
- **RAMT 5330. Computational Methods for Medical Physicists.** Medical physics entails many aspects of computational methods such as Monte Carlo simulation, optimization, image processing, and artificial intelligence. This course provides the fundamental principles and hands-on experience of the algorithms used in these subjects for medical Physics graduate students.
- **RAMT 5390. Master's Independent Study (Therapeutic).** Introductory problem-solving topic in therapy medical physics including data taking, analysis, and write-up. [1-2]
- **RAMT 5391.** Medical Physics Therapeutic Practicum I. Experience and training in a radiotherapy physics clinical setting; treatment planning, instrumentation calibration, and callity assurance. This course also includes radiotherapy patient interaction, clinical conference attendance, and review of treatment techniques in radiation oncology. Fall, Spring, Summer. [1-4]
- **RAMT 5392.** Medical Physics Therapeutic Practicum II. Experience and training in a radiotherapy physics clinical setting; treatment planning, instrumentation calibration, and quality assurance. This course also includes radiotherapy patient interaction, clinical conference attendance, and review of treatment techniques in radiation oncology. Fall, Spring, Summer. [1-4]
- **RAMT 5393. Doctoral Independent S. uoy I.** Advanced problem solving in therapy medical physics including literature survey, data taking, analysis and manuscript submission. [1-3]
- **RAMT 5394. Doctoral Indepen tent Study II.** Advanced problem solving in therapy medical physics including literature survey, data taking, analysis, and manuscript submission. [1-3]
- **RAMT 5395.** Medical Physics Clinical Rotations I. Advanced experience and clinical training in a radiation oncology department setting; hearment planning, instrumentation calibration, quality assurance, and problem solving. For third- and fourth-year doctoral students. Fall, Spring, Summer. [3-6]
- **RAMT 5396.** Medical Physics Clinical Rotations II. Advanced experience and clinical training in a radiation oncology department setting; treatment planning, instrumentation calibration, quality assurance, and problem solving. For third- and fourth-year doctoral students. Fall, Spring, Summer. [3-6]
- **RAMT 5397.** Medical Physics Clinical Rotations III. Advanced experience and clinical training in a radiation oncology department setting; treatment planning, instrumentation calibration, quality assurance, and problem solving. For third- and fourth-year doctoral students. Fall, Spring, Summer. [3-6]
- **RAMT 5401. Medical Physics Seminar II.** Topics in clinical therapy physics, techniques and application. Fall. [1]

GENETIC COUNSELING

Courses leading to the Master of Genetic Counseling

- GC 6010. Introduction to Genetic Counseling. The first half of this course will introduce the student to the framework of the genetic counseling profession, including the history, practice standards, principles, and code of ethics. The second half of this course will introduce the application of the genetic counseling framework via the client-provider relationship (defining and describing the qualities of the genetic counseling interaction) and various counseling theories. We will draw on the Reciprocal Engagement Model of genetic counseling to discuss the therapeutic approach, contracting, basic empathic interviewing, and client assessment. Other theories that will be discussed in depth include: cognitive behavioral theory, family systems theory, feminist theory, multicultural counseling, existential therapy, and person-centered therapy.
- GC 6015. Theories of Human Experience. This course guides students through theory and literature to support understanding of health-related behaviors and the human experience of grief and loss. Topics include health behavior and human motivation, stress and coping theory, adaptation theory and grief theories, as well as theories to provide context into families and culture. The theories and frameworks covered in this course will support the students education in theory-based research as well as provide context and specificity to the delivery of evidence-based genetic counseling interventions. Prerequisite: GC6010.
- GC 6020. Applied Genetic Counseling Theory. This course augments clinical rotations oursig the summer between the first and second years of the Master's degree program. Students will identify psychotherapeutic and educational issues in cases from their clinical rotations. These issues will be addressed through group discussion and practice of counseling approaches and interventions. Students will also build on their clinical skills of how to approach and work-up genetic counseling cases. Prerequisite: GC6015
- GC 6030. Advanced Genetic Counseling. This skills-based, interactive class will utilize standardized patients, role play, and discussion to practice advanced genetic counseling techniques. This course will encourage exploration of techniques grounded in counseling theory to gain conficence in the counseling process, including dynamics of grief and bereavement, crisis intervention, and multicultural sensitivity. Students will develop a sophisticated understanding of content and process and will be able to formulate a comprehensive biopsychosocial assessment and counseling approach. This class will be interactive with profile in a lecture time. Prerequisite: GC6015
- **GC 6500. Foundations of Genetics and Genomes.** The purpose of this course is to provide a framework for the study of human genetics with clinical examples to illustrate the application of the main principles. Topics covered this semester will include: gene tracture and function, chromosomal abnormalities, single gene inheritance, molecular, cellular and biochemical basis of genetic disease, complex and multifactorial inheritance, genetic diversity, and population genetics. Techniques of genetic analysis will be introduced.
- GC 6510. Medical Genetics 1. This course will use a systems-based approach to familiarize the students with human embryology, development biology and anatomy. Students will use this knowledge to understand concepts in clinical genetics and human development to foster an understanding of genetic disease. The course will include case-based didactic lecture, anatomy specimen interaction, and collaborative learning experiences.
- **GC 6515. Medical Genetics 2.** This course will build on the principles from Medical Genetics 1 by using different genetic sub-specialties including: Epigenetics, Personalized Genomic Medicine, Psychiatric genetics, Pharmacogenetics, Biochemical Genetics, Cancer Genetics, Cardiovascular genetics and Neurogenetics. The course will emphasize risk assessment for genetic disease, including pedigree analysis, Bayes, and Hardy-Weinberg and genetic susceptibility. Use of large genomic datasets in precision medicine will be introduced. Prerequisite: 6510
- **GC 6520. Laboratory Sciences in Medical Genetics.** Exposure to the clinical laboratory including ordering, lab utilization management, techniques, and reporting in the areas of molecular genetics, cytogenetics, biochemical genetics, genomics, personalized medicine, pharmacogenetics, genetic tumor screening will be provided. There will be extensive review of gene variant analysis and reporting for clinical relevancy.
- **GC 6610. Rsrch for Genetic Counselors 1.** Research for Genetic Counselors I & II will explore the research process, with a focus on genetic counseling research. The course will introduce the skills students will need to

develop a thesis proposal and complete their thesis research. This course implements application of research components and will be heavily discussion based. Each student will identify and develop his or her thesis proposal throughout this two semester course. As topics are discussed in class, students will apply knowledge to those aspects of the development of their theses. This will culminate in the presentation of their thesis proposals to the committee at the end of the second semester. Topics addressed during the first semester will include: basic principles of study design, critical reading of the literature, and developing a statistical plan.

GC 6615. Rsrch for Genetic Counselors 2. Research for Genetic Counselors 2 will explore the research process, with a focus on genetic counseling research. The course will introduce the skills students will need to develop a thesis proposal and complete their thesis research. This course implements application of research components and will be heavily discussion based. Each student will identify and develop his or her thesis proposal throughout this two semester course. As topics are discussed in class, students will apply knowledge to those aspects of the development of their theses. This will culminate in the presentation of their thesis proposals to the committee at the end of the second semester. Topics addressed during the first semester will include: quantitative and qualitative research methods, collection and management of data, human subjects research and the IRB, the informed consent process, and research ethics. Prerequisite: 6610

GC 7000. Genomics in Public Health. Genomics in Public Health will focus on demonstrating the use of epidemiology and population-based screening to create health policy. Exploration of how genetic counselors can use their clinical and research skills to critically review the impact of health policy will be covered, especially as it relates to healthcare delivery and access, and patient and provider education. The importance of metrics and the use of community, regional, and national health resources will be emphasized. This course will review health policy and legislation which relate to medical genetics.

GC 7010. Professional Issues 1. This course will focus on professional development for new genetic counselors. Topics are organized into sections and will address skills needed to secure employment, function as a genetic counselor in both clinical and non-clinical settings, and management actuands of working in a helping profession. Content addressed will include CV and cover letter development, job searching and negotiation techniques, financial and reimbursement issues, and expanding roles for genetic counselors, professional conduct, leadership skills, professional development and mentorship and self-care techniques.

GC 7015. Professional Issues 2. This course will explore in more depth the role of genetic counselors in research, education, and leadership. Topics include research funding, grant writing, working in a research team, conflicts of interest, supervision skills, genetic counseling outcome research and preparing for board examination and obtaining licensure. Students will participate in group activities, professional panel discussions, and interactive role plays. Prerequisite: GC7010

GC 7500. Topics in Clinical Genetics. Students, faculty, and guests participate in the presentation and critical review of current and emerging topics and interests in the field of human genetics and genetic counseling. Students will develop skills in critical valuer on of medical literature, assessment of emerging interests and topics, and presentation of original research

GC 7510. Genetic Counseling Pre-Practicum. This course will allow students the opportunity to practice genetic counseling skills (listening and reflecting techniques, empathy, medical history taking, pedigree construction, patient education) which are presented in Introduction to Genetic Counseling (GC7500). The course is designed to be practice-oriented, and it will provide a safe place to explore new skills. Experience-based learning using standardized patients to practice medical communication techniques, roleplay, and flipped classroom strategies will be employed. The RIME (Reporter, Interpreter, Manager, Educator) framework will be introduced as a competency-based assessment tool to set expectations for assessing the progress of student performance throughout their clinical training. As part of this course students will attend a weekly case conference with colleagues in which cases will be presented and discussed.

GC 7515. Genetic Counseling Practicum 1. Genetic Counseling Practicum 1 is part of a Genetic Counseling Practicum series that provides students the opportunity to integrate knowledge, skills and attitudes (KSA's) of genetic counseling in a clinical setting. Within the RIME framework the goal of this course is to consistently demonstrate the reporter level skills learned from their Pre-Practicum Course (GC7510), and integrate skills from

the interpreter level at least 50% of the time. As part of this course students will attend a weekly case conference with colleagues in which cases will be presented and discussed. Prerequisite: GC7510

GC 7520. Genetic Counseling Practicum 2. Genetic Counseling Practicum 2 is part of a Genetic Counseling Practicum series that provides students the opportunity to integrate knowledge, skills and attitudes (KSA's) of genetic counseling in a clinical setting. This series utilizes the RIME framework (Reporter, Interpreter, Manager, Educator), which is a framework used frequently in medical education to set expectations for student performance throughout their clinical training. The goal of this course is to consistently demonstrate the reporter and interpreter level skills learned and applied in the prerequisite courses. As part of this course students will attend a weekly case conference with colleagues in which cases will be presented and discussed. Prerequisite: GC7515

GC 7525. Genetic Counseling Practicum 3. Genetic Counseling Practicum 3 is part of a Genetic Counseling Practicum series that provides students the opportunity to integrate knowledge, skills and attitudes (KSA's) of genetic counseling in a clinical setting. This series utilizes the RIME framework (Reporter, Interpreter, Manager, Educator), which is a framework used frequently in medical education to set expectations for student performance throughout their clinical training. The goal of this course is to consistently demonstrate the reporter and interpreter level skills learned from their previous clinical experiences, and integrate skills from the manager level at least 50% of the time. As part of this course students will attend a weekly case conference with colleagues in which cases will be presented and discussed. Prerequisite: GC7520

GC 7530. Genetic Counseling Practicum 4. Genetic Counseling Practicum 4 is the last part of a Genetic Counseling Practicum series that provides students the opportunity to integrate knowledge, skills and attitudes (KSA's) of genetic counseling in a clinical setting. This series utilizes the RIME framework (Reporter, Interpreter, Manager, Educator), which is a framework used frequently in medical education to set expectations for student performance throughout their clinical training. The goal of this course is to consistently demonstrate the reporter, interpreter and manager level skills learned from their previous clinical experiences (GC7510, GC7515, GC7520, GC7525), and integrate skills from the educator level at least 50% of the time. As part of this course students will attend a weekly case conference with colleagues in which cases will be presented and discussed. Prerequisite: GC7525

GC 7600. Clinical Reflection and Self-Awareness. First year M.G.C. students will meet as a group in the Fall and Spring semesters for group supervision. The weekly one-nour sessions will be moderated by a counseling professional who is independent of the M.O.C. program. Transition to more peer-directed conversations will be encouraged as students advance through the program. Some of the topics to be covered include: self-awareness, self-care and coping skills, setting boundaries and like transitions. Sessions will be confidential and attendance will be the only requirement for this pass fail class.

GC 7610. Clinical Reflection and Scale Awareness. Second year M.G.C. students will meet as a group in the Fall and Spring semesters for group supervision. The weekly one-hour sessions will be moderated by a counseling professional who is independ in of the M.G.C. program. Transition to more peer-directed conversations will be encouraged as students advance through the program. Skills introduced in GC 7600 will be practices and layered with topics of life management through self-care, professional burnout in a helping profession, understanding one's role in the healthcare team and finding a professional self. Sessions will be confidential and attendance will be the only requirement for this pass/fail class. Pre-requisite: GC 7600

GC 7999. Genetic Counseling Master's Thesis. Completion of a mentored research project is a required component of the MGC program. The research project is driven by the interests of the individual student supported by the program faculty and/or clinical supervisors. The research must focus on a question related to the practice of genetic counseling from the patient and/or provider perspective. This course is graded pass/fail.

PUBLIC HEALTH

Courses leading to the Master of Public Health

PUBH 5501. Epidemiology I. This course focuses on measures of disease frequency and association, observational study design, and diagnostic and screening tests. The course reviews the use of these tools and the role of

epidemiology in measuring disease in populations, estimating risks, and influencing public policy. Study designs reviewed include cross sectional, ecologic, case-control, and cohort studies. Required for students in the MPH program.

PUBH 5502. Biostatistics I. This course addresses basic concepts and methods of biostatistics, including data description and exploratory data analysis, study design and sample size calculations, probability, sampling distributions, estimation, confidence intervals, hypothesis testing, nonparametric tests, analysis of continuous, categorical, and survival data, data analysis for cohort and case-control studies, relative risk and odds ratio estimation, and introduction to linear and logistic regression. Required for students in the MPH program.

PUBH 5505. Public Health Ethics. This course examines the ethical dimensions of public health research, practice, and policy. Students will become familiar with the language and literature of public health ethics as they explore ethical dilemmas pertaining to the values, principles, rights, and beliefs that shape concepts of research and health care. This course is required for all students in the M.P.H. Program.

PUBH 5508. Epidemiology II: Non-randomized Study Design. This course addresses the design of non-randomized studies and factors that are important in design selection. This includes the design of cohort studies, prospective and retrospective cohort studies, assembly and follow-up of the cohort, exposure measurement, outcome ascertainment, confounders, effect modification, calculation of measures of occurrence and effect, summary of multivariate statistical analyses for cohort studies; the case-control study, conditions necessary for validity of the case-control study, selection of controls, sources of bias in case-control studies, and medicariate analysis; as well as the ecological study, including when to use and when to avoid. The course includes diactic lectures and critical reading of important epidemiologic studies from the current medical literature. This course is required for students in the Epidemiology track of the M.P.H. Program. Prerequisite: Epidemiology I. Plostatistics II, Clinical Trials, or approval of instructor. Enrollment is limited due to space restrictions, with priority given to students in the M.P.H. and M.S.C.I. programs.

PUBH 5509. Biostatistics II. This course addresses and dorn multivariate analyses based on the concept of generalized linear models. This includes linear, logistic, and Pois or regression, survival analysis, fixed effects analysis of variance, and repeated measures analysis of variance. The course emphasizes underlying similarity of these methods, how to choose the right method for specific problems, common aspects of model construction, and the testing of model assumptions through in fluence and residual analyses. This course is required for students in the Epidemiology and Health Policy tracks of the M.P.H. Program. Prerequisite: Biostatistics I or consent of the instructor. Enrollment is limited due to space restrictions, with priority given to students in the M.P.H. Program.

PUBH 5510. Measurement and Analysis for Healthcare Improvement. This course takes a deep dive into understanding measures commonly used to assess quality in health and healthcare. At the end of the course students will be able to critically assess, analyze, and communicate healthcare data. Required for students in the Epidemiology and Health Policy tracks of the MPH program. Pre-requisites: PUBH 5501 Epidemiology I and PUBH 5502 Biostatistics I, or instructor approval.

PUBH 5512. Decision Analysis in Medicine and Public Health. This course provides an overview of qualitative and quantitative decision making with a dominant focus on quantitative techniques, using clinical and economic endpoints and their role in clinical strategies of care and health policy. Topics include: cognitive heuristics, Bayes' theorem, ROC analysis, the study of diagnostic tests, meta-analysis, health states and utility measurement using expected value decision making, decision tree analysis, Markov processes and network simulation modeling, quantitative management of uncertainty, cost theory and accounting, cost-effectiveness and cost-utility analysis.

PUBH 5515. Introduction to Public Health Informatics. This course will provide an overview of the role of informatics in public health practice, including the role of the public health informatician, health information systems used in public health, the role of the health care system in public health, and ethical considerations for the use of public health data. At the end of the course, students will understand the complexity of the data systems that underpin public health practice and the importance of informatics in data acquisition, analysis and use. Particular emphasis will be placed on the role of informatics in surveillance, including outbreak investigation.

PUBH 5516. Public Health Practice. Public Health Practice will introduce students to key topics, concepts and methods in Environmental Health and Public Health Surveillance. Basic environmental epidemiology, use of evidence in policy and practice, along with an overview of the main environmental exposures will be explored. This course also examines an overview of public health surveillance as a lens to public health practice, in terms of how public health programs are organized, financed, and operated and what surveillance data are available to inform specific programs. Public health practitioners and policy-makers who plan, implement, and evaluate infectious disease, chronic disease, injury, and disability prevention and control programs have a need for reliable information about the status of these health problems among the populations they serve. Surveillance systems provide information for action. Analyzing, interpreting and using public health surveillance data inform the design, operation, and delivery of public health programs and target public health action and disease control. Public health surveillance is the ongoing process that public health agencies use to collect, manage, analyze, interpret and disseminate this information. We will review basic approaches to public health surveillance, including disease reporting regulations and notifiable diseases, surveillance for infectious diseases, chronic diseases, and adverse events, uses of surveillance data, and how surveillance data can inform public health program, policy, and practice. The course will be taught by a multidisciplinary group of faculty using didactic and interactive elements of instruction.

PUBH 5517. Grant Writing. This course provides a foundation in grant writing for the early career scientist or public health practitioner. It includes seven core sessions, nine elective sessions (from which students must choose at least four), and a mock grant review experience. Core topics include an overview of funding agencies and award mechanisms, as well as how to identify funding opportunities, plan an application, construct an impactful research plan, develop a budget, and succeed at grantsmanship. Elective sessions discuss applying for specific types of grants including career development, global health, health policy, and programmatic averds; VUMC institutional awards and resources; VA grants; NIH biosketch development; research menorship; and training in the responsible conduct of research. Students will also learn how grants are reviewed and cored, and participate in a mock grant review, choosing either career development award applications or programmatic grants. Enrollment is limited to students in the M.P.H. and M.S.C.I. programs, or by permission of the instructor.

PUBH 5518. Research Ethics. This course present issues in the responsible conduct of research, including ethics, data management, research fraud, academic misconduct, and conflict of interest. The course covers federal and institutional guidelines regarding research in Luman and apinal subjects. Topics include vulnerable populations in research, confidentiality, and the Institutional Review Board (IRB). The course is required for students in the Epidemiology and Health Policy tracks of the M.P.H. Program. Enrollment is limited to students in the M.P.H. and M.S.C.I. programs, or by permission of the instructor.

PUBH 5520. Introduction to Health Policy. The aim of this course is to provide students with an overview of the U.S. health care system and key features of its financing and delivery. We will discuss the strengths and weaknesses of our health care system, historical trands, and how we compare to other countries. Moreover, we will discuss the major components of the Affordable Care Act and implementation challenges going forward. Drawing on materials from different academic disciplines, including economics, political science, and sociology, the course will place particular emphasis on analytic approaches to evaluate policy impact. The course will address a range of topics, including the structure of the delivery system, drivers of spending growth, quality of care, and long-term care. No disciplinary background is assumed, nor is any special familiarity with the field of health care required. Required for students in the Epidemiology and Health Policy tracks of the MPH program.

PUBH 5521. Survey Research Seminar. This is a didactic and participatory graduate-level class. It is designed to introduce key concepts and skills in survey methodology and the application of those skills to public health research. The course includes content on survey modes, sampling, questionnaire development, and survey implementation. The student will develop a research question, recruitment materials, and a short questionnaire based on the theory and skills learned in the course. This course is required for students in the MPH program.

PUBH 5522. Qualitative Health Research Methods I. This course is designed to provide an introduction to qualitative research methods, with a focus on research in health behavior, health care delivery, and sociocultural norms that impact health and well-being, although these methods can be applied easily to other arenas. The primary skills we will develop include techniques of the case study method including interviews, focus groups, and observation. Introductions to mixed methods will also be included. We will consider strategies for validity and

reliability, and the relevance of standard evaluative criteria such as objectivity, neutrality, and generalizability. This course is required for students in the MPH program.

PUBH 5523. Qualitative Health Research Methods II. This course is an extension of the one credit hour Qualitative Health Research Methods I course. During this course, students will pilot, refine, and employ their own qualitative interview guide to collect qualitative data. Students will receive qualitative data analysis training and will undertake to analyze the data from their pilot. The final project will include a write-up of the methods, data analysis, and discussion of findings. This course is an elective for students in the M.P.H. Program. Pre-requisite: Qualitative Health Research Methods I.

PUBH 5524. The Science of Health Behavior. This course will provide an overview of social and behavioral science theories that are currently used to (a) understand health behaviors; and (b) guide the development of interventions to prevent, reduce, or eliminate major public health problems. We will also explore how technologies (i.e., patient portals, mobile devices, and the Internet) are used to promote health behaviors, disparities in the performance of health behaviors, and how behavioral interventions attempt to address and reduce these disparities. This course is required for all students in the M.P.H. Program.

PUBH 5525. Health Economics. This course is intended to survey the major topics in Health Economics. Each class is organized around a topical theme: those themes include health reform, health insurance, health promotion and disease prevention, and the health care workforce. Each theme will be approached from an economic perspective using recent articles from the literature. This course is required for students in the Health Policy track of the M.P.H. Program.

PUBH 5526. Global Health Project Development. This course focuses or development of the individual student's MPH practicum and thesis including the identification of a key global health design of a suitable project to address the question. Each student will complete a relevant skiil process activity, a draft of his/her practicum agreement, and a project development concept paper. Enrollment is limited to students in the Global Health track of the MPH program.

PUBH 5527. Protocol Development I. This course is designed to prepare students to plan and conduct an independent thesis research project. Students will strengther their ability to assess whether a research strategy appropriately addresses study questions, with an emphasis on evaluating data sources, study population, measurement, and analysis approach. They will also develop management and logistical skills necessary for conducting public health research. Enrol ment is limited to students in M.P.H. Program.

PUBH 5530. Protocol Development II. This course focuses on development of the individual student's research protocol. Each student will present the background, methods, and limitations of their proposed research design in class, and complete the research protocol for the M.P.H. master's thesis. Enrollment is limited to students in the M.P.H. Program.

PUBH 5531. MPH Capstone ePortfolio Development. This course is designed to guide second-year MPH students through synthesizing their public health knowledge and skills and planning a capstone ePortfolio as part of their culminating experience in the Vanderbilt MPH Program. Through class discussions, lectures, peer feedback, and reflection, students will gain a deeper understanding of their own public health competencies and professional strengths. Upon successful completion of the course, students will be equipped to present their strengths and accomplishments as a public health professional and leader in an online ePortfolio. This course is required for all students pursuing the capstone option for the MPH culminating experience.

PUBH 5536. Public Health Practicum. Required as part of the M.P.H. Program, the public health practicum is intended to give students the opportunity to develop practical skills and competencies in public health practice settings.

PUBH 5538. Health Services Administration: Program and Policy Evaluation. This course addresses the evaluation of changes in the health care delivery system, either through programs specifically implemented to achieve such changes or through changes in health care delivery/financing policies. The primary designs-before/after, concurrent/retrospective control, interrupted time-series--and their strengths and limitations. The course

includes didactic lectures and small group critical reading/presentation of current program/policy evaluations published in leading medical journals. This course is required for students in the Health Policy track of the M.P.H. Program. Prerequisite: Epidemiology II, Biostatistics II, or approval of instructor.

PUBH 5540. Leadership and Management in Public Health. This course introduces students to principles of management and leadership of global health programs and organizations in complex and challenging environments. Students will explore diverse health systems, organizational behavior, health policy, program design, and core management techniques. Required for students in the Global Health track of the M.P.H. Program.

PUBH 5541. Essential Skills in Global Health. This course introduces students to core research, field tools, assessment and implementation techniques, and evaluation methodologies commonly used in the field of global health. Students explore theories and practices used to analyze issues and intervene in global health and they examine determinants of global health and development from an interdisciplinary vantage point. Health and developmental issues across nations and cultures that require collective, partnership-based action are highlighted. The course is taught by an interdisciplinary team of faculty members using didactic, interactive and practical elements of instruction. This course is required for students in the Global Health track of the M.P.H. program and may be taken as credit toward the Global Health Certificate.

PUBH 5542. Foundations of Global Health. This course introduces students to key topics, concepts and methods in global health, examining determinants of complex issues and multi-dimensional approaches and interventions with a particular emphasis on low-resource settings. Taught by an interd sc plinary team of faculty members, this course uses didactic, interactive and practical elements of instruction of address intervational and cross-cultural health and developmental issues. At the conclusion of the course, students should be able to discuss major topics in global health and design suitable projects that address global health challenges. This course is required for students in the Global Health track of the MPH program.

PUBH 5547. Case Studies in COVID-19. This course will introduce students to coronavirus in a case study format with student group discussion facilitated by faculty and trainees who have substantial front-line medicine training and experience. Faculty members will present representative case reports and lead interactive discussions on pathophysiology, epidemiology, disease transmission, clinical presentation, differential diagnosis, diagnosis, and management as well as public health surveillance and containment.

PUBH 5549. Case Studies in Tropical Diseases This course introduces tropical diseases and parasitology in a clinical case study format with student gloup leadership that is facilitated by faculty with substantial front-line tropical medicine training and experience. Written case protocols will be presented by faculty members and Infectious Disease fellows/Intern I Medicine residents who will lead an interactive discussion involving pathophysiology, clinical presentation, differential diagnosis, diagnosis and treatment. This course may be taken as elective credit toward the M.P.H. degree and the graduate certificate in global health. Summer.

PUBH 5550. Global Health Politics and Policy. Global Health Politics and Policy introduces core global health problems facing the world's populations today and examines the efforts taken to improve health at a global level. It focuses on the social and political movements of global health issues and how these forces create and shape global health policy both in the U.S. and among the G8 nations. This course is required for students in the Global Health track of the Master of Public Health (MPH) program and it may be taken for credit toward the graduate certificate in global health. Spring.

PUBH 5557. Protocol Development for Global Health. This course focuses on development of the individual student's MPH thesis for the Global Health track. Each student will develop the background, methods, and limitations of their proposed research design in class. In addition, the course will include a one-on-one session with Dr. Yuwei Zhu to review the statistical analysis plan for the thesis work. The student's thesis adviser(s) will be invited to participate. This course is required for students in the Global Health track of the MPH Program.

PUBH 5560. Data Science for Learning Health Systems. This course is designed to provide an intuition-based primer in using rapidly growing biomedical data to support continuous learning in healthcare. Students will gain a conceptual overview of the Learning Health System and the infrastructure necessary to support its development. Students will also be exposed to key concepts in data science, 'big data', and the application of a diverse

methodologies to improve the quality of healthcare outside of traditional clinical trials and related approaches. No prior experience in data science is necessary, but an introductory statistics course will be helpful.

PUBH 5565. Implementation Science. This course serves as an introduction to the field of dissemination and implementation research. Students will learn the foundations of D&I including its theoretical underpinnings as well as how to design and conduct an implementation study. Additional topics such conducting D&I in community and public health settings, policy settings, and the global context will also be covered.

PUBH 5590. Independent Study. Content varies according to individual needs and interests. A contract is made between the student and the faculty sponsor, with copies for the student, the sponsor, the program director, and the student's record. MPH Program Director approval required.

PUBH 5599. MPH Thesis Research I. The primary objective is the completion of the MPH thesis. Each student will work independently and coordinate research activities with their thesis adviser(s) and thesis readers.

PUBH 7999. MPH Thesis Research II. In this research seminar required as part of the M.P.H. Program, second-year students present the results of their master's thesis research. Each 40-minute presentation addresses the background and significance, methods, results, and public health/research implications. Presentations are scheduled through the course director on a first come, first served basis. Before presenting their work, students must obtain the approval of their thesis committee.

APPLIED CLINICAL INFORMATICS

Courses leading to the Master of Science (Applied Clinical Information)

ACI 6110. Introduction to Clinical Informatics. This course provides healthcare professionals with a basic and practical understanding of fundamental concepts in clinical informatics. Topics covered in the course include a history of biomedical informatics, review health information systems, clinical decision support, quality improvement, consumer health, human-system interactions, and others. Completion of this course will lay the groundwork for subsequent deep study of many of the individual topics covered.

ACI 6111. Foundations of Health Information Technology. This course will provide a strong foundation for understanding the current state and key topics in health information technology. Students will begin with a review of computer programs and systems, and then build on top of this framework detailed information on the structure of health care data and the architecture of supporting systems. Data exchange, interoperability and data networks will be covered, along with key concerts for data security and privacy. Students will utilize multiple modalities of digital learning, and will participate in projects at different points during the course. Health information technology skills and knowledge will be assessed incrementally throughout the course.

ACI 6112. The Health System. This introductory course provides a broad overview of actors & organizations comprising our health care systems as well as the the societal and organizational trends facing consumers, clinicians, executives, and policy-makers. It will provide an overview of some of the major characteristics of the American health care system that in turn drive health care delivery and clinical informatics priorities. Topics will include a historical overview of the American Health Care system, health care economics and financing, current regulatory issues, and other factors both influencing current informatics initiatives and suggesting future opportunities for innovative informatics solutions.

ACI 6120. Clinical Decision Support and Evidence-Based Patient Care. This course will focus on the design, implementation, and evaluation of clinical decision support features of clinical information systems. Topics to be addressed include cognitive aspects of human decision making, decision science, knowledge management, workflow, evidence-based patient care, and facilitated information retrieval. Many existing CDS examples will be reviewed and evaluated and students will be expected to design a novel CDS as part of their final project.

ACI 6121. Clinical Information System and Applications. The digitization of healthcare data and delivery of care functionality has been occurring on the small scale for nearly 50 years in clinical information systems. Clinical information systems are comprised of multiple components that comprise clinical information. Beginning in the 1990s, electronic health record (EHR) systems began to emerge as a foundational tool for clinical information

systems that brought together various aspects of healthcare such as billing, documentation, and order entry. By the mid-2000s the basic underpinnings of a comprehensive EHR were understood, but uptake was still very low. This situation changed fundamentally over the past decade and EHRs and related clinical information systems are now ubiquitous. The goal of this course is to provide a framework to understand the underpinnings of modern clinical information systems and the integration of these systems that enable their basic and extended functionalities. Furthermore, with healthcare consumers having more opportunities to be involved with their health information, we will explore the evolution of consumer informatics. Finally, we will discuss emerging trends in the digitization of healthcare data including mobile health, telemedicine, and voice technologies.

ACI 6122. Workflow, User-Centered Design, and Implementation. The course will cover three main topic areas: workflow, user-centered design, and implementation. Each topic area will include three course segments: principles, methods, and applications. In the principles section for each topic, the course will clearly define terminology related to the topic area (e.g., What is workflow?), review how key concepts relate to each other (e.g., relationship between human factors engineering and human-computer interaction), and examine the relevance of the topic area in Applied Clinical Informatics. The methodology section for each topic will address qualitative, quantitative, and computational methods used for the design, implementation, and evaluation of health information technology. The applications section for each topic will use case studies based in the topic area to examine the real world application of principles and methods. The course will cover a wide range of contexts, from homes/communities to organizations to a broader regional scale.

ACI 6130. Data to Knowledge (Clinical Data Standards). This course in troduces students to fundamental principles about terminologies and data standards and their importance in interoperability and health information exchange. It will focus on clinical data standards with respect to synt letter and son anxie interoperability by covering data exchange and messaging standards (e.g., HL7), clinical terminology standards (e.g., SNOMED), document standards (e.g., HL7 CDA).

ACI 6131. Clinical Information System Lifecycle. The course will cover all aspects of designing, implementing and supporting systems. The course will be taught with reference to both the System Development Life Cycle (SDLC) and Information Lifecycle Management (L.M) frameworks. Areas covered will include project conceptualization, methods for requirements gathering, risk analysis and mitigation, total cost of ownership, and implementation and support. Planning and management of disaster recovery and business continuity will also be covered, as well as methods of evaluating effectiveness and return on investment.

ACI 6132. Management and Organizational Change. This course will focus on the management skills needed to direct the informatics activities of large organizations, and to lead changes in technology that may be disruptive. As part of the course curriculum, students will learn leadership models, processes, and practices, effective interdisciplinary communication and team formation, project management, and strategic and financial planning for new clinical information systems.

ACI 7110. Practicum Experience This course will arrange for students to rotate through health IT operational teams based on their interests and team availability. As part of being embedded in an IT operation, students will be expected to complete limited assignments to advance the team agenda.

ACI 7111. Capstone Project Planning. Students will begin the process of planning for their second year Capstone project beginning with a faculty mentor selection, needs assessment and design phase leading up to a formal project proposal and submission of development specifications at the conclusion of the second semester. Project plans will be formally evaluated and will require approval prior to proceeding to implementation and evaluation.

ACI 7120. Practicum Experience. This course will arrange for students to rotate through health IT operational teams based on their interests and team availability. As part of being embedded in an IT operation, students will be expected to complete limited assignments to advance the team agenda.

ACI 7121. Capstone Project Planning. Students will continue the process of planning for their second year Capstone project. Project plans will be formally evaluated and will require approval prior to proceeding to implementation and evaluation.

ACI 7210. Practicum Experience. This course will arrange for students to rotate through health IT operational teams based on their interests and team availability. As part of being embedded in an IT operation, students will be expected to complete limited assignments to advance the team agenda.

ACI 7211. Capstone Project Implementation and Evaluations. Based on an approved project plan from the first year, students will implement and evaluate a Capstone project in conjunction with a clinical informatics operations team at their home institution. The Capstone Project is designed to provide students with knowledge and skills required to design and conduct applied research studies to evaluate the efficacy of informatics applications in the clinical environment. Based on personal career objectives and informatics challenges that they identify in practicum course, the capstone project will have the flexibility to be completed as a group or individually. Each student will have a faculty mentor and, if applicable, a practice mentor within the student's home department/organization.

ACI 7220. Practicum Experience. This course will arrange for students to rotate through health IT operational teams based on their interests and team availability. As part of being embedded in an IT operation, students will be expected to complete limited assignments to advance the team agenda.

ACI 7221. Capstone Project Implementation and Evaluations. Based on an approved project plan from the first year, students will implement and evaluate a Capstone project in conjunction with a clinical informatics operations team at their home institution. The Capstone Project is designed to provide students with knowledge and skills required to design and conduct applied research studies to evaluate the efficiency of informatics applications in the clinical environment. Based on personal career objectives and informatics challenges that they identify in practicum course, the capstone project will have the flexibility to be completed as a gloup or individually. Each student will have a faculty mentor and, if applicable, a practice mentor within the student's home department/organization.

CLINICAL INVESTIGATION

Courses leading to the Master of Science in Clinical Investigation

MSCI 5000. Drug and Device Development. This sem mar styled course is designed to provide an overview of the drug and device development process and will include issues of drug discovery, pre-clinical drug development, Phase I through IV human testing, device development and the role of the FDA in regulatory affairs. Learning objectives will include: 1. To provide an overview of the drug development process from initial compound discovery, through clinical trials, to post marketing issues; 2. To provide an overview of device development, and to contrast this to the process of drug development; 3. To provide some insight into the function of the Food & Drug Administration(FDA); 4. To discuss topical issues related to drugs, devices, and the FDA by using current events in the news. [3]

MSCI 5001. Grant Writing. [Also listed as PUBH 5517] This course provides a foundation in grant writing for the early career scientist. Core topics include an overview of funding agencies and award mechanisms, as well as how to identify funding opportunities plan an application, construct an impactful research plan, develop a budget, and succeed at grantsmanship. Optional sessions discuss career development awards, research mentorship, VUMC institutional awards and resources, VA grants, NIH biosketch development, and training in the responsible conduct of research. Students will also learn how grants are reviewed and scored, complete a grant review, and participate in a mock study section. [1]

MSCI 5002. Medical & Grant Writing for Clinical Investigators. This course is designed to teach clinical investigators medical writing skills required to publish scientific articles in a peer-reviewed medical journal. Since trainees in the MSCI program are expected to complete their Master's thesis based on their research project in the Spring of year 2, this course is scheduled prior to this deadline to assist students in writing their thesis/paper. Teaching will consist of demonstrations and discussions of how to improve the writing quality using each student's thesis-in-progress as an example. Students will be expected to write and revise their Master's thesis as course-work, no additional written assignments will be required. [2]

MSCI 5003. Genetics, Genomics, and Molecular Medicine. The main goal of this course is to provide an up to date perspective in genomics as it applies to clinical practice and medical research and thus to enhance knowledge and skills in this rapidly evolving field. This course is designed to give physician and life-scientist trainees an

overview of genomic medicine and how best to utilize it in both clinical practice and research projects. The course will introduce students to key concepts in genetics and how these concepts affect genomic data interpretation and study design. Students will learn about a number of approaches that can be used to biologically test these data. The course format will be a mix of interconnected lectures, hands-on workshops, supplemented by online training modules. [4]

MSCI 5005. Case Studies in Clinical Investigation I. The Case Studies I course is designed to utilize a studio process to enrich trainee research. Studios are structured, dynamic sessions which bring together relevant research experts with the purpose of enhancing research quality, improving funding success, fostering advances in clinical practice and improvements in patient health, increasing publications and generating new hypotheses. Participants include 2-6 experienced faculty, your mentor, your MSCI peers, and the MSCI program directors. You choose the most appropriate studio depending on the stage of your research: hypothesis generation, aims, study design, implementation, analysis and interpretation, translation, manuscript development, or grant development. Presentations should be conducted as if presenting at a research conference. Attendance at peers' studios is expected as it will foster critical thinking from an interdisciplinary approach, collegiality, and collaboration. [1]

MSCI 5009. Biostatistics I. This course will teach practical, modern biostatistical skills and help the student to become multilingual regarding statistical software. Students will use several statistical software packages to learn data analysis methods for reproducible research using actual clinical research data sets. Students will also learn about statistical power and sample size calculations using the software PS and nQuery Advacor. An emphasis will be placed on performing statistical analyses and interpreting output. Common y used statistical methods will be explained as well as the techniques that experienced biostatisticians use to analyze data. [4]

MSCI 5015. Biostatistics II. The primary focus of Biostatistics II is the multivaliable regression model which is the fundamental tool that researchers use for prediction, effect estimation, and hypothesis testing. This course covers the most commonly used regression models (linear, logistic, ordinal, time-ty-event, and serial) plus general methods applicable to all regression models such as restricted cubic splines, bootstrapping, multiple imputation for missing data, model diagnostics, and validation. There is an emphasis on aspects related to clinical and translational study design.

MSCI 5016. Research Skills. This course offer basic in truction and practical advice on a variety of issues and skills related to the conduct of clinical research, often with computer demonstrations. First or second year. Fall, Spring. [1]

MSCI 5017. Clinical Scientist Coreer Seminars. This seminar series, conducted in conjunction with the office of Clinical and Translational Scientist Development, features two pathways based on the trainee's current career stage: Translational Bridge - Post-doctoral MD and PhD investigators completing training and establishing careers in clinical and translational research; Newman Society - Junior faculty members pursuing a career as a physician-scientist or as a clinical educator with significant clinical research involvement. Topics of discussion will include academic 'rules of the road', time had agement, promotion/tenure issues, publication compliance, independence, scientific branding, grants management, and overall program evaluation. Trainees will also submit a poster abstract to the annual Clinical and Translational Research Forum hosted in the fall. The seminars occur throughout the MSCI matriculation. [1]

MSCI 5021. Master's Research I. Trainees will participate in this course throughout the first and second years of the MSCI program. The Master's Research course, along with the Case Studies series, is designed to guide trainees to the successful completion of the Master's Final project. All trainees are required to spend a minimum of 80% time in research activities, which include didactic coursework and activities within the mentor's lab. [1]

MSCI 5022. Master's Research II. Trainees will participate in this course throughout the first and second years of the MSCI program. The Master's Research course, along with the Case Studies series, is designed to guide trainees to the successful completion of the Master's Final project. All trainees are required to spend a minimum of 80% time in research activities, which include didactic coursework and activities within the mentor's lab. [3]

MSCI 5023. Master's Research III. Trainees will participate in this course throughout the first and second years of the MSCI program. The Master's Research course, along with the Case Studies series, is designed to guide trainees

to the successful completion of the Master's Final project. All trainees are required to spend a minimum of 80% time in research activities, which include didactic coursework and activities within the mentor's lab. [3]

MSCI 5024. Case Studies in Clinical Investigation II. The Case Studies II course provides an opportunity to present and discuss the progress and results of the trainees' primary MSCI project. In accomplishing this goal, the course utilizes a studio process and/or presentation format. You choose the most appropriate format depending on the stage of your research: presentation, manuscript studio, data analysis studio, or grant review studio. Studios will be conducted in the same manner as in Case Studies I. Presentations should be conducted as if presenting at a research conference. Attendance at peers' studios is expected as it will foster critical thinking from an interdisciplinary approach, collegiality, and collaboration. [1]

MSCI 5025. Research Extension. This course allows for an extension on the research project. [0]

MSCI 5028. Data Management for Clinical Research. This course is designed to teach important concepts related to research data planning, collection, storage and dissemination. Instructional material will cover best-practice guidelines for 1) investigator-initiated & sponsored research studies, 2) single- & multi-center studies, and 3) prospective data collection & secondary-reuse of clinical data for purposes of research. The curriculum will balance theoretical guidelines with the use of practical tools designed to assist in planning and conducting research. Real-world research examples, problem solving exercises and hands-on training will ensure students are comfortable with all concepts. [1]

MSCI 5029. Research Ethics and Scientific Integrity. This course is a systematic examination of the ethical concepts and standards of responsible conduct of research in biomedical science and elinical investigation. Its aim is to provide post-doctoral and graduate trainees in clinical research a framework in which to recognize, examine, resolve, and prevent ethical questions and conflicts in their professional work. Objectives-Upon successfully completing this class, students will be able to: 1. Trace the his torical development and critique concepts of scientific integrity and research ethics, including legal and socio-religious influences, in biomedical science and clinical investigation; 2. Recognize, identify, and analyze questions central to the ethical problems in biomedical science and clinical research using relevant professional and regulatory standards; 3. Formulate recommendations for preventing and/or resolving ethical conflict in biomedical science and clinical research and promoting responsible conduct of research; and 4. Identify the appropriate institutional resources for addressing questions related to ethics and integrity in biomedical science and clinical research in an demic and nonacademic settings. [1]

MSCI 5030. Epidemiology I. Introduction to epidemiology with an emphasis on clinical practice. Includes use of data to study disease etiology, progressis and treatment, concepts of interpreting tests, predicting outcomes, choosing treatments and reading medical liferature emphasized. First year. Fall. [4]

MSCI 5044. Clinical Trials. This course will cover design and data analysis for clinical trials in biomedical research. Primary topics include specification of study objectives, design options, ethical guidelines, randomization, blinding, sample size determination and power analysis, interim monitoring and data analysis appropriate for parallel, crossover, nested, factorial and group allocation designs. Other topics include role of FDA in the drug approval process, adaptive trial designs, non-inferiority trials and bio-equivalence trials. Emphasis is on practical use of methods rather than formal statistical theory. [3]

MSCI 5099. Independent Study. Students may choose a topic for independent study. This course is graded pass/fail. [1-5]

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 - B.S. (Saint Louis 2011); D.O. (LECOM 2015) [2019]
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 - B.A. (Washington University 1998); M.D. (Robert Wood Johnson Medical, New Brunswick 2002); M.S. (Pittsburgh 2009) [2013]
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 - B.S. (Illinois, Champaign 2008); M.A. (Loyola 2010); M.D. (Rush 2015) [2020]
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- RIMA N. ABOU-KHALIL, Assistant Professor of Clinical Hearing and Speech Sciences M.S. (Vanderbilt 1991); B.A., M.A. (American University of Beirut [Lebanon] 1992, 1993), Ph.D. (Vanderbilt 2003) [2009]
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 - B.A. (Dartmouth 1985); M.D. (Medical College of Georgia 2000) [2008]
- VANDANA G. ABRAMSON, Associate refessor of Medicine
 - B.A. (California, Berkeley 1996). M.D. (Chicago 2000) [2009]
- TAREK S. ABSI, Assistant Professor of Cardiac Surgery
 - B.S., M.D. (American University of Beirut [Lebanon] 1991, 1995) [2005]
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 - B.S. (Miami [Ohio] 2006); M.D. (Vanderbilt 2010) [2018]
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 - M.D. (Ain Shams [Egypt] 1993) [2009]
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- VANDITA ACHARYA, Assistant Professor of Clinical Pediatrics
 - B.A. (Miami 2013); M.D. (Miami [Florida] 2017) [2020]
- BENJAMIN ACHEAMPONG, Instructor in Clinical Pediatrics
 - M.B.Ch.B (Kwame Nkrumah University of Science and Technology [Ghana] 2004); M.P.H. (Vanderbilt 2019) [2020]
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 - B.A. (George Washington 2001); B.A. (Oxford [U.K.] 2003); M.D. (Virginia 2007) [2013]
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 - B.A. (Tennessee 2011); M.D. (Emory 2015) [2020]
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- ALEXANDER GUNTER AGTHE, Assistant Professor of Pediatrics M.D., Ph.D. (Freie Universitat Berlin [Germany] 1993, 1997) [2016]

- MARIA DEL PILAR AGUINAGA, A, Professor of Obstetrics and Gynecology at Meharry Medical College; Adjunct Professor of Medicine B.S., M.S. (Universidad Peruana 'Cayetano Heredia' [Peru] 1977, 1979); Ph.D. (Kanazawa [Japan] 1984) [1997]
- CHETAN AHER, Assistant Professor of Surgery B.S. (Loyola 2006); M.D. (Rush 2010) [2015]
- ASMA AHMAD, Associate Professor of Clinical Radiology & Radiological Sciences B.A. (Vanderbilt 1996); M.D. (Louisville 2001) [2009]
- MAHMOUD S. AHMED, Assistant Professor of Radiation Oncology
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 - M.D. (Bangalore [India] 1986) [2005]
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 - B.E. (Osmana [India] 2002); Ph.D., M.S. (Arizona State 2005, 2010) [2012]
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 - A.B. (Harvard 1998); M.D. (Johns Hopkins 2004)
 [2016]
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- KIMBERLY M. AKINYELE, Assistant in Medicine B.S.N., M.S.N. (Tennessee State 2000, 2017) [2018]

- KEERTHANA AKKINENI, Assistant Professor of Clinical Neurology
 - M.B.B.S. (PSG Institute of Medical Sciences and Research 2013) [2020]
- SYLVIE AKOTIE AKOHOUE, Assistant Professor of Family & Community Medicine at Meharry Medical College; Adjunct Assistant Professor of Medicine at Vanderbilt University School of Medicine
 - B.S. (National, San Diego 1986); M.S. (California State, Fresno 1990); Ph.D. (Pennsylvania State 2003) [2008]
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 - B.S., M.D. (American University of Beirut [Lebanon] 2003, 2007) [2019]
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- KIMBERLY MICHELLE ALBERT, Research Instructor in Psychiatry and Behavioral Sciences B.S. (Johns Hopkins 2008); Ph.D. (Vermont 2015) [2019]
- NORMAN ALBERTSON, Associate Clinical Professor of Pediatrics B.S. (Texas A & M 1981); M.D. (Texas, San Antonio 1991) [1995]
- DONALD J. ALCENDOR, Assistant Professor of Cancer Biology at Meharry Medical College; Adjunct Associate Professor of Pachology, Microbiology and Immunology B.S. (Southern, Baton Rouge 1983); M.S. (Louisiana State 1986); Ph.D. (California, Davis 1992) [2009]
- MELINDA C. ALDRICH, Assistant Professor of Medicine; Assistant Professor of Biomedical Informatics; Assistant Professor of Thoracic Surgery
 - B.A. (California, Santa Cruz 1992); M.P.H., Ph.D. (California, Berkeley 2003, 2007) [2010]
- ANSARI MUKHTAR ALEEM, Research Instructor in Biochemistry
 - B.S., M.S. (Aligarh Muslim [India] 1993, 1995); Ph.D. (Mumbai [India] 2004) [2018]
- LOUISE ANNE ALEXANDER, Instructor in Anesthesiology
 - B.S. (Clemson 2007); M.D. (Medical University of South Carolina 2013) [2019]
- MATTHEW R. ALEXANDER, Assistant Professor of Medicine
 - B.S. (Duke 2001); Ph.D., M.D. (Virginia 2011, 2013) [2020]

- TIFFANY C. ALEXANDER, Assistant Professor of Emergency Medicine B.S. (Bethel College [Indiana] 2006); M.D.
 - (Indiana, Indianapolis 2010) [2013]
- SOPHOCLIS PANTELIS ALEXOPOULOS, Associate Professor of Surgery B.S. (California, San Diego 1996); M.D. (Columbia 2000) [2017]
- DAVID D. ALFERY, Adjunct Associate Professor of Anesthesiology
 - B.A. (Tulane 1970); M.D. (Louisiana State, New Orleans 1976) [1995]
- WILLIAM C. ALFORD, Clinical Professor of Medicine, Emeritus
 - B.A., M.D. (Vanderbilt 1952, 1955) [1964]
- HOLLY M. ALGOOD, Associate Professor of Medicine; Associate Professor of Pathology, Microbiology and Immunology B.S. (Mount Union 1998) Ph.D. (Pittsburgh
 - B.S. (Mount Union 1998), Ph.D. (Pittsburgh 2003) [2003]
- YASMINE SUBHI ALI, Assistant Clinical Professor of Medicine
 3.A., M.D., M.S.C.I. (Vanderbilt 1997, 2001,
 - B.A. M.D., M.S.C.I. (Vanderbilt 1997, 2001, 2007) [2(08]
- MUKTAR HASSAN ALIYU, Professor of Health Policy Professor of Medicine; Assistant Professor of Family and Community Medicine at Meharry Medical College
 - M.B.B.S. (Ahmadu Bello [Nigeria] 1994); M.P.H. (George Washington 2002); Dr.P.H. (Alabama, Birmingham 2005) [2009]
- BRIAN F.S. ALLEN, Assistant Professor of Anesthesiology
 - B.A., M.D. (Washington University 2002, 2006) [2012]
- JENNIFER SHEREE ALLEN, Assistant in Pediatrics B.S.N. (Lipscomb 2011); M.S.N. (Vanderbilt 2016) [2016]
- LAVEIL M. ALLEN, Assistant Professor of Clinical Radiology & Radiological Sciences B.S. (Tennessee State 2004); M.D. (Meharry Medical 2010) [2015]
- PATRICIA FLYNN ALLEN, Adjunct Assistant Professor of Hearing and Speech Sciences B.A. (Fordham 1970); M.A., M.S. (Vanderbilt 1973, 1976) [2006]
- RYAN M. ALLEN, Research Instructor in Medicine B.S., M.S. (Arkansas State 2006, 2009); Ph.D. (Saint Louis 2014) [2018]
- JOHN DAVID ALLISON, Research Assistant Professor of Pharmacology B.A., Ph.D. (Texas 1984, 1992) [2015]
- RACHEL KATHLEEN ALLISON, Assistant in Medicine
 - B.S. (Tennessee, Martin 2006); M.S. (Vanderbilt 2016) [2017]

[2007]

- CHRISTINE S. ALLOCCO, Assistant in Medicine B.A. (Boston College 1990); M.S.N. (Vanderbilt 2001) [2004]
- BAN MISHU ALLOS, Associate Professor of Medicine
 - B.A. (Emory 1981); M.D. (UT Health Science Center [Tennessee] 1985) [1993]
- SUHAIL H. ALLOS, Assistant Clinical Professor of Surgery
 - M.B.Ch.B (Mosul [Iraq] 1980) [2000]
- MHD WAEL ALRIFAI, Assistant Professor of Pediatrics; Assistant Professor of Biomedical Informatics
 - M.D. (Damascus [Syria] 2008) [2016]
- ANDREW RYAN ALSENTZER, Clinical Instructor in Pediatrics
 - B.A., M.D. (Vanderbilt 2009, 2013) [2016]
- LAUREL V. ALSENTZER, Clinical Professor of Pediatrics
 - B.S.N. (Vanderbilt 1983); M.D. (Pennsylvania State 1987) [1993]
- D. PHILLIPS ALTENBERN, Clinical Instructor in Obstetrics and Gynecology B.A. (North Carolina 1984); M.D. (Vanderbilt 1988) [1992]
- LISA A. ALTIERI, Assistant Clinical Professor of Radiology and Radiolgocial Sciences B.S. (Murray State 1981); M.D. (Louisville 1985) [2012]
- RONALD DAVID ALVAREZ, Betty and Lonne 3. Burnett Chair in Obstetrics and Gynecology, Professor of Obstetrics and Gynecology, Chair of the Department of Obstetrics and Gynecology B.S., M.D. (Louisiana State 1979, 1933); M.B.A. (Auburn 2013) [2016]
- BRET ALVIS, Assistant Professor of Anesthesiology B.S., M.D. (Iowa 2005, 2009) [2014]
- VENKATARAMAN AMARNATH Research Associate Professor of Medicine B.S. (Madras Christian [India] 1768); M.S. (Indian Institute of Technology, Madras 1970); Ph.D. (Carnegie Mellon 1973) [1995]
- EMILY C. AMBROSE, Instructor in Otolaryngology
 Head and Neck Surgery
 - B.S., M.D. (North Carolina 2009, 2014) [2019]
- TYLER AMES, Assistant Professor of Clinical Oral and Maxillofacial Surgery
 - B.S. (Nevada, Reno 2007); D.M.D. (Nevada, Las Vegas 2012) [2014]
- LORI L. AMIS, Associate Clinical Professor of Pediatrics
 - B.S. (Auburn 1989); M.D. (UT Health Science Center [Tennessee] 1993) [1996]

- TERAKO S. T. AMISON, Assistant Professor of Clinical Psychiatry and Behavioral Sciences B.S. (Samford 1996); M.D. (Alabama, Birmingham 2001) [2010]
- J. DAVID AMLICKE, Assistant Clinical Professor of Medicine B.A. (Williams 1980); M.D. (Northwestern 1988)
- GUSTAVO G. C. AMORIM, Research Assistant Professor of Biostatistics B.Sc., M.Sc. (Universidade Federal de Minas
 - Gerais [Brazil] 2007, 2010); Ph.D. (Auckland [New Zealand] 2014) [2018]
- OLUWATOBI A. AMOSUN, Assistant Clinical Professor of Pediatrics B.S. (Vanderbilt 2000); M.D. (Pittsburgh 2004) [2009]
- JENNIFER WHISENANT AMUNDSON, Research Assistant Professor of Medicine B.S. (North Carolina State 2006); M.E., Ph.D. (Vanger lilt 2008, 2015) [2016]
- HANBUNG AN, Research Assistant Professor of Otolaryngology Head and Neck Surgery 5.5., M.S. (Liaoning [China] 1993, 1996); Ph.D. (Northeast Normal [China] 1999) [2006]
- UCHENNA E. ANANI, Assistant Professor of Clinical Pediatrics
 - B.S., M.D. (Howard 2010, 2012) [2018]
- KNLSTEN K. ANCELL, Assistant Professor of Clinical Medicine
 - B.S. (Missouri State 2001); M.D. (Missouri, Saint Louis 2005) [2011]
- JONATHAN W. ANDERECK, Assistant Professor of Emergency Medicine B.A., M.D., M.B.A. (Vanderbilt 2010, 2015, 2015) [2019]
- SHILO ANDERS, Research Associate Professor of Anesthesiology; Research Associate Professor of Computer Science; Research Assistant Professor of Biomedical Informatics

 B. A. (Montana Western 2002); M. A. (Dayton
 - B.A. (Montana Western 2002); M.A. (Dayton 2004); Ph.D. (Ohio State 2008) [2011]
- SHANEDA N. WARREN ANDERSEN, Adjunct Assistant Professor of Medicine B.S., M.S., Ph.D. (Wisconsin 2004, 2008, 2013) [2017]
- ADAM W. ANDERSON, Professor of Biomedical Engineering; Professor of Radiology & Radiological Sciences B.A. (Williams 1982); M.S., M.Phil., Ph.D. (Yale 1984, 1986, 1990) [2002]
- BRENT C. ANDERSON, Assistant Professor of Clinical Medicine B.A., M.D. (Mercer 1997, 2001) [2010]

- CARL A. ANDERSON, Assistant in Pediatrics; Instructor in Nursing B.S.N. (Tennessee Technological 1997); M.S.N. (Vanderbilt 2001); D.N.P. (Northeastern 2015)
- JAMES CHARLES ANDERSON, Clinical Professor of Pediatrics
 - B.A. (Illinois Wesleyan 1985); M.D. (Vanderbilt 1989) [1993]
- JULIA L. ANDERSON, Assistant Professor of Pediatrics
 - B.S. (University of the South 1996); M.D. (Mercer 2001); M.S.C.I. (Vanderbilt 2008) [2008]
- KATHERINE C. ANDERSON, Assistant in Medicine
 - B.A. (Miami [Ohio] 2014); Sc.M. (Johns Hopkins 2019) [2019]
- MARGARET S. ANDERSON, Assistant in Pediatrics; Instructor in Nursing B.S. (Tennessee, Chattanooga 1986); M.S.N. (Vanderbilt 1994); D.N.P. (Alabama, Huntsville 2017) [2002]
- MORGAN DEAN ANDERSON, Assistant Professor of Clinical Radiology and Radiological Sciences B.S. (Tennessee 2005); M.D. (UT Health Science Center [Tennessee] 2009) [2014]
- REBECCA WYLIE ANDERSON, Assistant Professor of Clinical Medicine B.S., M.S., M.D. (Alabama, Birmingham 2004, 2005, 2009) [2013]
- TED L. ANDERSON, Betty and Lonnie S. Burnett Chair in Obstetrics and Gynecology; Professor of Obstetrics and Gynecology B.S., M.S. (Southern Mississippi 1976, 1978), Ph.D., M.D. (Vanderbilt 1985, 1933) [2002]
- TUCKER ANDERSON, Assistant Professor of Clinical Pediatrics
 - B.S. (Freed-Hardeman 2010); M.D. (UT Health Science Center [Tennessee] 2014, [2020]
- BRUNO DE BEZERRIL ANDPADE, Adjunct Assistant Professor of Medicine M.D. (Universidade Federal da Bahia [Brazil] 2006) [2017]
- ROCHELLE F. ANDREOTTI, Professor of Clinical Obstetrics and Gynecology; Professor of Clinical Radiology and Radiological Sciences B.S., M.D. (Florida 1975, 1978) [2005]
- E. JAMES ANDREWS, JR., Adjunct Associate Professor of Radiology and Radiological Sciences B.A. (Colorado 1962); M.D. (Florida 1966) [2002]
- JENNIFER C. ANDREWS, Associate Professor of Pathology, Microbiology and Immunology;
 Associate Professor of Pediatrics
 B.S. (Florida State 1999); M.D. (South Florida 2004); M.S.C.R (Emory 2011) [2018]

- WILLIAM A. ANDREWS, Assistant in Surgery B.A. (Trevecca Nazarene 2006); M.S.N. (Vanderbilt 2011) [2011]
- JAMES MICHAEL ANDRY, Assistant Professor of Neurology
 - B.S. (Saint Mary's [Texas] 2008); M.D. (Texas, Southwestern Medical 2012) [2017]
- FEDERICA B. ANGEL, Assistant Professor of Clinical Medicine
 - B.A. (Texas 2001); M.D. (Texas Tech University 2008) [2011]
- NARENDER ANNAPUREDDY, Assistant Professor of Medicine
 - Bachelor in Medicine (Osmania [India] 2007) [2014]
- KIM ANNIS, Assistant in Medicine B.S. (Wisconsin, Stout 1979); M.S. (Transylvania 1986); B.H.S. (Kentucky, Lexington 1996) [2013]
- JAMES WILLIAM ANTOON JR., Assistant Professor of Pediatric, B.A. (Davidson 2004), M.S., M.D., Ph.D. (Tulane
 - 2005, 2012, 2012) (2019)

 CHEL KATURY I PRICE APPLE Assistant
- RACHEL KATHEYN PRICE APPLE, Assistant Professor of Pediatrics; Assistant Professor of Medicine
 - B.A. Princeton 2007); M.D. (Vanderbilt 2012)
- BARBARA A. AQUINO, Clinical Professor of Pediatrics
- B.S., M.D. (Santo Tomas [Phillipines] 1974, 1978) [2005]
- JENETH AQUINO, Associate in Radiology and Radiological Sciences
 - B.S. (St. Scholastica College [Philippines] 1990); A.D.N. (Aquinas College [Tennessee] 1997); B.S.N. (Middle Tennessee State 2005); M.S.N. (Belmont 2010) [2016]
- DEREK B. ARCHER, Research Instructor in Neurology
 - B.S. (Rose-Hulman Institute of Technology 2012); Ph.D. (Florida 2016) [2019]
- ARAVIND AREPALLY, Adjunct Professor of Radiology and Radiological Sciences B.A. (Mercer 1989); M.D. (Emory 1993) [2015]
- MARY ANN THOMPSON ARILDSEN, Associate Professor of Pathology, Microbiology and Immunology
 - B.S., M.S. (Yale 1977, 1977); M.D., Ph.D. (Pennsylvania 1983, 1983) [2001]
- RONALD C. ARILDSEN, Associate Professor of Radiology and Radiological Sciences B.S., M.S. (Yale 1977, 1977); M.D. (Columbia 1981) [1992]
- LESLIE B. ARMISTEAD, Assistant in Medicine B.S.N. (Middle Tennessee State 2008); M.S.N. (Vanderbilt 2016) [2019]

- COLIN ARMSTRONG, Assistant Professor of Physical Medicine & Rehabilitation; Assistant Professor of Clinical Psychiatry and Behavioral Sciences; Psychologist Kim Dayani Center B.A. (California State, Bakersfield 1990); Ph.D. (San Diego State 1998) [2001]
- S. KRISTAN ARMSTRONG, Assistant in Psychiatry and Behavioral Sciences B.A. (Maryville 2008); M.S.S.W. (Tennessee, Nashville 2013) [2016]
- AMY C. ARNOLD, Adjunct Assistant Professor of Medicine
 - B.S. (Pacific University 2004); Ph.D. (Wake Forest 2009); M.S.C.I. (Vanderbilt 2014) [2013]
- DONALD H. ARNOLD, Professor of Pediatrics B.A., M.D. (Emory 1975, 1979); M.P.H. (Johns Hopkins 2006) [2002]
- SHANNA ALEXANDRIA ARNOLD, Adjunct Assistant Professor of Anesthesiology B.S. (Texas Christian 2003); Ph.D. (University of Texas Southwestern 2009); M.S.C.I. (Vanderbilt 2014) [2014]
- DAVID MICHAEL ARONOFF, Addison B. Scoville Jr. Chair in Medicine; Professor of Medicine; Professor of Medicine, Health, & Society; Professor of Obstetrics & Gynecology; Professor of Pathology, Microbiology and Immunology; Director, Division of Infectious Diseases B.S. (Indiana, Fort Wayne 1991); M.D. (Tufts 1995) [2013]
- DOMINIK ARONSKY, Adjunct Associate Professor of Biomedical Informatics M.D. (Berne [Switzerland] 1989); Ph.D. (Utal. 2000) [2000]
- SANDEEP SINGH ARORA, A. Sistant Professor of Radiology and Radiological Sciences M.B.B.S. (Delhi [India] 2007) [2014]
- CARLOS L. ARTEAGA, Adjunct Professor in Medicine
 M.D. (Universidad Católica de Guayaquil [Ecuador] 1980) [1988]
- CATHERINE ARTHUR-JOHNSON, Associate Professor of Clinical Pediatrics B.S. (Oakwood 1979); M.D. (Meharry Medical 1983) [1999]
- MUHAMMAD ASAD, Assistant Clinical Professor of Medicine
 - F.Sc. (Multan [Pakistan] 1986); M.D. (Nishtar Medical [Pakistan] 1992) [2009]
- SOHEYL ASADSANGABI, Assistant Professor of Clinical Obstetrics and Gynecology B.S.N. (Tennessee State 1996); M.S.N., D.N.P. (Vanderbilt 2004, 2013) [2006]

- MANUEL ASCANO, JR., Assistant Professor of Biochemistry; Assistant Professor of Pathology, Microbiology and Immunology B.S. (Illinois, Champaign 1997); Ph.D. (Cincinnati 2006) [2014]
- JUDY L. ASCHNER, Adjunct Professor of Pediatrics
 - B.S. (Union College [New York] 1977); M.D. (Rochester 1981) [2004]
- MICHAEL ASCHNER, Adjunct Professor of Pediatrics B.S., M.S., Ph.D. (Rochester 1980, 1983, 1985) [2004]
- NATHAN E. ASHBY, Associate Professor of Clinical Anesthesiology; Assistant Professor of Nursing
 - B.A. (Vanderbilt 1998); M.D. (UT Health Science Center [Tennessee] 2003) [2008]
- ANTHONY L. ASHER, Clinical Professor of Neurological Surgery B.S. (Kalamazoo 1982), M.D. (Wayne State 1987) [2012]
- LIND A.G. ASHFORD, Assistant Professor of Pediatrics
 - B.S., M.S. (Tennessee 1971, 1973); M.S., Ph.D. (Peal day 1982, 1988) [1995]
- DANIEL H. ASHMEAD, Professor of Hearing & Speech Sciences, Emeritus; Adjunct Professor of Hearing & Speech Sciences
 - Sc.B. (Brown 1976); Ph.D. (Minnesota 1983) [1984]
- JENNIFER SINGLETON ASHWORTH, Associate Clinical Professor of Pediatrics B.A. (Vanderbilt 1992); M.D. (Alabama, Birmingham 1997) [2000]
- MUHAMMAD ASLAM, Research Assistant Professor of Medicine M.B.B.S. (Nishtar Medical [Pakistan] 1981) [2010]
- RHEANNA N. ATA, Assistant Professor of Clinical Psychiatry and Behavioral Sciences B.A. (College of the Holy Cross 2006); M.A., Ph.D. (South Florida 2012, 2015) [2016]
- MARGARET ANN ATKINS, Clinical Instructor in Pediatrics
 - B.S. (Tennessee 2007); M.D. (UT Health Science Center [Tennessee] 2011) [2016]
- JAMES B. ATKINSON III, Professor of Pathology, Microbiology and Immunology B.A., M.D., Ph.D. (Vanderbilt 1973, 1981, 1981) [1985]
- STEPHANIE JANE ATTARIAN, Assistant Professor of Clinical Pediatrics B.A. (East Tennessee State 2004); M.D. (UT Health Science Center [Tennessee] 2009) [2018]

- ALBERT ATTIA, Associate Professor of Radiation Oncology; Associate Professor of Neurological Surgery
 - B.E., M.D. (Vanderbilt 2003, 2007) [2013]
- KATELYN KENNEDY ATWATER, Assistant Professor of Medicine
 - B.A. (California, Los Angeles 2005); M.D. (Texas, Houston 2012) [2015]
- CAROLYN S. AUBREY, Senior Associate in Orthopaedic Surgery B.S.N. (Evansville College 1973); M.S.N. (Vanderbilt 1974) [1991]
- CAROLYN AUDET, Assistant Professor of Health Policy
 - B.A. (Princeton 2000); Ph.D. (Vanderbilt 2006) [2008]
- JOSEPH M. AULINO, Associate Professor of Radiology & Radiological Sciences B.S. (Richmond 1991); M.D. (Medical College of Virginia 1995) [2001]
- THOMAS M. AUNE, Professor of Medicine; Associate Professor of Pathology, Microbiology and Immunology
 - B.S. (Rhodes College 1973); Ph.D. (UT Health Science Center [Tennessee] 1976) [1995]
- ANNE ELIZABETH AUSTIN, Assistant in Medicine
 - B.S.N. (Pennsylvania 2013); M.S.N. (Vanderbilt 2017) [2017]
- ERIC D. AUSTIN, Associate Professor of Pedianes B.A. (Pennsylvania 1996); M.D. (Emory 2001); M.S.C.I. (Vanderbilt 2008) [2008]
- LINDA L. AUTHER, Adjunct Assistant Professor, Hearing and Speech Sciences
 B.S., M.Ed. (James Madison Virginia) 1986, 1988); Ph.D. (Vanderbilt 1996) [1997]
- SAMEER KAUSHIK AVASARALA, Instructor in Medicine
 - M.B.B.S. (Kamineni Institute of Medical Sciences 2011) [2020]
- MALCOLM J. AVISON, Professor of Radiology and Radiological Sciences; Professor of Neurology; Professor of Pharmacology
 - B.A. (Cambridge College [Massachusetts] 1979); M.Phil., Ph.D. (Yale 1985, 1986) [2003]
- JOSEPH A. AWAD, Professor of Medicine B.A. (Vanderbilt 1980); M.D. (Washington University 1985) [1992]
- JULIO E. AYALA, Associate Professor of Molecular Physiology & Biophysics
 - B.S. (Duke 1997); Ph.D. (Vanderbilt 2003) [2005]
- GREGORY DANIEL AYERS, Senior Associate in Biostatistics
 - B.S. (Virginia Polytechnic Institute 1982); M.S., M.S. (Louisiana State 1985, 1990) [2006]

- SUZANNE SARAH AZZAZY, Assistant Clinical Professor of Psychiatry B.S. (East Tennessee State 2010); D.O. (Lincoln Memorial 2014) [2019]
- KENNETH S. BABE, JR., Assistant Professor of Medicine
 - B.S. (Pennsylvania State 1987); M.D. (Vanderbilt 1991) [1997]
- MATTHEW D. BACCHETTA, H. William Scott Jr. Chair in Surgery #2; Associate Professor of Thoracic Surgery; Associate Professor of Biomedical Engineering; Associate Professor of Cardiac Surgery
 - B.S.E. (Duke 1985); M.B.A., M.A. (Virginia 1991, 1994); M.D. (Cornell 1998) [2018]
- BRIAN O. BACHMANN, Stevenson Chair;
 Professor of Chemistry; Professor of
 Biochemistry; Professor of Pharmacology; CoDirector of the Program in Biochemistry and
 Chemical biology
 - B.S. (Vi ginia Polyte same Institute 1992); M.S. (So tthem Methodist 1994); M.A., Ph.D. (Johns Hepkins 1997, 2000) [2003]
- Professor of Medicine; Assistant Professor of Biomedical Informatics; Assistant Professor of Hearb Policy; Assistant Professor of Physical Medicine and Rehabilitation
 - P.A. (Washington University 2000); M.D. (Vanderbilt 2006) [2014]
- KATHERINE NEUBECKER BACHMANN, Assistant Professor of Medicine A.B. (Harvard 2006); M.D. (Texas, Southwestern Medical 2009) [2015]
- DAVID M. BADER, Professor of Medicine, Emeritus
 - B.A. (Augustana [South Dakota] 1974); Ph.D. (North Dakota, Williston 1978) [1995]
- JAYANT BAGAI, Assistant Professor of Medicine M.D. (Delhi [India] 1994) [2008]
- KANIKA BAGAI, Associate Professor of Neurology M.B.B.S. (Delhi [India] 1995); M.S.C.I. (Vanderbilt 2010) [2004]
- SARAH M. BAGGETTE, Assistant in Anesthesiology B.A. (Birmingham-Southern 1993); B.S.N. (Alabama, Birmingham 1997); M.S.N. (Johns Hopkins 2001) [2009]
- NICOLE O. BAGGOTT, Clinical Professor of Pediatrics B.S. (Vanderbilt 1995); M.D. (Tulane 2000)

[2004]

- FRANCESCA BAGNATO, Assistant Professor of Neurology
 - M.D., Ph.D. (Rome [Italy] 1996, 2005) [2010]

- YASMIN BAHORA, Assistant Professor of Clinical Pediatrics
 - B.A. (Tulane 2007); D.O. (WVSOM 2011) [2016]
- LALEH BAHRAMI, Clinical Instructor in Pediatrics B.A. (Duke 2010); M.D. (Tulane 2014) [2019]
- MINGFENG BAI, Assistant Professor of Radiology and Radiological Sciences
 - B.S. (Nankai [China] 2001); M.S., Ph.D. (Vanderbilt 2003, 2007) [2017]
- ELIZABETH W. BAILES, Clinical Professor of Pediatrics
 - B.S., M.D. (Kentucky, Lexington 1998, 2002) [2005]
- AMELIA P. BAILEY, Assistant Clinical Professor of Obstetrics and Gynecology
 - B.A. (Mississippi 2002); M.D. (Mississippi, Jackson 2007) [2015]
- BROOKE BAILEY, Clinical Instructor in Nursing; Assistant in Medicine
 - B.A. (Southern Adventist 2008); B.S.N. (Loma Linda 2012); M.S.N. (California, Los Angeles 2014); D.N.P. (Vanderbilt 2016) [2014]
- CHRISTINA EDWARDS BAILEY, Assistant Professor of Surgery
 - B.S. (Louisiana Tech 2001); M.D. (Louisiana State, Shreveport 2005); M.S.C.I. (Vanderbilt 2010) [2015]
- AMANDA LEAH BAKER, Assistant in Medicine B.A. (University of the South 2004); B.S.N. (Samford 2007); M.S.N. (Vanderbilt 2013) [2014]
- DAVID ALAN BAKER, Associate Clinical Professor of Surgery B.G.S. (Kentucky, Lexington 1975); M.D. (Louisville 1979); M.B.A. (Tennessee 2004) [2015]
- DEBORAH D. BAKER, Assistant in Medicine B.S. (Pepperdine 2007); M.S. (Harding 2010) [2013]
- MALLORY BAKER, Clinical Instructor in Pediatrics
 - B.S. (Middle Tennessee State 2008); M.D. (UT Health Science Center [Tennessee] 2013) [2018]
- MICHAEL T. BAKER, Assistant Professor of Medicine
 - B.A. (Tennessee 1986); M.D. (Tennessee, Memphis 1990) [2008]
- TRACIE BAKER, Assistant in Anesthesiology B.S.N. (Missouri, Saint Louis 2007); M.S.N. (Alabama, Birmingham 2014) [2015]
- LINDSEY AMINA BAKSH, Instructor in Nursing; Instructor in Obstetrics & Gynecology B.S. (California State 2005); M.S.N., D.N.P. (Vanderbilt 2007, 2019) [2010]

RAMYA BALACHANDRAN, Adjunct Assistant Professor of Otolaryngology - Head and Neck Surgery

- B.E. (Madras [India] 2001); M.S., Ph.D. (Vanderbilt 2003, 2008) [2008]
- RITA BALDI, Research Instructor in Psychiatry and Behavioral Sciences
 - Ph.D. (Szeged [Hungary] 2012) [2019]
- CYNTHIA A. BALDWIN, Senior Associate in Pediatrics
 - B.A. (Augustana [South Dakota] 1988); M.S. (San Diego State 2007) [2020]
- H. SCOTT BALDWIN, Katrina Overall McDonald Chair in Pediatrics; Professor of Pediatrics; Professor of Cell and Developmental Biology B.A., M.D. (Virginia 1977, 1981) [2002]
- BRIAN BALES, Assistant Professor of Emergency Medicine
 - B.A. (DePaul 2000); M.D. (Indiana, Bloomington 2008) [2012]
- JUSTIN M. BALKO, Associate Professor of Medicine; Associate Professor of Pathology, Microbiology and immunology Tharm.D (SULYY, Buffalo 2004); Ph.D.
 - (Kentucky, Lexington 2009) [2013]
- STEPHEN K. BALL, Assistant Professor of Clinical Croiac Surgery
 - B.S. (Mississippi State 1983); M.D. (Mississippi 1987) [2019]
- Pathology at Meharry Medical College; Professor of Pathology, Microbiology and Immunology B.S. (Southern, Baton Rouge 1961); D.D.S., M.D. (Meharry Medical 1965, 1980) [2004]
- KEKI R. BALSARA, Assistant Professor of Cardiac Surgery
 - B.A., M.D., M.B.A. (Pennsylvania 1998, 2003, 2019) [2018]
- JEFFREY R. BALSER, Vice Chancellor for Health Affairs; Dean of Vanderbilt University School of Medicine; Professor of Anesthesiology; Professor of Medicine; Professor of Pharmacology B.S.E. (Tulane 1984); M.D., Ph.D. (Vanderbilt 1990, 1990) [1998]
- FRANCIS BALUCAN, Assistant Professor of Clinical Medicine
 - B.S., M.D. (Philippines 2003, 2008); M.B.A. (Indiana-Purdue, Indianapolis 2016) [2017]
- THOMAS A. BAN, Professor of Psychiatry, Emeritus
 - M.D. (Budapest University of Technology and Economics [Hungary] 1954) [1976]
- MARY BANACH, Adjunct Instructor of Biostatistics M.P.H., Ph.D. (California, Berkeley 1985, 2003) [2013]

- BABAK BANAN, Research Instructor in Surgery M.D. (Shiraz [Iran] 2008) [2019]
- ARNA BANERJEE, Assistant Dean for Simulation in Medical Education and Administration; Associate Professor of Anesthesiology; Associate Professor of Medical Education & Administration (VUMC); Associate Professor of Surgery M.D. (Calcutta [India] 1994) [2003]
- RITU BANERJEE, Associate Professor of Pediatrics B.A. (Swarthmore 1994); M.D., Ph.D. (Washington University 2003, 2003) [2016]
- CAROLINE TUCKER BANES, Assistant in Surgery B.A. (Lipscomb 2006); M.S.N. (Vanderbilt 2007) [2011]
- FILIP BANOVAC, Associate Professor of Radiology and Radiological Sciences B.S. (Duke 1993); M.D. (Medical College of

Virginia 1998) [2015]

- VIKRAM KUMAR BANSAL, Assistant Professor of Clinical Anesthesiology
 - B.A., M.D. (Buffalo 2006, 2010) [2015]
- SHICHUN BAO, Associate Professor of Medicine M.D. (Shanghai Second Medical [China] 1989); Ph.D. (Indiana, Indianapolis 1997) [2005]
- BEHIN BARAHIMI, Associate Professor of Clinical Ophthalmology & Visual Sciences; Assistant Professor of Clinical Ophthalmology and Visual Sciences
 - B.S., M.D. (Vanderbilt 2002, 2007) [2013]
- MATTHEW BRYAN BARAJAS, Instructor in Anesthesiology
 - B.S. (Rice 2010); M.D. (Columbia 2014) [2020]
- ADRIAN BARBUL, Professor of Surgely B.S. (City College of New York 1969); M.D. (University of Medicine and Prarmacy [Romania] 1974) [2015]
- NAIRA BAREGAMIAN, Assistant Professor of Surgery B.A. (California State, Northridge 1999); M.D. (St. George's, Grenada 2003); M.S.M. (Texas, Galveston 2007) [2014]
- AMY BARKER, Assistant in Obstetrics & Gynecology B.A. (Baylor 1992); M.S.N. (Vanderbilt 1995) [2014]
- COLIN M. BARKER, Associate Professor of Medicine

(Tulane 2002) [2019]

- B.A. (Bucknell 1994); M.A., M.D. (Boston University 1997, 2001) [2019]
- EMILY CHISM BARKER, Assistant Professor of Medicine B.S. (California, Santa Barbara 1998); M.D.

- SHARI L. BARKIN, William K. Warren Foundation Chair in Medicine; Professor of Pediatrics; Professor of Health Policy; Director, Division of General Pediatrics
 - A.B. (Duke 1986); M.D. (Cincinnati 1991); M.S.H.S. (California, Los Angeles 1998) [2006]
- ALISON B. BARLOW, Assistant Professor of Clinical Obstetrics and Gynecology; Adjunct Assistant Professor of Nursing
 - B.S., M.S.N. (Vanderbilt 1995, 2000) [2006]
- APRIL LYNN BARNADO, Assistant Professor of Medicine
- B.S. (Davidson 2005); M.D. (Emory 2009) [2014]
- JULIE B. BARNES, Assistant in MedicineB.S.N. (Belmont 1995); M.S.N., Post Masters in Nursing (Vanderbilt 1999, 2012) [2001]
- JOEY V. BARNETT, Assistant Dean for Medical Student Research; Professor of Pharmacology; Professor of Medicine; Professor of Pathology, Microbiology and Imparatology; Professor of Pediatrics
 - B S (Sputhern Ind and 1980); Ph.D. (Vanderbilt 1936) [1992]
- DANIEL A. BAROCAS, Associate Professor of Urology; Associate Professor of Medicine B.A., P.S.E. (Pennsylvania 1992, 1992); M.D. (Johas Hopkins 2001); M.P.H. (Vanderbilt 2010) [2007]
- CLRISTOPHER M. BARON, Assistant Professor of Clinical Radiology & Radiological Sciences B.S. (Saint Edward's 2000); M.D. (Texas 2005) [2012]
- MICHAEL J. BARON, Assistant Clinical Professor of Psychiatry and Behavioral Sciences A.A. (Oxford College [Georgia] 1979); B.A. (Emory 1981); M.D., M.P.H. (Tulane 1986, 1986) [2003]
- TYLER W. BARRETT, Associate Professor of Emergency Medicine
 B.S. (Michigan 1997); M.D., M.S.C.I. (Vanderbilt 2001, 2010) [2005]
- RUBEN MARTINEZ BARRICARTE, Assistant Professor of Medicine; Assistant Professor of Pathology, Microbiology and Immunology B.Sc. (Navarra [Spain] 2006); M.Sc., Ph.D. (Universidad Complutense de Madrid [Spain] 2008, 2011) [2020]
- HEATHER BARROW, Associate Clinical Professor of Pediatrics B.S. (Tennessee 2002); M.P.H., M.D. (East
 - Tennessee State 2004, 2008) [2011]
- ANNE P. BARTEK, Assistant Clinical Professor of Psychiatry & Behavioral Sciences B.S., M.D. (Michigan 1975, 1979) [1990]

- MARY KATHRYN BARTEK, Assistant Clinical Professor of Pediatrics B.S. (Haverford 2002); M.D. (University of Washington 2007) [2013]
- ALYSSA BARTOK, Assistant in Medicine B.S.N., M.S.N. (Marquette 2009, 2014) [2017]
- DAVID BARTON, Clinical Professor of Psychiatry and Behavioral Sciences
 - B.S. (Alabama, Birmingham 1958); M.D. (Tulane 1962) [1971]
- JEFFREY P. BARTON, Assistant in Anesthesiology B.S., M.P.A.S. (Western Michigan 2004, 2007) [2013]
- LYNN P. BARTON, Assistant Clinical Professor of Psychiatry and Behavioral Sciences B.A. (Tulane 1963); M.S.S.W. (Tennessee 1977) [1986]
- JOHN ALLAN BARWISE, Associate Professor of Clinical Anesthesiology; Associate Professor of Clinical Neurological Surgery M.B.Ch.B (Zimbabwe 1983) [1998]
- IRVING Z. BASANEZ, Adjunct Assistant Professor of Otolaryngology - Head and Neck Surgery M.D. (Texas 2012) [2019]
- TANZILA BASHAR, Clinical Instructor in Pediatrics
 - B.S. (Tennessee 2011); M.D. (UT Health Science Center [Tennessee] 2016) [2019]
- SHARMIN BASHER, Assistant Professor of Medicine
 B.S., B.S., M.S. (South Carolina 2002, 2004, 2004); M.D. (Medical University of South Carolina 2008) [2014]
- JULIE A. BASTARACHE, Associate Professor of Medicine; Associate Professor of Cell & Developmental Biology; Associate Professor of Pathology, Microbiology and Immunology B.A. (College of the Holy Cross 1996); M.D. (Vanderbilt 1999) [2005]
- LISA BASTARACHE, Research Assistant Professor of Biomedical Informatics
 - B.S., M.S. (Chicago 2003, 2008) [2019]
- GERASIMOS BASTAS, Assistant Professor of Physical Medicine and Rehabilitation B.S. (Brown 2002); M.D., Ph.D. (Boston University 2010, 2010) [2014]
- SAMUEL R. BASTIAN, Associate Clinical Professor of Pediatrics B.S. (Middle Tennessee State 1984); M.D. (UT Health Science Center [Tennessee] 1989) [1996]
- COREY JAMAR BATSON, Instructor in Clinical Medicine; Instructor in Clinical Pediatrics B.S. (Xavier [Louisiana] 2005); M.D. (Meharry Medical 2015) [2018]

- JAMES H. BATSON, Assistant Clinical Professor of Pediatrics
 - B.A. (Transylvania 1992); M.D. (East Tennessee State 1996) [2003]
- JEANETTE RENEE BAUCHAT, Associate Professor of Anesthesiology B.S. (Michigan 1997); M.D., M.S. (Northwestern 2002, 2016) [2018]
- ASHLEY M. BAUER, Instructor in Otolaryngology Head and Neck Surgery
 - B.S., M.D. (Nebraska, Omaha 2009, 2014) [2019]
- JOSHUA A. BAUER, Research Assistant Professor of Biochemistry
 - B.S. (Wisconsin 2001); Ph.D. (Michigan 2006) [2012]
- LAURA BAUER, Adjunct Instructor in Surgery B.S. (Lipscomb 2004); M.H.S. (Duke 2007) [2018]
- HOWARD B. BAUM, Associate Professor of Medicine
 - B.A. (Texas 1983): M.B. (Johns Hopkins 1987) [2012]
- BAANI BAWA, Assistant Professor of Clinical Vegiatrics
 - B.A. (Columoia 2008); M.S. (Georgetown 2010); M.D. (Yulane 2015) [2018]
- ELIZ ABETH A. BAXTER, Assistant Clinical Professor of Psychiatry and Behavioral Sciences B.S. (Rhodes College 1985); M.D. (Vanderbilt 1990) [2003]
- CURTIS L. BAYSINGER, Professor of Anesthesiology
 - B.S., M.D. (Vanderbilt 1974, 1978) [2003]
- SUSAN E. BEAIRD, Assistant in Pediatrics; Instructor in Nursing B.S.N. (Middle Tennessee State 2006); M.S.N. (Vanderbilt 2007); D.N.P. (Samford 2011) [2009]
- XYLINA D. BEAN, Professor of Pediatrics at Meharry Medical College; Clinical Professor of Pediatrics at Vanderbilt University School of Medicine
 - B.A. (Mount Holyoke 1969); M.D. (Pennsylvania 1973) [2007]
- DEANA MARCI BEARD, Assistant in Medicine M.S.N. (Vanderbilt 1996) [2005]
- DAVID W. BEARL, Assistant Professor of Pediatrics B.S., M.D. (Minnesota 2006, 2011); M.A. (Duke 2017) [2017]
- R. DANIEL BEAUCHAMP, John Clinton Foshee
 Distinguished Chair in Surgery; Professor of
 Surgery; Professor of Cell and Developmental
 Biology; Adjunct Professor of Surgery at Meharry
 Medical College
 B.S. (Texas Tech University 1978); M.D. (Texas,
 Dallas 1982) [1994]

- DAWN M. BEAULIEU, Associate Professor of Medicine
 - B.S. (Tennessee 1993); M.D. (Memphis 2003) [2009]
- MATTHEW E. BECHARD, Research Instructor in Pathology, Microbiology and Immunology Ph.D. (Georgia 2010) [2010]
- DAVID E. BECK, Professor of Clinical Surgery B.S. (U.S. Air Force Academy 1975); M.D. (Miami [Florida] 1979) [2019]
- SONIA CAMPOS BECK, Assistant Professor of Clinical Psychiatry and Behavioral Sciences B.A., M.A. (West Chester 1986, 1988); Ph.D. (Tennessee State 2001) [2011]
- JONATHAN E. BECKER, Associate Professor of Clinical Psychiatry and Behavioral Sciences M.S., B.A. (Tulane 2003, 2004); D.O. (Des Moines University 2009) [2013]
- SAMUEL S. BECKER, Clinical Instructor in Otolaryngology - Head and Neck Surgery B.A. (Amherst 1991); M.A. (Boston University 1995); M.D. (California, San Francisco 2002) [2008]
- KATHRYN EBY BECKERMANN, Assistant Professor of Medicine B.S. (Southwestern [Texas] 2004); Ph.D., M.D. (Vanderbilt 2010, 2012) [2018]
- JOSHUA A. BECKMAN, Professor of Medicine B.A. (Pennsylvania 1987); M.D. (New York 1991); M.S. (Harvard 2001) [2015]
- MARIANA BEDOYA PULGAR-VIDAL, Assistant Professor of Clinical Pediatrics M.D. (Universidad de San Martin de Porres 2010) [2020]
- ALICIA BEEGHLY-FADIEL, As is ant Professor of Medicine
 B.S. (Massachusetts Institute of Technology 1995); M.P.H., Ph.D., M.Phil. (Val 2002, 2005, 2005) [2009]
- ROBERT O. BEGTRUP, Clinical Professor of Psychiatry and Behavioral Sciences M.D. (Tulane 1966) [1984]
- MILAD BEHBAHANINIA, Instructor in Clinical Surgery
 - B.S. (Arizona State 2010); M.D. (Arizona 2014) [2020]
- ADAM ARASH BEHROOZIAN, Instructor in Clinical Medicine; Research Fellow of Medicine B.A. (California, Riverside 2010); M.P.H. (Michigan 2012); M.D. (California, San Diego 2016) [2019]
- COSMIN ADRIAN BEJAN, Assistant Professor of Biomedical Informatics B.S., M.S. (Universitatea "Alexandru Ioan Cuza" [Romania] 1999, 2000); Ph.D. (Texas, Dallas 2009) [2014]

- RICHARD S. BELCHER, JR., Assistant Professor of Emergency Medicine
 B.A. (Tennessee, Chattanooga 1985); M.D. (UT Health Science Center [Tennessee] 1989) [1992]
- RYAN BELCHER, Assistant Professor of Otolaryngology - Head and Neck Surgery B.S. (Arkansas 2009); M.D. (Arkansas, Little Rock 2013) [2019]
- ABBES BELKHIRI, Assistant Professor of Surgery M.Phil. (Reading [U.K.] 1988); Ph.D. (Manitoba [Canada] 1995) [2005]
- DEANNA SMITH BELL, Associate Professor of Clinical Pediatrics B.S. (Belmont 1996); M.D. (East Tennessee State 2000) [2003]
- SHANNON SWEENEY BELL, Assistant in Surgery B.S. (Lipscomb 2000); M.S.N. (Vanderbilt 2003) [2006]
- SUNNY D. BELL, Assistant Professor of Clinical Pediatrics

 B.S. (De Paul 2005); W.D. (Indiana, Indianapolis 20(9)) [2013]
- SUSAN P. BELL, Assistant Professor of Medicine B.Sc., M.B.B.S. (London [U.K.] 1995, 1998); M.S.C.I. (Vanderbilt 2012) [2012]
- LEWIS BELLARDO, Clinical Instructor in Obstetrics and Gynecology B.A. (Vanderbilt 1987); M.D. (Kentucky, Lexington 1991) [2007]
- CHRISTINA MARIA BELLINO, Assistant in Pediatrics
 - M.S.N. (Texas, Arlington 2013) [2015]
- JENNIFER ELIZABETH BELOW, Associate Professor of Medicine B.A. (Carleton College 2003); Ph.D. (Chicago 2011) [2017]
- HARVEY W. BENDER, JR., Professor of Cardiac and Thoracic Surgery, Emeritus M.D. (Baylor 1959) [1971]
- DANIEL J. BENEDETTI, Assistant Professor of Pediatrics B.A. (Pennsylvania 2005); M.D. (University of
- Washington 2011) [2018] NANCY MAYER BENEGAS, Associate Professor of Clinical Ophthalmology and Visual Sciences; Associate Professor of Clinical Pediatrics
 - B.A. (Harvard 1988); M.D. (Minnesota 1993) [2009]
- JOHN G. BENITEZ, Adjunct Professor in Emergency Medicine; Adjunct Professor in Medicine
 - B.A. (Southern Illinois 1978); M.D. (Southern Illinois, Springfield 1981); M.P.H. (Pittsburgh 1995) [2008]

- MARIA C. BENITEZ-BRAUER, Associate Clinical Professor of Pediatrics
 - B.S. (Philippines 1985); M.D. (University of the East [Philippines] 1989) [2004]
- FROCK BENJAMIN, Assistant Professor of Clinical Psychiatry and Behavioral Sciences B.S., M.D. (Creighton 2012, 2016) [2020]
- JOHN T. BENJAMIN, Assistant Professor of Pediatrics M.B.B.S. (Lokmanya Tilak Municipal [India]

1998); M.P.H. (Medical University of South Carolina 2001) [2012]

- KELLY A. BENNETT, Professor of Obstetrics and Gynecology; Director, Division of Maternal Fetal Medicine
 - B.S. (Concordia, Montreal [Canada] 1988); B.S., M.D. (Memorial University of Newfoundland 1990, 1992) [2009]
- MARC L. BENNETT, Associate Professor of Otolaryngology - Head and Neck Surgery B.S. (Emory 1996); M.D. (Johns Hopkins 2000); M.Mgt. (Vanderbilt 2014) [2007]
- MONIQUE R. BENNETT, Research Instructor in Pediatrics
 - B.A., M.S., Ph.D. (Vanderbilt 2012, 2014, 2019) [2019]
- KELLY S. BENNIE, Assistant Clinical Professor of Pediatrics
 - B.S. (Miami [Ohio] 1988); M.D. (UT Health Science Center [Tennessee] 1994) [1997]
- MARGARET MCCULLOUGH BENNINGFIELD, Associate Professor of Psychiatry and Behavioral Sciences; Associate Professor of Psychology & Human Development; Associate Professor of Pediatrics
 - B.A. (Washington University 1996); *M.*D., M.S.C.I. (Vanderbilt 2002, 2011) [2008]
- CLAYNE BENSON, Assistant Professor of Clinical Anesthesiology
 - B.A. (Brigham Young 1978; W.D. (Georgetown 2004) [2018]
- ALAN R. BENTLEY, Assistant Vice Chancellor for Technology Transfer and Enterprise Development; Assistant Professor of Medical Education & Administration (VU) B.S., M.S. (Carnegie Mellon 1994, 1994) [2011]
- JOEL S. BENVENISTE, Assistant Professor of Clinical Radiology and Radiological Sciences
 B.S. (Illinois, Champaign 1976); M.D. (Illinois, College of Medicine, Chicago 1980); M.B.A. (Nova Southeastern 1993) [2016]
- TIMOTHY A. BERG, Assistant Clinical Professor of Surgery
 - B.S., M.D. (Wake Forest 1980, 1984) [2016]

- KIMBERLY C. BERGERON, Associate Clinical Professor of Pediatrics B.S. (Millsaps 1983); M.D. (Mississippi, Jackson 1993) [1998]
- RICHARD A. BERKMAN, Assistant Professor of Neurological Surgery B.A. (Harvard 1983); M.D. (New York 1987) [2016]
- JORDAN D. BERLIN, Ingram Professor of Cancer Research; Professor of MedicineB.S. (Illinois, College of Medicine, Champaign 1985); M.D. (Illinois, Chicago 1989) [1999]
- ROBERT J. BERMAN, JR., Associate Clinical Professor of Pediatrics B.A. (Rice 1993); M.D. (Tennessee, Memphis 1997) [2002]
- SUZANNE K. BERMAN, Associate Clinical Professor of Pediatrics B.A. (Rice 1994); M.D. Tennessee, Memphis 1998) [2002]
- GORDON It. BERNARD, Senior Associate Dean for Clinical Research, Welinda Owen Bass Chair in Medicine; Progressor of Medicine
 - **5.5.** (Southern, Baton Rouge 1972); M.D. (Louisiana State 1976) [1981]
- YVONNE D. BERNARD, Assistant in Pediatrics B 5.N. (Aquinas College [Tennessee] 2000); M.S.N. (Vanderbilt 2009) [2016]
- KATIE BERNAS, Assistant in Medicine B.A. (Florida 2006); M.P.A.S. (Nova Southeastern 2009) [2018]
- WILLIAM BERNET, Professor of Psychiatry, Emeritus A.B. (College of the Holy Cross 1963); M.D. (Harvard 1967) [1992]
- KEVIN MICHAEL BERRY, Assistant Professor of Clinical Physical Medicine and Rehabilitation B.S. (Scranton 2009); M.D. (Pennsylvania State 2013) [2017]
- LYNNE D. BERRY, Research Assistant Professor of Biostatistics B.A. (Wellesley 1994); Ph.D. (Vanderbilt 1997)
- PHILLIP D. BERTRAM, Associate Clinical Professor of Medicine B.S. (Tennessee Technological 1966); M.D. (UT Health Science Center [Tennessee] 1968) [1983]

[2018]

- LAURA MARI BESKOW, Ann Geddes Stahlman Chair in Medical Ethics; Professor of Health Policy B.S. (Jowa State 1985): M.P.H. (Boston
 - B.S. (Iowa State 1985); M.P.H. (Boston University 1995); Ph.D. (North Carolina 2005) [2017]

- FRED H. BESS, Vickie and Thomas Flood Chair in Hearing and Speech Sciences; Professor of Hearing and Speech Sciences; Professor of Otolaryngology - Head and Neck Surgery A.B. (Carthage 1962); M.S. (Vanderbilt 1964); Ph.D. (Michigan 1970) [1976]
- AMY R. BEST, Assistant Clinical Professor of Psychiatry and Behavioral Sciences B.S. (Indiana, Bloomington 2002); M.D. (Cincinnati 2007) [2012]
- ALBERT H. BETH, Professor of Molecular Physiology and Biophysics, Emeritus B.S. (Murray State 1974); Ph.D. (Vanderbilt 1977) [1977]
- KRISTINA ANN BETTERS, Assistant Professor of **Pediatrics**
 - B.S., M.D. (Florida 2008, 2011) [2017]
- JON E. BETTS, Associate Clinical Professor of **Pediatrics**
 - B.S. (Vanderbilt 1992); M.D. (Alabama, Birmingham 2000) [2003]
- NANCY GRAVES BEVERIDGE, Clinical Professor of Pediatrics
 - B.A. (North Carolina 1984); M.D. (Wake Forest 1988) [1991]
- ROBEL BEYENE, Assistant Professor of Surgery B.A. (Texas 2005); M.D. (Cornell 2011) [2018]
- BRUCE R. BEYER, Associate Professor of Clinical Obstetrics and Gynecology B.A., M.D. (Vanderbilt 1977, 1981) [1986]
- DEBORAH D. BEYER, Clinical Professor of **Pediatrics**
 - B.S. (Pepperdine 1987); M.D. (Vanderbilt 199 [1995]
- RIHA BHATT, Assistant Professor of Pediatrics B.S. (William and Mary 2001): M.D. (Wedical College of Virginia 2006) [2018]
- SUJOY BHATTACHARYA, Research Assistant Professor of Ophthalmology & Visual Sciences B.Sc., M.Sc. (Ambedkar Medical [India] 1994, 1996); Ph.D. (Jadavpur [India] 1999) [2018]
- GAUTAM BHAVE, Assistant Professor of Medicine; Assistant Professor of Cell and **Developmental Biology** B.G.S. (Cornell 1996); Ph.D., M.D. (Baylor 2002, 2004) [2010]
- ITALO O. BIAGGIONI, David Robertson, M.D. Professorship in Autonomic Disorders; Professor of Medicine; Professor of Pharmacology M.D. (Universidad Peruana 'Cayetano Heredia' [Peru] 1980) [1986]
- ADRIANA BIALOSTOZKY, Assistant Professor of **Pediatrics** M.D. (Universidad Nacional Autónoma de México 1994) [2004]

- DAVID P. BICHELL, William S. Stoney, Jr. Chair in Cardiac and Thoracic Surgery; Professor of Clinical Cardiac Surgery B.A. (Johns Hopkins 1980); M.D. (Columbia 1987) [2006]
- RONALD J. BIERNACKI, Assistant Professor of Clinical Ophthalmology and Visual Sciences B.A. (Pennsylvania State 1981) [2009]
- BRIAN STUART BIESMAN, Assistant Clinical Professor of Ophthalmology and Visual Sciences B.S., M.D. (Michigan 1984, 1988) [2003]
- VIRGIL L. BIGHAM IV, Clinical Instructor in **Pediatrics**
 - B.A. (Mississippi 1988); M.D. (Mississippi, Jackson 1993) [2019]
- DANIEL H. BILLER, Associate Professor of Clinical Obstetrics and Gynecology B.A. (Texas 1994); M.D. (UT Health Science Center [Tennessee] 1999, M.Mgt. (Vanderbilt 2014) [2007]
- FREDERIC T. BILLINGS IV, Associate Professor of Anosthesiology: Associate Professor of Medicine B.J. (Washington and Lee 1998); M.D. Louisiara State 2002); M.S.C.I. (Vanderbilt 2010) [2088]
- GIOVANNI BILLINGS, Assistant Professor of Clinical Psychiatry and Behavioral Sciences; Adjunct Assistant Professor of Psychology P.A. (Oral Roberts 2003); M.A., Psy.D. (Wheaton 2005, 2009) [2015]
- JEFFREY L. BINDER, Clinical Professor of Psychiatry and Behavioral Sciences B.A., M.A., Ph.D. (Michigan 1965, 1969, 1971)
- NATHAN C. BINGHAM, Assistant Professor of Pediatrics: Assistant Professor of Molecular Physiology & Biophysics B.A. (Brigham Young 1999); Ph.D., M.D. (Texas, Southwestern Medical 2007, 2008) [2013]
- ANDREA B. BIRCH, Associate Professor of Clinical Radiology and Radiological Sciences B.S. (Spelman 1981); M.D. (Meharry Medical 1985) [2009]
- DANIEL A. BIRCHMORE, Assistant Professor of Medicine
 - B.S. (Georgia 1972); M.D. (Medical College of Georgia 1976) [1997]
- EMILY CLAYBON BIRD, Assistant Professor of Clinical Pediatrics B.A. (Michigan 2001); M.D. (Ohio State 2012) [2015]
- PETER A. BIRD, Assistant Clinical Professor of Surgery
 - M.B.B.S. (Monash [Australia] 1986) [2011]

- KELLY A. BIRDWELL, Assistant Professor of Medicine
 - B.A. (Tennessee 1997); M.D. (Emory 2001); M.S.C.I. (Vanderbilt 2008) [2009]
- LINDSAY ANN BISCHOFF, Associate Professor of Medicine
 - B.S. (Villanova 2003); M.D. (Jefferson Medical 2007) [2015]
- JENNIFER URBANO BLACKFORD, Professor of Psychiatry and Behavioral Sciences; Professor of Psychology & Human Development; Professor of Psychology B.S. (Florida State 1990): M.S. Ph.D. (Vanderbill
 - B.S. (Florida State 1990); M.S., Ph.D. (Vanderbilt 1994, 1998) [1999]
- TIMOTHY SCOTT BLACKWELL, Ralph and Lulu Owen Chair in Medicine; Rudy W. Jacobson Chair in Pulmonary Medicine; Professor of Medicine; Professor of Cell and Developmental Biology; Director, Division of Allergy, Pulmonary & Critical Care B.A. (Vanderbilt 1983); M.D. (Alabama, Birmingham 1988) [1995]
- JAMES L. BLAIR, Assistant Professor of Clinical Anesthesiology
 - D.O. (College of Osteopathic Medicine and Surgery 1983); B.S. (Iowa State 0) [2007]
- RANDOLPH BLAKE, Centennial Professor of Psychology; Professor of Ophthalmology and Visual Sciences
 - B.A. (Texas 1967); M.A., Ph.D. (Vanderbil 1969, 1972) [1988]
- MARTIN L. BLAKELY, Professor of Pediatric Surgery; Professor of Pediatrics B.S. (Rhodes College 1985); M.D. (UT Health Science Center [Tennessee] 1969); M.S. (Texas 2004) [2011]
- CYNTHIA BLALOCK, Assistant in Surgery B.S. (Murray State 2009); M.S.N. (Vanderbilt 2014) [2014]
- DAVID J. BLAZER, Assista it Chical Professor of Medicine
 - B.A. (Hartford 1973); M.D. (Florence [Italy] 1980) [2009]
- JENNIFER SHEPPARD BLAZIER, Assistant Professor of Clinical Medicine B.A. (Tennessee 2005); M.D. (Tennessee, Memphis 2011) [2014]
- RAYMOND D. BLIND, Assistant Professor of Medicine; Assistant Professor of Biochemistry; Assistant Professor of Pharmacology B.S. (SUNY, Fredonia 1997); Ph.D. (New York 2005) [2015]
- ANNA LOUISE BLOBAUM, Research Assistant Professor of Pharmacology B.A. (West Virginia 1999); Ph.D. (Michigan 2004) [2008]

- KAREN C. BLOCH, Associate Professor of Medicine; Associate Professor of Health Policy B.S. (Duke 1986); M.D. (Virginia 1990); M.P.H. (California, Berkeley 1996) [1997]
- FRANK EMMANUEL BLOCK, JR., Research Professor of Physics; Research Professor of Anesthesiology
 - B.A. (Yale 1972); M.D. (Virginia 1976) [2013]
- JOHN J. BLOCK, Associate Professor of Radiology and Radiological Sciences; Associate Professor of Emergency Medicine; Associate Professor of Orthopaedic Surgery
 - B.S., M.D. (Oklahoma 1991, 1995) [2001]
- SARAH BLOOM, Assistant in Medicine; Lecturer of Nursing
 - B.S.N. (Michigan 2011); M.S.N. (Vanderbilt 2014) [2014]
- WILLIAM J. BLOT, Ingram Professor of Cancer Research; Research Professor of Medicine B.S., M.S. (Florida 1964, 1956); Ph.D. (Florida State 1970) [2000]
- SARAH E BLUMBERS, Assistant in Pediatrics B.B., M.S. (Michel Tennessee State 1998, 2004); Ed.D. (Nova Southeastern 2012) [2014]
- YE) FREY D. BZUME, Professor of Biostatistics; Professor of Biochemistry; Associate Professor of Biomedical Informatics; Director, Biostatistics Collaboration Center; Director, Graduate Studies B.A. (SUNY, Buffalo 1994); Ph.D. (Johns Hopkins 1999) [2008]
- JAMES F. BLUMSTEIN, University Professor of Constitutional Law and Health Law and Policy; Professor of Medicine B.A., LL.B., M.A. (Yale 1966, 1970, 1970) [1970]
- ASHLEY C. BLYE, Assistant in Medicine B.S. (Grand Valley State 2010); B.S.N. (Michigan State 2011); M.S.N. (Duke 2014) [2018]
- MICHAEL L. BOBO, Assistant Clinical Professor of Oral and Maxillofacial Surgery B.S. (Tennessee 1990); D.D.S. (UT Health Science Center [Tennessee] 1994); M.D. (Vanderbilt 1997) [2003]
- JEFFREY F. BOCCHICCHIO, Assistant Professor of Clinical Pediatrics B.E. (SUNY, Stony Brook 1987); M.D. (Eastern
 - B.E. (SUNY, Stony Brook 1987); M.D. (Eastern Virginia 1998) [2019]
- JAMES W. BODFISH, Professor of Hearing and Speech Sciences; Professor of Psychiatry and Behavioral Sciences; Professor of Special Education
 - B.S. (New Haven 1983); M.A., Ph.D. (Alabama, Birmingham 1985, 1986) [2012]

- FRANK H. BOEHM, Professor of Obstetrics & Gynecology, Emeritus; Adjunct Professor of Nursing
 - B.A., M.D. (Vanderbilt 1962, 1965) [1972]
- PAOLO BOFFETTA, Adjunct Professor of Medicine M.D., M.P.H. (Torino [Italy] 1985, 1988) [2002]
- JULIA K. BOHANNON, Assistant Professor of Anesthesiology; Assistant Professor of Pathology, Microbiology and ImmunologyB.S. (Eastern Kentucky 2003); Ph.D. (Texas,
 - Galveston 2011) [2015]
- JOHN DUNNING BOICE, JR., Research Professor of Medicine
 - B.S. (Texas, El Paso 1967); M.S. (Rensselaer Polytechnic Institute 1968); S.M. (Harvard 1974); Sc.D. (Harvard Medical 1977) [2000]
- ALYSSA J. BOLDUAN, Instructor in Otolaryngology - Head and Neck Surgery B.S. (Michigan 2010); M.S. (Georgetown 2011); M.D. (Indiana, Indianapolis 2015) [2020]
- GEORGE C. BOLIAN, Professor of Psychiatry, Emeritus
 - B.A. (Chicago 1950); B.A. (Harvard 1952); M.D. (Tulane 1957) [1987]
- ANDREAS BOLLMANN, Visiting Professor of Medicine
 - M.D. (Otto-von-Guericke-Universität Magdeburg [Germany] 1995) [2007]
- RACHEL HENRY BONAMI, Assistant Professor of Medicine; Assistant Professor of Pathology Microbiology and Immunology B.S. (Florida 2002); Ph.D. (Vanderbilt 2009) [2016]
- ROGER A. BONAU, Associate Clinical Professor of Surgery at St. Thomas Medican Center B.A. (Emory 1977): M.D. (Tu'ane 1987) (1989)
- CHRISTINA SATO BONCYK, Assistan Professor of Anesthesiology
 B.S. (Northern Michigan 2009), M.D. (Wisconsin 2013) [2018]
- JOHN B. BOND III, Assistant Professor of Ophthalmology and Visual Sciences B.S., M.D. (Vanderbilt 1979, 1984) [1989]
- JENNIFER ELYSE BONDURANT, Clinical Professor of Pediatrics B.E. (Vanderbilt 1993); M.D. (UT Health Science Center [Tennessee] 1997) [2000]
- ROBERT C. BONE, Adjunct Associate Professor of Pediatrics B.A., M.D., M.B.A. (Vanderbilt 1958, 1962,

1985) [1969]

- CHRISTOPHER M. BONFIELD, Assistant Professor of Neurological Surgery; Assistant Professor of Orthopaedic Surgery; Assistant Professor of Plastic Surgery B.A. (Pennsylvania 2003); M.D. (Pittsburgh 2007) [2015]
- TIMOTHY BONGARTZ, Assistant Professor of Emergency Medicine
 M.D. (Ludwig-Maximilians-Universität
 [Germany] 1998); M.B.S. (Mayo Graduate School
 [MN] 2009) [2018]
- ALYSSA R. BONINE-SUMMERS, Adjoint Associate Professor of Biochemistry B.A. (Lawrence 2000); Ph.D. (Vanderbilt 2006) [2011]
- JAMES A. BOOKMAN, Assistant Professor of Clinical Ophthalmology and Visual Sciences M.D. (Tulane 1972) [2012]
- JEFFREY TYLER BOON, Assistant in Anesthesiology
 B.A. (Rl odes College 2005); M.S.N. (Vanderbilt 2013) [2015]
- WHITNEY LEFT OON, Assistant Professor of Chnical Pediatrics
 - B.A. (Brown 1999); M.D. (Meharry Medical 2011 (2016]
- JOHN M. BOONE, JR., Assistant Professor of Pediatrics; Assistant Professor of Clinical Medicine
- B.S., M.D. (Mississippi State 1985, 1991) [2008] TRINITY JOY BOONE, Assistant in Pediatrics B.S. (Centre 2012); M.S.N. (Vanderbilt 2014) [2017]
- GARRETT S. BOOTH, Associate Professor of Pathology, Microbiology and Immunology B.S. (California, Los Angeles 2000); M.S. (Johns Hopkins 2002); M.D. (Arizona 2007) [2011]
- MARK R. BOOTHBY, Professor of Pathology, Microbiology and Immunology; Professor of Medicine B.S. (Wisconsin 1976); M.D., Ph.D. (Washing
 - B.S. (Wisconsin 1976); M.D., Ph.D. (Washington University 1983, 1983) [1992]
- SETH R. BORDENSTEIN, Centennial Chair in Biological Sciences; Professor of Biological Sciences; Professor of Pathology, Microbiology and Immunology
 - B.S., M.S., Ph.D. (Rochester 1997, 1999, 2002) [2008]
- ANTHONY JOSEPH BORGMANN, Assistant Professor of Clinical Radiology & Radiological Sciences
 - B.A. (DePauw 2006); M.D. (Indiana, Indianapolis 2011) [2016]

- EMILEE LANAYE BORGMEIER, Instructor in Clinical Anesthesiology B.S. (Michigan 2010); M.D. (Indiana, Indianapolis 2016) [2020]
- SCOTT C. BORINSTEIN, Scott and Tracie Hamilton Chair in Cancer Survivorship; Associate Professor of Pediatrics B.S. (Richmond 1994); M.D., Ph.D. (Medical
- College of Virginia 2002, 2002) [2009] ALEXANDRA J. BORST, Assistant Professor of
- Pediatrics
 B.A. (Pomona 2005); M.D. (Columbia 2010)
 [2017]
- CORINA BORZA, Research Assistant Professor of Medicine
 - B.Sc., M.Sc. (Bucharest [Romania] 1991, 1991); Ph.D. (Kansas 2000) [2010]
- WENDY BOTTINOR, Instructor in Medicine B.S. (College of New Jersey 2007); M.D. (Virginia Commonwealth 2011); M.Sci. (Vanderbilt 2019) [2018]
- CATHERINE SIPE BOTTOMS, Clinical Professor of Pediatrics
 - B.S. (Duke 1997); M.D. (Wake Forest 2002) [2005]
- SADIQA BOURA, Instructor in Clinical Medicine; Instructor in Clinical Pediatrics
 - B.S. (American 2009); M.D. (University of Medicine and Health Sciences 2015) [2019]
- LANA JERADEH BOURSOULIAN, Assistant Professor of Clinical Neurology; Assistant Professor of Clinical Pediatrics M.D. (Damascus [Syria] 2002) [2012]
- CLIFFORD BOWENS, JR., Associate Professor Clinical Anesthesiology B.S. (Illinois, Champaign 1985); M.D. (Duke 1993) [2005]
- EVE BOWERS, Assistant Professor of Chinical Medicine
 - B.S. (Duke 2002); M.D. (Emery 2007) [2019]
- MATTHEW CODY BOWERS, Assistant in Medicine
 - B.A. (San Francisco State 2008); M.S.N. (Vanderbilt 2010) [2012]
- AARON B. BOWMAN, Adjunct Associate Professor of Biochemistry; Adjunct Associate Professor of Pediatrics; Adjunct Associate Professor of Neurology
 - B.S. (Brigham Young 1995); Ph.D. (California, San Diego 2000) [2006]
- ELIZABETH A. BOWMAN, Assistant Professor of Medical Education & Administration (VU); Assistant Director, Interdisciplinary Graduate Program
 - Ph.D., B.S. (Belmont 2008, 2008) [2015]

- ERIC NATHAN BOWMAN, Assistant Professor of Orthopaedic Surgery
 - B.A. (Miami [Ohio] 2006); M.P.H. (Ohio State 2008); M.D. (Cincinnati 2012) [2018]
- ROBERT H. BOYCE, Assistant Professor of Orthopaedic Surgery B.S. (Auburn 1992): M.D. (Vanderbilt 199
 - B.S. (Auburn 1992); M.D. (Vanderbilt 1996) [2013]
- ALAN S. BOYD, Professor of Dermatology; Associate Professor of Pathology, Microbiology and Immunology B.S. (Abilene Christian 1982); M.D. (Texas,
- Houston 1986) [1993] ERIN DENISE BOYD, Assistant Professor of Pediatrics
 - B.A. (Vanderbilt 2003); M.S., M.D. (Meharry Medical 2006, 2012) [2018]
- JEREMY S. BOYD, Assistant Professor of Emergency Medicine B.A. (Rhodes College 2001), M.D. (Brown 2009) [2013]
- KELLILIAN BOYD, rofessor of Pathology, Microbiology and Immunology
 - B.S., D.Y.M. (Mississippi State 1993, 1996); Ph.D. (Georgia 2001) [2009]
- MLL K. BOYLE, Associate Professor of Clinical A esthesiology
 - B.A. (Converse 1977); M.D. (Medical University South Carolina 1980) [2003]
- EATHARINE BOYLE, Assistant Professor of Pediatrics
- B.A. (Pomona 2001); M.D. (Cornell 2012) [2018]WILLIAM S. BRADHAM, JR., Assistant Professor of Medicine
 - B.A., M.S., M.D. (South Carolina 1988, 1992, 2003) [2010]
- ELISE BALDWIN BRADLEY, Assistant Professor of Clinical Neurology; Adjunct Assistant Professor of Psychology
 - B.A. (Sonoma State 2003); M.A. (Pepperdine 2006); Ph.D. (Palo Alto University 2012) [2015]
- JENNIFER MICHELLE BRADLEY, Assistant in Medicine
 - B.S. (Wheaton 2009); M.S.N. (Vanderbilt 2011) [2016]
- JOEL FONTAINE BRADLEY III, Assistant
 Professor of Surgery
 - B.S. (Memphis 2000); M.D. (Wake Forest 2006) [2020]
- JOEL F. BRADLEY, JR., Clinical Professor of Pediatrics
 - B.S. (Davidson 1973); M.D. (Wake Forest 1977) [2001]

- MELITA M. BRADLEY, Assistant Clinical Professor of Pediatrics B.S. (Middle Tennessee State 1991); M.D. (Miami [Florida] 1996) [2007]
- L. ALAN BRADSHAW, Research Assistant Professor of Surgery B.S. (Abilene Christian 1990); M.S., Ph.D. (Vanderbilt 1992, 1995) [1996]
- MARQUES LEVAR BRADSHAW, Associate Professor of Clinical Radiology & Radiological Sciences B.S. (Morehouse 2000); M.D. (Duke 2004); M.S.C.R (Medical University of South Carolina 2013) [2017]
- ASHLEY BRADY, Assistant Dean of Biomedical Career Engagement and Strategic Partnerships; Assistant Professor of Medical Education & Administration (VU) B.A. (Centre 1996); Ph.D. (Vanderbilt 2003) [2014]
- CASSANDRA CORINNE BRADY, Assistant Professor of Clinical Pediatrics B.S. (Indiana, Bloomington 2005); M.D. (Indiana, Indianapolis 2009) [2015]
- DONALD W. BRADY, Senior Associate Dean for Health Sciences Education; Professor of Medicine; Professor of Medical Education & Administration (VUMC) B.A., M.D. (Vanderbilt 1986, 1990) [2007]
- LINDA D. BRADY, Clinical Professor of Pediatric, B.A., M.D. (Vanderbilt 1988, 1992) [1996]
- MATTIE GODFREY BRADY, Assistant in Medicine
 B.S.N. (Appalachian State 2013); M.S.N. (Vanderbilt 2016) [2017]
- JAN LEWIS BRANDES, Assistant Clinical Professor of Neurology B.S. (Mississippi University for Women 1975); M.S. (Tennessee 1980); M.D. (Vanderoilt 1989) [1993]
- STEPHEN J. BRANDT, Professor of Medicine; Professor of Cell and Developmental Biology B.S. (Duke 1976); M.D. (Emory 1981) [1990]
- MILAM A. BRANTLEY, JR., Associate Professor of Ophthalmology and Visual Sciences; Associate Professor of Molecular Physiology and Biophysics
 - B.A. (Austin College 1988); Ph.D., M.D. (Baylor 1996, 1998) [2010]
- DANA M. BRANTLEY-SIEDERS, Assistant Professor of Medicine B.A. (Maryville 1995); Ph.D. (Vanderbilt 2000) [2003]
- ALAN R. BRASH, Professor of Pharmacology B.A. (Cambridge [U.K.] 1970); Ph.D. (Edinburgh [U.K.] 1976) [1977]

- WHITNEY ANDERSON BRATCHER, Assistant in Medicine
 - B.A. (Birmingham-Southern 2008); M.S.N. (Vanderbilt 2012) [2017]
- CHASTITY T. BRAUER, Assistant in Pediatrics B.S.N. (Baptist College of Health Sciences 1999); M.S.N. (UT Health Science Center [Tennessee] 2002) [2009]
- JENNIFER ANN BRAULT, Assistant Professor of Clinical Pediatrics B.S. (Hillsdale 1997): M.S. (Toledo 2002): M.D.
 - B.S. (Hillsdale 1997); M.S. (Toledo 2002); M.D. (Indiana, Indianapolis 2006) [2015]
- STEPHANE ALAIN BRAUN, Assistant Professor of Plastic Surgery
- B.S., M.D. (Ottawa [Canada] 1991, 1995) [2009] DEBRA BRAUN-COURVILLE, Assistant Professor
- DEBRA BRAUN-COURVILLE, Assistant Professor of Clinical Pediatrics
 - B.S. (Cornell 1997); M.D. (Yeshiva 2002) [2014]
- JERI LYNN MARIE BRAUNUN, Assistant in Neurology
 - B.S.N. (Capital 1979); M.S.N. (Ohio State 1982); D.N.P. (Wright State 2017) [2019]
- DANA C. BRAY, Assistant in Pediatrics B.S.N. (Membris 1996); M.S.N. (UT Health Science Center [Tennessee] 1998) [2009]
- LORI A BREAUX, Assistant Clinical Professor of Pediatrics
 - B.S. (Spelman 1992); M.D. (Meharry Medical 1996) [2000]
- RANDALL BRENN, Adjunct Associate Professor of Anesthesiology

 R.S. (Lowis and Clark 1982): M.D. (Oragon)
 - B.S. (Lewis and Clark 1982); M.D. (Oregon Health and Science 1986) [2017]
- KIMBERLY C. BRENNAN, Assistant Professor of Clinical Radiology and Radiological Sciences B.S. (Indiana, Bloomington 1994); M.D. (Kentucky, Lexington 1998) [2004]
- MATTHEW D. BREYER, Adjunct Professor of Medicine B Sc. (Michigan 1975): M.D. (Harvard 1979)
 - B.Sc. (Michigan 1975); M.D. (Harvard 1979) [2008]
- RICHARD M. BREYER, Ruth King Scoville Chair in Medicine; Professor of Medicine; Professor of Biochemistry; Professor of Pharmacology B.S. (Michigan 1978); M.S., Ph.D. (Massachusetts Institute of Technology 1982, 1988) [1991]
- PAUL BREZINA, Assistant Clinical Professor of Obstetrics and Gynecology B.A. (North Carolina 1999); M.D., M.B.A. (East Carolina 2004, 2004) [2013]
- BRIAN C. BRIDGES, Associate Professor of Pediatrics; Associate Professor of Anesthesiology B.A. (Furman 1998); M.D. (Medical University of South Carolina 2004) [2010]

- THOMAS BRIDGES, Research Assistant Professor of Pharmacology
 - B.S. (Wheaton 2005); Ph.D. (Vanderbilt 2010) [2015]
- ERIC R. BRIGGS, Assistant Professor of Clinical Anesthesiology
 - B.S. (Louisiana Tech 2002); M.D. (Louisiana State 2006) [2010]
- A. BERTRAND BRILL, Research Professor of Radiology & Radiological Sciences, Emeritus M.D. (Utah 1956); Ph.D. (California, Berkeley 1961) [1997]
- NATALIE C. BRIM, Assistant in Pediatrics B.A. (Colorado 2011); M.M.S. (Yale 2016) [2017]
- DOUGLAS MARSHALL BRINKLEY, Assistant Professor of Medicine
 - B.S. (Duke 2002); M.D. (Vanderbilt 2007) [2016]
- CARRIE ELIZABETH BRINTZ, Assistant Professor of Anesthesiology
 - B.A. (Brandeis 2008); M.S., Ph.D. (Miami 2013, 2016) [2019]
- MARCELA BRISSOVA, Research Professor of Medicine
 - M.S., Ph.D. (Slovak Technical [Slovakia] 1990, 1994) [2001]
- EVAN L. BRITTAIN, Assistant Professor of Medicine
 - B.S. (North Carolina 2003); M.D. (Cornell 2007) M.S.C.I. (Vanderbilt 2014) [2013]
- KENDAL SCOT BROADIE, Stevenson Professor of Neurobiology; Professor of Cell and Developmental Biology; Professor of Pharmacology
 - B.S. (Oregon 1989); Ph.D. (Cambridge [U.K.] 1994) [2002]
- CAROL H. BROADWAY, Clinical Professor of Pediatrics
 - B.A. (Tennessee 1983); M.D. (Thealth Science Center [Tennessee] 1988) [2006]
- JOHN W. BROCK III, Monroe Carell Jr. Chair; Professor of Urology; Professor of Pediatrics; Director, Division of Pediatric Urology B.A. (Vanderbilt 1974); M.D. (Medical College of Georgia 1978) [1983]
- ERIN BROCKWAY, Instructor in Clinical Anesthesiology
 - B.S. (Davidson 2003); M.D. (Texas, San Antonio 2008) [2014]
- NEILL BRODERICK, Assistant Professor of Pediatrics; Adjunct Assistant Professor of Psychology B.S., M.Ed. (Vanderbilt 2004, 2005); M.Ed., Ph.D. (Virginia 2010, 2014) [2016]

- ELIZABETH BROKAMP, Assistant in Pediatrics B.S. (Ohio State 2013); M.S. (Sarah Lawrence 2016) [2016]
- A. SCOTT BROOKS, Clinical Professor of Pediatrics
 - B.S. (Vanderbilt 1977); M.D. (UT Health Science Center [Tennessee] 1981) [1984]
- CRAIG R. BROOKS, Assistant Professor of Medicine; Assistant Professor of Cell & Developmental Biology
 B.S. (Emmanuel [Georgia] 2003); Ph.D. (Medical College of Georgia 2008) [2016]
- KYLE BROOKS, Assistant in Orthopaedic Surgery B.S. (California, Los Angeles 2002) [2018]
- COLLEEN M. BROPHY, Professor of Surgery; Professor of Medicine B.S., M.D. (Utah 1979, 1983) [2008]
- DONALD T. BROTHERS, JR., Associate Clinical Professor of Pediatrics
 - B.S. (Vanderbilt 1985), M.D. (UT Health Science Center [Tennessee] 1989) [1994]
- JOSEFH R. BROUCEK, Assistant Professor of Surgery
 - B.A. (Illinois Wesleyan 2007); M.D. (Rush 2011) [2018]
- ALAIN ANEEN BROWN, Assistant Professor of Obstetrics and Gynecology
- B.A. (Baylor 2004); M.D. (Texas, Houston 2008) [2016]
- AMY E. BROWN, Assistant Professor of Clinical Neurology; Instructor in Clinical Neurology B.A., M.S. (Case Western Reserve 2009, 2011); M.D. (Illinois, College of Medicine, Chicago 2015) [2019]
- ANNE W. BROWN, Assistant in Medicine B.S.N., M.S.N. (Vanderbilt 1974, 1983) [2001]
- ASHLEY R. BROWN, Assistant Professor of Emergency Medicine B.S. (Washington and Lee 2006); M.D. (Wake Forest 2010) [2013]
- BREANN LEIGH BROWN, Assistant Professor of Biochemistry
 - B.S. (Duke 2006); Ph.D. (Brown 2012) [2019]
- CHARLOTTE MORRIGAN BROWN, Assistant Professor of Clinical Pediatrics B.A. (Wake Forest 2005); M.D. (Vanderbilt 2009) [2015]
- CHRISTOPHER BRIAN BROWN, Adjunct Assistant Professor of Pharmacology B.S. (Auburn 1990); Ph.D. (Vanderbilt 1997) [2003]
- DANIEL B. BROWN, Professor of Radiology and Radiological Sciences; Professor of Biomedical Engineering
 - B.S. (Dickinson 1989); M.D. (Hahnemann Medical 1993) [2013]

- DEANNA B. BROWN, Assistant Clinical Professor of Pediatrics
 - B.S. (Tennessee 2004); M.D. (East Tennessee State 2010) [2013]
- EMILY S. BROWN, Assistant Professor of Clinical Medicine
 - M.S. (Millsaps 2009); M.D. (Alabama, Birmingham 2013) [2020]
- ERIC N. BROWN, Assistant Professor of Ophthalmology and Visual Sciences B.A. (Saint Olaf 2001); M.D., Ph.D. (Iowa 2010, 2010) [2015]
- JONATHAN D. BROWN, Assistant Professor of Medicine; Assistant Professor of Molecular Physiology & Biophysics B.A. (Brown 1995); M.D. (New York Medical 2000) [2015]
- KAREN M. BROWN, Assistant in Neurological Surgery B.S.N. (SUNY, Brockport 2003); M.S.N. (Vanderbilt 2017) [2017]
- KELLY MARI BROWN, Associate Professor of Clinical Neurology B.A., B.S. (Muhlenberg 1991, 1991); M.D. (Hahnemann Medical 1996) [2013]
- KIMBERLY P. BROWN, Associate Professor of Clinical Psychiatry and Behavioral Sciences B.A. (Duke 1995); Ph.D. (Alabama 2000) [2002]
- KYLE L. BROWN, Research Assistant Professor of Medicine
 B.S. (Union [Tennessee] 1997); Ph.D. (Vanacrbilt
 - B.S. (Union [Tennessee] 1997); Ph.D. (Valderbilt 2008) [2008]
- LAUREN BROWN, Adjunct Assistant Professor of Medicine
 B.A. (Middle Tennessee Stat 2003); M.S.S.W. (Tennessee, Nashville 2008); Ph.D. (Louis ville 2016) [2018]
- NANCY J. BROWN, Adjunct Assistant Professor of Medicine
 - B.A. (Yale 1981); M.D. (Yarvard Medical 1986) [1992]
- REBEKAH FLOWERS BROWN, Associate Professor of Pediatrics; Assistant Professor of Pediatrics
 - B.S. (University of the South 1999); M.D. (Arkansas, Little Rock 2003) [2010]
- STEVEN H. BROWN, Associate Professor of Biomedical Informatics; Director, Health and Medical Informatics
 - A.B., M.D. (Brown 1981, 1987); M.S. (Vanderbilt 1998) [1996]
- KIERSTEN A. BROWN-ESPAILLAT, Assistant in Neurology
 - B.S., M.S.N. (Vanderbilt 1996, 2003); D.N.P. (UT Health Science Center [Tennessee] 2013) [2019]

- WHITNEY L. BROWNING, Assistant Professor of Pediatrics
 - B.S., M.D. (Kentucky, Lexington 2001, 2005) [2009]
- REBECCA ELAINE BRUCCOLERI, Assistant Professor of Clinical Medicine
- B.A. (Dartmouth 2005); M.D. (Yale 2009) [2018] STEPHEN P. BRUEHL, Professor of Anesthesiology
- B.S. (Belmont 1985); M.A., Ph.D. (Kentucky, Lexington 1991, 1994) [2000]
- KAYLON L. BRUNER-TRAN, Professor of Obstetrics & Gynecology B.S. (Delta State 1985): Ph.D. (Vanderbilt 1985)
 - B.S. (Delta State 1985); Ph.D. (Vanderbilt 1995) [1999]
- ALEXANDER JEFFREY BRUNNER, Clinical Professor of Pediatrics B.A. (Dartmouth 1996); M.D. (Case Western Reserve 2001) [2005]
- STEVEN M. BRUNWASSEN Adjunct Assistant Professor of Psychology: Adjunct Assistant Professo: of Medicine B.A. (Pennsylvenic 2003); M.S., Ph.D. (Michigan 2018, 2012) [2015]
- DEBCRAH M. BRYANT, Clinical Professor of Pediatrics
 - B.A. Wellesley 1976); M.D. (Vanderbilt 1980)
- G LTE BRYANT, Clinical Instructor in Ctolaryngology - Head and Neck Surgery B.S. (Baylor 1987); M.D. (Vanderbilt 1992) [2012]
- LUCAS M. BRYANT, Assistant Clinical Professor of Otolaryngology - Head and Neck Surgery B.S. (Minnesota 2007); M.D. (Eastern Virginia 2012) [2019]
- JEREMY BRYWCZYNSKI, Associate Professor of Emergency Medicine; Medical Director, Vanderbilt LifeFlight; Assistant Medical Director, Nashville Fire Department B.S. (Dayton 2000); M.D. (Wright State 2004) [2007]
- MICHAEL BUBSER, Research Assistant Professor of Pharmacology B.S., Ph.D. (Universität Stuttgart [Germany] 1987, 1992) [2002]
- MACIEJ S. BUCHOWSKI, Research Professor of Medicine; Research Professor of Pediatrics B.S., M.Sc., Ph.D. (Poznan [Poland] 1973, 1975, 1982) [2007]
- AMANDA K. BUCK, Instructor in Radiology and Radiological Sciences; Instructor in Biomedical Engineering
 - B.S. (Mississippi State 1997); Ph.D. (Georgia Institute of Technology 2005) [2012]

- LISA HUNT BUCKLEY, Assistant Professor of Pediatrics
 - B.S. (Georgia 2009); M.D. (Medical College of Georgia 2013); M.S. (Pennsylvania 2019) [2019]
- RYAN JOSEPH BUCKLEY, Assistant Professor of Clinical Medicine
 - B.S. (Florida 2007); M.D. (South Florida 2012) [2019]
- HINA BUDHWANI, Assistant Professor of Medicine
 - B.S. (Houston 2003); M.P.H. (Texas, Houston 2010); M.D. (St. George's, Grenada 2015) [2019]
- SERGEY BUDKO, Assistant Professor of Medicine; Assistant Professor of Biochemistry M.A. (Moscow Institute of Physics and Technology [Russia] 1999); Ph.D. (University of Basel [Switzerland] 2003) [2015]
- KIMBERLY ANN BUIE, Associate Clinical Professor of Pediatrics B.S. (Tennessee, Martin 2000); M.S. (Emory 2003); M.D. (UT Health Science Center [Tennessee] 2007) [2010]
- BRADLEY N. BULLOCK, Clinical Professor of Pediatrics
 - B.S., M.D. (Florida 1989, 1993) [1997]
- NADA M. BULUS, Research Assistant Professor of Medicine
 - M.D. (American University of Beirut [Lebanon] 1986) [1992]
- MATTHEW R. BUMBALOUGH, Assistant in Medicine
 - M.S.N. (Vanderbilt 1993) [2003]
- MELINDA JEAN BUNTIN, Mike Curb Chair for Health Policy; Professor of Health Policy; Professor of Leadership, Policy, & Organizations; Chair of the Department of Health Policy A.B. (Princeton 1993); Ph.D. (Harvard 2000) [2013]
- ROY P. BURCH, JR., Clinical Instructor in Obstetrics and Gynecology B.S. (Lipscomb 1983); M.D. (UT Health Science Center [Tennessee] 1987) [1991]
- ANNA M. BURGNER, Assistant Professor of Medicine
 - B.S. (Rose-Hulman Institute of Technology 2003); M.D. (Indiana, Indianapolis 2007) [2013]
- RAYMOND F. BURK, Professor of Medicine, Emeritus
 - B.A. (Mississippi 1963); M.D. (Vanderbilt 1968) [1987]
- JESSICA R. BURKE, Assistant Professor of Clinical Medicine
 - B.A. (Tennessee 2005); M.D. (UT Health Science Center [Tennessee] 2013) [2016]

- KRISTOPHER JOHN BURKEWITZ, Assistant Professor of Cell & Developmental Biology B.S. (Miami 2006); Ph.D. (Vanderbilt 2012) [2019]
- LAURA ELIZABETH BURKHART, Assistant Professor of Clinical Medicine B.S. (Southern Nazarene 2007); M.D. (New Mexico 2011); M.P.H. (University of Washington 2017) [2017]
- DYLAN T. BURNETTE, Assistant Professor of Cell and Developmental Biology B.S. (Georgia 2000); Ph.D. (Yale 2007) [2014]
- W. BRYAN BURNETTE, Associate Professor of Clinical Pediatrics; Associate Professor of Clinical Neurology
 - B.S., M.S. (Emory 1992, 1995); M.D. (Vanderbilt 2001) [2007]
- IAN M. BURR, Professor of Pediatrics, Emeritus M.B.B.S. (Melbourne [Australia] 1959); M.D. (Monash [Australia] 1969); 1971]
- ERIN L. HE PPER BURRELL, Assistant in Surgery; Adjunct instructor in Nursing
 - 3.1., M.S.N. (Yanderbilt 2006, 2007) [2010]
- ALVIN M. BURT III, Professor of Cell and Developmental Biology, Emeritus
 - B.A. Amherst 1957); Ph.D. (Kansas 1962)
- LESME BURTON, Assistant Professor of Clinical Pediatrics
 - B.S. (Indiana State 2004); D.O. (Lake Erie College of Osteopathic Medicine 2008) [2014]
- ROCHELL LEE BURTON, Assistant in Urology A.D. (Columbia State Community 1998); M.S.N. (Vanderbilt 2007) [2008]
- SCOTT D. BURY, Assistant Professor of Pathology, Microbiology and Immunology B.S. (Illinois, Champaign 1997); Ph.D. (University of Washington 2002) [2018]
- WILLIAM SCOTT BUSH, Adjunct Assistant Professor of Biomedical Informatics B.S. (Western Kentucky 2003); M.S., Ph.D. (Vanderbilt 2008, 2009) [2010]
- BEN HUNTER BUTLER, Assistant Clinical Professor of Pediatrics B.S. (Mississippi State 2003); M.D. (Emory 2008) [2011]
- MIRANDA R. BUTLER, Assistant Clinical Professor of Pediatrics
 - B.S. (Lee 2006); M.D. (Vanderbilt 2010) [2013]
- ZULFIKAR BUX, Adjunct Assistant Professor of Emergency Medicine M.B.B.S. (Guyana 2007) [2002]
- JEFFREY DAVID BYERS, Associate Professor of Clinical Dermatology B.A. (Rice 1988); M.D. (Duke 1992) [2004]

- MARIANA XAVIER BYNDLOSS, Assistant Professor of Pathology, Microbiology and Immunology
 - D.V.M., M.V.Sc., Ph.D. (Universidade Federal de Minas Gerais [Brazil] 2007, 2009, 2013) [2018]
- SHAI C. BYNUM, Assistant in Pediatrics B.S. (Middle Tennessee State 2005); M.S.N. (Vanderbilt 2007) [2013]
- BEVERLY R. BYRAM, Assistant in Medicine A.D.N. (Tennessee 1975); M.S.N. (Vanderbilt 1992) [1993]
- BRETT C. BYRAM, Associate Professor of Biomedical Engineering; Assistant Professor of Biomedical Engineering; Assistant Professor of Radiology & Radiological Sciences B.E. (Vanderbilt 2004); Ph.D. (Duke 2011) [2013]
- JESSE M. BYRAM, Assistant in Medicine B.S. (Washington State 2004); M.S.N. (Vanderbilt 2014) [2014]
- KEVIN WAYNE BYRAM, Assistant Professor of Medicine
 - B.S., M.D. (Alabama, Birmingham 2008, 2012) [2017]
- BENJAMIN F. BYRD III, Professor of Medicine A.B. (Princeton 1973); M.D. (Vanderbilt 1977) [1984]
- RACHEL CHIKOWSKI BYRD, Assistant Professor of Dermatology
 - M.D. (Virginia Commonwealth 2014) [2015]
- KELLY CARPENTER BYRGE, Assistant Professor of Medicine
 - B.S. (Vanderbilt 2010); M.D. (Georgetown 2014) [2019]
- DANIEL W. BYRNE, Senior Associate in Biostatistics; Senior Associate in Medicine, Senior Associate in Biomedical Informatics B.A. (SUNY, Albany 1983); M.S. (New York Medical 1991) [1999]
- MICHAEL T. BYRNE, Assistant Professor of Medicine
 - B.A., B.S. (Duquesne 2002, 2002); D.O. (LECOM 2007) [2015]
- BRYAN BYRNSIDE, Assistant Clinical Professor of Oral and Maxillofacial Surgery
 - B.A. (Emory 1998); D.M.D. (Medical University of South Carolina 2003) [2007]
- WANDA B. CADE, Associate Clinical Professor of Pediatrics
 - B.S. (Mississippi State 1989); M.D. (Mississippi, Jackson 1993) [2007]
- HUGH BRIAN CAHILL, Adjunct Instructor in Neurology
 - B.A. (College of the Holy Cross 1999); Ph.D. (Johns Hopkins 2008); M.D. (Marshall 2015) [2019]

- KATHERINE NIEDERER CAHILL, Assistant Professor of Medicine
 - B.S. (Pepperdine 2003); M.D. (Robert Wood Johnson Medical, New Brunswick 2007) [2018]
- HUI CAI, Research Associate Professor of MedicineM.D. (Nantong Medical [China] 1982); M.S.(China Medical 1987); Ph.D. (West ChinaUniversity of Medical Sciences 1995) [2005]
- QIUYIN CAI, Professor of Medicine M.D. (Shanghai Medical [China] 1984); M.S. (Chinese Academy of Preventive Medicine 1990); Ph.D. (Alabama, Birmingham 2000) [2000]
- YING CAI, Research Assistant Professor of Pediatrics
 - M.S. (Liaoning [China] 2000); Ph.D. (Chinese Academy of Medical Sciences 2002) [2009]
- CHRISTINA CAIN, Associate Professor of Clinical Obstetrics & Gynecology B.A. (Vanderbilt 1990); M.D. (Georgetown 1995) [2007]
- ISIN CAKTR. Adjunct Research Assistant Professor of Molecular Physiology & Biophysics 3.3. (Bogazici [Turkey] 2003); Ph.D. (Brown 2009) [2017]
- MSTIN CALASRACE, Assistant in Anesthesiology
 A.D.N (Excelsior 2003); M.S.N. (Vanderbilt 2008) [2009]
- M WADE CALCUTT, Research Assistant Professor Biochemistry
- B.S. (Francis Marion 1996); Ph.D. (Wake Forest 2001) [2005]
- SUSAN A. CALDERWOOD, Associate Professor of Clinical Anesthesiology
- B.A. (Winthrop 1972); M.D. (Duke 1976) [1999] BELINDA J. CALDWELL, Assistant Professor of
- Clinical Obstetrics and Gynecology B.S., M.S. (Colorado, Denver 2008, 2011) [2014]
- MIRNA A. CALDWELL, Assistant Clinical
 - Professor of Oral and Maxillofacial Surgery B.S., D.M.D. (Tufts 1997, 2001) [2006]
- ROBERT CALDWELL, Assistant Clinical Professor of Oral and Maxillofacial Surgery B.S. (Tennessee, Martin 1994); D.M.D. (Tufts 2003) [2006]
- ERIN SICILIANO CALIPARI, Assistant Professor of Pharmacology; Assistant Professor of Molecular Physiology & Biophysics; Assistant Professor of Psychiatry and Behavioral Sciences B.S. (Massachusetts 2009); Ph.D. (Wake Forest 2013) [2017]
- CYNTHIA R. CALISI, Assistant Clinical Professor of Pediatrics
 - B.S. (Western Kentucky 1995); M.D. (Louisville 1999) [2003]

- DAVID J. CALKINS, Denis M. O'Day, M.B.B.S., Chair in Ophthalmology and Visual Sciences; Professor of Ophthalmology and Visual Sciences; Professor of Pharmacology B.S. (Michigan 1989); Ph.D. (Pennsylvania 1995) [2004]
- STEPHEN TODD CALLAHAN, Professor of Pediatrics B.S. (Arkansas Tech 1990); M.D. (Arkansas 1994); M.P.H. (Harvard 2002) [2002]
- STEPHEN M. CAMARATA, Professor of Hearing and Speech Sciences; Professor of Psychology & Human Development; Professor of Special Education; Professor of Psychiatry and Behavioral Sciences
 B.A., M.A. (San Diego State 1979, 1981); Ph.D. (Purdue 1984) [1990]
- WILLIAM R. CAMERON, JR., Assistant in Surgery B.A. (Colorado Christian 1989); B.S.N. (Middle Tennessee State 2006); M.S.N. (Vanderbilt 2009) [2012]
- COREY D. CAMPBELL, Assistant Clinical Professor of Psychiatry and Behavioral Sciences B.S. (Ohio 2000); D.O. (Nova Southeastern 2004) [2009]
- DUNCAN R. CAMPBELL, Clinical Professor of Pediatrics B.A. (Vanderbilt 1971); M.D. (Kentucky, Lexington 1975) [1998]
- ERIN J. CAMPBELL, Assistant in Plastic Surgery B.A. (San Diego State 1998); B.S.N. (Beliront 2010) [2017]
- HEATHER L. CAMPBELL, Assistant in Obstetrics& GynecologyB.S.N. (Tampa 2010); M.S.N. South Alabama 2017) [2019]
- IAN S. CAMPBELL, Assistant Professor of Clinical Medicine B.A. (Auburn 2008); M.D. (Alabama, Birmingham 2012) [2015]
- JOSHUA A. CAMPBELL, Assistant Clinical Professor of Oral and Maxillofacial Surgery D.D.S., B.S. (Bethel University [Minnesota] 2004, 2004) [2011]
- SARAH L. CAMPBELL, Assistant in Medicine B.A. (Murray State 2003); M.S. (Tennessee, Nashville 2008) [2019]
- THOMAS W. CAMPBELL, Assistant Clinical Professor of Psychiatry and Behavioral Sciences B.A., M.D. (Vanderbilt 1964, 1968) [1977]
- W. BARTON CAMPBELL, Professor of Medicine B.A. (Carleton College 1959); M.D. (Rochester 1963) [1970]

- CHRISTOPHER L. CANLAS, Assistant Professor of Clinical Anesthesiology B.S. (Duke 1996); M.A. (Portland 1998); M.D. (Louisiana State, New Orleans 2004) [2008]
- AIZE CAO, Research Assistant Professor of Biomedical Informatics
 B.Eng. (Beijing Institute of Technology [China] 1993); M.Sci. (Chinese Academy of Sciences, Beijing 1996); Ph.D. (Nanyang Technological [Singapore] 2004) [2005]
- SHIRONG CAO, Adjunct Instructor in Medicine B.S. (Gannan Medical [China] 2008); Ph.D. (Sun Yat-Sen [China] 2013) [2019]
- ZHENG CAO, Research Assistant Professor of Medicine M.D., M.S. (Nantong Medical [China] 1983, 1990); Ph.D. (Shanghai Medical [China] 1998) [2004]
- ZHIPENG CAO, Research Assistant Professor of Radiology & Radiological Sciences B.E. (Ts nghua [China] 2006); Ph.D. (Penns Ilvania 2916) [2013]
- JORGE H. CAPDIVILA, Professor of Medicine, Enteritus
- B.S. (Chia 1960); Ph.D. (Georgia 1974) [1986]
 BRITNI P. CAPLIN, Assistant Clinical Professor of O'olaryngology Head and Neck Surgery
 B.S. (West Virginia 2007); M.D. (Vanderbilt 2016) [2017]
- MCARDO CAPONE, Research Instructor in Biochemistry B.A., M.S. (State University of Milan [Italy] 1996, 1996); Ph.D. (Hebrew University of Jerusalem [Israel] 2001) [2017]
- DAVID ANDREW CAPPEL, Research Instructor in Molecular Physiology & Biophysics B.A. (Princeton 2008); Ph.D. (Vanderbilt 2014) [2018]
- JOHN ANTHONY CAPRA, Associate Professor of Biological Sciences; Associate Professor of Biomedical Informatics; Assistant Professor of Computer Science B.A. (Columbia 2004); M.A., Ph.D. (Princeton 2006, 2009) [2013]
- RICHARD M. CAPRIOLI, Stanford Moore Chair in Biochemistry; Professor of Biochemistry; Professor of Chemistry; Professor of Medicine; Professor of Pharmacology; Director, Mass Spectrometry Center B.S., Ph.D. (Columbia 1965, 1969) [1998]
- DANA BACKLUND CARDIN, Assistant Professor of Medicine B.S., M.D. (North Carolina 1997, 2003); M.S.C.I. (Vanderbilt 2010) [2009]

- KATHRYN L. CARLSON, Assistant Professor of Pediatrics
 - B.S. (Cornell 1999); M.D. (Washington University 2004) [2009]
- LAUREN S. CARLSON, Assistant in Pediatrics B.E., M.S.N. (Vanderbilt 2001, 2008) [2010]
- JAMES GLENN CARLUCCI, Instructor in Pediatrics

(Vanderbilt 2003) [2007]

- B.S. (Santa Clara 2004); M.D. (Vanderbilt 2009) [2014]
- ROBERT H. CARNAHAN, Associate Professor of Pediatrics; Associate Professor of Radiology & Radiological Sciences B.S. (Indiana, Bloomington 1995); Ph.D.
- CHRISTOPHER CARPENTER, E. Bronson Ingram Chair; Professor of Economics; Professor of Law; Professor of Health Policy; Professor of Public Policy & Education; Director of Public Policy Studies
 - B.A. (Albion 1997); Ph.D. (California, Berkeley 2002) [2013]
- GRAHAM F. CARPENTER, Professor of Biochemistry, Emeritus B.S., M.S. (Rhode Island 1966, 1969); Ph.D. (Tennessee 1974) [1974]
- LAVENIA B. CARPENTER, Associate Professor of Clinical Obstetrics and Gynecology B.S. (Vanderbilt 1988); M.D. (UT Health Science Center [Tennessee] 1992) [2006]
- SARAH ELIZABETH CARPENTER, Assistant in Psychiatry and Behavioral Sciences; Instructor in Nursing
 - B.A. (Belmont 2008); M.S.N. (Vanderbilt 2017) [2020]
- J. JEFFREY CARR, Cornelius V, inderbilt Chair in Radiology & Radiological Sciences: Professor of Radiology and Radiological Sciences; Professor of Biomedical Informatics; Professor of Medicine B.A., M.D. (Vanderbilt 1985, 1989); M.S. (Wake Forest 1998) [2013]
- THOMAS JOSEPH CARR, Clinical Professor of Pediatrics B.A. (Notre Dame 1992); M.D. (Loyola 1996)

[1999]

- BARBARA GISELLA CARRANZA LEON, Assistant Professor of Medicine M.D. (Universidad Peruana 'Cayetano Heredia' [Peru] 2006) [2015]
- NANCY CARRASCO, Joe C. Davis Chair in Biomedical Science; Professor of Molecular Physiology & Biophysics; Chair of the Department of Molecular Physiology & Biophysics M.D., M.S. (National Autonomous University of Mexico 1980, 1981) [2018]

- ERICA J. CARRIER, Research Assistant Professor of Medicine
 B.S. (Guilford 1998); Ph.D. (Medical College of Wisconsin 2005) [2010]
- FRANK E. CARROLL, JR., Professor of Clinical Radiology and Radiological Sciences, Emeritus B.S. (Saint Joseph's [New York] 1963); M.D. (Hahnemann Medical 1967) [1999]
- KECIA N. CARROLL, Associate Professor of Pediatrics
 - B.A. (Vassar 1991); M.D., M.P.H. (Vanderbilt 1996, 2004) [2003]
- LEE VAN CARROLL, JR., Instructor in Clinical Radiology & Radiological Sciences B.S. (Auburn 2010); M.D., M.P.H. (Alabama, Birmingham 2014, 2015) [2020]
- ROBERT J. CARROLL, Assistant Professor of Biomedical Informatics M.S., Ph.D. (Vanderbilt 2011, 2014) [2015]
- ROBERT P. CARSON, Assistant Professor of Pediatrics; Assistant Professor of Pharmacology B.S. (South Dallow) 995); Ph.D., M.D. (Vinderbilt 2001, 2005) [2011]
- NITAKA CARSWELL, Instructor in Clinical Medicine
 - B.S. Spelman 2004); M.D. (Meharry Medical 2012) [2019]
- BRUCE D. CARTER, Professor of Biochemistry P.S. (Alma 1986); Ph.D. (Michigan 1992) [1997]
- DEFFREY B. CARTER, Assistant Clinical Professor of Oral and Maxillofacial Surgery B.S. (Tufts 1972); D.M.D. (Connecticut, Stamford 1976); M.D. (Vanderbilt 1978) [1988]
- MARY ALYSON CARTER, Assistant in Medicine B.S. (Lipscomb 2004); M.S.N. (Vanderbilt 2007) [2010]
- DIANA E. CARVER, Assistant Professor of Radiology & Radiological Sciences B.S. (Texas 2005); M.S. (Arizona 2008); M.M.P., M.A., Ph.D. (Vanderbilt 2010, 2012, 2015) [2017]
- CARISSA J. CASCIO, Associate Professor of Psychiatry and Behavioral Sciences; Assistant Professor of Psychology
 - B.S. (Baylor 1997); Ph.D. (Emory 2003) [2007]
- AUDREY JANE CASE, Assistant in Medicine B.S.N. (North Carolina 1993); M.S.N. (Old Dominion 1997); D.N.P. (Vanderbilt 2010) [1998]
- JONATHAN DALE CASEY, Assistant Professor of Medicine
 - B.S. (Vanderbilt 2006); M.D. (Louisville 2010) [2019]

- TABITHA ANNE CASILLI, Assistant Clinical Professor of Pediatrics B.S. (Middle Tennessee State 2002); M.D. (East Tennessee State 2010) [2015]
- CHARLES F. CASKEY, Assistant Professor of Radiology and Radiological Sciences; Assistant Professor of Biomedical Engineering B.S. (Texas 2004); Ph.D. (California, Davis 2008) [2013]
- JAMES E. CASSAT, Assistant Professor of Pediatrics; Assistant Professor of Biomedical Engineering; Assistant Professor of Pathology, Microbiology and Immunology
 B.S., M.D., Ph.D. (Arkansas 2000, 2008, 2008)
 [2012]
- JESSICA L. CASTILHO, Assistant Professor of MedicineB.A. (Washington University 2003); M.P.H., M.D. (Johns Hopkins 2007, 2008) [2015]
- GERMAN E. CASTILLO, Assistant Clinical Professor of Oral & Maxillofacial Surgery B.S. (Tennessee State 2010); D.D.S. (Meharry Medical 2015) [2018]
- MARCIE S. CASTLEBERRY, Associate Clinical Professor of Pediatrics B.S. (Abilene Christian 1987); M.D. (Louisiana State, Shreveport 1993) [2007]
- JUSTIN M. M. CATES, Professor of Pathology, Microbiology and Immunology B.S., M.D., Ph.D. (Tufts 1989, 1997, 1997) [2005]
- JAMES R. CATO, Associate Clinical Professor of Medicine B.A., M.D. (Vanderbilt 1974, 1975) [1986]
- THOMAS F. CATRON, Associate Professor of Medical Education and Administration, 7 stociate Professor of Pediatrics
 B.A. (Virginia 1979); M.S., Ph.D. (Peabody 1982, 1989) [1990]
- MICHAEL F. CAUCCI, Assistant Professor of Obstetrics and Gynecology; Assistant Professor of Clinical Psychiatry and Behavioral Sciences B.S. (Scranton 2000); M.D. (Georgetown 2004) [2009]
- KERRI L. CAVANAUGH, Associate Professor of Medicine
 - A.B. (Dartmouth 1995); M.D. (Yale 1999); M.H.S. (Johns Hopkins 2006) [2006]
- LINDSAY J. CELADA, Assistant Professor of Medicine B.S. (Lipscomb 2006); Ph.D. (Tennessee State 2013) [2016]

- JONAZARY REYES CERVONE, Instructor in Clinical Medicine; Instructor in Clinical Pediatrics
 - B.S. (California, Irvine 2006); M.B.S., D.O. (Midwestern University 2012, 2015) [2018]
- JEEYON CHA, Instructor in Medicine B.Sc., Ph.D., M.D. (Cincinnati 2007, 2013, 2015) [2020]
- ROSETTE J. CHAKKALAKAL, Assistant Professor of Medicine

 B.S. (Miami 2003): M.D. (Miami [Floridal 2006):
 - B.S. (Miami 2003); M.D. (Miami [Florida] 2006); M.H.S. (Yale 2012) [2012]
- ANURADHA BAPSI CHAKRAVARTHY, Professor of Radiation Oncology B.S. (Johns Hopkins 1978); M.D. (George Washington 1983) [1998]
- G. ROGER CHALKLEY, Senior Associate Dean for Biomedical Research, Education and Training; Professor of Molecular Physiology and Biophysics, Professor of Medical Education & Administration (VI), b.A., M.A., D.Phil. (Oxford [U.K.] 1361, 1962 (1964) [1986]
- ERIN CHAMBERS, Assistant in Radiation Oncology
 - B.S. (Tennessee Technological 2013); M.S. (Lou stana State 2016) [2018]
- EUGING P. CHAMBERS, JR., Assistant Clinical Professor of Surgery
 - P.S. (Millsaps 1983); M.D. (Mississippi, Jackson 1990) [2008]
- JOHN W. CHAMBERS, JR., Clinical Professor of Pediatrics
 - B.S. (Lee College [Tennessee] 1991); M.D. (UT Health Science Center [Tennessee] 1995) [1998]
- MARK R. CHAMBERS, Assistant Professor of Clinical Medicine; Assistant Professor of Clinical Pediatrics
 - B.S. (Miami [Ohio] 1988); M.D. (Ohio State 1993) [2010]
- LOLA B. CHAMBLESS, Associate Professor of Neurological Surgery; Associate Professor of Radiation Oncology
 - M.D., B.S. (Stanford 2005, 2005) [2012]
- JOHN CHRISTOPHER CHAMPION, Assistant Professor of Emergency Medicine B.S.E. (Duke 2006); M.D., M.B.A. (Baylor 2011, 2011) [2014]
- RACHEL WERGIN CHAMPION, Assistant Professor of Dermatology B.S.E. (Duke 2006); M.D. (Texas, Houston 2011) [2015]
- CHARLES G. CHANDLER, Associate Clinical Professor of Pediatrics B.A. (Tennessee 1976); M.D. (UT Health Science Center [Tennessee] 1980) [2007]

- RAKESH CHANDRA, Professor of Otolaryngology
 Head and Neck Surgery
 - B.S. (Virginia Polytechnic Institute 1993); M.D. (Maryland 1997) [2014]
- DEEPA CHANDRASEKARAN, Assistant Professor of Clinical Ophthalmology and Visual Sciences B.S. (Elite School of Optometry 1999); M.S.,
 - O.D. (Alabama, Birmingham 2002, 2004) [2014]
- MEERA CHANDRASHEKAR, Assistant Professor of Clinical Anesthesiology
 - M.B.B.S. (Bangalore [India] 1979) [1999]
- SAM S. CHANG, Patricia and Rodes Hart Chair in Urologic Surgery; Professor of Urology; Professor of Medicine
 - B.S. (Princeton 1988); M.D., M.B.A. (Vanderbilt 1992, 2015) [2000]
- TONY CHING-HSIANG CHANG, Assistant Professor of Anesthesiology B.S. (Johns Hopkins 2006); M.D. (South Alabama 2010) [2019]
- PHILIP CHANIN, Assistant Clinical Professor of Psychiatry and Behavioral Sciences B.A. (Amherst 1970); M.Ed., Ed.D. (Massachusetts, Boston 1972, 1975) [2005]
- SONJA CHAPARALA, Assistant Professor of Clinical Neurology B.S. (Virginia Commonwealth 2009); M.D. (St. George's, Grenada 2014) [2019]
- JAMES DAVID CHAPPELL, Research Associate Professor of Pediatrics B.S., M.S. (Murray State 1988, 1991); Ph.D., M.D. (Vanderbilt 1997, 2001) [2005]
- PHILIP DAVID CHARLES, Professor of Neurology B.S., M.D. (Vanderbilt 1986, 1990) [1994]
- WHITNEY E. CHASE, Assistant in Medicine B.S.N. (Virginia 2011); M.S.N. (Vandericit 2017) [2017]
- CODY CHASTAIN, Assistant Professor of Medicine B.Sc. (Southern Adventist 2004); M.D. (Loma Linda 2008) [2014]
- CHAYLA MURIEL CHASTEN, Assistant Professor of Clinical Medicine; Assistant Professor of Clinical Pediatrics

 B.S. (Clark Atlanta 2004); M.S. (Indiana, Indianapolis 2006); M.D. (Meharry Medical 2010) [2016]
- EDWARD CHAUM, Margy Ann and J. Donald M. Gass Chair in Ophthalmology; Professor of Ophthalmology & Visual Sciences; Professor of Biomedical Engineering; Professor of Pathology, Microbiology and Immunology B.A. (Johns Hopkins 1979); Ph.D., M.D. (Cornell 1986, 1987) [2018]

- KATHERINE FRITTON CHAVES, Instructor in Clinical Obstetrics & Gynecology; Research Instructor in Obstetrics & Gynecology B.S. (Cornell 2008); M.S. (Stanford 2011); M.D. (Jefferson Medical 2015) [2019]
- ERIC MARTIN CHAZEN, Clinical Professor of Pediatrics
 - B.A. (Vanderbilt 1952); M.D. (UT Health Science Center [Tennessee] 1955) [1961]
- WALTER J. CHAZIN, Chancellor's Chair in Medicine; Professor of Biochemistry; Professor of Chemistry
 - B.S. (McGill [Canada] 1975); Ph.D. (Concordia, Montreal [Canada] 1983) [2000]
- EDUARD Y. CHEKMENEV, Adjoint Associate Professor of Radiology and Radiological Sciences B.S. (Perm State [Russia] 1998); Ph.D. (Louisville 2003) [2009]
- ANGELA CHEN, Assistant reofessor of Medicine B.A. (Rice 2012); M.D. (New York 2016) [2019]
- CHIU-LAN CHEN, Research Associate Professor of Biostalistics 3.3... M.S. (National Taiwan 1982, 1984); Ph.D.
 - (North Carolina State 1995) [2004]
- FA CHEN, Visiting Instructor in Medicine
 Ph.D (Fujian Medical [China] 2017) [2019]
- JIAN CYUN CHEN, Research Associate Professor of Medicine
 - M.D., M.S. (Kunming Medical [China] 1998, 2003) [2007]
- JIN CHEN, Professor of Medicine; Professor of Cell and Developmental BiologyM.D. (Shanghai Medical [China] 1984); Ph.D. (Harvard 1991) [1997]
- JUN-SONG CHEN, Research Instructor in theDepartment of Cell and Developmental BiologyB.S. (Zhejiang [China] 1994); Ph.D. (Shanghai Institute of Biochemistry [China] 2001) [2017]
- KONG Y. CHEN, Adjunct Assistant Professor of Medicine
 - B.S. (Tennessee Technological 1993); Ph.D., M.S.C.I. (Vanderbilt 1997, 2002) [1997]
- LEI CHEN, Research Instructor in Cell & Developmental Biology
 B.A., M.A., Ph.D. (Sichuan Agricultural University [China] 2002, 2005, 2008) [2018]
- LI MIN CHEN, Associate Professor of Radiology and Radiological Sciences M.D., M.S., Ph.D. (Fourth Military Medical [China] 1989, 1992, 1997) [2003]

- QINGXIA CHEN, Associate Professor of Biostatistics; Associate Professor of Biomedical Informatics; Associate Professor of Ophthalmology & Visual Sciences B.S. (University of Science and Technology of China, Hefei 1999); M.S. (Pittsburgh 2001); Ph.D. (North Carolina 2005) [2005]
- RUI CHEN, Research Instructor in Molecular Physiology & Biophysics B.S. (Huazhong University of Science and Technology [China] 2005); Ph.D. (Peking [China] 2012) [2014]
- WEI CHEN, Research Associate Professor of Medicine M.D., M.S., Ph.D. (Harbin Medical [China] 1989, 1998, 2001) [2011]
- WENBIAO CHEN, Associate Professor of Molecular Physiology & Biophysics B.S. (Hunan Normal [China] 1985); M.S. (Washington State 1993); Ph.D. (Oregon Health and Science 1997) [2008]
- YOU CHEN, Assistant Professor of Biomedical Informatics; Assistant Professor of Computer Science
 - B.S. (Fuzhou [China] 2004); Ph.D. (Chinese Academy of Sciences 2010) [2015]
- ZHENBANG CHEN, Adjunct Associate Professor B.S. (Huazhong Agricultural [China] 1985); M.S. (Chinese Academy of Sciences 1988); Ph.D. (Ohio State 1999) [2020]
- ALEX C. CHENG, Research Assistant Professor of Biomedical Informatics B.S.E., M.E.M. (Duke 2005, 2010); M.S., Ph.D. (Vanderbilt 2016, 2018) [2018]
- LEO K. CHENG, Adjunct Assis and Professor of Surgery
 B.E., Ph.D. (Auckland [New Zealand]) 1997, 2002) [2012]
- CHRISTY M. CHERKESKY, Assistant in Neurological Surgery M.S.N. (Vanderbilt 2009) [2011]
- EDWARD F. CHERNEY, Associate Professor of Clinical Ophthalmology and Visual Sciences A.B. (California, Davis 1969); M.D. (California, Los Angeles 1973) [2002]
- ALAN D. CHERRINGTON, Jacquelyn A. Turner and Dr. Dorothy J. Turner Chair in Diabetes Research; Professor of Medicine; Professor of Molecular Physiology & Biophysics B.Sc. (New Brunswick [Canada] 1967); M.Sc., Ph.D. (Toronto [Canada] 1969, 1973) [1975]
- CAROLINE H. CHESTER, Assistant Clinical Professor of Plastic Surgery B.S. (Vanderbilt 1975); M.D. (UT Health Science Center [Tennessee] 1983) [2002]

- DAVID H. CHESTNUT, Professor of Anesthesiology B.A. (Samford 1974); M.D. (Alabama, Birmingham 1978) [2014]
- DANE MICHAEL CHETKOVICH, Margaret and John Warner Chair for Neurological Education; Professor of Neurology; Chair of the Department of Neurology B.A. B.S. (Texas 1988, 1988); Ph.D. M.D.
 - B.A., B.S. (Texas 1988, 1988); Ph.D., M.D. (Baylor 1992, 1994) [2017]
- SERGEI CHETYRKIN, Research Associate Professor of Medicine M.S. (Kiev State [Ukraine] 1991); Ph.D. (National Academy of Sciences, Kiev [Ukraine] 1999) [2007]
- ANDREW C. CHEUNG, Assistant Clinical Professor of Oral and Maxillofacial Surgery
 - B.A. (Rice 1997); D.D.S. (Michigan 2001) [2011]
- JOYCE CHEUNG-FLYNN Research Associate Professor of Surgery B.S. M.S. (Northern Arizona 1992, 1995); Ph.D. (Arizona State 1999) [2008]
- JOSH JA DAVID CHEW, Assistant Professor of Pediatrics; Assistant Professor of Medicine B.A. (Cornell 2008); M.D. (Virginia 2012);
 - M.S. (Vanderbilt 2018) [2019]
- MICHAEL HENG-JAH CHI, Assistant Professor of Aresthesiology
 - P.E., M.D. (Vanderbilt 2008, 2012) [2018]
- MICHELLE CHI, Assistant Professor of Clinical Medicine
 - B.S. (Tennessee 2007); M.D. (UT Health Science Center [Tennessee] 2011) [2019]
- CHIN CHIANG, Professor of Cell and Developmental Biology B.S. (SUNY, Buffalo 1984); M.S., Ph.D. (Washington State 1986, 1990) [1997]
- NATALIE E. CHICHETTO, Research Instructor in Medicine
 - B.A. (Missouri 2009); M.S.W. (Washington University 2011); Ph.D. (Florida 2017) [2019]
- GEOFFREY CHIDSEY, Assistant Professor of Medicine

 B. S. (Purdue 1990): M.D. (Indiana Indianance)
 - B.S. (Purdue 1990); M.D. (Indiana, Indianapolis 1994) [2006]
- MICHAEL SHU-YUN CHIN, Assistant Professor of Clinical Medicine
 - M.D. (Tufts 2009); M.P.H. (Harvard 2017) [2018]
- PETER ANTHONY CHIN, Associate Professor of Clinical Anesthesiology
 M.B.B.S. (West Indies [Jamaica] 1991);
 M.M.H.C. M.M. (West Indies 2012) 2013)
 - M.B.B.S. (West Indies [Jamaica] 1991); M.M.H.C, M.Mgt. (Vanderbilt 2013, 2013) [2010]
- SALLAYA CHINRATANALAB, Assistant Professor of Medicine M.D. (Mahidol [Thailand] 1991) [2001]

- WICHAI CHINRATANALAB, Assistant Professor of Clinical Medicine
 - M.D. (Mahidol [Thailand] 1990) [2002]
- SANIKA S. CHIRWA, Professor of Neuroscience and Pharmacology at Meharry Medical College; Adjunct Professor of Pharmacology at Vanderbilt University School of Medicine B.Pharm., M.D., Ph.D. (British Columbia [Canada] 1981, 1985, 1988) [2000]
- ROHAN V. CHITALE, Assistant Professor of Neurological Surgery; Assistant Professor of Radiology & Radiological Sciences B.A. (Pennsylvania 2003); M.D. (Jefferson Medical 2007) [2015]
- SUNG HOON CHO, Research Assistant Professor of Pathology, Microbiology and Immunology B.S. (Kongju National University 1997); Ph.D. (Gwangju Institute of Science and Technology [Korea] 2004) [2011]
- HYEHUN CHOI, Research Assistant Professor of Pediatrics B.S. (Handong [Korea] 2004); M.S. (Seoul National [Korea] 2006); Ph.D. (Medical College of Georgia 2011) [2016]
- LEENA CHOI, Professor of Biostatistics; Associate Professor of Nursing B.S., M.S. (Seoul National [Korea] 1988, 1995):
 - B.S., M.S. (Seoul National [Korea] 1988, 1995); Ph.D. (Johns Hopkins 2005) [2005]
- SWATI BANSAL CHOKSHI, Assistant Professor Clinical Pediatrics B.A. (Vanderbilt 2008); M.D. (Alabama Birmingham 2012) [2018]
- YASH AMIT CHOKSI, Assistant Professor of Medicine
 - B.A. (Duke 2007); M.D. (Vanderbilt 2012) [2018]
- NEESHA CHOMA, Assistant Professor of Chaical Medicine; Associate Chief of Staff Voly, Executive Medical Director of Quality and Safety, VU Hospital and Clinics
 B.S. (Rensselaer Polytechnic Justitute 2000);
 M.D. (Albany Medical 2002), M.P.H. (Vanderbilt 2009) [2006]
- AMY S. CHOMSKY, Professor of Ophthalmology & Visual Sciences
 - B.A. (Gettysburg 1986); M.D. (Pennsylvania 1990) [1994]
- ABHA CHOPRA, Visiting Associate Professor of Medicine
 - B.S., M.S. (Mumbai [India] 1983, 1985); Ph.D. (Tata Institute of Fundamental Research [India] 1999) [2015]
- MARGARET MORRISON CHOTARD, Assistant in Medicine
 - B.S.N. (Bethel College of Nursing [Colorado] 2001); M.S.N. (Vanderbilt 2004) [2006]

- SHAHANA A. CHOUDHURY, Associate Professor of Pediatrics at Meharry Medical College; Clinical Professor of Pediatrics M.D. (Dhaka [Bangladesh] 1982) [2000]
- NAWEED CHOWDHURY, Assistant Professor of Otolaryngology - Head and Neck Surgery B.A. (Rice 2007); M.D. (Baylor 2011) [2017]
- MARY MARGARET CHREN, Robert N. and Rachelle Buchanan and A.H. and Lucile Lancaster Chair in Dermatology; Professor of Dermatology; Chair of the Department of Dermatology
 - A.B. (Smith 1974); M.D. (Yale 1978) [2018]
- KARLA G. CHRISTIAN, Associate Professor of Cardiac Surgery
 - B.S., M.D. (University of Washington 1981, 1985) [1994]
- BRIAN W. CHRISTMAN, Professor of Medicine B.S. (Tulane 1977); M.D. Oklahoma 1981) [1987]
- JOHN W. CHRISTMAN, Adjunct Professor of Medicine M.D. (Indiana, Indianapolis 1978) [2004]
- CECILIA P CHUNG, Associate Professor of
- M.D. Q ational University of San Marcos 1999); M.P.H. (Vanderbilt 2005) [2012]
- CHANG YONG CHUNG, Adjunct Associate Professor of Pharmacology
 - B.S., M.S. (Seoul National [Korea] 1986, 1988); Ph.D. (Duke 1995) [2001]
- LARRY R. CHURCHILL, Professor of Medicine, Emeritus
 - B.A. (Rhodes College 1967); M.Div., Ph.D. (Duke 1970, 1973) [2002]
- ANDRE L. CHURCHWELL, Senior Associate Dean for Diversity Affairs; Levi Watkins Jr., M.D. Chair; Professor of Medicine; Professor of Radiology and Radiological Sciences; Professor of Biomedical Engineering B.S. (Vanderbilt 1975); M.D. (Harvard 1979) [1991]
- KEITH B. CHURCHWELL, Adjunct Associate Professor of Medicine A.B. (Harvard 1983); M.D. (Washington
 - University 1987) [2006]
- DAISY A. CIENER, Assistant Professor of Clinical Pediatrics
 - B.S. (Emory 2005); M.D. (Miami [Florida] 2009) [2016]
- MARIANA CIOBANU, Assistant Professor of Clinical Pediatrics M.D. (Moldova State 1994) [2015]

- KRISTEN CIOMBOR, Assistant Professor of Medicine
 - M.A. (Harvard 2001); M.D. (Miami [Florida] 2005); M.S. (Vanderbilt 2013) [2010]
- JAMIE RENEE CIRBUS, Assistant Professor of Emergency Medicine B.S. (Wake Forest 2010); M.D. (SUNY Upstate
 - Medical University 2014) [2017]
- DEBRA KAY CIRONE, Assistant in Anesthesiology B.S.N. (South Alabama 1996); M.S.N. (Alabama, Huntsville 2011) [2012]
- DANIEL O. CLAASSEN, Associate Professor of Neurology
 - B.M., M.S. (Georgia 1999, 2001); M.D. (Medical College of Georgia 2005) [2011]
- ADRIENNE R. CLAGETT, Assistant in Medicine B.A. (Transylvania 1993); B.S.N. (Belmont 1996); M.S.N. (Vanderbilt 2012) [2015]
- CHRISTY ANN CLAIBORNE, Assistant in Medicine
 - B.A., M.S.S.W. (Tennessee 2002, 2006) [2018]
- WALTER K. CLAIR, Professor of Medicine A.B. (Harvard 1977); M.D. (Harvard Medical 1981); M.P.H. (Harvard 1985) [2006]
- AMY J. CLARK, Assistant in Pediatrics B.S.N. (Florida State 2014); M.S.N. (Vanderbilt 2017) [2017]
- CAROL A. CLARK, Assistant in Pediatrics M.S.N. (South Alabama 1996) [2016]
- CHARLES AMOS CLARK, Assistant Professor of Clinical Medicine
 - B.A. (Vanderbilt 2008); M.D. (UT Health Science Center [Tennessee] 2014) [2017]
- H. DANIEL CLARK, Assistant Clinical Professor of Oral and Maxillofacial Surgery
 D.D.S., B.S. (California, San Francisco 1997, 1997); M.D. (Harvard Medical 2000) [2010]
- JENNIFER J. CLARK, Adjoint Assistant Professor of Biostatistics
 - B.S. (Tennessee 2005); Pl.D. North Carolina 2013) [2019]
- NATHANIEL KIM CLARK, Associate Professor of Clinical Psychiatry and Behavioral Sciences; Adjunct Associate Professor of Nursing B.A. (Yale 1994); M.D. (Boston University 2001) [2007]
- STEPHEN WESLEY CLARK, Assistant Professor of Neurology
 - Ph.D. (Tennessee, Nashville 2003); M.D. (UT Health Science Center [Tennessee] 2005) [2011]
- CHARLES D. CLARKE, Assistant Professor of Clinical Neurology B.S. (West Virginia 2004); M.D. (Ohio State 2008) [2013]

- DEREK P. CLAXTON, Research Assistant Professor of Molecular Physiology & Biophysics B.S. (Alabama, Huntsville 2004); Ph.D. (Vanderbilt 2010) [2014]
- MARK A. CLAY, Assistant Professor of Pediatrics B.S. (Xavier [Louisiana] 1998); M.D. (Emory 2002) [2013]
- ANNA S. CLAYTON, Assistant Professor of Dermatology B.S. (Maryland 1985); M.D. (Uniformed Services
 - B.S. (Maryland 1985); M.D. (Uniformed Services 1990) [2007]
- DOUGLASS B. CLAYTON, Associate Professor of Urology; Associate Professor of Pediatrics B.S. (Lambuth 2000); M.D. (UT Health Science Center [Tennessee] 2004) [2011]
- ELLEN WRIGHT CLAYTON, Craig-Weaver Chair in Pediatrics; Professor of Pediatrics; Professor of Law
 - B.S. (Duke 1974); M.S. (Stanford 1976); J.D. (Yale 1979); M.D. (Har and 1985) [1988]
- GEORGE F. CLAYTON, Assistant Clinical Professor of Orel and Maxillofacial Surgery 3.A. (Wake Forest 1983); D.D.S. (North Carolina Charlotte 1987) [2004]
- YNN E. CLEMENT, Assistant in Medicine

 B.S.N. (North Carolina 1989); M.S.N. (Belmont 1998) [2004]
- JEFFFRY DEONTAI CLEMMONS, Assistant Professor of Clinical Anesthesiology B.S. (Alabama 2008); M.D. (Meharry Medical 2012) [2016]
- THOMAS F. CLEVELAND, Professor of Otolaryngology - Head and Neck Surgery; Adjunct Professor of Otolaryngology - Head and Neck Surgery
 - B.A., B.M. (Mississippi 1964, 1969); M.M., Ph.D. (Southern California 1970, 1976) [1991]
- LISA CLEWNER-NEWMAN, Assistant Professor of Clinical Pediatrics

 P. A. R.S. (North Carolina 2001, 2001); M.D.
 - B.A., B.S. (North Carolina 2001, 2001); M.D. (Texas 2005) [2017]
- DAVID E. CLIFFEL, Cornelius Vanderbilt Chair; Professor of Chemistry; Associate Professor of Pediatrics
 - B.E.E., B.S. (Dayton 1988, 1988); Ph.D. (Texas 1998) [2000]
- MARY ELLEN CLINTON, Assistant Clinical Professor of Neurology B.S. (Loyola Marymount 1972); M.D. (Southern California 1976) [1982]
- AMANDA CLOUSE, Assistant Professor of Emergency Medicine B.S. (Lipscomb 2006); M.D. (East Tennessee State 2011) [2015]

- CATHERYNE GRAYCE CLOUSE, Assistant Professor of Nursing; Assistant Professor of Medicine
 - B.S. (North Carolina 1998); M.P.H. (California, Berkeley 2005); Ph.D. (North Carolina 2012) [2014]
- EDITH E. CLOYD, Assistant in Psychiatry and Behavioral Sciences; Instructor in Nursing B.S. (East Tennessee State 1981); J.D. (Tennessee 1985); M.S.N. (Vanderbilt 2005) [2006]
- MARK A. CLYMER, Assistant Clinical Professor of Otolaryngology - Head and Neck Surgery B.S., M.D. (Iowa 1986, 1990) [2000]
- ANTHONY J. CMELAK, Professor of Radiation Oncology; Medical Director Vanderbilt-Ingram Cancer Center at Franklin B.S. (California, Berkeley 1987); M.D. (Northwestern 1992) [1996]
- KATIE COLBERT COATE, Research Instructor in Medicine; Adjoint Assistant Professor of Molecular Physiology and Biophysics B.S., M.S. (Auburn 2005, 2007); Ph.D. (Vanderbilt 2011) [2019]
- CHARLES E. COBB, Professor of Molecular Physiology & Biophysics B.S., M.S. (Michigan Technological 1980, 1981); Ph.D. (Vanderbilt 1986) [1990]
- CHERYL M. COBB, Associate Professor of Clinical Psychiatry and Behavioral Sciences B.S., M.D. (Vanderbilt 2001, 2005) [2010]
- MARK A. COBB, Assistant Clinical Professor of Neurological Surgery B.A. (Lipscomb 1978); M.S., M.D. (Vanderbi't 1980, 1990) [2012]
- LORI A. COBURN, Assistant Professor of Medicine B.S. (Lyon College 2000); M.D. (Harvard 2004) [2008]
- LAYLA M. COCHRAN, Assistant in Medicine B.S. (Tennessee Technological 2002); M.S.N. (Vanderbilt 2007) [2008]
- MICHELLE MACHT COCHRAN, Assistant Clinical Professor of Psychiatry and Behavioral Sciences B.S. (Centre 1988); M.D. (Louisville 1992)
- CHRISTOPHER L. COE, Assistant Professor of Clinical Medicine B.A. (Middlebury 2012); M.D. (Boston University 2017) [2020]

[1996]

CHARLES W. COFFEY II, Professor of Radiation Oncology, Emeritus B.S., M.S. (Kentucky, Lexington 1971, 1972); Ph.D. (Purdue 1975) [1993]

- ROBERT J. COFFEY, JR., Professor of Medicine; Professor of Cell and Developmental Biology A.B. (Princeton 1970); M.D. (Georgetown 1976) [1986]
- CHERYL M. COFFIN, Professor of Pathology, Microbiology and Immunology, Emerita B.A. (Bowdoin 1975); M.D. (Vermont 1980) [2008]
- JOY DARLENE COGAN, Research Professor of Pediatrics A.B. (Transylvania 1983); Ph.D. (Vanderbilt
 - A.B. (Transylvania 1983); Ph.D. (Vanderbilt 1991) [2003]
- ALISON L. COHEN, Assistant in Otolaryngology -Head and Neck Surgery B.A. (Beloit 1994); M.S.N. (Vanderbilt 2000) [2001]
- SARAH SCHWEITZER COHEN, Adjunct Assistant Professor of Medicine B.S. (North Carolina 2000); M.S. (Michigan 2002); Ph.D. (North Caroline 2010) [2012]
- CATHERINE A. COL ALANNI, Instructor in Otolar ingology Head and Neck Surgery B.A. (Duke 2007), M.Phil. (Cambridge [U.K.] 2014); M.D. (Johns Hopkins 2015) [2020]
- PCGER J. COLBRAN, Louise B. McGavock Chair (#10): Professor of Molecular Physiology and Biophysics
 - B.Sc. (Bristol [U.K.] 1982); Ph.D. (Newcastle niversity 1985) [1986]
- B.S. (Lipscomb 2004); B.S.N., M.S.N. (Belmont 2011, 2014) [2018]
- KATIE ANN COLE, Assistant in Surgery B.S. (Middle Tennessee State 2005); B.S.N. (Johns Hopkins 2006); M.S.N. (Vanderbilt 2010) [2011]
- ROSANNE COLEMAN, Assistant Clinical Professor of Pediatrics
 - B.S. (Christian Brothers 1985); M.D. (UT Health Science Center [Tennessee] 1994) [2009]
- BEATRIZ COLLADA, Clinical Instructor in Pediatrics
 B.S. (Duke 2008); M.D. (Florida International 2016) [2019]
- CORY B. COLLIER, Clinical Instructor in Pediatrics B.S. (Texas A & M 2003); M.D. (Texas Tech University 2008) [2015]
- DAVID L. COLLIER, Adjunct Assistant Professor of Health Policy B.S. (Harding 1980): M.D. (Arkansas, Little Rock
 - B.S. (Harding 1980); M.D. (Arkansas, Little Rock 1984) [1998]
- DAVID R. COLLINS, Associate Clinical Professor of Medicine B.E. (Vanderbilt 1993); M.D. (UT Health Science Center [Tennessee] 1997) [2000]

- DOUGLAS J. COLLINS, Associate Clinical Professor of Pediatrics B.S. (Memphis State 1987); M.D. (Arkansas, Little Rock 1991) [2006]
- HAROLD B. COLLINS II, Associate Clinical Professor of Obstetrics and Gynecology B.A. (Vanderbilt 1985); M.D. (UT Health Science Center [Tennessee] 1989) [2008]
- JO ANN COOK COLLINS, Associate Clinical Professor of Pediatrics B.S. (Birmingham-Southern 1993); M.D. (Vanderbilt 1997) [2000]
- MERRI SHAW COLLINS, Associate Clinical Professor of Pediatrics B.S. (University of the South 1992); M.D. (UT Health Science Center [Tennessee] 1996) [2002]
- NINA S. COLLINS, Assistant in Surgery; Instructor in Nursing B.S. (Vanderbilt 1999); B.S.N. (Tennessee Wesleyan 2003); M.S.N. (Vanderbilt 2005) [2011]
- SEAN P. COLLINS, Professor of Emergency Medicine
 - B.S. (Boston University 1993); M.D. (Wisconsin 1997); M.S. (Harvard 2005) [2011]
- SHEILA COLLINS, Professor of Medicine; Professor of Molecular Physiology & Biophysics B.S. (Massachusetts 1979); Ph.D. (Massachusetts Institute of Technology 1985) [2018]
- HENRY GERARD COLMER IV, Assistant Professor of Emergency Medicine B.S. (North Carolina, Charlotte 2010) M.D. (Wake Forest 2015) [2019]
- PATRICIA A. COMMISKEY, Research Assistant Professor of Neurology B.A. (South Alabama 1991); 11.A. (Balinnore 1996); Dr.P.H. (Tulane 2011) [2016]
- GILBERT M. COMOLA, Assistant in Crology B.S.N. (Mississippi University for Women 2008); M.S.N. (Goldfarb School of Mursing at Barnes-Jewish College [Missouri] 2012) [2016]
- BRUCE E. COMPAS, Patricia & Rodes Hart Chair; Professor of Psychology & Human Development; Professor of Pediatrics
 - B.A., M.A., Ph.D. (California, Los Angeles 1973, 1975, 1980) [2002]
- MARGARET LOUISE COMPTON, Assistant Professor of Pathology, Microbiology and Immunology B.A. (Oberlin 2009); M.D. (Rochester 2014) [2020]
- BEATRICE P. CONCEPCION, Assistant Professor of Medicine
 - M.D. (Philippines 2004) [2013]

- RAOUL S. CONCEPCION, Assistant Clinical Professor of Urology B.S. (Toledo 1979); M.D. (Ohio State 1984) [1990]
- CAROLINE P. CONE, Assistant in Medicine B.S.N. (Calvin 1988); M.S.N. (Vanderbilt 1989) [2020]
- DAVID SCOTT CONKLIN, Assistant Professor of Psychiatry and Behavioral Sciences B.A., M.D. (Wake Forest 2006, 2014) [2018]
- RACHEL W. CONKLIN, Assistant in Radiation Oncology
 - B.E. (Vanderbilt 2006); M.S., M.Sc. (Wake Forest 2013, 2015) [2015]
- ALEXANDER CHRISTIAN CONLEY, Research Instructor in Psychiatry and Behavioral Sciences Ph.D. (Newcastle [Australia] 2017) [2019]
- PETER JEFFREY CONN, Lee E. Limbird Chair in Pharmacology; Professor of Pharmacology B.S. (Lee 1981); Ph.D. (Van Jerbilt 1986) [2003]
- JIM CONN ELLY, Assistant Professor of Pediatrics B S (I)wa 1999), M.D. (Washington University 2013) [2016]
- CARA C. CONNOLLY, Instructor in Clinical Radiology & Radiological Sciences
 - B.S. (Forida 1996); M.D. (Tulane 2015) [2020]
- CIAPAN CONSIDINE, Assistant Professor of Cinical Neurology
 - P.A. (Michigan 2008); M.A., Ph.D. (Windsor [Canada] 2011, 2015) [2017]
- EDWARD G. CONTURE, Professor of Hearing and Speech Sciences, Emeritus
 - B.S. (Emerson 1967); M.S. (Northwestern 1968); Ph.D. (Iowa 1972) [1997]
- TRISHA L. CONWELL, Assistant in Neurological Surgery
 - B.S. (Tennessee 2005); M.S. (Trevecca Nazarene 2007) [2012]
- ALICE C. COOGAN, Professor of Pathology, Microbiology and Immunology; Interim Chair of the Department of Pathology, Microbiology and Immunology
 - B.A. (Stanford 1984); M.D. (Vanderbilt 1988) [2009]
- LAURA A. COOLEY, Assistant Clinical Professor of Medicine
 - M.A. (Western Kentucky 2008); Ph.D. (Bowling Green State 2012) [2018]
- LINDSEY W. COOPER, SR., Assistant Clinical Professor of Oral and Maxillofacial Surgery D.M.D. (Kentucky, Lexington 1975) [2003]
- MICHAEL K. COOPER, Associate Professor of Neurology
 - B.S. (Rhodes College 1987); M.D. (Alabama, Birmingham 1992) [2002]

- WILLIAM O. COOPER, Associate Dean for Faculty Affairs; Cornelius Vanderbilt Chair; Professor of Pediatrics; Professor of Health Policy B.A. (Transylvania 1987); M.D., M.P.H. (Vanderbilt 1991, 1997) [1996]
- BILLY H. COPELAND II, Assistant Professor of Clinical Medicine
 - B.S. (Tennessee 1997); M.D. (East Tennessee State 2003) [2010]
- ELIZABETH ANNE COPENHAVER, Assistant Professor of Clinical Pediatrics B.E. (Vanderbilt 2008); M.D. (West Virginia 2013) [2016]
- BLYTHE ANNE CORBETT, Professor of Psychiatry and Behavioral Sciences; Associate Professor of Psychology & Human Development M.A., Ph.D. (California School of Professional Psychology 1996, 1999) [2010]
- JACKIE D. CORBIN, Professor of Molecular Physiology and Biophysics, Emeritus B.S. (Tennessee 1963); Ph.D. (Vanderbilt 1968) [1971]
- JOHN M. COREY, Associate Professor of Clinical Anesthesiology
 - B.S. (Missouri State 1996); M.D. (Missouri 2001) [2011]
- KYLIE M. CORMIER, Associate Clinical Professor of Pediatrics
 - B.S. (Louisiana, Monroe 1997); M.D. (Louisiana, State 2003) [2007]
- CARLTON W. CORNETT, Assistant Clinical Professor of Psychiatry and Behavioral Sciences B.A. (Huntingdon 1982); M.S.W. (Georgia 1984) [2007]
- DALE SHANNON CORNETT, A Junct Assistant Professor of Biochemistry B.S. (Eastern Kentucky 1988); Ph.D. (Georgia 1993) [2002]
- LAURA L. CORONA, Assistant Professor of Pediatrics
 - B.A. (Williams 2011); Ph.D., M.A. (SUNY, Albany 2018, 2018) [2019]
- ROGELIO A. CORONADO, Research Assistant Professor of Orthopaedic Surgery; Research Assistant Professor of Physical Medicine and Rehabilitation
 - M.S.P.T. (Texas Tech University 2007); B.S. (Texas A&M University 2009); Ph.D. (Florida 2014) [2014]
- HERNAN CORREA, Associate Professor of Pathology, Microbiology and Immunology M.D. (Universidad del Valle [Colombia] 1983) [2006]

- PELAYO CORREA, Professor of Medicine, Emeritus M.D. (Universidad de Antioquia [Colombia] 1949) [2005]
- DAVID CORTEZ, Ingram Professor of Cancer Research; Richard N. Armstrong, Ph.D. Chair for Innovation in Biochemistry; Professor of Biochemistry
 - B.S. (Illinois, Champaign 1993); Ph.D. (Duke 1997) [2002]
- DANIEL COTTRELL, Assistant Professor of Clinical Medicine B.A. (Boston University 2001); M.D. (George Washington 2006) [2017]
- ALLISON C. COUDEN, Associate Clinical Professor of Pediatrics B.S. (Furman 1992); M.D. (UT Health Science Center [Tennessee] 1996) [2002]
- ELIZABETH ERIN COUG'IN IN, Assistant in Medicine
 B.S.N. (Georgia College and State University)
- 20(9); M.S.N. (Vancerbilt 2017) [2018] LAULA B. COULAM, Instructor in Clinical
- Neurology B.A. (Williams 1995); M.A., Ph.D. (Washington
- B.A. (Winicans 1995); M.A., Ph.D. (Washingtor University 1995, 2003) [2013]
- HOLLY I. COVAS, Assistant in Pathology, Microbiology and Immunology B.S. (Mississippi 2010); M.P.H. (California, Berkeley 2014) [2017]
- TIMOTHY L. COVER, Professor of Medicine; Professor of Pathology, Microbiology and Immunology B.S. (Muhlenberg 1980); M.D. (Duke 1984) [1990]
- RONALD L. COWAN, Professor of Psychiatry and Behavioral Sciences; Professor of Radiology and Radiological Sciences B.S. (Christian Brothers 1984); Ph.D. (UT Health Science Center [Tennessee] 1990); M.D. (Cornell

1994) [2002]

- CHARLES L. COX III, Assistant Professor of Orthopaedic Surgery B.E. (Vanderbilt 1998); M.D. (UT Health Science Center [Tennessee] 2002); M.P.H. (Vanderbilt 2010) [2008]
- JOY D. COX, Clinical Instructor in Obstetrics and Gynecology
 - B.A., M.D. (Vanderbilt 1998, 2002) [2007]
- NANCY J. COX, Mary Phillips Edmonds Gray Chair; Professor of Medicine B.Sc. (Notre Dame 1978); Ph.D. (Yale 1982) [2015]
- LAURA S. CRADDOCK, Assistant in Medicine B.S. (Auburn 1994); M.S.N. (Vanderbilt 2002) [2008]

- ALLEN SCOTT CRAIG, Adjunct Associate Professor of Health Policy B.A. (SUNY, Geneseo 1978); M.D. (Yeshiva 1982) [1998]
- KAYLIN S. CRAIG, Assistant Professor of Clinical Medicine
 - B.S. (Louisiana State 2007); M.D. (Louisiana State, New Orleans 2012) [2015]
- GABRIELLA L. CRANE, Associate Professor of Clinical Radiology & Radiological Sciences; Associate Professor of Clinical Pediatrics B.A. (William and Mary 1994); M.D. (Boston University 2004) [2010]
- DEBRA M. CRAVEN, Assistant in Anesthesiology B.S. (Tennessee 1999); M.S.N. (Vanderbilt 2010) [2011]
- ERIKA L. CRAWFORD, Assistant Clinical Professor of Pediatrics B.S. (Hampton 2000); M.D. (Meharry Medical 2004) [2007]
- LANE C. CRAWFORD, Assistant Professor of Clinical Anesthesiology
 - B.A., M.D. (Vanderbilt 2007, 2011) [2017]
- JEFFREY L. CREASY, Professor of Radiology and Radiological Sciences
 - B.S. (Michigan State 1976); M.D. (North Carolina 1980) [1988]
- CLARENCE BUDDY CREECH, Associate
 Professor of Pediatrics
 B.S. (Vanderbilt 1995); M.D. (Tennessee,
 Memphis 1999); M.P.H. (Vanderbilt 2006) [2006]
- MADELINE G. CREGO, Assistant in Medicine; Lecturer of Nursing B.S. (Wake Forest 2015); M.S.N. (Vanderbile 2017) [2018]
- RACHELLE L. CRESCENZI, Assistant Professor of Radiology & Radiological Sciences
 B.S. (Delaware 2009); Ph.D. (Pennsylvania 2015)
 [2018]
- THERESA A. CRESSMAN, Assistant in Radiation Oncology B.S.N. (Austin Peay State 2006); M.S.N.

(Vanderbilt 2011) [2012]

- CANDICE CREWSE, Assistant Clinical Professor of Pediatrics
 - B.S. (Christian Brothers 2004); M.D. (East Tennessee State 2008) [2011]
- MARTA ANN CRISPENS, Professor of Obstetrics and Gynecology
 - B.S. (Emory 1987); M.D. (Alabama, Birmingham 1991) [2002]
- CHRISTY J. CROCKETT, Assistant Professor of Anesthesiology
 - B.S., M.D. (North Carolina 2005, 2009) [2016]

- SARAH CROESSMANN, Research Assistant Professor of Medicine B.S. (Virginia 2009); Ph.D. (Johns Hopkins 2015) [2019]
- LESLIE J. CROFFORD, Wilson Family Chair in Medicine; Professor of Pathology, Microbiology and Immunology; Professor of Medicine B.A. (Vanderbilt 1980); M.D. (UT Health Science Center [Tennessee] 1984) [2013]
- OSCAR B. CROFFORD, Professor of Medicine, Emeritus
 - B.A., M.D. (Vanderbilt 1952, 1955) [1959]
- ROBERT M. CRONIN, Assistant Professor of Biomedical Informatics; Assistant Professor of Medicine; Assistant Professor of Pediatrics B.S., M.Eng. (Cornell 2001, 2002); M.D. (Ohio State 2009); M.S. (Vanderbilt 2015) [2013]
- TRAVIS CROOK, Assistant Professor of Pediatrics B.S. (Clemson 2005); M.D. (Baylor 2009) [2012]
- GEORGE H. CROSSLEY III, Professor of Medicine B.S. M.S. (Georgia 197/, 1980); M.D. (Medical College of Georgia 1984) [2014]
- RACHEL DENISE CROUCH, Adjunct Assistant Professo in Pharmacology
 - B.A., D.Pherm. (Lipscomb 2008, 2012); Ph.D. (Van Grbilt 2016) [2018]
- DEBORAH O. CROWE, Assistant Clinical Professor of Pathology, Microbiology and Immunology B.S. (Kentucky, Lexington 1974); Ph.D. (Louisville 1985) [1989]
- DONNA J. CROWE, Clinical Instructor in Obstetrics and Gynecology B.S. (Birmingham-Southern 1989); M.D. (Vanderbilt 1993) [1997]
- JAMES E. CROWE, JR., Ann Scott Carell Chair;Professor of Pediatrics; Professor of Pathology,Microbiology and ImmunologyB.S. (Davidson 1983); M.D. (North Carolina 1987) [1995]
- ANGELA N. CRUDELE, Assistant Professor of Neurology B.A. (Williams 2008); M.D. (Jefferson Medical 2013) [2019]
- CRISTINA REYES CRUZ, Assistant Clinical Professor of Pediatrics B.S., M.D. (Universidad Santo Tomás, Bucaramanga [Colombia] 1984, 1988) [2013]
- MARIA ELENA CRUZ, Assistant in Medicine B.S. (Pace, White Plains 1994); M.S.N. (Vanderbilt 2016) [2017]
- JEFFREY L. CULBREATH, Assistant Clinical Professor of Oral & Maxillofacial Surgery B.S. (Middle Tennessee State 2004); D.D.S. (UT Health Science Center [Tennessee] 2008) [2019]

- JON CUMBERLEDGE, Instructor in Clinical Medicine; Instructor in Clinical Pediatrics M.D. (Southern Illinois, Springfield 1991) [2018]
- TARA LEIGH CUMMING, Assistant in Urology B.S.N. (Catholic University of America 2006); M.S.N. (Thomas Jefferson 2016) [2016]
- JARED JACKSON CUMMINGS, Assistant Professor of Clinical Anesthesiology B.S. (Bryan 2011); M.D. (Virginia Commonwealth 2015) [2020]
- ALLYSON WITTERS CUNDIFF, Assistant Professor of Clinical Psychiatry and Behavioral Sciences
 - B.S. (Vanderbilt 2002); M.D. (UT Health Science Center [Tennessee] 2010) [2015]
- JOHN A. CURCI, Associate Professor of Surgery B.A. (Miami [Ohio] 1990); M.D. (Yale 1994) [2014]
- HOWARD LEE CURLIN, Assistant Professor of Obstetrics and Gynecology B.S. (Wheaton 1995); M.D. (East Tennessee State 1999) [2010]
- KEVIN P. M. CURRIE, Adjunct Associate Professor of Anesthesiology B.Sc. (Edinburgh [U.K.] 1990); Ph.D. (London [U.K.] 1994) [2002]
- KIMBERLY ARNOLD CURRIER, Assistant in Medicine
 - B.A. (Houston 1989); M.S.N. (Vanderbilt 2007) [2004]
- WILLIAM BEN CUTRER, Associate Dean for Undergraduate Medical Education; Associate Professor of Pediatrics; Associate Professor of Anesthesiology
 - B.A. (Hardin-Simmons 1999); M.D. (Kentucky, Lexington 2003); M.Ed. (Cincinnati 2018) [2010]
- LAURIE E. CUTTING, Patricia and Rodes Hart Chair; Professor of Special Education, Professor of Psychology secondary; Professor of Pediatrics B.A. (American 1993); M.A., H.D. (Northwestern 1995, 1999) [2009]
- MELISSA A. CYPERSKI, Assistant Professor of Psychiatry and Behavioral Sciences; Adjunct Assistant Professor of Psychology B.S. (Denison 2010); M.S., Ph.D. (Auburn 2013, 2016) [2017]
- LAURA N. D'AOUST, Assistant Professor of Clinical Pediatrics B.S. (Massachusetts Institute of Technology 2008); M.D., Ph.D. (Vanderbilt 2016, 2016) [2019]
- KATHRYN MCCRYSTAL DAHIR, Professor of Medicine B.A. (Virginia 1995); M.D. (Eastern Virginia 1999) [2005]

- KIMBERLY BROWN DAHLMAN, Assistant Professor of Medicine B.S. (Lafayette 1999); Ph.D. (Vanderbilt 2006) [2010]
- CHUNHUA DAI, Research Associate Professor of MedicineM.D., M.Sc. (Hunan Medical [China] 1975, 1986)
 - M.D., M.Sc. (Hunan Medical [China] 1975, 1986) [1992]
- QI DAI, Professor of Medicine M.D. (Shanghai Medical [China] 1990); Ph.D. (South Carolina 2001) [2003]
- ROBIN LIGLER DALAL, Assistant Professor of Medicine
 - B.S., M.S. (Georgia 2006, 2006); M.D. (Medical College of Georgia 2012) [2013]
- KEVIN MICHAEL DALE, Assistant Professor of Orthopaedic Surgery B.A. (DePauw 2004); M.D. (Southern Illinois,
 - B.A. (DePauw 2004); M.D. (Southern Illinois Springfield 2009) [2016]
- KELLY WYNN DALEY, Assistant in Anesther iology
 - M.S.N. (Vanderbil (2014) [2014]
- ARTHUR F. DALLEY II, Professor of Cell and Developmental Biology, Emeritus B.S., Ph.D. (Utah 1970, 1975) [1998]
- LINDSEY T. DALTON, Assistant in Medicine B.S.N. (Lipscomb 2007); M.S.N. (Vanderbilt 2012) [2016]
- STEVEN M. DAMO, Adjunct Assistant Professor of Biochemistry
 - B.S. (New York 1998); Ph.D. (California, Berkeley 2006) [2013]
- BRUCE M. DAMON, Professor of Radiology & Radiological Sciences; Professor of Biomedical Engineering; Associate Professor of Molecular Physiology and Biophysics
 - B.S. (Massachusetts 1987); M.S., Ph.D. (Illinois, Champaign 1993, 2000) [2003]
- JULIE B. DAMP, Associate Professor of Medicine; Associate Director, Cardiovascular Fellowship Training Program
 - B.S. (Tennessee 1997); M.D. (Vanderbilt 2001) [2007]
- ANTHONY B. DANIELS, Assistant Professor of Ophthalmology and Visual Sciences; Assistant Professor of Radiation Oncology B.A. (Princeton 2002); M.S.H.S. (London School of Economics [U.K.] 2003); M.D. (Pennsylvania
- JOHN SCOTT DANIELS, Adjunct Associate Professor of Pharmacology B.S. (Southwest Baptist 1992); Ph.D. (Missouri 1998) [2010]

2007) [2013]

- R. NATHAN DANIELS, Adjunct Assistant Professor of Pharmacology
 - B.S. (Ohio State 2003); Ph.D. (Vanderbilt 2010) [2013]
- MELISSA ELLEN DANKO, Assistant Professor of Pediatric Surgery
 - B.A. (Duke 2000); M.D. (Pittsburgh 2005) [2014]
- DAVID MITCHELL DANTZLER, JR., Assistant Professor of Clinical Medicine B.A. (Washington University 2003); M.D. (Meharry Medical 2007) [2015]
- BENJAMIN DANZO, Professor of Obstetrics and Gynecology, Emeritus; Research Professor of Biochemistry, Emeritus B.A. (Franciscan University of Steubenville 1965); M.S. (Arkansas 1968); Ph.D. (Michigan 1971) [1973]
- ANH H. DAO, Associate Professor of Pathology, Emeritus
 - B.A. (Nguyen Trai University 1951); M.D. (NA 1960); M.S. (Vermont 1964) [1977]
- Medicine
 B.Med.Sc., M.B., Ph.D. (Dundee [U.K.] 1986, 1989, 2001) [2002]

DAWOOD DARBAR, Adjunct Professor of

- RICHARD RYAN DARBY, Assistant Professor of Neurology
 - A.B. (Princeton 2007); M.D. (Vanderbilt 2011); Certificate (Harvard 2016) [2017]
- JAMES P. DARKE, Assistant Clinical Professor of Pediatrics
 - B.S. (Memphis 1994); M.D. (UT Health Science Center [Tennessee] 2001) [2010]
- NANCY SUE DARR, Adjunct Professor of Physical Medicine and Rehabilitation B.A. (Ohio Wesleyan 1981); M.S. (Southern California 1985) [2015]
- SATYA B. DAS, Assistant Professor of Medicine B.A. (California, Berkeley 2008) M.D. (Emory 2013) [2019]
- SUMAN RANJAN DAS, Research Associate Professor of Medicine
 - Ph.D. (Banaras Hindu [India] 2005) [2016]
- NOOSHIN KARAMZADEH DASHTI, Assistant Professor of Pathology, Microbiology and Immunology
 - M.D. (Tehran [Iran] 2007); M.P.H. (Loma Linda 2013) [2019]
- RISHABH C. DATE, Instructor in Clinical Ophthalmology & Visual Sciences B.S. (California, San Diego 2010); M.D. (California, Los Angeles 2014) [2018]
- KARISHMA ABHAYA DATYE, Assistant Professor of Pediatrics B.S. (California, Irvine 2006); M.D. (New Mexico 2010) [2016]

- DANIEL J. DAUNIS, JR., Assistant Professor of Psychiatry and Behavioral Sciences B.S., M.D. (Louisiana State, Shreveport 2010, 2014) [2019]
- ARASH DAVANIAN, Instructor in Clinical Ophthalmology & Visual Sciences B.S. (Tennessee 2011); D.O. (Nova Southeastern 2016) [2020]
- ASHLEY DAVIDSON, Assistant Professor of Psychiatry and Behavioral Sciences B.S., M.D. (Ohio State 2008, 2013) [2018]
- GLEN W. DAVIDSON, Adjunct Professor of Medical Education & Administration (VU) A.B. (University of the Pacific 1958); B.D., M.Div. (Drew 1961, 1961); Ph.D. (Claremont Graduate 1964) [2014]
- HEATHER A. DAVIDSON, Associate Professor of Medical Education & Administration (VUMC); Assistant Professor of Nursing B.A., M.S., Ph.D. (Vanderbit 1996, 2001, 2005) [2010]
- JEFFREY M. DAVIDSON, Professor of Pathology, Microbiology and immunology, Emeritus; Adjunct Professor of Pathology, Microbiology and Immunology
- B.S. Pafts 1967); M.S., Ph.D. (Stanford 1969, 1975) [1986]
- MARIO A. DAVIDSON, Assistant Professor of Prostatistics
 - B.S., M.S. (Tennessee State 1996, 1998); M.S., M.A., Ph.D. (Ohio State 2002, 2005, 2007) [2009]
- WILLIAM R. DAVIDSON, Clinical Professor of Pediatrics
 - B.S. (Tennessee, Martin 1985); M.D. (UT Health Science Center [Tennessee] 1989) [1992]
- SEAN S. DAVIES, Associate Professor of Pharmacology
 - B.S., Ph.D. (Utah 1993, 1999) [2002]
- ALAINA M. KIEFER DAVIS, Assistant Professor of Pediatrics
 - B.E., M.D. (Vanderbilt 2004, 2008) [2011]
- ALISON N. DAVIS, Assistant in Medicine B.S.N. (Southern Mississippi 2008); M.S.N. (Alabama, Birmingham 2014) [2014]
- CLAIRE SROUJI DAVIS, Assistant in Medicine B.S., M.S.N. (Vanderbilt 1995, 1996) [2004]
- ELIZABETH J. DAVIS, Assistant Professor of Medicine
 - B.S. (Duke 2005); M.D. (Wright State 2009) [2016]
- JEFFREY A. DAVIS, Assistant Professor of Clinical Obstetrics and Gynecology B.S. (North Carolina 2002); D.O. (Arizona
 - College of Osteopathic Medicine 2013) [2017]

- KAREN F. DAVIS, Assistant Professor of Clinical Obstetrics & Gynecology
 - B.S. (Middle Tennessee State 1981); M.D. (UT Health Science Center [Tennessee] 1986) [2018]
- KATIE MCCONNELL DAVIS, Assistant Professor of Clinical Radiology & Radiological Sciences B.A. (Ursuline 2007); D.O. (Ohio 2012) [2018]
- LARRY TAYLOR DAVIS, Assistant Professor of Radiology and Radiological Sciences; Assistant Professor of Neurology
 - B.E., M.D. (Vanderbilt 2004, 2008) [2013]
- LEA KARATHEODORIS DAVIS, Assistant
 Professor of Medicine; Assistant Professor of
 Biomedical Informatics; Assistant Professor of
 Molecular Physiology & Biophysics; Assistant
 Professor of Psychiatry and Behavioral Sciences
 B.S. (Alabama 2003); Ph.D. (Iowa 2009) [2015]
- MARY FELLER DAVIS, Adjoint Assistant Professor of Biomedical Informatics B.S. (Brigham Young 2008); Ph.D., M.S. (Vanderbilt 2013, 2013) [2019]
- NANCY B. DAVIS, Associate Professor of Medicine; Associate Professor of Urology B.S. (Vanderbilt 1988); M.D. (Texas, Houston 1997) [2018]
- RICHARD E. DAVIS, Assistant Clinical Professor of Surgery B.A. (San Diego 1991); M.D. (Creighton 2000) [2011]
- SHARON ELIZABETH DAVIS, Research Astisam Professor of Biomedical Informatics A.B. (Duke 2004); M.S. (North Carolina State 2008); M.S., Ph.D. (Vanderbilt 2017, 2019) [2019]
- STEPHEN M. DAVIS, Assistant Clinical Professor of Plastic Surgery B.S. (Vanderbilt 1976); M.D. (Mehrary Medical 1981) [1998]
- STEPHEN N. DAVIS, Adjunct Professor of Medicine
 M.B.B.S. (London [U.K.] 1979); M.R.C.P. (Royal College of Physicians [U.K.] 1982); Ph.D. (London [U.K.] 1991); M.D. (Royal College of Physicians [U.K.] 1993) [1988]
- THOMAS L. DAVIS, Professor of Neurology B.A. (Wooster 1981); M.D. (Mississippi 1985) [1991]
- BENOIT DAWANT, Cornelius Vanderbilt Chair in Engineering; Professor of Electrical Engineering; Professor of Radiology & Radiological Sciences; Professor of Biomedical Engineering; Professor of Otolaryngology - Head and Neck Surgery M.S. (Université Catholique de Louvain [Belgium] 1982); Ph.D. (Houston 1987) [1988]

- ROSS LOCKE DAWKINS, Assistant Professor of Neurological Surgery B.A., B.S. (Rhodes College 2007, 2007); M.D. (UT Health Science Center [Tennessee] 2011)
- JOAO A. DE ANDRADE, Professor of Medicine M.D. (Universidade Federal do Rio Grande do Sul [Brazil] 1990) [2019]
- MARK P. DE CAESTECKER, Professor of Medicine; Professor of Cell & Developmental Biology; Professor of Surgery B.A., M.A. (Cambridge [U.K.] 1980, 1983); M.B.B.S. (London [U.K.] 1986); Ph.D. (Manchester [U.K.] 1994) [2000]
- ALEXANDER DE CASTRO-ABEGER, Instructor in Clinical Ophthalmology & Visual Sciences B.A. (Tufts 2011); M.D., M.B.A. (Brandeis 2016, 2016) [2020]
- ALI SEVILLA DE COCCO, instructor in Clinical Obstetrics and Gynecology B.S. M. Div., M.S N. (Vanderbilt 2008, 2011, 2015) [2016]
- IRINA DE LA HCERTA, Assistant Professor of Opnthalmology & Visual Sciences B.A. (Harvard 2003); M.D. (Queen's [Canada] 2009; Ph.D. (Harvard 2012) [2018]
- LISA ANNE DE LA MOTHE, Adjunct Assistant Professor of Hearing and Speech Sciences B.S. (Tennessee, Martin 2001); M.A., Ph.D. (Vanderbilt 2006, 2008) [2012]
- MICHAEL DE RIESTHAL, Associate Professor of Hearing & Speech Sciences B.S. (Northwestern 1997); M.S., Ph.D. (Vanderbilt 1999, 2003) [2007]
- ERIKA DANIELLE DEAN, Assistant Professor of Medicine; Assistant Professor of Molecular Physiology & Biophysics B.S., M.S. (Tennessee 2000, 2002); Ph.D. (Emory 2011) [2017]
- MICHAEL RUTLEDGE DEBAUN, J.C. Peterson, M.D. Chair; Professor of Pediatrics; Vice Chair for Clinical Research, Department of Pediatrics B.S. (Howard 1982); M.D., M.S. (Stanford 1987, 1987); M.P.H. (Johns Hopkins 1993) [2010]
- JILL DEBONA, Assistant Clinical Professor of Psychiatry and Behavioral Sciences B.A. (Virginia 1986); M.D. (Vanderbilt 1990) [1994]
- ALLISON H. DECKARD, Assistant in Pediatrics B.A. (Georgia 2009); M.S.N. (Vanderbilt 2011) [2011]
- MICHAEL D. DECKER, Adjunct Professor of Health Policy B.S. (California Institute of Technology 1969); M.D. (Rush 1978); M.P.H. (Illinois, School of Public Health, Chicago 1982) [1986]

- RAJ DILIP DEDHIA, Instructor in Otolaryngology -Head and Neck Surgery B.S. (California, Berkeley 2010); M.D. (Southern California 2014) [2019]
- KEVIN C. DEE, Assistant Professor of Medicine B.S. (Vanderbilt 2005); M.D. (Iowa 2010) [2016]
- ROBERT J. DEEGAN, Professor of Clinical Anesthesiology
 - M.D., B.Sc., Ph.D. (University College, Dublin [Ireland] 1986, 1988, 1991) [1996]
- THOMAS A. DEERING, Assistant Clinical Professor of Pathology, Microbiology and Immunology
 - B.S., M.D. (Iowa 1979, 1988) [2002]
- MARY ELLEN DEES, Assistant Professor of Pediatrics
 - B.A., M.D. (Case Western Reserve 1986, 1991) [1999]
- KIRBY HUDSON DEETER, Associate in Orthopaedic Surgery B.A. (Kansas 1994); D.P.M. (Ohio College of Podiatric Medicine 1999) [2006]
- LORI A. DEITTE, Professor of Radiology & Radiological Sciences B.S. (Wisconsin, Eau Claire 1978); M.D. (Wisconsin 1984) [2015]
- DOMINIQUE DELBEKE, Professor of Radiology and Radiological Sciences M.D., Ph.D. (Université Libre de Bruxelles {Belgium] 1978, 1985) [1990]
- KATHLEEN E. DELGIORNO, Assistant Professor of Cell and Developmental Biology Ph.D. (SUNY at Stony Brook 2012) (2020]
- AUBREY MICHAEL DELK, Clinical Listructor in Emergency Medicine
 - B.S. (Lipscomb 2002); M.D. (UT Health Science Center [Tennessee] 2006) [2009]
- JAN S. DELOZIER, Assistant Professor of Clinical Medicine
 - A.B. (Tennessee 1978); M.D. C'f Health Science Center [Tennessee] 1982) [1965]
- JOSEPH B. DELOZIER III, Assistant Clinical Professor of Plastic Surgery B.A. (University of the South 1977); M.D. (UT Health Science Center [Tennessee] 1982) [2000]
- ERIC DELPIRE, Professor of Anesthesiology; Professor of Molecular Physiology and Biophysics B.S., M.S., Ph.D. (Liège [Belgium] 1981, 1983, 1989) [1997]
- SAMUEL H. DEMENT, Assistant Clinical Professor of Pathology, Microbiology and Immunology B.A. (Tennessee 1977); M.D. (Vanderbilt 1982) [1989]

- SANDRA L. DEMING-HALVERSON, Adjunct Research Assistant Professor of Medicine B.S. (Southern California 1992); M.P.H. (George Washington 1996); Ph.D. (North Carolina 2005) [2009]
- KATHARINE DEMPSEY, Instructor in Clinical Ophthalmology & Visual Sciences B.A. (Yale 2008); M.D. (Mount Sinai 2016) [2020]
- JEFFREY MICHAEL DENDY, Assistant Professor of Medicine B.E., B.S., M.D. (Vanderbilt 1996, 1996, 2000) [2020]
- NANETTE ELDRIDGE DENDY, Assistant Professor of Clinical Medicine B.S. (Western Kentucky 1997); M.D. (UT Health Science Center [Tennessee] 2001) [2020]
- YONG DENG, Adjunct Professor of Biostatistics B.S. (Shaan'xi Normal University [China] 1997); M.S. (Hunan [China] 2000); Ph.D. (Shanghai Jiao Tong [China] 2003) [2011]
- SUSAN M. DENCLER Assistant in Neurological Surgery
 - B.S.N. (Maryville University of Saint Louis 1981); M.S.N. (Saint Louis 1983) [2011]
- MARK I DENISON, Edward Claiborne Stahlman Charun Pediatric Physiology and Cell Metabolism; Professor of Pediatrics; Professor of Pathology, Microbiology and Immunology B.S., M.D. (Kansas 1977, 1980) [1991]
- THOMAS WADE DENNEY, Clinical Professor of Pediatrics
 - B.S. (Lipscomb 1982); M.D. (UT Health Science Center [Tennessee] 1986) [2006]
- BRADLEY M. DENNIS, Associate Professor of Surgery
 - B.S. (Georgia 2001); M.D. (Medical College of Georgia 2005) [2012]
- JESSICA DENNIS, Adjunct Assistant Professor of Medicine
 - Ph.D. (Toronto [Canada] 2016) [2019]
- JOSHUA C. DENNY, Adjunct Professor of Biomedical informatics B.S., M.D., M.S. (Vanderbilt 1998, 2003, 2007) [2007]
- JEROD SCOTT DENTON, Associate Professor of Anesthesiology; Associate Professor of Pharmacology B.S., M.S. (Central Arkansas 1995, 1997); Ph.D. (Dartmouth 2001) [2005]
- STEPHEN A. DEPPEN, Assistant Professor of Thoracic Surgery; Assistant Professor of Medicine B.S. (Tennessee Technological 1988); M.A. (Tennessee 1991); M.S. (Indiana, Bloomington 1994); Ph.D. (Vanderbilt 2013) [2014]

- CHARLES V. DEPRIEST, Assistant Professor of Clinical Radiology and Radiological Sciences A.B., M.D. (Harvard 1977, 1982) [2008]
- TERENCE S. DERMODY, Adjunct Professor of Pediatrics
 - B.S. (Cornell 1978); M.D. (Columbia 1982) [1990]
- JOY DERWENSKUS, Associate Professor of Clinical Neurology
 - B.A. (Hope 1990); M.A. (Ball State 1992); D.O. (College of Osteopathic Medicine and Surgery 1998); M.S. (Mount Sinai 2005) [2019]
- MIHIR JITENDRA DESAI, Assistant Professor of Orthopaedic Surgery
 - B.S. (Davidson 2004); M.S., M.D. (Georgetown 2005, 2009) [2015]
- NEERAV A. DESAI, Assistant Professor of Pediatrics
 - B.E. (Vanderbilt 1998); M.D. (UT Health Science Center [Tennessee] 2002) [2006]
- JAYANT K. DESHPANDE, Adjunct Professor of Anesthesiology
 - A.B. (Boston University 1973); M.D. (UT Health Science Center [Tennessee] 1976); M.P.H. (Vanderbilt 2003) [1990]
- CINDY ANN DESIO, Assistant in Medicine B.S.N. (Union [Tennessee] 2002); M.S.N. (Vanderbilt 2003) [2016]
- M. SHEILA DESMOND, Professor of Clinical Pediatrics
 - B.A. (City University of New York, Queens College 1971); M.D. (New York Medical 1975) [2009]
- KRISTEN BETH DETTORRE, Assistant Professor of Emergency Medicine
 - B.S. (Kent State 2002); M.D. Northeastern Ohio Universities 2006) [2009]
- PATRICA A. DETZEL, Associate Professor of Clinical Obstetrics & Gynecology B.S.N. (Cincinnati 1994); M.S.N. (Vanderbilt
 - 1998) [2010]
- ARIEL Y. DEUTCH, James G. Blakemore Chair in Psychiatry and Behavioral Sciences; Professor of Psychiatry and Behavioral Sciences; Professor of Pharmacology
 - B.A. (Vanderbilt 1973); Ph.D. (Georgia 1983) [1996]
- CLINTON J. DEVIN, Adjunct Associate Professor of Orthopaedic Surgery and Rehabilitation B.S. (Wyoming 1998); M.D. (Vanderbilt 2002) [2009]
- JESSICA K. DEVIN, Adjoint Assistant Professor of Medicine
 - B.A. (Dartmouth 1998); M.D., M.S.C.I. (Vanderbilt 2002, 2007) [2011]

- LAUREN DEVINE, Assistant in Otolaryngology Head and Neck Surgery
 B.S. (Furman 2005); M.S.N. (Vanderbilt 2007)
 [2013]
- VICTORIA J. DEVITO, Associate Professor of Clinical Pediatrics
 - B.S. (Ohio 1976); M.D. (Medical College of Ohio 1979) [2005]
- WILLIAM MICHAEL DEVOE, Professor of Clinical Pediatrics
 - B.A. (Miami [Ohio] 1974); M.D. (Ohio State 1977) [2017]
- ANNA K. DEWAN, Assistant Professor of Dermatology
 - B.A. (Northwestern 2005); M.D., M.H.S. (Yale 2012, 2012) [2017]
- MICHAEL C. DEWAN, Assistant Professor of Neurological Surgery
 - B.S. (Notre Dame 2007) M.D. (Yale 2012); M.S.C.I. (VUMC 2017) 20 0]
- JAMES DE WAR, Assistant Professor of Bioche mistry
 - M.A. (Bath ['5 X.]' 2007); Ph.D. (Newcastle University 2011) [2016]
- OSEPH EDWARD DEWEESE, Adjunct Assistant

 ✓ Professor of Biochemistry
 - B. 5. Freed-Hardeman 2004); Ph.D. (Vanderbilt 2009) [2009]
- Educator Development; Professor of Medical Education and Administration; Professor of Medicine
 - B.S. (Bradley 1985); M.D. (Morehouse 1990); M.Ed. (Houston 2004) [2007]
- TRACEY L. DEWIRE, Assistant in Surgery B.S. (Tennessee 1990); M.S.N. (Vanderbilt 2008) [2009]
- JUDITH DEXHEIMER, Adjunct Instructor in Biomedical Informatics
 - B.S. (Central Florida 2003); M.S., Ph.D. (Vanderbilt 2006, 2011) [2011]
- SWATI DEY, Assistant Professor of Medicine B.S. (Patna [India] 2003); M.S. (Banaras Hindu [India] 2006); Ph.D. (Ohio State 2012) [2019]
- CHRISTINE DEYHOLOS, Assistant Professor of Surgery
 - B.A. (McGill [Canada] 2008); M.D. (Northwestern 2015) [2020]
- PIERRE FRANCOIS DHAESE, Adjoint Associate Professor of Electrical Engineering; Adjunct Research Associate Professor of Neurological Surgery
 - B.S., M.S., Ph.D. (Catholic University of Leuven [Belgium] 2002, 2004, 2006) [2009]

- ANJANI DHAMODHARAN, Assistant Clinical Professor of Psychiatry and Behavioral Sciences M.D. (Madras [India] 1998) [2018]
- KALTRA DHIMA, Assistant Professor of Clinical Neurology
 - B.A. (Boston University 2011); Ph.D. (University of Texas Southwestern 2018) [2020]
- BHAGIRATHBHAI R. DHOLARIA, Assistant Professor of Medicine
 - M.B.B.S. (B. J. Medical [India] 2009) [2018]
- ALEX BENJAMIN DIAMOND, Associate Professor of Orthopaedic Surgery; Associate Professor of Pediatrics
 - B.A. (Duke 1998); D.O. (Philadelphia College of Osteopathic Medicine 2003); M.P.H. (Vanderbilt 2011) [2008]
- ISAURA DIAZ, Assistant Professor of Clinical Pediatrics
 - B.A. (Washington University 2001); M.D. (University of Puerto Rico 2009) [2017]
- JOSE ANTONIO DIAZ, Research Associate Professor of Surgery
 - M.D. (Buenos Aires [Argentina] 1992) [2019]
- EMMANUELE DIBENEDETTO, Centennial Professor of Mathematics; Professor of Molecular Physiology and Biophysics; Research Professor of Mathematics
 - B.A. (Florence [Italy] 1975); Ph.D. (Texas 1979) [2000]
- MATTHEW T. DICKERSON, Research Instructor if Molecular Physiology & Biophysics B.S., Ph.D. (Kentucky, Lexington 2006, 2012) [2014]
- S. KENT DICKESON, Research Assistant Professor of Pathology, Microbiology and Immunology B.S. (Missouri State 1985); Ph.D. (Karsas 1991) [2003]
- IRINA A. DIDIER, Assistant Professor of Clinical Medicine; Assistant Professor of Clinical Pediatrics
 - B.S. (Gomel State Medical Pelarus] 1980); M.D. (Minsk State Medical [Belarus] 1987) [2005]
- ANDRE M. DIEDRICH, Research Professor of Medicine; Research Professor of Biomedical Engineering
 - C.E. (Martin-Luther-Universität Halle-Wittenberg [Germany] 1979); M.D. (I. M. Sechenov Moscow Medical Academy [Russia] 1985); Ph.D. (Humboldt-Universität zu Berlin [Germany] 1991) [2000]
- KEVIN L. DIEHL, Assistant Professor of Clinical Radiology and Radiological Sciences B.S. (Arizona State 2004); D.O. (Western University of Health Sciences [California] 2008) [2016]

- MARY S. DIETRICH, Professor of Nursing (Statistics & Measurements); Professor of Biostatistics; Professor of Psychiatry and Behavioral Sciences
 - B.S. (Bethel College [Kansas] 1979); M.S. (Fort Hays State 1986); Ph.D. (Vanderbilt 1996) [2006]
- SERGEY DIKALOV, Research Associate Professor of Medicine
 - Ph.D. (Russian Academy of Science, Siberian Branch [Russia] 1994); M.S. (Novosibirsk State [Russia] 1999) [2011]
- ANNA DIKALOVA, Research Assistant Professor of Medicine
 - M.S. (Novosibirsk State [Russia] 1987); Ph.D. (Institute of Cytology and Genetics [Russia] 1993) [2011]
- ELIA C. DIMITRI, Clinical Professor of Pediatrics B.A. (East Tennessee State 1957); M.D. (UT Health Science Center [Tennessee] 1960) [2005]
- THOMAS S. DINA, Professor of Radiology and Radiological Sciences, Emeritus B S (Norre Dame 1961); M.D. (Northwestern 1955) [1994]
- TEMUJIN DINARAM, Assistant Professor of Clinical Medicine
- B.A. (New York 2001); M.D. (Ross 2009) [2017]
- GEOKOE X. DING, Professor of Radiation Occology
 - P.Sc., M.Sc. (Xuzhou Medical [China] 1982, 1985); Ph.D. (Carleton [Canada] 1995) [2004]
- TIANBING DING, Research Assistant Professor of Obstetrics & Gynecology B.S., M.S. (Jilin [China] 1995, 1998); Ph.D.
 - (Changchun University of Technology [China] 2001) [2013]
- HENRY EVAN DINGLE, Assistant Professor of Emergency Medicine
 - B.S. (Furman 2009); M.D. (South Carolina 2013) [2016]
- LISA M. DIPIETRO, Assistant Professor of Clinical Pediatrics
 - B.S. (Providence College 2007); M.D. (Tufts 2011) [2020]
- ANDREW DITTBERNER, Adjunct Assistant Professor of Hearing and Speech Sciences B.A. (North Dakota 1996); M.S. (Arizona 1998); Ph.D. (Iowa 2002) [2006]
- KURT F. DITTRICH, Assistant Professor of Clinical Anesthesiology
 - B.A., M.D. (Vermont 1994, 1999) [2011]

- ROBERT S. DITTUS, Senior Associate Dean for Population Health Sciences; Albert and Bernard Werthan Chair in Medicine; Professor of Medicine; Professor of Nursing; Director of the Institute for Medicine and Public Health B.S.I.E. (Purdue 1973); M.D. (Indiana, Bloomington 1978); M.P.H. (North Carolina 1984) [1997]
- ROGER R. DMOCHOWSKI, Professor of Urology; Professor of Obstetrics and Gynecology; Professor of Surgery B.A. (Trinity [Texas] 1979); M.D. (Texas, Galveston 1983); M.Mgt. (Vanderbilt 2012) [2002]
- NHUE L. DO, Assistant Professor of Cardiac Surgery; Assistant Professor of Biomedical Informatics B.S. (California, Davis 2000); M.D. (Southern California 2006) [2019]
- CHRISTOPHER HERBERT DODD, Assistant Clinical Professor of Pediatrics B.S. (Samford 1998); Ph.D., M.D. (Alabama, Birmingham 2008, 2009) [2014]
- DEBRA A. DODD, Professor of Clinical Pediatrics B.A., M.D. (Johns Hopkins 1980, 1984) [1990]
- TRACEY E. DOERING, Assistant Clinical Professor of Medicine
 B.S. (Rutgers, Newark 1981); M.D. (Johns Hopkins 1985) [1989]
- MARK D. DOES, Professor of Biomedical Engineering; Professor of Electrical Engineering; Professor of Radiology and Radiological Science B.S., M.S., Ph.D. (Alberta [Canada] 1991, 1993, 1997) [2002]
- KATHLEEN M. DOHERTY, Assistant Professor of Pediatrics
 B.A. (Wellesley 2011); M.D. (Vandarbik 2017)

[2020] B.A. (Wellesley 2011); M.D. (Vandaron 2017)

- MICHAEL ROBERT DAVID DOLE, Assistant Professor of Pediatrics
 B.S. (South Carolina 2007), M.D. (Medical University of South Carolina 2011) [2018]
- NIDHI KUMAR DOLE, Assistant Professor of Clinical Medicine
 - B.S. (South Carolina 2007); M.D. (Medical University of South Carolina 2011) [2015]
- ROWENA JOY DOLOR CUFFE, Adjunct Associate Professor of Medicine B.A., M.D., M.H.S. (Duke 1987, 1991, 1998) [2014]
- BRIAN S. DONAHUE, Professor of Anesthesiology; Professor of Pediatrics B.A., B.S. (Dayton 1985, 1985); Ph.D., M.D. (Emory 1990, 1992) [1996]

- EDMUND J. DONAHUE, Assistant in Anesthesiology; Adjunct Instructor in Nursing B.S. (King's [Pennsylvania] 1979); M.P.A. (Nebraska 2002) [2010]
- MANUS J. DONAHUE, Professor of Radiology & Radiological Sciences; Professor of Neurology; Professor of Psychiatry and Behavioral Sciences B.A., B.S. (Duke 2003, 2003); Ph.D. (Johns Hopkins 2007) [2010]
- PAULA DONAHUE, Research Assistant Professor of Physical Medicine and Rehabilitation D.P.T. (Northwestern 2002); M.B.A. (Johns Hopkins 2007) [2012]
- RAFE M. DONAHUE, Adjunct Associate Professor of Biostatistics B.S. (Dayton 1987); Ph.D. (Colorado State 1992) [2008]
- SEAN P. DONAHUE, Sam and Darthea Coleman Chair in Pediatric Ophthamology; Professor of Ophthalmology and Viscal Sciences; Professor of Pediatrics: Associate Professor of Neurology B S. (Dayton 1984); Ph.D., M.D. (Emory 1988, 1939) [1995]
- KATILLEEN DONAIS, Assistant in Radiology & Radiological Sciences
 - B.S.N. M.S.N. (Alabama, Birmingham 2004, 2005) [2011]
- REBECCA RIGEL DONALD, Assistant Professor of Anesthesiology
 - B.S. (Davidson 2003); M.D. (Virginia 2015) [2021]
- JOSHUA M. DONALDSON, Instructor in Medicine B.S. (College of New Jersey 2003); M.D., Ph.D. (Thomas Jefferson 2012, 2012) [2019]
- HONGWEI DONG, Research Assistant Professor of Pediatrics
 - M.D. (Hebei North University 1992); Ph.D. (Peking [China] 1997) [2017]
- XINHONG DONG, Assistant Professor of Microbiology and Immunology at Meharry Medical College; Adjunct Assistant Professor of Medicine at Vanderbilt University School of Medicine
 - B.S. (Wuhan [China] 1992); Ph.D. (Chinese Academy of Sciences, Beijing 1997) [2006]
- CARRIE A. DONNELL, Assistant in Pediatrics B.A., M.S.N. (Vanderbilt 2005, 2010) [2011]
- EDWIN F. DONNELLY, Associate Professor of Radiology and Radiological Sciences; Associate Professor of Biomedical Engineering B.S., M.D. (Cincinnati 1992, 1996); Ph.D. (Vanderbilt 2003) [2000]
- JENNIFER M. DONNELLY, Assistant Clinical Professor of Pediatrics B.S., M.D. (Cincinnati 1992, 1996) [1999]

- PETER D. DONOFRIO, Professor of Neurology B.S. (Notre Dame 1972); M.D. (Ohio State 1975) [2006]
- MEGAN M. DONOHUE, Assistant in Obstetrics & Gynecology
 - B.S., B.S.N. (Capital 2007, 2010); M.S.N. (Cincinnati 2015) [2018]
- AMANDA C. DORAN, Assistant Professor of Medicine; Assistant Professor of Molecular Physiology & Biophysics B.A. (Wellesley 2001); M.S., Ph.D., M.D. (Virginia 2008, 2009, 2011) [2018]
- STACY L. DORRIS, Assistant Professor of Pediatrics B.A. (Columbia College 1997); M.D. (Vanderbilt 2007) [2007]
- RICHARD D. DORTCH, Assistant Professor of Biomedical Engineering; Adjunct Assistant Professor of Radiology and Radiological Sciences B.S. (Tennessee, Chattanooga 2002); M.S., Ph.D. (Vanderbilt 2006, 2009) [2012]
- RYAN STEVEN DOSTER, Instructor in Medicine B.A. (Hanover 2005); M.D. (Indiana, Indianapolis 2009) [2018]
- THOMAS WESLEY DOUB III, Assistant Professor of Pediatrics B.S. (Oral Roberts 1994); M.S., Ph.D. (Vanderbil)
- 1994, 2001) [2019]
 JONATHAN JAMES DOUDS, Assistant Professor of Pathology, Microbiology and Immunology B.S. (Grove City 2008); M.D. (Pennsylvania State
- MATTHEW JOHN DOUGHERTY, Instructor in Emergency Medicine
 B.S. (Pennsylvania State 2011) M.D. (Temple 2016) [2019]

2012) [2018]

- GLENN C. DOUGLAS, Instructor in Chine Medicine
 B.A. (South Florida 1991); M.D. (East Tenne
 - B.A. (South Florida 1991); M.D. (East Tennessee State 1998) [2007]
- CHRISTINE K. DOVE, Associate Professor of Clinical Radiology & Radiological Sciences B.A. (Bowdoin 1996); M.D. (Vanderbilt 2002) [2007]
- SHANA R. DOWELL, Associate Professor of Clinical Obstetrics & Gynecology B.A., M.S. (Columbia 1998, 1998); M.D. (Rochester 2003) [2013]
- JOHN E. DOWNING, Clinical Professor of Ophthalmology and Visual Sciences B.S. (Baylor 1959); M.D. (Louisville 1962) [1987]
- MELISSA B. DOYLE, Assistant in Medicine B.S. (Auburn 1999); M.S.N. (Vanderbilt 2004) [2008]

- THOMAS P. DOYLE, Ann and Monroe Carell Jr. Family Chair in Pediatric Cardiology; Associate Professor of Pediatrics
 - B.S., M.D. (Arizona 1983, 1987) [1994]
- WONDER PURYEAR DRAKE, Professor of Medicine; Professor of Pathology, Microbiology and Immunology
 - B.S. (Alabama 1990); M.D. (Vanderbilt 1994) [2001]
- SISTER MARY DIANA DREGER, Assistant Clinical Professor of Medicine B.S., M.A. (SUNY, Stony Brook 1981, 1987); M.D. (Vanderbilt 2001) [2011]
- SARAH M. DREJET, Instructor in Otolaryngology Head and Neck Surgery
 - M.D. (Jefferson Medical 2014) [2019]
- PAUL BERNARD DRESSLER, Assistant Professor of Clinical Pediatrics B.A. (Vanderbilt 2006); M.D. (Toledo 2010) [2016]
- CYNTHIA Y DRISKUL, Assistant in Pediatrics B S N. (1 ennessee 2000); M.S.N. (Vanderbilt 2012) [2006]
- PRIAN C. PROLET, Associate Professor of Plastic Surgery; Associate Professor of Biomedical Informatics
 - B.A. Johns Hopkins 2005); M.D. (Vanderbilt 2009) [2016]
- MADALENE DAWSON DRUMMOND, Assistant in Surgery
 - B.S. (Georgia 2015); M.S.N. (Vanderbilt 2017) [2018]
- SUSAN B. DRUMMOND, Senior Associate in Obstetrics and Gynecology B.S.N., M.S.N. (Vanderbilt 1988, 1989) [2005]
- LIPING DU, Assistant in Biostatistics B.A. (Dalian University of Technology [China] 1993); M.S. (Tianjin [China] 1996); Ph.D., M.S. (Vanderbilt 2001, 2013) [2005]
- BERNARD JOHN DUBRAY, JR., Assistant Professor of Surgery B.A. (Notre Dame 2004); M.D. (Georgetown 2008) [2017]
- STEPHANY N. DUDA, Associate Professor of Biomedical Informatics B.S.E. (Princeton 2002); M.S., Ph.D. (Vanderbilt 2005, 2011) [2011]
- MARTHA SHAW DUDEK, Assistant Professor of Obstetrics & Gynecology B.A. (Washington University 1993); M.S. (Cincinnati 1996) [2001]
- ROSEMARIE A. DUDENHOFER, Assistant Professor of Medicine B.A. (City University of New York, Queens College 2004); M.D. (SUNY, Brooklyn 2008) [2017]

- B. STEPHENS DUDLEY, Assistant Clinical Professor of Obstetrics and Gynecology B.A., M.D. (Vanderbilt 1973, 1977) [1984]
- PAIGE DUDLEY, Assistant Professor of Clinical Pediatrics
 - B.S. (Furman 2005); M.D. (East Tennessee State 2012) [2020]
- MELISSA COLLINS DUFF, Associate Professor of Hearing & Speech Sciences; Associate Professor of Psychology & Human Development B.A., B.S. (Southern Illinois 1996, 1997); M.S. (North Carolina 1999); Ph.D. (Illinois, Champaign 2005) [2016]
- BARBARA DUFFY, Associate in Pediatrics B.S.N., M.S.N. (Vanderbilt 1980, 1991) [2005]
- LAURA L. DUGAN, Abram C. Shmerling, M.D. Chair in Alzheimer's and Geriatric Medicine; Professor of Medicine S.B. (Massachusetts Institute of Technology
- 1981); M.D. (Ohio State 1987) [2014]
- MARIA CARLO DUGGAN, Assistant Professor of Medicine
 - B.S. (Harvard 2006); M.D. (Vanderbilt 2010) [2014]
- MEREDITH COLLEEN DUKE, Assistant Professor of Surgery
 - B.S. (North Carolina 2004); M.D. (Oklahoma 2008); M.B.A. (East Carolina 2011) [2018]
- DANIEL E. DULEK, Assistant Professor of Pediatrics
 - B.S. (Notre Dame 2000); M.D. (Washington University 2004) [2011]
- CAROLINE V. DULEY, Assistant in Medicine B.S. (Arizona 1997); M.S.N. (V. medicine [2003]
- JOSHUA DULEY, Assistant in Pediatrics B.S.N. (Murray State 2007); M.S.N. (Temessee State 2016) [2016]
- SUSAN DAKIN DUMAS, Associate Professor of Clinical Anesthesiology
 - B.A. (Wellesley 1988); M.D. (Wright State 1991); M.D. (Case Western Reserve 1993) [2017]
- LOGAN CANEEL DUMITRESCU, Research Assistant Professor of Neurology
 - M.S., Ph.D. (Vanderbilt 2010, 2011) [2018]
- J. STEPHEN DUMMER, Professor of Medicine, Emeritus
 - B.A. (Wesleyan 1966); M.D. (Pittsburgh 1977) [1990]
- LAURA DUNCAN, Assistant in Pediatrics B.S. (Florida 2010); M.S. (Cincinnati 2012) [2014]
- JAMES A. DUNCAVAGE, Professor of Otolaryngology, EmeritusB.S. (SUNY, Buffalo 1971); M.D. (Wisconsin 1975) [1986]

- MARY C. DUNDON, Clinical Professor of Pediatrics B.S. (William and Mary 1975); M.D. (Vanderbilt
 - 1979) [1982]
- JOHN R. DUNN, Adjunct Assistant Professor of Health Policy
 - B.S. (Louisiana State 1991); D.V.M., Ph.D. (Louisiana State, New Orleans 1997, 2003) [2005]
- FLOYD DANIEL DUNNAVANT, Assistant Professor of Clinical Radiology & Radiological Sciences
 - B.S. (Rhodes College 2004); M.D. (UT Health Science Center [Tennessee] 2008) [2018]
- BRENT DUNWORTH, Assistant Professor of Nursing; Assistant Professor of Clinical Anesthesiology
 - B.S.N., M.S.N. (Pittsburgh 1996, 1999); M.B.A. (Waynesburg 2014); D.N.P. (Pittsburgh 2016) [2015]
- WILLIAM D. DUPON's Professor of Biostatistics; Professor of Health Jolicy B. J. C., M.Sc. (McGill [Canada] 1969, 1971);
 - Ph.D. (Johns Hopkins 1977) [1977]
- STACIE B. DUSETZINA, Associate Professor of Health Policy
 - Ph.D. (North Carolina 2010) [2018]
- MATCHEW DUVERNAY, Research Assistant Professor of Orthopaedic Surgery; Research Assistant Professor of Pharmacology B.S. (Tulane 2003); Ph.D. (Louisiana State, New Orleans 2008) [2019]
- ANYA CHRISANN DVIRNAK, Assistant in Emergency Medicine B.S. (Northern Colorado 2008); M.S. (Pacific University 2013) [2017]
- RYSZARD DWORSKI, Associate Professor of Medicine M.D., Ph.D. (Jagiellonian [Poland] 1980, 1983)
- [2005]

 JAMIE P. DWYER, Professor of Medicine
 Sc.B., M.D. (Brown 1996, 2000) [2008]
- JENNIFER E. DYER, Adjunct Assistant Professor of Health Policy
 - B.A. (Samford 1999); M.T.S., Ph.D. (Vanderbilt 2001, 2007) [2011]
- ELISABETH MAY DYKENS, Professor of Psychology & Human Development; Professor in Pediatrics; Professor of Psychiatry and Behavioral Sciences
 - B.A. (Mount Holyoke 1979); M.A., Ph.D. (Kansas 1983, 1985) [2003]
- KATHERINE A. DYKES, Assistant Professor of Clinical Obstetrics and Gynecology B.A. (Southwestern at Memphis 1981); M.D. (UT Health Science Center [Tennessee] 1988) [2012]

- ELIZABETH PONDER DYKSTRA, Clinical Professor of Pediatrics B.A. (Mississippi 1993); M.D. (Medical College of Georgia 1998) [2001]
- MICHAEL FRANCIS EAGLE, Associate in Orthopaedic Surgery
 - B.Sc. (Florida 1993) [2009]
- SUSAN S. EAGLE, Professor of Anesthesiology B.S. (Georgia 1994); M.D. (Medical College of Georgia 1999) [2003]
- LETITIA JANE EASDOWN, Professor of Anesthesiology
 - B.S., M.D. (McGill [Canada] 1976, 1980) [1996]
- SHANNON C. EASTHAM, Assistant Professor of Surgery
 - B.A. (Virginia 1999); M.D. (Medical College of Virginia 2006) [2012]
- SUSAN VANCE EASTMAN, Assistant in Medicine B.S. (Tennessee 2006); M.S.N. (Vanderbilt 2011) [2018]
- ROLAND D. EAVEY, Guy M. Maness Chair in Otolaryngology; Professor of Otolaryngology Head and Neck Surgery; Professor of Hearing and Speech Sciences; Chair of the Department of Otolaryngology Head and Neck Surgery; Director Vanderbilt Bill Wilkerson Center B.S. (St. Joseph's [Sri Lanka] 1971); M.D. (Pennsylvania 1975); S.M. (Harvard 2004) [2009]
- DAVID SUSHILKUMAR EBENEZER, Assistan Professor of Clinical Orthopaedic Surgery B.S. (California, Riverside 2001); M.D. (Southern California 2007) [2013]
- JON S. EBERT, Associate Professor of Clinical Psychiatry and Behavioral Sciences: Adjunct Assistant Professor of Psychology B.A. (Bethel University [Minnesota] 1995); M.A. (Trinity International 1998); M.A., Psy.D. (Wheaton 2000, 2003) [2008]
- KIARA ANNE EBINGER, Adjurct Assistant Professor of Hearing and Speech Sciences B.S., M.S. (Texas, Dallas 1986, 1991); Ph.D. (Vanderbilt 2002) [2013]
- CHARLES W. ECKSTEIN, Associate Clinical Professor of Urology
 - B.A. (Iowa 1972); M.D. (Vanderbilt 1976) [1981]
- DALE SCOTT EDGERTON, Research Associate Professor of Molecular Physiology & Biophysics B.Sc. (Boise State 1996); Ph.D. (Vanderbilt 2002) [2005]
- W. DANIEL EDMONDSON, Clinical Professor of Medicine; Clinical Professor of Pediatrics
 B.S. (Tennessee 1989); M.D. (UT Health Science Center [Tennessee] 1993) [1997]

- APRIL STANLEY EDWARDS, Assistant in Medicine
 - B.S.N. (North Carolina 2004); M.S.N. (Vanderbilt 2010) [2016]
- DAVID A. EDWARDS, Associate Professor of Anesthesiology; Associate Professor of Neurological Surgery B.S. (Brigham Young 2001); Ph.D., M.D.
- (Maryland, Baltimore 2006, 2008) [2015] DEANNA N. EDWARDS, Research Instructor in Medicine
 - B.S. (Lipscomb 2005); Ph.D. (Kentucky, Lexington 2012) [2019]
- KATHRYN M. EDWARDS, Sarah H. Sell and Cornelius Vanderbilt Chair in Pediatrics; Professor of Pediatrics M.D. (Iowa 1973) [1980]
- NORMA EDWARDS, Assistant in Medicine B.S. (Belmont 1998); M.S.N. (Vanderbilt 2002) [2015]
- TODD L. E DWARDS. Associate Professor of Medicine
 3.3. (Middle 1) miessee State 2003); Ph.D., M.S. (Vanderl ilt 2008, 2008) [2010]
- WILLIAM H. EDWARDS, SR., Professor of Surgery, Emeritus
 - B.A., M.D. (Vanderbilt 1949, 1953) [1960]
- WHLIAM H. EDWARDS, JR., Associate Clinical Professor of Surgery at St. Thomas Medical Center
 - B.A., M.D. (Vanderbilt 1977, 1981) [1988]
- SATORU EGAWA, Research Assistant Professor of Orthopaedic Surgery

 M.D. (Tokyo Medical and Dental Hapan) 2009)
 - M.D. (Tokyo Medical and Dental [Japan] 2009) [2018]
- MARY E. EGGER, Assistant in Surgery B.S.N. (Illinois, School of Nursing 1983); M.S.N. (Vanderbilt 2006) [2008]
- MARTIN EGLI, Professor of Biochemistry B.S., Ph.D. (ETH-Zurich 1984, 1988) [2000]
- KEHINDE AMEN EGUAKUN, Assistant in Medicine
 - B.S. (Nigeria 1982); M.S. (Obafemi Awolowo, Ile-Ife [Nigeria] 1988); M.S.N. (North Carolina 1999) [2010]
- JESSE M. EHRENFELD, Adjoint Professor of Anesthesiology
 - B.S. (Haverford 2000); M.D. (Chicago 2004); M.P.H. (Harvard 2009) [2010]
- QUENTIN GAVIN EICHBAUM, Professor of Pathology, Microbiology and Immunology; Professor of Medical Education & Administration (VUMC) B.S., Ph.D. (Cape Town [South Africa] 1984, 1990); M.F.A. (Vermont College 1995); M.P.H. (Harvard 1999); M.D. (Harvard Medical 2001); M.Mgt. (Vanderbilt 2013) [2010]

- BRANDT F. EICHMAN, William R. Kenan, Jr. Chair; Professor of Biological Sciences; Professor of Biochemistry; Chair of Biological Sciences B.S. (Mississippi 1993); Ph.D. (Oregon State 2000) [2004]
- STEPHANIE H. EIDSON, Assistant Professor of Clinical Pediatrics
 - B.A. (Smith 1991); M.D. (Emory 1996) [2001]
- TIMOTHY H. EIDSON, Clinical Professor of Pediatrics
 - B.S. (Bob Jones 1992); M.D. (UT Health Science Center [Tennessee] 1996) [2000]
- ESTHER EISENBERG, Professor of Obstetrics and Gynecology, Emerita
 - B.A. (City College of New York 1973); M.D. (Yeshiva 1976); M.P.H. (Vanderbilt 2000) [1992]
- ROSANA EISENBERG, Associate Professor of Pathology, Microbiology and Immunology M.D. (Universidade Federal do Rio de Janeiro [Brazil] 1981) [2009]
- MOHAMMED AMINE ACHHAL EL KADMIRI, Adjunct Research Assistant Professor of Medicine M.D. (Mohammad V [Morocco] 2003) [2020]
- OSAMA EL SHAMY, Assistant Professor of Medicine
 - B.S. (Virginia 2009); M.D. (Rutgers, Newark 2014) [2020]
- MAIE EL-SOURADY, Assistant Professor of Medicine; Assistant Professor of Pediatrics B.S. (Duke 2000); M.S., M.D. (North Carolina 2002, 2006) [2011]
- TOM A. ELASY, Ann and Roscoe R. Robinson Chair of Clinical Research at the Diacetes Center; Professor of Medicine; Director, Division of General Internal Medicine and Puolic Health B.A., M.D. (Maryland, Baltimore 1987, 1991); D.T.M.&H. (London School of Hygicae and Tropical Medicine 1994); M.P.H. (North Carolina 1998) [1998]
- FLORENT ELEFTERIOU, Adjunct Associate Professor of Medicine M.S. (Burgundy [France] 1995); Ph.D. (Université Claude Bernard Lyon 1 [France] 1999) [2006]
- JOHN G. ELEY, Assistant Professor of Radiation Oncology B.S. (College of Charleston 2005); M.S. (Louisiana State 2009); Ph.D. (Texas, Houston 2013) [2018]
- BERTHA CHRISTINA ELIAS, Research Assistant Professor of Medicine B.S., M.S., M.Phil., Ph.D. (Pune [India] 1983, 1985, 1987, 1995) [2010]
- FERNANDO ELIJOVICH, Professor of Medicine B.A., B.S., M.D. (Buenos Aires [Argentina] 1960, 1960, 1967) [2012]

- CHRISTOPHER RANDALL ELLIS, Associate Professor of Medicine B.S. (Cornell 1995); M.D. (Rochester 2000) [2009]
- DARREL L. ELLIS, Professor of Dermatology B.S. (Kansas State 1973); M.D. (Kansas 1976) [1984]
- SHELLEY E. ELLIS, Assistant Professor of Clinical Medicine
 - B.A. (Vanderbilt 1992); M.D. (Texas, Dallas 1996); M.P.H. (Vanderbilt 2001) [2002]
- SHANNON MARIE ELLRICH, Assistant in Medicine; Lecturer of Nursing B.S.N. (Belmont 2009); M.S.N., D.N.P. (Vanderbilt 2017, 2019) [2017]
- EUGENE WESLEY ELY, Grant W. Liddle Chair; Professor of Medicine B.S., M.D., M.P.H. (Tulane 1985, 1989, 1989)
- KIM ADAMS ELY, Assistant Professor of Pathology, Microbiology and Immunology B.S. (Massachuset's institute of Technology 1935); M.D. (Talane 1989) [1998]
- RIAN R. FMERSON, Assistant Professor of Clinical Assisthesiology
 - B.A. Potre Dame 1999); M.D. (Vanderbilt 2003)
- RONALD B. EMESON, Joel G. Hardman and Mary F. Parr Chair in Pharamcology; Professor of Pharmacology; Professor of Biochemistry; Professor of Molecular Physiology and Biophysics; Professor of Psychiatry and Behavioral Sciences

 B.A. (Johns Hopkins 1980); Ph.D. (Colorado 1986) [1991]
- HOLLY B. ENDE, Assistant Professor of Anesthesiology
 - B.A., M.D. (Baylor 2007, 2011) [2016]
- CATHY ENG, David H. Johnson Chair in Surgical and Medical Oncology; Professor of Medicine B.A. (New York 1990); M.D. (Hahnemann Medical 1994) [2019]
- BARBARA ENGELHARDT, Associate Professor of Pediatrics
 - M.D. (Ruprecht-Karls-Universität [Germany] 1976) [1986]
- BRIAN G. ENGELHARDT, Associate Professor of Medicine
 - B.S. (Michigan, Dearborn 1996); M.D. (Case Western Reserve 2000); M.S.C.I. (Vanderbilt 2008) [2006]
- HOLLY J. ENGELSTAD, Assistant Professor of Clinical Pediatrics M.D. (Iowa 2012) [2018]

- DARREN W. ENGERS, Research Assistant Professor of Pharmacology
- B.S. (Delaware 1998); Ph.D. (Texas 2006) [2012] JULIE ENGERS, Research Assistant Professor of
- Pharmacology B.S., M.S. (Louisiana State 1998, 2000); Ph.D.
 - B.S., M.S. (Louisiana State 1998, 2000); Ph.D (Texas 2005) [2008]
- AMY C. ENGEVIK, Research Instructor in Surgery B.S. (Biola 2007); Ph.D. (Cincinnati 2015) [2019]
- CHRISTOPHER SCOTT ENGLISH, Assistant Professor of Clinical Medicine B.A., M.S. (Hampton 1996, 2002); M.D. (Meharry Medical 2007) [2014]
- WAYNE ENGLISH, Associate Professor of Clinical Surgery
 - B.S. (Miami 1986); M.D. (Miami [Florida] 1990) [2014]
- DARIO J. ENGLOT, Assistant Professor of Neurological Surgery; Assistant Professor of Radiology & Radiological Sciences; Assistant Professor of Biomedical Engineering; Assistant Professor of Electrical Engineering B.S. (Scranton 2003); M.Phil., Ph.D., M.D. (Yale 2007, 2009, 2010) [2016]
- STEPHEN MATTHEW ENGSTROM, Assistant Professor of Orthopaedic Surgery B.S. (Boston College 2007); M.D. (Connecticut 2012) [2018]
- DANIEL W. ENROTH, Associate in Orthopaedic Surgery B.S.N. (Louisiana, Monroe 2001); M.S.N. (Alabama, Huntsville 2005) [2011]
- JEANNE CAITLYN ENSTROM, Assistant in Surgery; Lecturer of Nursing B.S.N. (American Internation at 2011); M.S.N. (Northeastern 2017) [2017]
- STEPHEN S. ENTMAN, Professor of Observices and Gynecology, Emeritus
- A.B. (Harvard 1964); M.D. (Duke 1968) [1980]
- PAUL EPSTEIN, Assistant Professor of Medicine B.A. (Princeton 1976); M.D. (Yale 1980) [2015]
- SANDRA R. ERMINI, Assistant in Medicine B.S. (Boston University 1989); M.S. (Middle Tennessee State 1994); M.S.N. (Vanderbilt 2000) [2002]
- PAIGE K. ERNSTE, Assistant in Pediatrics B.A. (Drake 2017); M.S. (Sarah Lawrence 2019) [2019]
- JENNIFER CUNNINGHAM ERVES, Adjunct Assistant Professor of Medicine B.S., M.S. (Tuskegee 2006, 2008); Ph.D., M.A. (Alabama, Birmingham 2013, 2013) [2016]
- WARREN D. ERVIN, Clinical Professor of Pediatrics B.S., M.S. (Stanford 1975, 1975); M.D. (Duke 1980) [2003]

- ADAM JOHN ESBENSHADE, Associate Professor of Pediatrics
 - B.A. (Vanderbilt 1999); M.D. (UT Health Science Center [Tennessee] 2004); M.S.C.I. (Vanderbilt 2010) [2010]
- CAROLINE COHEN ESKIND, Instructor in Medicine
 - B.S., M.D. (Virginia 2010, 2014) [2020]
- JEFFREY B. ESKIND, Assistant Clinical Professor of Medicine
 - A.B. (Harvard 1976); M.D. (Tulane 1980) [1985]
- STEVEN J. ESKIND, Assistant Professor of Surgery A.B. (Washington University 1973); M.D. (Tulane 1977) [1983]
- FERDINAND S. ESPELETA, Assistant Clinical Professor of Pediatrics B.S., M.D. (Santo Tomas [Phillipines] 1987, 1991) [2009]
- ALLINA ESPINOSA, Clinical Instructor in Pediatrics

 B.S. (Te tas 2013): L.C. (William Carey 2017) [2020]
- JENN FER ESS Associate Clinical Professor of Pediatrics
 - B.A. (Pittsburgh 1981); B.S.N. (Creighton 1983); M.S. (Kansas 1989); M.D. (Colorado 1999) [2006]
- KEVIN C. ESS, Gerald M. Fenichel Chair in Neurology; Associate Professor of Pediatrics; Associate Professor of Cell & Developmental Biology; Associate Professor of Neurology; Director, Division of Pediatric Neurology B.M., Ph.D., M.D. (Cincinnati 1989, 1996, 1998) [2006]
- CRISTINA MARIA ESTRADA, Associate Professor of Emergency Medicine; Associate Professor of Clinical Pediatrics
 - B.S., M.D. (Florida 1998, 2001) [2007]
- JUAN C. ESTRADA, Assistant Professor of MedicineM.D. (Universidad Nacional Autónoma de Honduras 1995); M.P.H. (North Florida 2004) [2011]
- LOURDES ESTRADA, Associate Professor of Biochemistry
 - B.S. (Puerto Rico, Rio Piedras 1991); M.S., Ph.D. (Michigan 1994, 1997) [2004]
- AMY HURST EVANS, Associate Clinical Professor of Pediatrics
 - B.S. (Duke 1983); M.D. (North Carolina 1989) [1999]
- BETHANY L. EVANS, Assistant in Surgery B.A. (Middle Tennessee State 2003); M.S.N. (Vanderbilt 2006) [2011]

- EMILY ROSE EVANS, Assistant in Emergency Medicine
 - B.S. (Delaware 2005); M.S.N. (Vanderbilt 2008) [2010]
- LEA HELEN EVANS, Assistant Professor of Hearing and Speech Sciences B.S. (Lambuth 1987); M.S. (Mississippi 1992); Ph.D. (Tennessee 1997) [2008]
- PATRICK D. EVANS, Research Instructor in Medicine
 - B.A., B.S. (Indiana, Indianapolis 2001, 2001); Ph.D. (Chicago 2007) [2018]
- RANDOLPH R. EVANS, Assistant Professor of Clinical Ophthalmology and Visual Sciences B.S. (Pennsylvania State 1979); M.D. (Ohio State 1983) [2011]
- JORDAN EVERSON, Assistant Professor of Health Policy; Assistant Professor of Biomedical Informatics
 - B.A. (Duke 2008); M.P.H. (Georgetown 2012); Ph.D. (Michigan 2017) [2017]
- JOHN H. EXTON, Professor Emeritus of Molecular Physiology and Biophysics B.Med.Sc., M.B.Ch.B (New Zealand 1955, 1958); Ph.D., M.D. (Otago [New Zealand] 1963, 1984) [1964]
- MARALIE G. EXTON, Associate in Pathology, Microbiology and Immunology B.A. (Randolph-Macon Woman's College 1975) [1987]
- SYLVIA AGNES JACOBS EXUM, Assistan Professor of Psychiatry and Behavioral Sciences B.S., M.D. (North Carolina 2009, 2013) [2018]
- SWATHI EYYUNNI, Assistant Professor of Clinical Pediatrics
 - B.S. (Wake Forest 2003); D.O. (Touro [California] 2008) [2014]
- DANIEL FABBRI, Assistant Professor of Biomedical Informatics; Assis(ant Professor of Computer Science B.S. (California, Los Angeles 2007); Ph.D. (Michigan 2013) [2014]
- JOHN M. FAHRENHOLZ, Assistant Professor of Medicine
 - B.A. (Miami [Ohio] 1992); M.D. (Ohio State 1997) [2016]
- EMILY T. FAIN, Assistant Professor of Clinical Pediatrics
 - B.A. (Auburn 2007); M.D. (Alabama, Birmingham 2011) [2018]
- ALECIA MALIN FAIR, Research Assistant Professor of Medicine B.A., B.S. (SUNY, Buffalo 1992, 1992); M.S. (SUNY, Buffalo 1995); Ph.D. (South Carolina 1999) [2004]

- ELIZABETH H. FAIRBANK, Clinical Professor of Pediatrics
 - B.S. (Tufts 1992); M.D. (New York Medical 1997) [2001]
- ERIN LEEANN FAIRBROTHER, Assistant Professor of Obstetrics & Gynecology B.S. (Southern Mississippi 2007); M.D. (Mississippi, Jackson 2011) [2017]
- JOSEPH FAIZ, Assistant Clinical Professor of Oral and Maxillofacial Surgery B.S. (Tennessee 2002); D.D.S. (Tennessee, Memphis 2006) [2012]
- WIAAM FALOUJI, Assistant Professor of Clinical Neurology
 - M.B.B.S. (Dow Medical [Pakistan] 1981) [2011]
- JOHN Y. FANG, Associate Professor of Neurology B.S. (Pennsylvania State 1989); M.D. (Thomas Jefferson 1991) [1998]
- JOSEPH BURTON FANNING, Associate Professor of Medicine
 - B.A (Bi mingham-Southern 1993); M.T.S. (Princeton Theological Seminary 2001); Ph.D. (Vanderbilt 2008) [2009]
- Ophthalmology and Visual Sciences

 B.S. Notre Dame 2011); M.D. (Boston
 University 2015) [2019]
- MELYSSA A. FARROW, Research Assistant Professor of Pathology, Microbiology and Immunology
 - B.A. (Regis College 1999); Ph.D. (Massachusetts, Boston 2005) [2013]
- MARQUETTA L. FAULKNER, Interim Chair and Professor of Internal Medicine at Meharry Medical College; Assistant Clinical Professor of Medicine at Vanderbilt University School of Medicine
 - B.S. (Texas Southern 1977); M.D. (Meharry Medical 1981) [1993]
- LARRY MCNEILL FAUST, Associate Clinical Professor of Pediatrics B.A. (Tennessee 1969); M.D. (UT Health Science Center [Tennessee] 1973) [2005]
- MOHAMMAD FAROOQ FAZILI, Associate Professor of Clinical Pediatrics M.B.B.S. (Nishtar Medical [Pakistan] 1984) [2003]
- CHARLES F. FEDERSPIEL, Professor of Preventive Medicine (Biostatistics), Emeritus B.A., M.A. (Michigan 1950, 1952); Ph.D. (North Carolina State 1959) [1959]
- JAMES W. FELCH, Professor of Clinical Ophthalmology & Visual Sciences B.S. (Delaware 1968); Ph.D., M.D. (Vanderbilt 1973, 1977) [2007]

- SAMANTHA J. FELDMAN, Instructor in Clinical Ophthalmology & Visual Sciences B.S. (Maryland 2011); M.D. (Maryland, Baltimore 2015) [2019]
- ANDREW S. FELTS, Research Assistant Professor of Pharmacology
 - B.A. (Tennessee 2000); B.S. (Florida State 2002); Ph.D. (Vanderbilt 2007) [2015]
- QIPING FENG, Assistant Professor of Medicine B.S. (Wuhan [China] 2002); Ph.D. (Peking Union Medical [China] 2006) [2012]
- GERALD M. FENICHEL, Professor of Neurology, Emeritus
 - B.A. (Johns Hopkins 1955); M.D. (Yale 1959) [1969]
- TRACY D. FENNESSY, Instructor in Emergency Medicine
 - B.S. (Virginia 2012); M.D. (Virginia Commonwealth 2017) [2020]
- HUGH M. FENTRESS, Adjunct Assistant Professor of Pharmacology
 - B.Sc. (Tennessee State 1999); Ph.D. (Vanderbilt 2005) [2011]
- JANE F. FERGUSON, Assistant Professor of Medicine
 - B.A., Ph.D. (Trinity, Dublin [Ireland] 2005, 2009) [2014]
- CLAUDE L. FERRELL III, Adjunct Assistant Professor of Anesthesiology B.A. (Tennessee 1985); M.D. (UT Health Science Center [Tennessee] 1989) [1996]
- NICHOLAS FERRELL, Assistant Professo: or Medicine; Assistant Professor of Biomedical Engineering
 - B.S., Ph.D. (Ohio State 2003 2003) [2012]
- P. BRENT FERRELL, JR., Assis ant Professor of Medicine
 - B.A. (Davidson 2000); M.D. (North Carolina 2009) [2015]
- ASHLEY PAIGE O'CONNEUL FERSTER,
 Instructor in Otolaryngology Head and Neck
 Surgery
 - B.A., B.S. (Ursinus 2010, 2010); M.D. (Drexel 2014) [2019]
- STEPHEN W. FESIK, Orrin H. Ingram, II Chair in Cancer Research; Professor of Biochemistry; Professor of Chemistry; Professor of Pharmacology B.A. (College of the Holy Cross 1975); Ph.D.

(Connecticut 1981) [2009]

IRENE D. FEURER, Research Professor of Surgery; Research Professor of Biostatistics B.S. (Ursinus 1976); M.S.Ed., Ph.D. (Pennsylvania 1983, 1997) [1997]

- AARON LOUIS FIDLER, Research Assistant Professor of Medicine B.A. (Berea 2009); Ph.D. (Tennessee State 2017) [2018]
- JAMES P. FIELDS, Associate Clinical Professor of Dermatology
 - B.S., M.S. (Texas 1953, 1954); M.D. (Texas, Galveston 1958) [1978]
- ELLIOT M. FIELSTEIN, Assistant Professor of Biomedical Informatics B.A. (SUNY, Buffalo 1976); Ph.D. (Vermont
- MARY-MARGARET ANNE FILL, Adjunct Assistant Professor of Medicine; Adjunct Assistant Professor of Pediatrics B.S. (Ohio State 2007); M.D. (Mercer 2011)

1984) [1998]

[2001]

- B.S. (Ohio State 2007); M.D. (Mercer 2011 [2017]
 EMMA FINAN, Associate in Psychiatry and
 - Behavioral Sciences R.N. (Surrey [U.K.] 1967), F.S. (College of Saint Francis 1001); M.M.F.T. (Trevecca Nazarene 20(6) [2011]
- LUKE R. FINCK, Assistant Professor of Medical Education & Administration (VU); Assistant Director, inquiry Program and Office of Medical Student Research
 - B 5., M.A. (Murray State 2003, 2009); Ed.D. (East Tennessee State 2013) [2014]
- Professor of Pediatrics
 B.S. (Yale 1972); M.D. (Kentucky, Lexington
 - B.S. (Yale 1972); M.D. (Kentucky, Lexington 1976); M.P.H. (North Carolina 1992) [2004]
- JOEL LAWRENCE FINE, Instructor in Clinical Medicine
 - B.S. (Georgia 1988); M.D. (Medical College of Georgia 1992) [2019]
- BARBARA MARY FINGLETON, Associate Professor of Pharmacology; Associate Professor of Surgery B.Sc., Ph.D. (Dublin City [Ireland] 1992, 1996)
- A. J. REID FINLAYSON, Associate Professor of Clinical Psychiatry and Behavioral Sciences M.D. (Western Ontario [Canada] 1969); M.Mgt. (Vanderbilt 2014) [2001]
- SABRINA TANIS FINNEY, Assistant Professor of Clinical Medicine; Assistant Professor of Clinical Pediatrics
 - B.S. (Spelman 1990); M.D. (Meharry Medical 1996) [2015]
- MARY SUE FINO-SZUMSKI, Associate Professor of Hearing & Speech Sciences B.S. (Marywood 1986); M.S., Ph.D. (Vanderbilt 1987, 1997) [1997]

- EDWARD FREDERICK FISCHER, Cornelius Vanderbilt Chair; Professor of Anthropology; Professor of Health Policy; Professor of Owen Graduate School of Management; Professor of Radiology & Radiological Sciences; Director of the Center for Latin American Studies B.A. (Alabama, Huntsville 1989); Ph.D., M.A. (Tulane 1995, 1995) [1996]
- MELISSA A. FISCHER, Research Assistant Professor of Medicine B.S.E. (Purdue 2003); M.S. (Indiana-Purdue, Fort Wayne 2006); Ph.D. (Vanderbilt 2011) [2015] MICHELLE D. FISCUS, Associate Clinical
- Professor of Pediatrics B.S. (Indiana, Fort Wayne 1990); M.D. (Indiana, Indianapolis 1994) [1998]
- FRANK A. FISH, Professor of Pediatrics; Professor of Medicine
 - A.B. (Wabash 1978); M.D. (Indiana, Bloomington 1983) [1990]
- HANNAH L. FISH-TROTTER, Assistant Professor of Clinical Medicine
 - B.A. (Chicago 2009); M.D. (UT Health Science Center [Tennessee] 2016) [2019]
- JACK FISHER, Associate Clinical Professor of Plastic Surgery; Adjunct Associate Professor of Nursing
 - B.S. (Illinois, Champaign 1969); M.D. (Emory 1973) [1987]
- CHRISTINA TAULIEN FISKE, Assistant Professor of Medicine
 - B.S. (Pennsylvania State 1999); M.D. (Loyola 2003); M.P.H. (Vanderbilt 2009) [2009]
- WILLIAM H. FISKE, Assistant Professor of Medicine
 - B.S. (Duke 1999); M.D., M.P.H. (Vanderbilt 2003, 2008) [2006]
- RACHEL B. FISSELL, Assistant Professor of Medicine
 - B.A. (Yale 1991); M.D., 11.5 (Maryland, Baltimore 1996, 1996) [2012]
- WILLIAM H. FISSELL IV, Associate Professor of Medicine
 - S.B. (Massachusetts Institute of Technology 1992); M.D. (Case Western Reserve 1998) [2012]
- ROBERT WARNE FITCH, Associate Professor of Emergency Medicine; Associate Professor of Orthopaedic Surgery
 - B.S., M.D. (Wake Forest 1997, 2001) [2006]
- FERN FITZHENRY, Research Assistant Professor of Biomedical Informatics
 - B.S.N. (Chicago 1974); M.A. (Northwestern 1983); Ph.D. (Chicago 1997) [2000]

- J. MICHAEL FITZPATRICK, Professor of Computer Science, Emeritus; Professor of Computer Engineering, Emeritus; Professor of Electrical Engineering, Emeritus; Professor of Neurological Surgery, Emeritus; Professor of Radiology and Radiological Sciences, Emeritus; Research Professor of Computer Science B.S. (North Carolina 1967); Ph.D. (Florida State 1972); M.S. (North Carolina 1982) [1982]
- ENGLISH C. FLACK, Assistant Professor of Clinical Pediatrics
 - B.S. (Wofford 2000); M.S., M.D. (Medical University of South Carolina 2002, 2007) [2014]
- SHERYL BRYNNE FLEISCH, Assistant Professor of Psychiatry and Behavioral Sciences B.S., M.D. (Vanderbilt 2004, 2008) [2013]
- ARTHUR C. FLEISCHER, Cornelius Vanderbilt Chair in Radiology #5; Professor of Radiology and Radiological Sciences, Professor of Obstetrics and Gynecology B.S. (En ory 1973): M.D. (Medical College of Georgia 1976) (1980)
- AMY E. FLEMING, Associate Dean for Medical Student Affairs, Professor of Pediatrics; Professor of Medical Education & Administration (VUMC) B.A. M.D. (Virginia 1993, 1997) [2007]
- GEOFFREY M. FLEMING, Professor of Pediatrics; Professor of Anesthesiology
- P.S. (Florida 1993); M.D. (Virginia 1997) [2007] HILIP E. FLEMING, Assistant Clinical Professor of Plastic Surgery
 - B.A. (Vanderbilt 1974); M.D. (Alabama, Birmingham 1979) [1987]
- RICHARD MICHAEL FLEMING, Assistant Professor of Clinical Radiology and Radiological Sciences
 - B.S., M.S. (Memphis State 1973, 1978); M.D. (UT Health Science Center [Tennessee] 1983) [2016]
- KEVIN DALE FLEMMONS, Assistant Professor of Medicine
 - B.S. (Texas Tech University 1997); M.D. (Texas, Galveston 2001) [2012]
- LISA NICOLE FLEMMONS, Assistant in Medicine B.S.N. (Tennessee Technological 2004); M.S.N. (Vanderbilt 2008) [2009]
- MEGHAN S. FLEMMONS, Assistant Professor of Pediatrics; Assistant Professor of Clinical Ophthalmology and Visual Sciences B.A. (Texas Tech University 1977); M.D. (Texas, Galveston 2003) [2013]
- PAUL FLESER, Assistant Clinical Professor of Surgery M.D. (Wayne State 1999) [2014]

- KENNETH C. FLETCHER, Assistant Professor of Otolaryngology - Head and Neck Surgery B.S. (Auburn 1997); M.D. (Alabama, Birmingham 2001) [2009]
- LAUREN FLETCHER, Assistant in Surgery B.S.N. (Virginia 2008); M.S.N. (Vanderbilt 2010) [2014]
- JESSICA I. FLIPPO, Assistant in Obstetrics & Gynecology
 - M.S.N. (Tennessee State 2017) [2018]
- MARK D. FLORA, Assistant Clinical Professor of Urology
 - B.S. (Purdue 1981); M.D. (Indiana, Indianapolis 1985) [1991]
- CHARLES ROBERT FLYNN, Associate Professor of Surgery
 - B.S. (Montana State 1995); Ph.D. (Arizona State 2001) [2008]
- EDWARD P. FODY, Clinical Professor of Pathology, Microbiology and Immunology B.S. (Duke 1969); M.D. (Vanderbilt 1975) [2011]
- AGNES B. FOGO, John L. Shapiro Chair in Pathology; Professor of Pathology, Microbiology and Immunology; Professor of Medicine; Professor of Pediatrics
 - B.A. (Tennessee, Chattanooga 1976); M.D. (Vanderbilt 1981) [1987]
- SARAH ANGELA FOLLIARD,
 - Assistant in Surgery; Lecturer of Nursing B.S.N. (Southern Illinois University Edwards Tile 2010); M.S.N., D.N.P. (Vanderbilt 2014, 2019) [2014]
- ANNA L. FONG, Assistant in Anesthes ology B.S. (California, San Diego 1994), M.S.N. (Vanderbilt 1998) [2010]
- PETE P. FONG, Assistant Professor of Medicine B.S., M.D. (Vanderbilt 1994, 1998) [2007]
- CHRISTOPHER J. FONNESBECK Adjoint Associate Professor of Biostatistics B.S., M.S. (British Columbia [Canada] 1996, 1998); M.S., Ph.D. (Georgia 2002, 2003) [2010]
- RICARDO B. FONSECA, Assistant Professor of Clinical Radiology and Radiological Sciences M.D. (Sao Paulo [Brazil] 1993) [2003] MICHELLE C. FOOTE-PEARCE, Assistant
- Professor of Clinical Physical Medicine and Rehabilitation; Associate in Psychiatry and Behavioral Sciences M.S.N. (Yale 1980); B.S.N. (Fitchburg State 1984); D.Min. (Graduate Theological Foundation 2005); M.S. (Trevecca Nazarene 2006) [2009]

- ANJALI J. FORBER-PRATT, Assistant Professor of Human & Organizational Development; Assistant Professor of Special Education; Assistant Professor of Physical Medicine and Rehabilitation B.S., M.A., Ph.D. (Illinois, Champaign 2006, 2007, 2012) [2015]
- CONNOR M. FORBES, Instructor in Clinical Urology
 - B.S. (Queen's [Canada] 2011); M.D. (British Columbia [Canada] 2015) [2020]
- RACHEL C. FORBES, Associate Professor of Surgery
 - B.S., M.D. (Vanderbilt 2001, 2005); M.B.A. (Ohio State 2013) [2013]
- JILL A. FORBESS, Clinical Professor of PediatricsB.S. (Oglethorpe 1984); M.D. (Medical College of Georgia 1991) [1994]
- DANIEL J. FORD, Assistant in Medicine B.S.N. (South Florida 2007); M.S.N. (Vanderbilt 2019) [2013]
- JAQUELYN M. FORD, Assistant in Neurological Survey
 - 3.3. (South Fiorida 2010); M.P.A.S. (Eastern Virginia 2013) [2013]
- AURIE B. PORD, Assistant in Surgery
 M.S. V (Vanderbilt 2008) [2010]
- MOL A M. FORD, Associate Professor of Surgery B.S. (Wyoming 2002); M.D. (Oregon Health and Science 2006) [2013]
- MCOLAS P. FORGET, Adjoint Assistant Professor of Emergency Medicine
 - B.Sc. (McGill [Canada] 1997); M.D. (Maryland, Baltimore 2004) [2010]
- MARY C. FORRESTER, Assistant in Surgery B.S. (Lipscomb 1996); M.S.N. (Vanderbilt 2003) [2011]
- EMILY DAWN FORSYTH, Assistant in Pediatrics B.S., B.S.N. (Southern Indiana 2004, 2013); M.S.N. (Missouri, Kansas City 2016) [2016]
- KIMBERLY B. FORTNER, Assistant Clinical Professor of Obstetrics and Gynecology B.S. (Tennessee 1997); M.D. (Emory 2001) [2011]
- COREY FOSTER, Assistant Professor of Radiation Oncology
 - B.S. (DeSales University 2011); M.D. (Michigan 2015); M.S. (Chicago 2019) [2020]
- DANIEL JOHN FOSTER, Research Assistant Professor of Pharmacology B.S. (Bucknell 2005); Ph.D. (Michigan 2010) [2015]
- JOHN RANDOLPH FOSTER, Instructor in Clinical Anesthesiology
 - B.A. (Clemson 1997); M.D. (Medical University of South Carolina 2005) [2014]

- TORI FOSTER, Assistant Professor of Pediatrics B.A. (Richmond 2008); M.A., Ph.D. (Georgia 2012, 2016) [2020]
- JAY H. FOWKE, Adjunct Associate Professor of Medicine
 - B.A. (Clark 1987); M.S. (Michigan 1990); M.P.H. (SUNY, Albany 1994); Ph.D. (Massachusetts, Boston 2000) [2001]
- LESLIE C. FOWLER, Assistant in Anesthesiology B.A. (Clemson 1997); M.Ed. (Southern Wesleyan 2006) [2014]
- MICHAEL J. FOWLER, Associate Professor of Medicine
 - B.A., M.D. (East Tennessee State 1994, 1998) [2003]
- MALLORY NOELL FOX, Assistant Professor of Clinical Obstetrics & Gynecology B.A., B.S. (Tennessee Technological 2010, 2010); M.D. (East Tennessee State 2015) [2019]
- DANIEL J. FRANCE, Research Professor of Anesthesiology; Research Professor of Biomedical Engineering B.S., M.E. (Louisville 1990, 1991); Ph.D. (Vanderbilt 1997); M.P.H. (Utah 2000) [2005]
- LOGAN K. FRANCE, Assistant Professor of Pathology, Microbiology and Immunology B.A. (Texas 2011); D.V.M. (Texas A & M 2015) [2018]
- DAVID OLIVER FRANCIS, Adjunct Assistant Professor of Otolaryngology - Head and Neck Surgery
 - B.A. (Colgate 1999); M.S. (Dartmouth 2000); M.D. (Rochester 2004) [2010]
- SARA MARIE SCHMIDT FRANCIS, Assistant Professor of Pediatrics B.A. (Virginia 2010); M.A., Ph.D. (Georgia State 2014, 2017) [2018]
- SHARRON H. FRANCIS, Adjunct Processor of Molecular Physiology and Biophysics B.S. (Western Kentucky 1965), Ph.D. (Vanderbilt 1970) [1975]
- JACOB A. FRANCO, Assistant Professor of Clinical Medicine
 - Sc.B. (Brown 2012); M.D. (Stony Brook 2016) [2019]
- ANDREW DAVID FRANKLIN, Associate Professor of Anesthesiology
 B.S. (University of Georgia Center for Continuing Education 2001); M.D. (Medical College of Georgia 2005); M.B.A. (George Washington 2015) [2010]
- JEFFREY L. FRANKLIN, Research Assistant Professor of Medicine; Research Assistant Professor of Cell & Developmental Biology B.A. (Haverford 1984); Ph.D. (Vanderbilt 1992) [1992]

- JERRY M. FRANKLIN, Assistant Professor of Clinical Medicine B.S. (Tennessee, Martin 1973); M.D. (UT Health
- Science Center [Tennessee] 1977) [2012] LLOYD D. FRANKLIN, Clinical Professor of Pediatrics
 - B.S. (Birmingham-Southern 1976); M.D. (Alabama, Birmingham 1980) [2007]
- MELANIE E. FRANKLIN, Assistant in Pediatrics B.S.N. (Auburn 2005); M.S.N. (Alabama, Birmingham 2014) [2015]
- JOHN J. FRANKS, Professor of Anesthesiology, Emeritus
 - B.A., M.D. (Colorado 1951, 1954) [1986]
- KATHERINE FREDERICK-DYER, Assistant Professor of Clinical Radiology & Radiological Sciences
 - B.S. (Tennessee 2006); M.D. (UT Health Science Center [Tennessee] 2010) [2019]
- BRADLEY W. FREEMAN As ociate Professor of Clinical Psychiatry and Behavioral Sciences B S (Florida 1996), M.D. (South Florida 2003) [2009]
- CLIFFORD L. FLEMAN, Instructor in Emergency Medicine
 - B.S. Kentucky, Lexington 2013); M.D. (Louisville 2017) [2020]
- MICNAEL L. FREEMAN, Professor of Radiation Oncology; Professor of Radiology and Radiological Sciences
 - B.S., Ph.D. (Colorado State 1974, 1978) [1983]
- FRANK R. FREEMON, Professor of Neurology, Emeritus
 - B.S., M.D. (Florida 1962, 1965); M.A. (Vanderbilt 1985); Ph.D. (Illinois, Champaign 1992); M.T.S. (Vanderbilt 1998) [1972]
- MATTHEW S. FREIBERG, Dorothy and Laurence Grossman Chair in Cardiology; Professor of Medicine
 - B.S. (University of Washington 1991); M.D. (Oregon Health and Science 1995); M.Sc. (Boston University 2004) [2014]
- KATHERINE L. FREUNDLICH, Assistant Professor of Clinical Pediatrics B.A. (Johns Hopkins 2006); M.D. (Baylor 2010) [2016]
- ROBERT EDWARD FREUNDLICH, Assistant Professor of Anesthesiology; Assistant Professor of Biomedical Informatics B.A., M.S. (Johns Hopkins 2005, 2007); M.D. (Baylor 2010) [2016]
- DAVID B. FRIEDMAN, Adjunct Research Associate Professor of Biochemistry B.S. (California, Irvine 1987); Ph.D. (University of Washington 1993) [2001]

- DEBRA L. FRIEDMAN, E. Bronson Ingram Chair in Pediatric Oncology; Professor of Pediatrics; Associate Professor of Ophthalmology & Visual Sciences; Director, Division of Pediatric Hematology/Oncology B.A. (CUNY, Queens College 1975); M.S. (Pace 1981); M.D. (Robert Wood Johnson Medical, New Brunswick 1991); M.S. (Pennsylvania 1997) [2008]
- CHRISTOPHER A. FRIEDRICH, Associate Professor of Clinical Pediatrics B.A. (Glassboro State 1978); M.S., Ph.D. (Texas, Houston 1984, 1986); M.D. (Robert Wood Johnson Medical, New Brunswick 1988) [2018]
- G. CHRISTIAN FRIESINGER III, Assistant Professor of Clinical Medicine
 B.S. (Davidson 1979); M.D. (UT Health Science Center [Tennessee] 1984) [2006]
- K. FRANCES FRIGON, Clinical Instructor in PediatricsM.D. (UT Health Science Center [Tennessee] 1977); B.A. (Pennsylvania 1988); J.D. (Georgetown 1992) [2012]
- BENJAMIN PAUL FRISCHHERTZ, Assistant Professor of Medicine B.A. (Dartmouth 2002); M.D. (Louisiana State 2006) [2015]
- MARK E. FRISSE, Accenture Chair in the Vanderbilt Center for Better Health; Professor of Biomedical Informatics, Emeritus; Professor of Nursing; Professor of Biomedical Informatics B.S. (Notre Dame 1974); M.D. (Washington University 1978); M.S. (Stanford 1987); M.B.A. (Washington University 1997) [7004]
- WILLIAM H. FRIST, Adjunct Professor of Cardiac Surgery A.B. (Princeton 1974); M.D. (Harvard 1978)

A.B. (Princeton 1974); M.D. (Harvard 1978) [2009]

- CRISTIN FRITZ, Assistant Professor of Pediatrics B.S. (Washington and Let 2010), M.D., M.P.H. (VUMC 2015, 2015) [2020]
- RYAN ANDREW FRITZ, Assistant Professor of Emergency Medicine B.S. (Virginia 2002); M.D., M.B.A. (Vanderbilt 2013, 2013) [2016]
- MICHAEL T. FROEHLER, Associate Professor of Neurology; Associate Professor of Neurological Surgery; Associate Professor of Radiology & Radiological Sciences B.S. (Cornell 1996); M.S., M.D., Ph.D. (Rochester 2002, 2004, 2004) [2013]
- PATRICIA FROST, Assistant Professor of Clinical Pediatrics
 - B.S. (Duke 2007); M.D. (Virginia 2012) [2015]

- ALEKSANDRA P. FRYE, Instructor in Clinical Medicine; Instructor in Clinical Pediatrics B.S. (Judson College [Alabama] 1994); M.D. (Alabama, Birmingham 1999) [2017]
- CARY FU, Assistant Professor of Pediatrics B.S., M.D. (Missouri 1998, 2002) [2012]
- D. CATHERINE FUCHS, Professor of Psychiatry and Behavioral Sciences; Professor of Pediatrics B.A., M.D. (Vanderbilt 1978, 1982) [1987]
- DOUGLAS H. FUCHS, Nicholas Hobbs Chair in Special Education and Human Development; Professor of Special Education; Professor of Psychology & Human Development; Professor of Pediatrics
 - B.A. (Johns Hopkins 1971); M.S. (Pennsylvania 1973); Ph.D. (Minnesota 1978) [1985]
- LYNN S. FUCHS, Dunn Family Chair in Psychoeducational Assessment; Professor of Special Education; Professor of Psychology & Human Development; P. ofessor of Pediatrics B.A. (Joans Hopkins 1972); M.S. (Pennsylvania 1973); Ed.S., P.D. (Minnesota 1977, 1981) [1985]
- SABINE FUHRMANN, Associate Professor of Ophthalmology & Visual Sciences; Associate Professor of Cell & Developmental Biology M.S. (University of Oldenburg 1991); Ph.D. (Albert Ludwigs University of Freiburg [Germany] 1996) [2015]
- MELISSA E. FULLER, Associate Clinical Professor of Pediatrics
 - B.S. (Texas A & M 2002); M.D. (Texas, Houston 2006) [2009]
- KEVIN MICHAEL FURMAN, Instructor in Anesthesiology B.S. (Corban University 2009); M.A., D.O. (Midwestern University 2010, 2015) [2019]
- MATTHEW ROBERT FUSCO, Assistant Professor of Neurological Surgery; Assistant Professor of Radiology and Radiological Sciences B.A. (Virginia 2003); M.D. (Wake Forest 2007) [2015]
- AMY PATEL GABBARD, Instructor in Clinical Pathology, Microbiology and Immunology B.S. (Ohio State 2009); M.D., M.S.P.H. (Toledo 2014, 2014) [2019]
- MICHAEL D. GABBARD, Instructor in Clinical Orthopaedic Surgery B.S. (Ohio State 2009); M.S. (Cincinnati 2010); M.D. (Kentucky, Lexington 2014) [2019]
- CURTIS L. GABRIEL, Instructor in Medicine B.A. (Johns Hopkins 2004); Ph.D., M.D. (Vanderbilt 2012, 2014) [2020]

- CYNTHIA S. GADD, Professor of Biomedical Informatics
 - B.S. (North Carolina State 1976); M.B.A. (Winthrop 1979); Ph.D. (Pittsburgh 1995); M.S. (Duke 1998) [2005]
- JENNIFER ANGELINE GADDY, Assistant Professor of Medicine; Assistant Professor of Pathology, Microbiology and Immunology B.S. (Indiana University East 2003); Ph.D. (Miami [Ohio] 2010) [2013]
- F. ANDREW GAFFNEY, Professor of Medicine, Emeritus
 - B.A. (California, Berkeley 1968); M.D. (New Mexico 1972) [1992]
- DAVID GAILANI, Ernest W. Goodpasture Chair in Experimental Pathology for Translational Research; Professor of Pathology, Microbiology and Immunology; Professor of Medicine B.A. (Cornell 1980); M.D. (Illinois, College of Medicine, Chicago 1984) [1995]
- JAMES V. GAINER III, Assistant Professor of Medicine
 - B.S. (Virginia 1986); M.D. (West Virginia 1990) [1996]
- KENNETH J. GAINES, Professor of Clinical Neurology
 - B.A. (Emory 1969); M.D. (UT Health Science Center [Tennessee] 1972); M.B.A. (Memphis 1998) [2015]
- LAWRENCE S. GAINES, Associate Professor of Psychiatry and Behavioral Sciences; Associate Professor of Medicine B.A. (City College of New York 1965); M.A., Ph.D. (Maryland 1969, 1972) [1987]
- MEGAN IMBODEN GALASKS, Clinical Instructor in Pediatrics
 - B.S. (Middle Tennessee State 2008), 1c.D. (UT Health Science Center [Tennessee] 2013) [2016]
- CRISTI L. GALINDO, Adjunct Assistant Professor of Medicine
 - B.S. (Texas, Arlington 2000), Ph.D. (Texas, Galveston 2005); M.B.A. (Texas, Brownsville 2009) [2014]
- BETHANY GALLAGHER, Assistant Professor of Orthopaedic Surgery
 - B.E. (Pennsylvania 2000); M.D. (Texas, San Antonio 2004) [2010]
- MARTIN J. GALLAGHER, Associate Professor of Neurology
 - B.S. (Notre Dame 1989); M.D., Ph.D. (Washington University 1997, 1997) [2002]

- ROBERT L. GALLOWAY, JR., Professor of Biomedical Engineering, Emeritus; Professor of Neurological Surgery, Emeritus; Professor of Surgery, Emeritus; Research Professor of Mechanical Engineering B.S.E. (Duke 1977); M.E. (Virginia 1979); Ph.D. (Duke 1983) [1988]
- VIVIAN GAMA, Assistant Professor of Cell and Developmental Biology B.S. (Los Andes [Colombia] 1995); M.S. (Wisconsin, Milwaukee 2002); Ph.D. (Case Western Reserve 2008) [2015]
- ERIC R. GAMAZON, Research Instructor in Medicine
 - B.A. (California, San Diego 1989); M.S. (Chicago 1991); Ph.D. (Amsterdam [Netherlands] 2016) [2017]
- ALFREDO GAMBOA, Research Associate
 Professor of Medicine
 B.S., M.D. (Universidad Perjana 'Cayetano
 Heredia' [Peru] 1998, 1999); M.S.C.I. (Vanderbilt 2008) [2005]
- ANTI ONY M. 6 MBOA, Assistant Professor of Medicine
 - B.A., M.D. (Georgetown 2002, 2009) [2015]
- ORGE GAMBOA, Research Assistant Professor of Medicine
 - M.D. (Universidad Peruana 'Cayetano Heredia' [Peru] 1999); Ph.D. (Kentucky, Lexington 2009) [2013]
- AMANDA PETTY GAMMEL, Clinical Instructor in Pediatrics
 - B.S. (Middle Tennessee State 2008); D.O. (Edward Via College of Ostheopathic Medicine 2014) [2019]
- AMY DINESH GANDHI, Assistant Clinical Professor of Pediatrics B.S. (Emory 2001); M.D. (Alabama, Birmingham 2005) [2009]
- SAPNA S. GANGAPUTRA, Assistant Professor of Ophthalmology & Visual Sciences M.D. (Jawaharlal Nehru [India] 1997); M.P.H. (Johns Hopkins 2005) [2017]
- MAUREEN ANNE GANNON, Associate Dean for Faculty Development; Professor of Medicine; Professor of Cell and Developmental Biology; Professor of Molecular Physiology and Biophysics

 B.S. (Molloy 1985): M.S. (Adelphi 1988): Ph.D.
 - B.S. (Molloy 1985); M.S. (Adelphi 1988); Ph.D. (Cornell 1996) [2001]
- WHITNEY D. GANNON, Assistant in Medicine B.S.N. (Virginia 2009); M.S.N. (Pennsylvania 2012); M.S. (Columbia 2018) [2018]
- RYAN GANT, Assistant in Medicine B.S.N., M.S.N. (Alabama, Huntsville 2009, 2013) [2014]

- JUDY GARBER, Cornelius Vanderbilt Chair;
 Professor of Psychology & Human Development;
 Professor of Psychiatry and Behavioral Sciences;
 Professor of Psychology
 B.A. (SUNY, Buffalo 1973); Ph.D. (Minnesota 1987) [1985]
- SHAWN P. GARBETT, Assistant in Biostatistics B.S. (Tulane 1990); M.S. (Pennsylvania State 2014) [2019]
- EMILY M. GARLAND, Research Associate Professor of Medicine B.S. (Duke 1973); Ph.D. (Maryland 1982); M.S.C.I. (Vanderbilt 2005) [2003]
- SARAH W. GARRAND, Assistant in Medicine B.S.N. (Kentucky, Lexington 2002); M.S.N. (Vanderbilt 2007) [2011]
- C. LOUIS GARRARD, Associate Professor of Clinical Surgery B.A., M.D. (Vanderbilt 1986, 1990) [2010]
- C. GAELYN GARRETT, Guy M. Maness Chair in Laryngology and Voice; Professor of Otolaryngology - Head and Neck Surgery A.B., M.D. (North Carolina 1984, 1988) [1994]
- LATAMARA Q. GARRETT, Assistant in Pediatrics B.S. (Texas, Houston 2003); M.S. (Arizona State 2013) [2014]
- ETOI A. GARRISON, Associate Professor of Clinical Obstetrics and Gynecology B.A. (Chicago 1991); M.D., Ph.D. (Tulane 1997, 1997) [2006]
- KIM VICTORIA GARVEY, Research Instructor in Anesthesiology B.S. (South Florida 1992); M.L.I.S., M.S. (Southern Mississippi 2001, 2005), Pn.D. (Burry 2017) [2019]
- CHERYL LYNN GATTO, Research Assistant Professor of Biostatistics B.A. (College of the Holy Cross 1993); Ph.D. (Massachusetts, Worcester 2004) [2019]
- SILVANA GAUDIERI, Research Associate Professor of Medicine B.S., Ph.D. (Western Australia 1990, 1996) [2013]
- JAMES A. GAUME, Assistant Clinical Professor of Medicine
 - B.S. (Loyola Marymount 1972); M.D. (Southern California 1976) [1990]
- ISABEL GAUTHIER, David K. Wilson Chair; Professor of Psychology; Professor of Radiology and Radiological Sciences B.A. (Quebec [Canada] 1993); M.S., Ph.D. (Yale
- JAMES C. GAY, Professor of Pediatrics B.S. (Davidson 1974); M.D. (Emory 1978); M.Mgt. (Vanderbilt 2014) [1985]

1995, 1998) [1999]

- VOLNEY P. GAY, Professor of Religious Studies, Emeritus; Professor of Psychiatry and Behavioral Sciences
 - B.A. (Reed 1970); M.A., Ph.D. (Chicago 1973, 1976) [1979]
- TEBEB GEBRETSADIK, Senior Associate in Biostatistics
 - B.S. (San Francisco State 1988); M.P.H. (California, Berkeley 1993) [2003]
- SUNIL K. GEEVARGHESE, Associate Professor of Surgery; Associate Professor of Radiology and Radiological Sciences; Director, Vanderbilt Transplant Center Clinical Trials Office B.A. (Tennessee 1986); M.D., M.S.C.I. (Vanderbilt 1994, 2006) [2005]
- TIMOTHY M. GEIGER, Associate Professor of Surgery
 - B.S., M.D. (Missouri 1999, 2004) [2010]
- ALEXANDER H. GELBARD. Associate Professor of Otolaryngology Pear and Neck Surgery B.S. (Stanford 2000), M.D. (Tulane 2006) [2013]
- BRIAN JAY GELFAND, Associate Professor of Arestnesiology, Associate Professor of Surgery B.A. (Adelphi 1986); M.S., M.D. (Chicago Medical School 1988, 1991) [2016]
- BRUCE C. GELLIN, Adjunct Associate Professor of Hearth Policy
 - B.A. (North Carolina 1977); M.D. (Cornell 1983); M.P.H. (Columbia 1991) [1998]
- NAN GENTRY, Associate in Obstetrics & Gynecology B.S. (Kentucky, Lexington 2003); M.S.N.
 - B.S. (Kentucky, Lexington 2003); M.S.N. (Vanderbilt 2006) [2012]
- RICHARD H. GENTZLER, Assistant Clinical Professor of Oral and Maxillofacial Surgery B.S. (Austin Peay State 1998); D.D.S. (Tennessee 2001) [2006]
- ALEXANDER J. GEORGE, Instructor in Anesthesiology B.S. (Loyola Marymount 2011); M.D., M.B.A. (Tulane 2016, 2016) [2020]
- IVELIN S. GEORGIEV, Associate Professor of Pathology, Microbiology and Immunology; Associate Professor of Computer Science B.S. (Eckerd 2004); Ph.D. (Duke 2009) [2015]
- SABINA B. GESELL, Adjunct Assistant Professor of Pediatrics
 - B.A. (Vassar 1993); M.A., Ph.D. (Notre Dame 1997, 1999) [2008]
- LESLIE STUART GEWIN, Assistant Professor of Medicine; Assistant Professor of Cell and Developmental Biology B.A. (Princeton 1997); M.D. (Alabama, Birmingham 2002) [2009]

- MUTEEB GHAFFAR, Assistant Professor of Clinical Medicine; Assistant Professor of Clinical Pediatrics
 - M.D. (University of Seychelles American Institute of Medicine 2010); M.H.A. (Western Kentucky 2013) [2018]
- MASOUD GHAMARI-LANGROUDI, Research Assistant Professor of Molecular Physiology and Biophysics
 - M.D. (Shiraz [Iran] 1991); Ph.D. (McGill [Canada] 2001) [2011]
- GIOVANNA A. GIANNICO, Associate Professor of Pathology, Microbiology and Immunology M.D. (Bari [Italy] 1996) [2010]
- JAYME C. GIBSON, Assistant in Anesthesiology B.S. (Murray State 2002); M.S.N. (Vanderbilt 2007) [2010]
- LISA DAWN GIBSON, Instructor in Clinical Pediatrics
 - B.S. (Rhodes College 1991); M.D. (UT Health Science Center [Tennessee] 1995) [2017]
- MICHAEL K. GIBSON, Associate Professor of Medicine
 - B.S. (North Carolina State 1991); M.D., Ph.D. (Johns Hopkins 1996, 2010) [2017]
- MICHELE R. GIBSON-O'GRADY, Assistant in Obstetrics & Gynecology B.A. (California, Santa Cruz 1980); B.S.N. (San Diego State 1987); M.S.N. (Frontier Nursing University 2009) [2018]
- KATHERINE A. GIFFORD, Assistant Professor of Neurology; Adjunct Assistant Professor of Psychology
 - B.A. (Skidmore 2002); M.S., Psy. D. (Florida Institute of Technology 2007 2010) [2013]
- RENE H. GIFFORD, Professor of Hearing and Speech Sciences; Professor of Otology and Speech Sciences; Professor of Otology and Head and Neck Surgery; Director of Pediatric Audiology & Director of Cochiea Implant Program
 - B.S. (Arizona State 1995); M.S. (Vanderbilt 1997); Ph.D. (Arizona State 2003) [2011]
- JOSEPH GIGANTE, Professor of Pediatrics B.A. (CUNY, Brooklyn College 1984); M.D. (SUNY, Stony Brook 1988) [1994]
- FELISA L. GILBERT, Associate Clinical Professor of Pediatrics
 - B.S. (Vanderbilt 1993); M.D. (UT Health Science Center [Tennessee] 1997) [2007]
- JILL GILBERT, Professor of Medicine M.D. (Alabama, Birmingham 1990); B.S. (North Carolina 1994) [2006]

- MARIA C. GILLAM-KRAKAUER, Assistant Professor of Pediatrics B.S. (William and Mary 1998); DEA (Bordeaux I [France] 2000); M.D. (Eastern Virginia 2004)
- ERIN ALEXIS GILLASPIE, Assistant Professor of Thoracic Surgery B.S. (Florida 2004); M.D. (Miami [Florida]
- 2008); M.P.H. (Vanderbilt 2018) [2016] LYNETTE A. GILLIS, Assistant Professor of
 - B.A. (Bucknell 1992); M.D. (Pennsylvania State 1996) [2004]
- MARY JO STRAUSS GILMER, Professor of Nursing; Professor of Pediatrics B.S.N. (Michigan State 1971); M.S.N. (Illinois, Champaign 1978); M.B.A. (Queens University, Charlotte [North Carolina] 1989); Ph.D. (North Carolina 1997) [1998]
- LAUREN L. CVNGLES, A. sist in Pediatrics B.S. (Lij scomb 2003), B.S.N. (Belmont 2006); M.J.N. (Vanderbil (2011) [2013]
- MARY KATHER NE GINGRASS, Assistant Clinical Professor of Plastic Surgery B.S. (Boster College 1985); M.D. (Medical College of Wisconsin 1989) [2000]
- AYUSH GIRI, Assistant Professor of Obstetrics & Omecology; Assistant Professor of Medicine P.A. (Knox 2006); M.S. (Massachusetts 2011); Ph.D. (Vanderbilt 2015) [2017]
- FIONA GISPEN, Assistant Professor of Clinical Medicine

 B.A. M.S. (Stanford 2009, 2012); M.D. (John
 - B.A., M.S. (Stanford 2009, 2012); M.D. (Johns Hopkins 2016) [2020]
- DARIO A. GIUSE, Associate Professor of Biomedical Informatics
 - Ph.D., M.S. (Carnegie Mellon 1979, 1993) [1994]
- NUNZIA B. GIUSE, Professor of Biomedical Informatics; Professor of Medicine; Director Eskind Biomedical Library M.D. (Brescia [Italy] 1985); M.L.S. (Pittsburgh 1992) [1994]
- KEVIN BARRETT GLATT, Assistant Professor of Clinical Pediatrics
 - B.A. (Middlebury 2011); M.D. (Medical College of Wisconsin 2016) [2019]
- MARK DENNIS GLAZER, Assistant Professor of Medicine
 - B.A. (Emory 1975); M.D. (Louisville 1979) [2006]
- KIMBERLY R. GLENN, Adjunct Assistant Professor of Health Policy B.S. (James Madison [Virginia] 2005); M.P.H. (Georgia State 2007); Ph.D. (Vanderbilt 2014) [2016]

- SUZANNE E. GLOVER, Assistant Clinical Professor of Pediatrics B.A. (Rhodes College 2002); M.D. (Tennessee, Memphis 2007) [2012]
- JOCELYN DANIELLE GMEREK, Assistant in Pediatric Surgery B.S.N. (Arizona 2001); M.S.N. (North Carolina, Greensboro 2008) [2018]
- JOSEFINA DEE GO, Associate Professor of Clinical Pediatrics
 - M.D., B.S. (Santo Tomas [Phillipines] 1988, 1988) [2009]
- GLENN T. GOBBEL, Research Assistant Professor of Biomedical Informatics D.V.M. (Florida 1985); Performer's Certificate (California, San Francisco 1991); M.S. (Vanderbilt 2013) [2012]
- ALAIN P. GOBERT, Research Professor of Medicine M.S. (Bordeaux I [France] 1995); B.S. (University of Orleans 1996); Ph.D. (Bordeaux I [France] 1999) [2015]
- DANIEL F. GOCHBERG, Professor of Radiology & Radiological Sciences B.S. (Massachusetts Institute of Technology 1991); M.S., Ph.D. (Yale 1994, 1998) [2002]
- TRACEY L. GODDARD, Assistant in Radiology and Radiological Sciences B.S.N. (Austin Peay State 1991); M.S.N.
- (Alabama, Huntsville 2008) [2009]

 JAMES C. GODFREY III, Associate Clinical
- Professor of Pediatrics B.S. (Tennessee, Martin 1997); M.D. (UT Health Science Center [Tennessee] 2007) [2004]
- JUSTIN ANDREW GODOWN, Assistant Professor of Pediatrics B.S.Ch.E. (Clarkson 2003); M.D. (Pochester
 - 2008) [2014]
- LISA A. GOEHRING, Assistant Professor of Clinical Obstetrics and Gynecology B.S. (Texas Woman's 1990); M.S.N. (Vanderbilt 2007) [2009]
- KASHISH GOEL, Assistant Professor of Medicine M.B.B.S. (Delhi [India] 2008) [2018]
- JEREMY ALLEN GOETTEL, Assistant Professor of Medicine; Assistant Professor of Pathology, Microbiology and Immunology B.S. (Missouri State 1998); Ph.D. (Vanderbilt 2010) [2017]
- LAURA ANN WILLIAMS GOFF, Associate Professor of Medicine B.S. (Duke 1997); M.D. (Texas, San Antonio 2001); M.S.C.I. (Vanderbilt 2008) [2007]
- JASON J. GOKEY, Research Instructor in Medicine B.S., Ph.D. (SUNY, Potsdam 2009, 2015) [2020]

- MEREDITH GOLDEN, Assistant in Anesthesiology B.A. (Wesleyan [Georgia] 2004) [2012]
- JAMES R. GOLDENRING, Paul W. Sanger Chair in Experimental Surgery; Professor of Surgery; Professor of Cell and Developmental Biology A.B. (Harvard 1980); Ph.D., M.D. (Yale 1984, 1986) [2002]
- MICHAEL GOLDFARB, H. Fort Flowers Chair in Mechanical Engineering; Professor of Mechanical Engineering; Professor of Electrical Engineering; Professor of Physical Medicine and Rehabilitation B.S. (Arizona 1988); M.S., Ph.D. (Massachusetts Institute of Technology 1992, 1994) [1994]
- FRED GOLDNER, JR., Clinical Professor of Medicine, Emeritus
 - B.A., M.D. (Vanderbilt 1945, 1948) [1954]
- MICHAEL SAMUEL GOLINKO, Assistant Professor of Plastic Surgery; Assistant Professor of Otolaryngology - Head and Neck Surgery B.S. (Massachusetts Institute of Technology 1998), M.A. (Amsterdam [Netherlands] 2002); M.D. (South Florida 2004) [2018]
- THOMAS A. GGOPER, Professor of Medicine B.A. (Northwestern 1969); M.D. (Indiana, Bloomington 1973) [1999]
- JOSE A COMEZ, Assistant Professor of Medicine; Assistant Professor of Molecular Physiology & Biophysics
 - P.S. (Universidad Nacional de Colombia 1995); M.S. (Wisconsin, Milwaukee 2003); Ph.D. (Case Western Reserve 2009) [2015]
- STEPHEN PAUL GONDEK, Assistant Professor of Surgery
 - B.S., M.D. (Northwestern 2004, 2009); M.P.H. (Michigan 2011) [2018]
- HOLLY M. GONZALES, Assistant Professor of Medicine
 - B.S. (Tulane 2004); M.D. (Rush 2013) [2019]
- LAZARO GONZALEZ CALVO, Adjunct Assistant Professor of Pediatrics Ph.D. (Alicante [Spain] 2006); B.S.N. (Salamanca [Spain] 2012) [2015]
- JULIO GONZALEZ-SOTOMAYOR, Associate Professor of Clinical Anesthesiology M.D. (Universidad de Concepción [Chile] 1990) [2020]
- RACHEL HUFFINES GOODE, Assistant Professor of Pediatrics
 - B.A. (Maryville 2005); M.D. (Tennessee, Memphis 2010) [2016]
- BRIGHTON SHAW GOODHUE, Assistant in Obstetrics & Gynecology B.S. (Furman 2017); M.S. (Alabama, Birmingham 2019) [2019]

- LINDSEY MARTIN GOODMAN, Assistant Professor of Clinical Medicine B.A., M.D. (Alabama, Birmingham 2004, 2008) [2016]
- STACEY A. GOODMAN, Professor of Medicine; Director, Special Fellowship Program for Marrow Transplant

M.D. (New York 1987) [1993]

- DAVID LEE GORDEN, Professor of Surgery; Professor of Pharmacology A.B. (Brown 1985); M.D. (Vanderbilt 1990) [2001]
- JOAN DEWITT GORDEN, Assistant Professor of Clinical Medicine

B.A., M.D. (Minnesota 1990, 1998) [2010]

- JENNIFER BETH GORDETSKY, Associate Professor of Pathology, Microbiology and Immunology; Associate Professor of Urology B.S. (California, San Diego 2000); M.D. (Medical College of Wisconsin 2005) [2019]
- JEFFRY S. GORDON, Professor of Educational Technology and Informatics; Professor of Biomedical Informatics B.S. (Emory 1970); M.Ed., Ph.D. (Illinois, Champaign 1972, 1976) [2002]
- LEANN GORDON, Assistant in Obstetrics & Gynecology
 A.S. (Columbia State Community 1999); B.S.N.

A.S. (Columbia State Community 1999); B.S.N., M.S.N. (Alabama, Huntsville 2004, 2007) [2018]

- REYNA L. GORDON, Assistant Professor of Otolaryngology Head and Neck Surgery; Assistant Professor of Psychology B.M. (Southern California 2001); M.S. (Université de Provence [France 2004); Ph.D. (Florida Atlantic 2010) [201.]
- JAMES E. GORE, Assistant Professor of Chinical MedicineB.S., M.D. (Kentucky, Lexington 1995, 1999) [2007]
- JOHN C. GORE, University Professor of Radiology and Radiological Sciences; Hertha Ramsey Cress Chair in Medicine; Professor of Biomedical Engineering; Professor of Physics and Astronomy; Professor of Molecular Physiology and Biophysics; Director, Institute of Imaging Science

 B.Sc. (Manchester [U.K.] 1972); Ph.D. (London [U.K.] 1976); B.A. (Ealing College [U.K.] 1983)
- ALISA CARMAN GOTTE, Associate Professor of Clinical Pediatrics B.A. (Texas 1998); M.D., M.S. (Texas, Southwestern Medical 2002, 2009) [2015]

[2002]

- GERALD S. GOTTERER, Professor of Medical Education and Administration, Emeritus A.B. (Harvard 1955); M.D. (Chicago 1958); Ph.D. (Johns Hopkins 1964) [1986]
- LAUREN P. GOTWALD, Instructor in Clinical Radiology & Radiological Sciences B.A. (Vanderbilt 2011); M.D. (UT Health Science Center [Tennessee] 2015) [2020]
- EDWARD R. GOULD, Assistant Professor of Medicine
 - M.D., B.A., B.S. (SUNY Upstate Medical University 2005, 2005, 2005) [2015]
- KATHLEEN L. GOULD, Associate Dean for Biomedical Sciences; Louise B. McGavock Chair; Professor of Cell and Developmental Biology A.B. (California, Berkeley 1981); Ph.D. (California, San Diego 1987) [1991]
- PARUL MANI GOYAL, Assistant Professor of Clinical Medicine M.B.B.S. (Government Yield cal, Chandigarh [India] 2000) [2009]
- MATTHEW RYAN CRACE, Assistant Professor of Obstetrics & Genecology
 5.A. (Vanderbilt 2000); M.D. (Wake Forest 2010)
 [2020]
- STEPHEN CHARLES GRADWOHL, Assistant Professor of Clinical Pediatrics B.S., M.D. (Washington University 2009, 2014)
- HOMAS BRENT GRAHAM, Associate Professor
- of Pediatrics

 B.S. (Rhodes College 1988): M.D. (Vanderhilt
 - B.S. (Rhodes College 1988); M.D. (Vanderbilt 1992); M.S. (Cincinnati 2000) [2008]
- TODD R. GRAHAM, Stevenson Chair in Biological Sciences; Professor of Biological Sciences; Professor of Cell and Developmental Biology B.S. (Maryville 1984); Ph.D. (Saint Louis 1988) [1992]
- JOSHUA R. GRAHE, Assistant Professor of Clinical Pediatrics B.S. (Washington and Lee 2005); D.O. (WVSOM 2011) [2015]
- DARYL K. GRANNER, Professor of Molecular Physiology and Biophysics, Emeritus B.A., M.D., M.S. (Iowa 1958, 1962, 1962) [1984]
- D. WESLEY GRANTHAM, Professor of Hearing and Speech Sciences, Emeritus B.A. (Oberlin 1967); Ph.D. (Indiana, Bloomington 1975) [1980]
- ANA M. GRAU, Associate Professor of Surgery M.D. (Pontificia Universidad Católica de Chile 1990) [2007]
- AMY BETH GRAVES, Instructor in Clinical Obstetrics and Gynecology B.S.N. (Murray State 1999); M.S.N. (Vanderbilt 2007) [2015]

- CORNELIA R. GRAVES, Clinical Professor of Obstetrics and Gynecology B A (Baylor 1983): M D. (Arkansas Little R
 - B.A. (Baylor 1983); M.D. (Arkansas, Little Rock 1987) [2008]
- JOHN A. GRAVES, Associate Professor of Health Policy; Associate Professor of Medicine B.A. (University of the South 2003); Ph.D. (Harvard 2011) [2011]
- SARAH JAYNE GRAVES, Assistant in Neurology B.S. (Florida Gulf Coast 2007); M.S. (Belmont 2015) [2016]
- JENNIFER KISER GREEN, Assistant Professor of Medicine; Assistant Professor of Pediatrics B.S. (Elon 1999); M.D. (North Carolina 2003); M.P.H. (Vanderbilt 2010) [2007]
- JENNIFER R. GREEN, Assistant Professor of Medicine
 - B.S. (Mississippi State 2004); M.D. (Mississippi, Jackson 2008) [2016]
- KELLY D. GREEN, Assistant Clinical Professor of Medicine
 - B.S.N. (Union [Tennessee] 1997); B.S. (Freed-Hardeman 1999); M.D. (UT Health Science Center [Tennessee] 2010) [2014]
- RACHAEL MARIE GREEN,
 - **Assistant in Pediatrics**
 - B.S.N. (Otterbein 2011); M.S.N. (Vanderbilt 2016) [2016]
- SHARON FETTERMAN GREEN, Assistant Professor of Clinical Medicine B.A. (Stanford 1990); M.D. (South Alabania 2001) [2013]
- SHAVAUGHN R. GREEN, Assistant Clinical Professor of Medicine
 - B.A. (Saint Louis 2007); M.D. (nicago 2012) [2018]
- BRAD A. GREENBAUM, Clinical Professor of Pediatrics
 - B.A. (Texas, Galveston 1991); M.D. (UT Health Science Center [Tennesse:] 1955) [1998]
- JOHN W. GREENE, Professor of Pediatrics, Emeritus
 - A.B. (West Georgia 1966); M.D. (Medical College of Georgia 1970) [1977]
- ASHLEY GREER, Assistant in Obstetrics & Gynecology
 - B.S.N. (Tennessee 2004); M.S.N. (Emory 2006) [2018]
- JOHN P. GREER, Professor of Medicine, Emeritus B.A., M.D. (Vanderbilt 1972, 1976) [1984]
- ROBERT ALAN GREEVY, JR., Associate Professor of Biostatistics
 - B.A. (Hampshire 1997); M.A., Ph.D. (Pennsylvania 2002, 2004) [2004]

- ANDREW J. M. GREGORY, Associate Professor of Orthopaedic Surgery; Associate Professor of Neurological Surgery; Associate Professor of Pediatrics
 - B.S. (Indiana, Bloomington 1993); M.D. (Alabama, Birmingham 1997) [2001]
- DAVID W. GREGORY, Associate Professor of Medicine, Emeritus
 - B.A., M.D. (Vanderbilt 1963, 1967) [1973]
- JUSTIN M. GREGORY, Assistant Professor of Pediatrics
 - B.S. (Tennessee 2003); M.D. (UT Health Science Center [Tennessee] 2008) [2014]
- KATHERINE W. GREGORY, Assistant Professor of Clinical Pediatrics
 - B.A. (Wheaton 2005); M.D. (Tennessee, Memphis 2009) [2018]
- MARY LUCIA PARTIN GREGORY, Assistant Professor of Clinical Pediatrics B.S. (Alabama 1996): M.D. (Alabama, Birming am 2000) [2014]
- SHAWN A. GRECORY, Associate Professor of Medicine
 - B.S. (Alabama 1994); M.D. (Virginia 1998);
 - M.M.S. (Narvard Medical 2006) [2014]
- BRUCE W GREIG, Associate in Pathology, M'crobiology and Immunology
 - B.S., B.S. (Auburn 1979, 1981) [2002]
- JAPED V. GRICE, Assistant Professor of Radiology & Radiological Sciences
 - B.S. (Missouri 2012); M.M.P., D.M.P. (Vanderbilt 2014, 2016) [2016]
- GARY GASTON GRIFFIETH, Clinical Instructor in Pediatrics
 - B.A. (Stanford 1972); M.D. (Yale 1977) [2018]
- ALLISON CHANDLER GRIFFIN, Assistant in Pediatrics; Lecturer of Nursing B.A. (Georgia 2003); M.S.N. (Vanderbilt 2015) [2015]
- CAROL A. GRIFFIN, Associate in Obstetrics & Gynecology
 - B.A. (Bard [New York] 1996); A.S.N. (Columbia State Community 1998); M.S.N. (Vanderbilt 2001) [2012]
- MARIE R. GRIFFIN, Professor of Health Policy, Emerita; Professor of Medicine A.B. (Immaculata 1972); M.D. (Georgetown 1976); M.P.H. (Johns Hopkins 1982) [1986]
- DEREK MACGREGOR GRIFFITH, Professor of Medicine, Health, & Society; Professor of Health Policy; Associate Professor of Medicine B.A. (Maryland 1993); M.A., Ph.D. (DePaul 1998, 2002) [2012]

- MICHELLE L. GRIFFITH, Associate Professor of Medicine
 - B.S. (Carnegie Mellon 2000); M.D. (Vanderbilt 2005) [2017]
- CARLOS G. GRIJALVA, Associate Professor of Health Policy M.D., B.S. (Universidad Nacional San Luis

Gonzaga de Ica [Peru] 2001, 2001); M.P.H. (Vanderbilt 2006) [2006]

- THOMAS JORDAN GRILLOT, Instructor in Clinical Radiology & Radiological Sciences B.S. (Kansas State 2007); M.D. (Kansas 2014) [2019]
- BARBARA J. GRIMM, Assistant in Medicine B.A. (Transylvania 1974); M.A. (Eastern Kentucky 1978); B.S.N. (Waynesburg 1991); M.S.N. (Belmont 1995) [1999]
- BARRY S. GRIMM, Assistant Professor of Clinical Obstetrics and Gynecology D.O. (UPIKE 2010) [2014]
- ZHANNA GRINCHUK, Instructor in Clinical Medicine; Instructor in Clinical Pediatrics B.S. (Central Florida 2011); M.D. (Ross 2016) [2020]
- WILLIAM A. GRISSOM, Associate Professor of Biomedical Engineering; Associate Professor of Electrical Engineering; Associate Professor of Radiology & Radiological Sciences B.S.E., M.S.E., M.S.E., Ph.D. (Michigan 2004 2006, 2007, 2008) [2011]
- KARISA BREE GRIZZLE, Assistant Professor Clinical Pediatrics
 - B.A., M.D. (Louisville 2010, 2014) [2019]
- ANGELA GROCHOWSKY, Assistant Professor **Pediatrics**
 - B.S. (Alabama, Huntsville 2008); M.D. (Alabama, Birmingham 2013) [2020]
- ERIC L. GROGAN, Associate Professor of Thoracic Surgery: Associate Professor of Medicine B.S. (Lipscomb 1995); M.D. W.P.H. (Vanderbilt 1999, 2004) [2008]
- SYLVIA L. GROTH, Assistant Professor of Clinical Ophthalmology & Visual Sciences B.A. (Wheaton [Massachusetts] 2004); M.D. (Minnesota 2013) [2018]
- LUCAS LEE GROVES, Assistant Clinical Professor of Ophthalmology and Visual Sciences B.S. (Tennessee 2008); M.D. (Uniformed Services 2012) [2017]
- BRAD A. GRUETER, Assistant Professor of Anesthesiology; Assistant Professor of Molecular Physiology & Biophysics; Assistant Professor of Pharmacology; Assistant Professor of Psychiatry and Behavioral Sciences B.S. (Illinois College 1998); M.S. (Illinois, Chicago 2001); Ph.D. (Vanderbilt 2006) [2012]

- CARRIE A. GRUETER, Research Assistant Professor of Anesthesiology B.S. (Montevallo 1999); Ph.D. (Vanderbilt 2006) [2012]
- MICHELLE S. GRUNDY, Assistant Professor of Medical Education & Administration (VU); Director of Health Professions Advice B.S., Ph.D. (Vanderbilt 1993, 2000) [2002]
- CALVIN LOUIS GRUSS, Instructor in Anesthesiology B.A., M.S. (Pennsylvania 2010, 2010); M.D.
 - (Vanderbilt 2015) [2019]
- EWA F. GRZESZCZAK, Associate Professor of Clinical Radiology & Radiological Sciences M.D. (Wroclaw Medical [Poland] 1984) [2000]
- GUOQIANG GU, Associate Professor of Cell and Developmental Biology B.S. (Jilin [China] 1988); M.S. (Chinese Academy of Sciences 1971; Ph.D. (Columbia 1998) [2002]
- SCOTT A. GUELCHER Professor of Chemical and Biomolecular Engineering; Professor of Biomedical Engineering; Professor of Medicine B.S. (Virginia Polytechnic Institute 1992); M.S. (Pittsburgh, 1996); Ph.D. (Carnegie Mellon 1999) [2001]
- F. PETER GUENGERICH, Professor of Biochemistry P.S. (Illinois, Champaign 1970); Ph.D. (Vanderbilt 1973) [1975]
- EMILY GUESS, Assistant in Obstetrics & Gynecology B.S.N. (Tennessee, Chattanooga 1998); M.S.N. (Vanderbilt 2012) [2018]
- RACHAEL G. GUICE, Assistant Clinical Professor of Pediatrics B.S. (Georgia 2007); M.D. (Medical College of

Georgia 2012) [2015]

- DANIEL ALLEN GUILES, Assistant Professor of Medicine; Assistant Professor of Pediatrics M.D. (Indiana, Indianapolis 2010); M.P.H. (Tulane 2017) [2019]
- OSCAR D. GUILLAMONDEGUI, Professor of Surgery; Professor of Hearing and Speech Sciences; Professor of Neurological Surgery B.A. (Dallas 1989); M.D. (Texas, Galveston 1993); M.P.H. (Vanderbilt 2010) [2003]
- ARIANNA M. GUILLARD, Assistant in Obstetrics & Gynecology B.S. (Richmond 2017); M.S. (Maryland, Baltimore 2019) [2019]

- RICHARD JOSEPH GUMINA, Adjunct Associate Professor of Medicine; Adjunct Associate Professor of Pharmacology B.S. (California, Davis 1988); Ph.D., M.D. (Medical College of Wisconsin 1996, 1997) [2013]
- MARGARET A. GUNNING, Assistant Clinical Professor of Pediatrics
 - M.B.B.S. (West Indies [Jamaica] 1991) [2010]
- OLIVER L. GUNTER, Associate Professor of Surgery
 - B.S. (Georgia 1996); M.D. (Medical College of Georgia 2000); M.P.H. (Vanderbilt 2014) [2009]
- XINGYI GUO, Assistant Professor of Medicine B.S. (Anhui Science and Technology University [China] 2003); Ph.D. (Zhejiang [China] 2008) [2013]
- DEEPAK K. GUPTA, Assistant Professor of Medicine
 - B.S. (Emory 2001); M.D. (Ohio State 2005) [2013]
- DINESH K. GUPTA, Assistant Clinical Professor of Medicine
 - M.D. (All India Institute of Medical Sciences 0) [2017]
- NIDHI GUPTA, Assistant Professor of Pediatrics M.B.B.S. (Delhi [India] 2008) [2018]
- RAJNISH KUMAR GUPTA, Associate Professor of Anesthesiology
 - B.A., M.D. (Vanderbilt 1998, 2002) [2006]
- EUGENIA V. GUREVICH, Associate Profes. of of Pharmacology
 - B.S., M.S., Ph.D. (Moscow State [Pursia] 1980 1980, 1985) [2001]
- VSEVOLOD V. GUREVICH, Conselius Vanderbilt Chair in Pharmacology; Professor of Ophthalmology & Visual Sciences; Professor of Pharmacology
 - B.S., M.S. (Moscow State [Russia] 1980, 1980); Ph.D. (Shemyakin Institute [Russia] 1990) [2001]
- LARRY D. GURLEY, Clinical Lastructor in Obstetrics and Gynecology
 - B.A. (Vanderbilt 1970); M.D. (UT Health Science Center [Tennessee] 1977) [1983]
- MOLLIE Q. GURLEY, Assistant in Psychiatry and Behavioral Sciences
 - B.S.N. (Florida 2014); M.S.N. (Vanderbilt 2015) [2018]
- DANIEL GUSTAVSON, Research Instructor in Medicine
 - B.A., M.A., Ph.D. (Colorado 2011, 2013, 2016) [2020]
- SCOTT OSBORN GUTHRIE, Associate Professor of Clinical Pediatrics
 - B.A. (Lipscomb 1995); M.D. (East Tennessee State 1999) [2005]

- DANIELLE GUTIERREZ, Research Assistant Professor of Biochemistry B.S. (Long Island, Southampton 2004); Ph.D. (Medical University of South Carolina 2010) [2014]
- ADAM GUTTENTAG, Associate Professor of Clinical Radiology and Radiological Sciences B.S., M.D. (Pennsylvania 1980, 1985) [2014]
- SUSAN H. GUTTENTAG, Julia Carell Stadler Chair in Pediatrics; Professor of Pediatrics B.A. (Pennsylvania 1981); M.D. (Medical College of Pennsylvania 1985) [2014]
- HARRY E. GWIRTSMAN, Associate Professor of Psychiatry and Behavioral Sciences; Adjunct Associate Professor of Nursing
- B.A. (Yale 1972); M.D. (Columbia 1976) [1995]
- SCOTT HAAKE, Assistant Professor of Medicine B.S. (South Florida 2005); M.D. (Miami [Florida] 2009) [2015]
- DAVID W. H. AS, Professor of Medicine; Professor of Pathology, Microbiology and Immunology; Professor of Phornacology A. 3. (Indiana, Pleomington 1979); M.D. (Vanderlilt 1933) [1990]
- KEVIN F. HAAS, Associate Professor of Neurology B.S. Duke 1991); Ph.D., M.D. (Michigan 1998, 1999) [2004]
- VOLKER H. HAASE, Krick-Brooks Chair in Mephrology; Professor of Medicine; Professor of Molecular Physiology and Biophysics M.D. (Johann Wolfgang Goethe [Germany] 1990) [2008]
- RALF C. HABERMANN, Assistant Professor of Medicine
 - M.D. (Freie Universitat Berlin [Germany] 1989); M.Mgt. (Vanderbilt 2010) [1996]
- SARA HABIBIAN, Clinical Instructor in Obstetrics and Gynecology
 - B.S. (Virginia 1995); M.D. (Vanderbilt 2002) [2007]
- DAVID L. HACHEY, Adjunct Research Professor of Biochemistry
 - B.A. (Oakland 1967); Ph.D. (California, Los Angeles 1972) [1998]
- MALLORY HACKER, Assistant Professor of Neurology; Assistant Professor of Physical Medicine and Rehabilitation
 - B.S. (Tennessee, Chattanooga 2007); Ph.D., M.S.C.I. (Vanderbilt 2013, 2019) [2015]
- ANN HACKETT, Assistant in Medicine
 - B.A., M.S.N. (Vanderbilt 2007, 2009) [2013]
- BRIAN PAUL HACKETT, Professor of Pediatrics B.A. (Middlebury 1975); Ph.D. (Boston College 1984); M.D. (Saint Louis University 1986) [2017]

- TROY A. HACKETT, Professor of Hearing and Speech Sciences; Professor of Psychology B.A., M.A. (Indiana, Bloomington 1987, 1989); Ph.D. (Vanderbilt 1996) [2000]
- AMBER HACKSTADT, Assistant Professor of Biostatistics
 - B.S., M.S. (Southeast Missouri State 2003, 2008); Ph.D. (Colorado State 2011) [2015]
- ELIAS V. HADDAD, Assistant Professor of Medicine
 - B.S. (Tennessee 1998); M.D. (UT Health Science Center [Tennessee] 2002) [2011]
- ZINAH HADIDI, Assistant Professor of Clinical Medicine
 - M.B.Ch.B (Baghdad [Iraq] 2004) [2018]
- MARIA HADJIFRANGISKOU, Associate Professor of Pathology, Microbiology and Immunology; Associate Professor of Urology
 - B.S. (Clarion 2000); Ph.D. (Texas, Houston 2007) [2012]
- EDMUND DABNEY HADLEY, Clinical Instructor in Emergency Medicine
 M.D. (Wake Forest 2012) [2016]
- EINAR THOR HAFBERG, Assistant Professor of Pediatrics
 - M.D. (Iceland 2005) [2017]
- DAVID D. HAGAMAN, Assistant Professor of Medicine
 - B.S. (Bowling Green State 1983); M.D. (Ohio State 1987) [2001]
- KEVIN D. HAGEMAN, Assistant Professor of Clinical Medicine
 - B.S. (South Florida 2009); M.D. (Ph. adelphia College of Osteopathic Medicine 2014) [2017]
- CLAIRE UNDERWOOD HAILEY Assistant
 Professor of Emergency Medicine
 B.S. (Georgia 2011); M.D. (Emory 2015) [2018]
- RAYMOND M. HAKIM, Professor of Chinical Medicine
 - M.S. (Rensselaer Polyteclinic Institute 1965); Ph.D. (Massachusetts Institute of Technology 1968); M.D. (McGill [Canada] 1976) [1987]
- NATASHA B. HALASA, Associate Professor of Pediatrics
 - B.S. (Akron 1994); M.D. (Medical College of Ohio 1998); M.P.H. (Vanderbilt 2004) [2002]
- DOUGLAS A. HALE, Associate Professor of Surgery
 - B.S. (Saint Bonaventure 1980); M.D. (Georgetown 1984) [2009]
- CONNIE ALLEN HALEY, Assistant Clinical Professor of Medicine B.A. (Virginia 1990); M.D., M.P.H. (Vanderbilt 1995, 2002) [2001]

- SPENCER A. HALEY, Assistant Clinical Professor of Oral and Maxillofacial Surgery B.S. (Tennessee, Martin 1991); D.D.S. (UT Health Science Center [Tennessee] 1995) [2003]
- APRYL HALL, Assistant Clinical Professor of Pediatrics
 - B.S. (Tennessee Technological 1999); M.D. (East Tennessee State 2005) [2010]
- DAVID E. HALL, Professor of Clinical Pediatrics B.A. (Missouri, Saint Louis 1972); M.D. (Chicago 1981) [2013]
- GREGORY HALL, Assistant Professor of Clinical Radiology & Radiological Sciences B.A. (Brigham Young 2008); M.D. (Yeshiva 2013) [2018]
- NATALIE J. HALL, Assistant in Neurological Surgery
 - B.S. (Baylor 2012); M.S.N. (Vanderbilt 2015) [2017]
- REAGAN HAYL,
 Associate in Orthopardic Surgery
 B.S. (Vardosta State 2001); M.S. (Belmont 2004);
 M.S.N. (Vande bhit 2011) [2015]
- ROBERT HALL, Assistant in Medicine B.S.N. (Midale Tennessee State 1999); M.S.N. (Van Igrbilt 2010) [2014]
- JOHN STEVEN HALLE, Adjunct Professor of Medical Education & Administration (VUMC) B.S., M.S. (Oregon 1975, 1977); Ph.D. (Iowa 1990) [2001]
- JENNIFER L. HALPERN, Assistant Professor of Orthopaedic Surgery B.A. (Princeton 1995); M.D. (Vanderbilt 1999) [2006]
- SUSAN A. HALTER, Associate Professor of Pathology, Emerita B.A. (Miami [Ohio] 1967); M.S. (Syracuse 1971); M.D. (Queen's [Canada] 1973) [1977]
- AMY-JOAN LORNA HAM, Adjoint Assistant Professor of Chemistry; Adjunct Assistant Professor of Medicine B.S., M.S., Ph.D. (Arizona 1988, 1991, 1995) [2003]
- DONNA M. HAMACHER, Assistant Clinical Professor of Pediatrics B.A. (Saint Louis 2005); M.D. (Saint Louis University 2009) [2012]
- TARA N. HAMADA, Associate Clinical Professor of Pediatrics B.S. (Tennessee, Memphis 1991); M.D. (UT
 - Health Science Center [Tennessee] 1995) [2005]
- KIRSTEN L. HAMAN, Assistant Clinical Professor of Psychiatry & Behavioral Sciences B.S. (Florida 1988); M.A., Ph.D. (Vanderbilt 1993, 2000) [2001]

- MERRITT HAMBRICK, Assistant in Medicine B.S. (Central Arkansas 2007); M.S. (Harding 2010) [2017]
- OMAR HAMEED, Adjunct Professor in Pathology, Microbiology and Immunology M.B.Ch.B (Baghdad [Iraq] 1991) [2011]
- RIZWAN HAMID, Dorothy Overall Wells Chair in Pediatrics; Professor of Pediatrics M.D. (Allama Iqbal Medical College [Pakistan] 1985); Ph.D. (Vanderbilt 1994) [2003]
- MARGARET HAMILTON, Assistant Clinical Professor of Oral and Maxillofacial Surgery D.D.S. (UT Health Science Center [Tennessee] 2010); B.S. (Tennessee 0) [2014]
- REGINA S. HAMLET, Assistant in Medicine B.S.N. (Western Kentucky 2010); M.S.N. (Frontier Nursing University 2015) [2017]
- HEIDI E. HAMM, Aileen M. Lange and Annie Mary Lyle Chair in Cardiovascular Research; Professor of Pharmacology; Professor of Ophthalmology and Visual Sciences; Professor of Orthopaedic Surgery; Professor of Biochemistry B.A. (Atlantic Union 1973); Ph.D. (Texas 1980) [2000]
- CATHERINE MELINDA HAMMACK, Associate in Health Policy
 - B.S. (Southern Mississippi 2009); J.D., M.A. (Wake Forest 2014, 2014) [2017]
- JIN HO HAN, Associate Professor of Emergency Medicine B.A. (New York 1993); M.D. (SUNY, Do vistate

Medical Center 1999); M.S. (Cincinnati 2007) [2005]

- YE HAN, Research Associate Professor of Neurology B.Sc., M.Sc. (Hebei Normal University 1938, 2001); Ph.D. (Chinese Academy of Sciences 2005) [2018]
- KENNETH R. HANDE, Professor of Medicine, Emeritus
 - A.B. (Princeton 1968); M.D. Johns Hopkins 1972) [1978]
- STEVEN K. HANKS, Professor of Cell and Developmental Biology, Emeritus B.S. (Utah 1977); Ph.D. (Texas, Houston 1982) [1990]
- ALLISON HANLON, Assistant Professor of Dermatology B.S. (Notre Dame 1997); M.D., Ph.D. (Temple
- B.S. (Notre Dame 1997); M.D., Ph.D. (Temple 2005, 2005) [2016]
 GENE A. HANNAH, Assistant Professor of
- Orthopaedic Surgery
 B.S. (Auburn 1984); M.D. (Alabama,
 Birmingham 1988) [2002]

- FARIS HANNOODI, Adjunct Instructor in Medicine M.D. (Charles, Prague [Czech Republic] 2011) [2019]
- DAVID E. HANSEN, Associate Professor of Medicine
 - B.A. (Amherst 1976); M.D. (Cornell 1980) [1987]
- KATHRYN HANSEN, Instructor in Clinical Nursing; Instructor in Physical Medicine and Rehabilitation
 - M.S.N. (Vanderbilt 2010) [2010]
- HOLLY RENEE HANSON, Assistant Professor of Clinical Pediatrics
 - B.S. (Mt. Vernon Nazarene 2006); M.D. (Northeast Ohio Medical University [Ohio] 2010) [2016]
- KATHERINE LOUISE HANSON, Associate Professor of Clinical Medicine B.S. (Cornell 1986); M.D. (Vanderbilt 1990) [1999]
- CHUAN-MING HAO, Adjunct Research Assistant Professor of Medicine M.D., 14.S. (Nanton Medical [China] 1982, 1937); Ph.D. (Shanghai Medical [China] 1990) [2600]
- FRANK JOSEPH HARAF, JR., Clinical Professor of Pediatrics
 - B. 5. (Emory 1993); M.D. (East Tennessee State 1997) [2000]
- POUGLAS P. HARDIN, Professor Mathematics; Professor of Biomedical Informatics B.E.E. (Georgia Institute of Technology 1980); M.E.E. (Stanford 1982); Ph.D. (Georgia Institute of Technology 1985) [1986]
- KAYLA HARDING, Assistant in Surgery B.S.N. (Western Kentucky 2014); M.S.N. (Vanderbilt 2017) [2017]
- NORMAN CHANDLER HARDMAN, JR., Assistant Professor of Clinical Medicine B.S. (Georgia Institute of Technology 1981); M.D. (Medical College of Georgia 1985) [1993]
- RAY HARGREAVES, Clinical Instructor in Surgery at St. Thomas Medical Center M.D. (Vanderbilt 1985); B.A. (Franklin and
- Marshall 0) [1992]
 CRISTINA M. HARMELINK, Research Instructor in
- Pediatrics

 R Sc. (Craighton 2004): Ph.D. (Alabama
 - B.Sc. (Creighton 2004); Ph.D. (Alabama, Birmingham 2011) [2019]
- DONNALITA B. HARMON, Assistant in Medicine B.S. (Tennessee State 1999); M.S.N. (Vanderbilt 2005) [2008]
- JENNA CHRISTINE HARMON, Instructor in Clinical Radiology & Radiological Sciences B.S. (Miami [Ohio] 2010); M.D. (Ohio State 2014) [2019]

- JOEL M. HARP, Research Assistant Professor of Biochemistry
 - B.A., M.S. (West Texas A & M 1973, 1975); Ph.D. (Tennessee 2000) [2003]
- FRANK E. HARRELL, Professor of Biostatistics B.S. (Alabama, Huntsville 1973); Ph.D. (North Carolina 1979) [2003]
- SHELTON HARRELL, Assistant in Medicine; Instructor in Clinical Nursing B.S. (Centre 2007); M.S.N. (Vanderbilt 2010) [2010]
- PHILIP R. HARRELSON, Assistant Professor of Clinical Medicine; Assistant Professor of Clinical Pediatrics
 - B.S. (Georgia College and State University 1987); M.D. (Medical College of Georgia 1999) [2006]
- DEBORAH RHEA HARRINGTON, Assistant in Medicine
 Diploma in Nursing (Baptist Hospital of East Tennessee 1979); A.A.S. (Roane State Community 2009); M.S.N. (Vanderbilt 2014) [2015]
- BRYAN DAVID HARRIS, Assistant Professor of Medicine
 - B.S., M.D., M.P.H. (Vanderbilt 2005, 2009, 2016) [2016]
- PAUL A. HARRIS, Professor of Biomedical Informatics; Professor of Biomedical Engineering; Professor of Biostatistics B.S. (Tennessee Technological 1987); M.S. Ph.D. (Vanderbilt 1993, 1996) [1999]
- RAYMOND C. HARRIS, JR., Ann and Poscoe R. Robinson Chair in Nephrology; Professor of Medicine; Professor of Molecular Physiology and Biophysics; Director, Division of Nephrology B.S. (Yale 1974); M.D. (Emory 1978) [1986]
- STEVEN S. HARRIS, Assistant Professo: of Clinical Radiology & Radiological Science B.E. (Vanderbilt 2004); Ph.D. (Georgia Institute of Technology 2012); M.D. (Emory 2013) [2019]
- TEMPIE MICHELLE HARRIS, Assistant in Pediatrics
 B.S.N. (Middle Tennessee State 2005); M.S.N. (Vanderbilt 2009) [2009]
- THOMAS R. HARRIS, Orrin Henry Ingram
 Distinguished Professor of Engineering, Emeritus;
 Professor of Biomedical Engineering, Emeritus;
 Professor of Chemical Engineering, Emeritus;
 Professor of Medicine, Emeritus
 B.S., M.S. (Texas A & M 1958, 1962); Ph.D.
 (Tulane 1964); M.D. (Vanderbilt 1974) [1964]
- LAURIE A. HARRIS-FORD, Associate Clinical Professor of Pediatrics B.S., M.D. (Alabama, Birmingham 1985, 1989) [2005]

- DAVID G. HARRISON, Betty and Jack Bailey Chair in Cardiology; Professor of Medicine; Professor of Molecular Physiology & Biophysics; Professor of Pharmacology; Director, Division of Clinical Pharmacology
 - B.S. (Oklahoma State 1970); M.D. (Oklahoma 1974) [2011]
- FIONA E. HARRISON, Assistant Professor of Medicine
 - B.Sc., Ph.D. (Cardiff [U.K.] 2000, 2004) [2008]
- JEREMY B. HARRISON, Assistant Clinical Professor of Pediatrics B.S. (Freed-Hardeman 1990); M.D. (East Tennessee State 1996) [2007]
- HEATHER ANNE HART, Assistant in Surgery B.A., B.S., B.S.N. (Belmont 2006, 2006, 2009); M.S.N. (Alabama, Birmingham 2017) [2017]
- SARAH R. HART, Assistant in Pediatrics B.A. (Virginia 1995); M.S.N. (Vanderbilt 1997) [2014]
- TINA V. HARTERT.

 Lund H. Owen Chair in Medicine; Professor of Medicine; Director, Center for Asthma and Environmental Sciences Research

 A.B. (Brown 1985); M.D., M.P.H. (Vanderbilt 1990 (1998) [1998]
- MARY KRISTEN HARTLEY, Assistant in Physical Medicine and Rehabilitation B.S.N. (Middle Tennessee State 2007); M.S.N. (Vanderbilt 2012) [2016]
- KATHERINE E. HARTMANN, Associate Dean for Clinical and Translational Scientist Development; Lucius E. Burch Chair of Reproductive Physiology and Family Planning; Professor of Obstetrics and Gynecology; Professor of Medicine; Deputy Director for the Institute of Medicine and Public Health B.A., M.A., M.D. (Johns Hopkins 1986, 1986, 1992); Ph.D. (North Carolina 1999) [2006]
- LARA F. BRATCHER HARVEY, Assistant Professor of Obstetrics and Gynecology B.A. (South Carolina 2004); M.D., M.P.H. (Vanderbilt 2010, 2010) [2014]
- SARA M. HARVEY, Assistant Professor of Clinical Radiology and Radiological Sciences B.S. (Memphis 1999); M.D. (UT Health Science Center [Tennessee] 2004) [2009]
- DANA J. HASELTON, Assistant Clinical Professor of Pediatrics B.S.E., M.S.E. (Michigan 1983, 1984); M.S., M.D., Ph.D. (University of Washington 1990, 1995, 1995) [2001]

- FREDERICK R. HASELTON, Professor of Biomedical Engineering; Professor of Ophthalmology and Visual Sciences; Professor of Chemistry B.A. (Haverford 1969); Ph.D. (Pennsylvania
- JOHN H. HASH, Professor of Microbiology and Immunology, Emeritus B.S. (Roanoke 1949); M.S., Ph.D. (Virginia Polytechnic Institute 1955, 1957) [1964]

1981) [1989]

- TRAVIS J. W. HASSELL, Assistant Professor of Neurology B.S. (Missouri 2002); Ph.D. (Purdue 2010); M.D. (Indiana, Indianapolis 2012) [2016]
- ALYSSA H. HASTY, Associate Dean for Faculty (Basic Sciences); Cornelius Vanderbilt Chair in Molecular Physiology and Biophysics; Professor of Molecular Physiology and Biophysics B.S. (Tennessee Technological 1994); Ph.D. (Vanderbilt 1998) [2002]
- LEON DUPREE HATCH III, Assistant Professor of Pediatrics M.D., B.S. (Florida 2004, 2004); M.P.H. (Vanderbilt 2015) [2011]
- ANGELA L. HATCHETT, Assistant in Neurological Surgery
 - B.A. (Agnes Scott 1982); M.S.W. (Georgia 1984); M.S.N. (Vanderbilt 2000) [2005]
- DANIEL A. HATEF, Assistant Clinical Professor of Plastic Surgery B.A., M.D. (Maryland, Baltimore 1998, 2004) [2015]
- HELEN E. HATFIELD, Associate in Psychiatry and Behavioral Sciences
 B.S.N. (Michigan State 1976); M.S.N. (Vanderbilt 2002) [2003]
- JACOB WALTER HATHAWAY, Assistant Professor of Medicine B.A. (Carleton College 1996): M.D., M.P.H. (Vanderbilt 2005, 2010) [2010]
- ANTONIS K. HATZOPOULOS, Associate Professor of Medicine; Associate Professor of Cell and Developmental Biology
 B.S. (Aristotelion [Greece] 1981); Ph.D.
 (Northwestern 1986) [2005]
- CHARLES HOWARD HAUSMAN, Assistant Professor of Clinical Hearing and Speech Sciences B.S. (Cincinnati 1972); M.S. (Vanderbilt 1974) [2008]

- JACEK J. HAWIGER, Distinguished Professor of Medicine; Louise B. McGavock Chair; Professor of Molecular Physiology and Biophysics M.D. (Copernicus School of Medicine [Poland] 1962); Ph.D. (National Institute of Public Health [Poland] 1967); M.A. (hon., Harvard 1987); M.D. (hon., Copernicus School of Medicine [Poland] 1992) [1990]
- ALEXANDER THARRINGTON HAWKINS, Assistant Professor of Surgery B.A. (Amherst 2000); M.D. (Virginia 2008); M.P.H. (Harvard 2013) [2016]
- ANNE B. HAWKINS, Assistant Clinical Professor of Pediatrics
 - B.A. (Virginia 1987); M.D. (UT Health Science Center [Tennessee] 1992) [1997]
- DEBORAH HAWKINS, Assistant in Medicine B.A. (Texas 1996); B.S.N. (Arizona 2005); M.S.N. (Vanderbilt 2010) [2010]
- STACY L. HAWKINS, Assistant in Pediatrics B.S.N. (Austin Peay State 2002); M.S.N. (Saint Louis 2005) [2008]
- EMILY HAWKINSON, Clinical Instructor in Pediatrics
- B.S., M.S., M.D. (Mississippi 2009, 2011, 2015)
- MELINDA J. HAWS, Assistant Clinical Professor of Pastic Surgery
 - M.D., B.A. (Indiana State 1991, 1991) [2009]
- DENJAMIN B. HAYES, Assistant Clinical Professor of Dermatology
 - B.A. (Davidson 1994); Ph.D. (Medical College of Virginia 1999); M.D. (Boston University 2003) [2007]
- DIANA D. HAYES, Assistant in Surgery B.S.N. (Clemson 2007); M.S.N. (Vanderbilt 2014) [2014]
- PATRICIA LYNN HAYES, Associate Professor of Hearing & Speech Sciences B.A. (Lenoir-Rhyne 1980); M.S. (Wisconsin, Milwaukee 1985); Ed.D. (Pittsburgh 1991) [2007]
- CHRISTINA HAYHURST, Assistant Professor of Anesthesiology
 - B.S., M.D. (Arizona 2004, 2009) [2015]
- DAVID S. HAYNES, Professor of Otolaryngology -Head and Neck Surgery; Professor of Neurological Surgery; Associate Professor of Hearing and Speech Sciences B.A. (Tennessee 1983); M.D. (UT Health Science Center [Tennessee] 1987) [1994]
- DAVID R. HEAD, Professor of Pathology, Microbiology and Immunology B.A. (Rice 1964); M.D. (Texas, Dallas 1968) [2000]
- JANE L. HEARNSBERGER, Assistant in Pediatrics B.S., M.S.N. (Vanderbilt 2010, 2011) [2014]

- BENJAMIN S. HEAVRIN, Adjunct Assistant Professor of Emergency Medicine B.A. (Princeton 1998); M.D., M.B.A. (Vanderbilt 2004, 2004) [2019]
- JILL E. LAWTON HEAVRIN, Clinical Instructor in Emergency MedicineB.S. (Vanderbilt 2002); M.D. (Miami 2006) [2009]
- STEPHAN HECKERS, William P. and Henry B.
 Test Chair in Schizophrenia Research; Professor
 of Psychiatry and Behavioral Sciences; Professor
 of Radiology and Radiological Sciences; Chair of
 the Department of Psychiatry and Behavioral
 Sciences; Adjunct Professor of Nursing
 M.D. (Cologne [Germany] 1988); M.Sc. (Harvard
 2000) [2006]
- PETER HEDERA, Associate Professor of Neurology M.D. (Univerzita Komenského [Slovakia] 1987) [2002]
- SARA E. HEDRICH, Assistant in Medicine B.S. (Alabama 2010); M.S.N. (Tennessee State 2017) [2018]
- WILLIAM JOHN HEERMAN, Assistant Professor of Pediatrics; Assistant Professor of Medicine B.A. (Carleton College 2004); M.D., M.P.H. (Vanderbilt 2008, 2014) [2012]
- MCKINLEY HEFLIN, Assistant Professor of Clinical Medicine B.S. (Kentucky, Lexington 2013); M.D. (Louisville 2017) [2020]
- MARK G. HEIDEL, Assistant Clinical Professo. in Radiology and Radiological Sciences B.S. (Tennessee 2003); M.D. (Meberty Medical 2009) [2014]
- PAUL J. HEIL, Clinical Profess in of Pediatrics B.S. (Stanford 1984); M.D. (Vanderbilt 1938) [1992]
- DOUGLAS C. HEIMBURGER, Professor of Medicine

 B. S. (Harding 1973): M.D. (Var carbill 1973)
 - B.S. (Harding 1973); M.D. (Vanderbilt 1978); M.S. (Alabama 1987) [2009]
- JEFFREY NORRIS HEIMILLER, Assistant Professor of Emergency Medicine B.S. (Virginia Commonwealth 2010); M.D. (Virginia Tech Carilion School of Medicine 2014) [2017]
- CAROLYN J. HEINRICH, Patricia and Rodes Hart Chair Professor of Public Policy and Education; Professor of Public Policy & Education; Professor of Health Policy; Associate Professor of Leadership, Policy, & Organizations B.A. (Beloit 1989); M.A., Ph.D. (Chicago 1991, 1995) [2015]

- J. HAROLD HELDERMAN, Professor of Medicine; Professor of Pathology, Microbiology and Immunology
 - B.A. (Rochester 1967); M.D. (SUNY, Downstate Medical Center 1971) [1989]
- LAWRENCE TYSON HELLER, Assistant Professor of Clinical Medicine B.A. (Rice 2007); M.D. (Texas, Houston 2012) [2015]
- RICHARD M. HELLER, JR., Professor of Radiology and Radiological Sciences, Emeritus B.A. (Carleton College 1959); M.D. (Northwestern 1963) [1975]
- CARL G. HELLERQVIST, Professor of Biochemistry, Emeritus M.S., Ph.D. (Stockholm [Sweden] 1967, 1968) [1974]
- SUSAN M. HELLERVIK, Assistant in Medicine; Adjunct Instructor in Nursing B.S.N. (Carifornia State, Sacramento 1988); M.S.N. (Vanderbilt 2009) [2009]
- JACKI YIJ NIKOLE 1 LLWEGE, Research Assistant Professor of Medicine 5.5. (Appalachian State 2009); Ph.D. (Wake Forest 2014) [2018]
- CHRISTIDE MAE HELOU, Instructor in Clinical Obstetrics & Gynecology B.S. (Georgetown 2010); M.D. (Maryland, Baltimore 2014) [2018]
- Obstetrics and Gynecology
 B.S., M.D., M.H.E. (Vanderbilt 2002, 2006, 2013) [2010]
- JONATHAN ALLEN HEMLER, Adjunct Assistant Professor of Pediatrics B.S. (William and Mary 2006); M.D. (Virginia 2011) [2016]
- ANNA R. HEMNES, Associate Professor of Medicine B.A. (Columbia 1995); M.D. (Johns Hopkins 1999) [2008]
- CHASE DEAN HENDRICKSON, Assistant Professor of Medicine B.S. (Bob Jones 2006); M.D. (Oklahoma 2010); M.P.H. (Dartmouth 2016) [2016]
- MEGHAN HENDRICKSON, Assistant Professor of Clinical Obstetrics & Gynecology B.S.N. (Wyoming 2002); M.S.N. (Vanderbilt 2005) [2012]
- JOAN COLLIER HENNING, Assistant Professor of Emergency Medicine B.S. (Mississippi State 1991); M.D. (Vanderbilt 1997) [2001]

- GREER MAHONEY HENRY, Associate in Orthopaedic Surgery B.A. (Hamilton 2005); M.S. (Syracuse 2006); M.S. (Le Moyne 2010) [2015] GREG L. HENRY, Visiting Professor of Emergency
- GREG L. HENRY, Visiting Professor of Emergency Medicine
 - B.A., M.D. (Michigan 1969, 1973) [2006]
- MELISSA C. HENRY, Assistant Professor of Hearing and Speech Sciences B.A. (Western Michigan 1980); M.A. (Wayne State 1982) [2008]
- TIMOTHY M. HENSCHEL, Assistant Clinical Professor of Pediatrics B.S. (Wheaton 1991); M.D. (Medical College of Wisconsin 1995) [1999]
- CHRISTOPHER PATRICK HENSON, Associate Professor of Clinical Anesthesiology D.O. (Oklahoma State 2006) [2010]
- ELIZABETH ADAIR HERBERT, Assistant in Otolaryngology - Head and Neck Surgery B.S. (Tennessee 2007); M.S.N. (Vanderbilt 2008) [2015]
- JENNIFER L. HERINGTON, Assistant Professor of Pediatrics; Assistant Professor of Pharmacology B.S., Ph.D. (Southern Illinois 2004, 2009) [2015]
- LISA D. HERMANN, Associate Professor of Clinical Neurology B.S. (Andrews 2002); M.D. (Virginia 2006) [2011]
- CASILDA I. HERMO, Associate Clinical Professor of Pediatrics
 - M.D. (Autonomous University of Santo Doming [Dominican Republic] 1980) [1996]
- ANTONIO HERNANDEZ, Associate Professor of Anesthesiology
 - B.S. (Texas, El Paso 1995); M.D. (Texas, Galveston 1999) [2013]
- CIRIA Q. HERNANDEZ, Adjunct Assistant Professor of Neurology M.D. (Centroccidental Licardro Alvarado [Venezuela] 1997); Ph.D. (Universidade Federal do Rio de Janeiro [Brazil] 2002) [2012]
- MARTA HERNANZ-SCHULMAN, Professor of Radiology and Radiological Sciences; Professor of Pediatrics
 - A.B. (Princeton 1973); M.D. (New York 1977) [1988]
- ALISON HERNDON, Assistant Professor of Clinical Pediatrics
 - B.A. (Wooster 2003); M.P.H. (Colorado, Denver 2007); M.D. (Colorado 2011) [2015]
- S. DUKE HERRELL III, Professor of Urology; Professor of Biomedical Engineering; Professor of Mechanical Engineering B.A. (Richmond 1986); M.D. (Virginia 1990) [2001]

- CATHERINE GALLERANI HERRINGTON, Adjunct Assistant Professor of Psychology; Assistant Clinical Professor of Psychiatry and Behavioral Sciences B.S., M.S., Ph.D. (Vanderbilt 2005, 2008, 2014) [2015]
- HEATHER WALLER HERRMANN, Assistant in Medicine
 - B.S. (Vanderbilt 1995); M.S. (Pittsburgh 2000) [2016]
- PAULA C. HERRMANN, Assistant Professor of Clinical Medicine B.S. (South Carolina 1999); M.D. (Medical
- University of South Carolina 2003) [2007] SHANNON L. HERSEY, Associate Professor of Clinical Anesthesiology
 - B.A. (Kalamazoo 1977); M.D. (Maryland, Baltimore 1985) [2018]
- DOUGLAS L. HESTER, Associate Professor of Anesthesiology A.B. (Georgia 1999), M.D. (Medical College of Georgia 2004) (2008)
- ELIZABETH AND E CHRISTINA HEVERT,
 Assistant Professor of Clinical Radiology &
 Radiological Sciences
- M.S. (Plorida Atlantic 2008); M.D. (Miami [Forida] 2012) [2018]
- JUSTUN CHRISTOPHER HEWLETT, Assistant Professor of Medicine
 - B.S., M.D. (Florida 2008, 2012) [2019]
- AMANDA C. HICKLIN, Assistant in Neurology A.A.S. (Itawamba Community 1999); M.S.N. (Vanderbilt 2012) [2017]
- LAURA ANSLEY ALLEN HICKMAN, Instructor in Clinical Surgery B.E. (Vanderbilt 2010); M.D., M.S. (Alabama,
 - B.E. (Vanderbilt 2010); M.D., M.S. (Alabama, Birmingham 2014, 2019) [2019]
- ADAM HICKS, Senior Associate in Orthopaedic Surgery
 - B.Med.Sc. (Auburn 2002); D.P.M. (Des Moines University 2006) [2014]
- CANDI G. HICKS, Assistant in Anesthesiology B.S. (Austin Peay State 2010); M.S. (Vanderbilt 2016) [2016]
- GERALD B. HICKSON, Joseph C. Ross Chair in Medical Education and Administration; Professor of Medical Education and Administration; Professor of Pediatrics; Adjunct Professor of Nursing
- B.S. (Georgia 1973); M.D. (Tulane 1978) [1982] SCOTT W. HIEBERT, Hortense B. Ingram Chair in
- Cancer Research; Professor of Biochemistry; Associate Professor of Medicine B.S. (Bethel College [Kansas] 1982); Ph.D. (Northwestern 1987) [1997]

- NICHOLAS S. D. HIGBY, Assistant Professor of Clinical Pediatrics
 - B.S., M.D. (Ohio State 2001, 2005) [2011]
- KENT K. HIGDON, Associate Professor of Plastic Surgery
 - B.S. (Alabama 1998); M.D. (Mississippi 2002) [2012]
- JAMES N. HIGGINBOTHAM, Research Instructor in Medicine
 - B.S., M.S., Ph.D. (Mississippi State 1989, 1993, 2000) [2006]
- MICHAEL S. HIGGINS, Professor of Anesthesiology B.S. (Lewis and Clark 1984); M.D., M.P.H. (Vanderbilt 1989, 1999) [1994]
- R. KEVIN HIGH, Senior Associate in Emergency Medicine
 - B.S. (University of the State of New York–Regents College 1992); Ph.D. (Columbus State 2000); M.H.E. (Vanderbilt 2013) [2007]
- GEORGE C. HILL, Professor of Medical Education and Administration, Emeritus; Professor of Pathology, Microbiology and Immunology, Emeritus
 - B.A. (Rutgers, Camden 1961); M.S. (Howard 1963); Ph.D. (New York 1967) [2002]
- JOHN BRADFORD HILL, Assistant Professor of Plastic Surgery; Assistant Professor of Surgery B.S. (Florida 2007); M.D. (Vanderbilt 2012) [2019]
- MICHAEL F. HILL, Adjunct Associate Professor of Medicine
 - B.Sc., M.Sc., Ph.D. (Manitoba [Canada] 1991 1995, 1998) [2006]
- TIFFANY P. HILL, Clinical Protector of Pediatries B.A. (Boston University 1990); M.D., Vr.S. (Chicago 1994, 1994) [2006]
- TRACY JANEEN HILLS, Assistant Professor of Clinical Pediatrics
 - B.A. (Bryn Mawr 2004); D.C. (Philadelphia College of Osteopathic Medicine 2012) [2016]
- MELISSA A. HILMES, Associate Professor of Pediatrics; Associate Professor of Radiology & Radiological Sciences
 - B.S., M.D. (Vanderbilt 1996, 2000) [2007]
- HEATHER LIMPER HIMELHOCH, Research Assistant Professor of Medicine B.S. (Georgia 2008); M.P.H., Ph.D. (Illinois, Chicago 2010, 2016) [2016]
- DANIEL P. HIMES, Assistant Professor of Emergency Medicine; Assistant Professor of Pediatrics
 - B.S. (Wheaton 1989); M.D. (Wake Forest 1993) [1996]

- WILLIAM L. HINDS III, Assistant Clinical Professor of Psychiatry and Behavioral Sciences B.A. (Virginia 1990); M.D. (Alabama, Birmingham 1996) [2018]
- JEFFREY F. HINE, Assistant Professor of Pediatrics; Adjunct Assistant Professor of Psychology B.A. (California, Santa Barbara 2002); M.Ed. (Vanderbilt 2005); Ph.D. (Georgia 2014) [2015]
- TIFFANY ELDER HINES, Assistant Professor of Pediatrics; Assistant Professor of Medicine B.S. (Auburn 1991); M.D. (South Alabama 1995) [2012]
- ALICE A. HINTON, Associate Professor of Clinical Radiology and Radiological Sciences B.S. (Tulane 1976); M.D. (Vanderbilt 1982) [2003]
- TIMOTHY JOHN HINTON, Assistant Professor of Clinical Medicine

 P. S. (Harding 1007): M. P. (Maryland, Baltimore)
 - B.S. (Harding 1997); M.D. (Maryland, Baltimore 2002) [2003]
- DUSTIN M HIPP, Assistant Professor of Pediatrics B S (Ceorgia Institute of Technology 2008); M.D., M.B.A. (Vanderbilt 2013, 2013) [2020]
- JBRIL HIRBO, Research Instructor in Medicine B.S. (Nairobi [Kenya] 1998); Ph.D. (Maryland 2011 [2014]
- GIRISH SHANKER HIREMATH, Assistant Professor of Pediatrics; Assistant Professor of Biomedical Engineering
 - M.B.B.S. (Veer Surendra Sai Medical College [India] 1994); M.P.H. (Johns Hopkins 2004) [2015]
- M. BRUCE HIRSCH, Clinical Instructor in Obstetrics and Gynecology B.S. (Georgia, Thomasville 1975); M.D. (Alabama, Birmingham 1980) [1984]
- RICHARD H. HO, Associate Professor of Pediatrics B.S. (Duke 1993); M.D., M.S.C.I. (Vanderbilt 1997, 2004) [2003]
- ASHLEY BARKER HOADLEY, Assistant in Medicine
 - A.S.N. (Columbia State Community 2003); B.S.N. (Middle Tennessee State 2006); M.S.N. (Belmont 2011) [2015]
- MICHAEL HOCHMAN, Assistant Professor of Obstetrics and Gynecology
 - B.A. (Rutgers 1984): M.D. (Florida 1988) [2016]
- RICHARD L. HOCK, Assistant Professor of Clinical Medicine A.B. (Dartmouth 1983); M.D. (Vanderbilt 1987)
- [1995]
 KYLE M. HOCKING, Research Assistant Professor of Biomedical Engineering; Research Assistant
 - Professor of Surgery B.E., M.E., Ph.D. (Vanderbilt 2009, 2012, 2014) [2015]

- EMILY C. HODGES, Assistant Professor of Biochemistry
 - B.A. (Rhodes College 1998); Ph.D. (Karolinska Institute [Sweden] 2006) [2015]
- KATHERINE HOEY, Assistant Clinical Professor of Pediatrics
 - B.A. (California, Los Angeles 2005); M.D. (Virginia 2010) [2014]
- JEAN MCFALL WHEELER HOFFMAN, Assistant Professor of Emergency Medicine B.S., M.S. (Texas A & M 2006, 2007); M.D. (Tulane 2011) [2019]
- JORDAN R. H. HOFFMAN, Assistant Professor of Cardiac Surgery
 - B.A. (Rice 2006); M.D., M.P.H. (Tulane 2011, 2011) [2019]
- ROBERT D. HOFFMAN II, Professor of Pathology, Microbiology and Immunology
 - B.A., M.D., Ph.D. (Johns Hopkins 1977, 1984, 1984) [2009]
- TIMOTHY JAMES HOHMAN, Associate Professor of Neurology; Assistant Professor of Pharmacology

 B. A. (Gordon 2007): M.A., Ph.D. (American)
 - B.A. (Gordon 2007); M.A., Ph.D. (American 2010, 2012) [2014]
- GEORGE WHITFIELD HOLCOMB, Clinical Professor of Pediatric Surgery B.A. (Virginia 1976); M.D. (Vanderbilt 1980) [2020]
- LYNN HOLLIDAY, Assistant Professor of Clinical Medicine; Assistant Professor of Clinical Pediatrics
 - B.S., M.D. (Vanderbilt 2003, 2007) [2014]
- STEVEN D. HOLLON, Gertrude Consovay
 Vanderbilt Chair in Social and Natural Sciences;
 Professor of Psychology; Professor of Psychiatry
 and Behavioral Sciences; Professor of Psychology
 & Human Development
 B.A. (George Washington 1971); M.S., Ph.D.
 (Florida State 1974, 1977 (1985)
- LEAH HOLMES, Assistant in Pediatrics B.S.N. (Cumberland 2011); M.S.N. (North Park 2017) [2017]
- MERRANDA DAWN HOLMES, Assistant Professor of Clinical Pediatrics; Assistant Professor of Clinical Medicine B.S. (Middle Tennessee State 2010); M.D. (East Tennessee State 2014) [2018]
- PATRICK R. HOLMES, Assistant Professor of Pediatrics
 - B.A. (Georgia 1999); M.D. (Medical College of Georgia 2008) [2011]
- ANDREANA NATALIE HOLOWATYJ, Assistant Professor of Medicine
 - B.A. (Benedictine [Illinois] 2013); Ph.D. (Wayne State 2017); M.S. (Utah 2018) [2020]

- KENNETH J. HOLROYD, Associate Professor of Anesthesiology; Associate Professor of Medicine B.A., M.D., M.B.A. (Johns Hopkins 1980, 1984, 2000) [2005]
- GINGER E. HOLT, Professor of Orthopaedic Surgery; Professor of Radiology & Radiological Sciences
 - B.S., M.D. (Alabama, Birmingham 1992, 1996) [2003]
- JENNIFER B. HOLZEN, Associate Clinical Professor of Pediatrics B.A. (Miami 1991); M.D. (Wright State 1996) [1999]
- MICHAEL D. HOLZMAN, Lester and Sara Jayne Williams Chair in Academic Surgery; Professor of Surgery
 - M.D. (Wake Forest 1988); M.P.H. (Vanderbilt 1999) [1996]
- KENNETH L. HOMANN, Assistant Professor of Radiation Cacology
 - M.S., Ph.D. (Texas Houston 2005, 2010) [2018]
- SARAH B HOMANN, Assistant Professor of Medicine; Insurctor in Medicine
 - 5.5. (Louisiana State 2006); M.D. (Texas Tech University 2010) [2018]
- CHARLES C. HONG, Adjunct Associate Professor of Pharmacology
 - 5.3. (Massachusetts Institute of Technology 1988); M.D., Ph.D., M.Phil. (Yale 1998, 1998, 1998) [2006]
- JUN HONG, Research Instructor in Surgery B.S. (Xiamen [China] 1993); M.S. (Fudan [China] 2001); Ph.D. (Texas A & M 2006) [2010]
- IRENE HONG-MCATEE, Associate Professor of Clinical Pediatrics
 - B.A. (Kentucky, Lexington 1995); M.D. (Washington University 1999) [2013]
- LINDA JEAN HOOD, Professor of Hearing and Speech Sciences
 - B.S. (Bowling Green State 1969); M.A. (Kent State 1974); Ph.D. (Maryland 1983) [2001]
- MOLLY RAMONA HOOD, Associate Clinical Professor of Pediatrics
 - B.S. (Richmond 1995); M.D. (UT Health Science Center [Tennessee] 1999) [2005]
- ROB R. HOOD, Assistant Professor of Medicine; Adjunct Assistant Professor of Nursing B.A. (South Florida 1973); B.S., M.D. (Tulane 1976, 1980) [2002]
- GILLIAN W. HOOKER, Adjunct Associate Professor of Medicine B.A. (Kalamazoo 2000); Ph.D. (Yale 2006); Sc.M. (Johns Hopkins 2009) [2019]

- MARY ALICIA HOOKS, Associate Professor of Clinical Surgery
 - B.S. (Michigan 1980); M.D. (Pennsylvania 1989); M.B.A. (Emory 2008) [2011]
- RICHARD L. HOOVER, Associate Dean for Academic Affairs; Professor of Pathology, Microbiology and Immunology; Adjunct Professor of Pathology, Microbiology and Immunology B.A. (Ohio State 1966); M.S. (Kentucky, Lexington 1969); Ph.D. (Michigan State 1972)
- M. BENJAMIN HOPKINS, Assistant Professor of Surgery
 - B.A. (Davidson 1994); M.D. (Wake Forest 2004) [2016]
- ANNA K. HOPLA, Adjunct Instructor in Medicine B.S., M.D. (Oklahoma 1976, 1980) [1998]
- MICHELLE M. HOPTON, Assistant in Pediatrics B.S. (Pennsylvania State 2006); M.Ed. (Vanderbilt 2008) [2016]
- LEORA HORN, Ingram Associate Professor of Cancer Research; Associate Professor of Medicine
 - B.S., M.S., M.D. (Toronto [Canada] 1996, 1998, 2002) [2009]
- BENJAMIN W. Y. HORNSBY, Associate Professor of Hearing & Speech Sciences B.A. (Maryville 1985); M.S., Ph.D. (Vanderbit 1995, 2002) [2001]
- DAVID H. HOROWITZ, Assistant Clinical Professor of Medicine B.A. (Emory 1966); M.D. (Meharry Medical 1970) [1994]
- TARA BETH WEISELBERG HOPK, Assistant Professor of Medicine
 B.A. (Vassar 2006); M.D. (Rochester 2010)
 [2018]
- SARA NICOLE HORST, Associate Professor of Medicine
 - B.S. (Northwestern Ohio 2000); M.D. (Ohio State 2004); M.P.H. (Vanderbilt 2011) [2011]
- ANGELA MICHELLE HORTON, Assistant Professor of Medicine; Assistant Professor of Physical Medicine and Rehabilitation B.A. (Fisk 1996); B.S., M.D. (UT Health Science Center [Tennessee] 1996, 2006); M.P.H. (Vanderbilt 2014) [2011]
- JACOB L. HOUGHTON, Assistant Professor of Radiology and Radiological Sciences; Assistant Professor of Biomedical Engineering; Adjunct Assistant Professor of Radiology and Radiological Sciences
 B.A. (Carleton College 2007); Ph.D. (Michigan 2012) [2016]

- LAURA ELAINE HOUSTON, Assistant Professor of Obstetrics & Gynecology B.A. (Tennessee 2002); M.D. (East Tennessee State 2006); M.S.C.R (Medical University of South Carolina 2012) [2017]
- AMY HOWARD, Assistant in Medicine B.S.N. (Kentucky, Lexington 2006); M.S.N. (Vanderbilt 2009) [2017]
- GWENDOLYN A. HOWARD, Assistant Professor of Clinical Medicine
 - B.S. (Yale 1984); M.D. (Temple 1990) [2001]
- JANE ELLEN HOWARD, Assistant Professor of Neurology
 - A.B. (Washington University 1978); M.D. (Florida 1982) [1991]
- LEIGH M. HOWARD, Assistant Professor of Pediatrics
 - B.S. (Harding 2002); M.D. (Texas, Southwestern Medical 2006); M.P.H. (Vanderbilt 2013) [2011]
- LINDA T. HOWERTON, Assistant in Medicine B.S.N. (Southern Mr. Sissippi 1978); M.S.N. (Vanderbilt 1995) [2018]
- TAMARYA L. HOYT, Assistant Professor of Clinical Radiology and Radiological Sciences B.S. (Indiana, Bloomington 1998); M.D. (Indiana, Indiana prolis 2002) [2007]
- RYAV S. HSI, Assistant Professor of Urology B.A., B.S. (Stanford 2005, 2005); M.D. (Loma Linda 2009) [2016]
- PATRICK J. HU, Associate Professor of Medicine; Associate Professor of Cell & Developmental Biology
 - A.B. (Harvard 1985); M.D., Ph.D. (New York 1995, 1995) [2016]
- HUI HUANG, Research Instructor in Biochemistry B.S. (Ocean [China] 2009); Ph.D. (Auburn 2014) [2015]
- SHAN HUANG, Research Assistant Professor of Otolaryngology - Head and Neck Surgery M.D. (Fourth Military Medical [China] 1968); Ph.D. (Beijing Neurosurgical Institute [China] 1982) [1994]
- SHI HUANG, Assistant in Biostatistics Ph.D. (Miami 2007) [2019]
- THOMAS HUANG, Associate Professor of Clinical Pediatrics
 - B.S. (Yale 1989); M.D. (Uniformed Services 1994) [2005]
- BARTON WEST HUDDLESTON, Assistant Professor of Clinical Physical Medicine and Rehabilitation
 - B.S. (Baylor 1986); M.D. (Tennessee, Memphis 1990) [2017]

- CHARLES LOUIS HUDDLESTON II, Assistant Professor of Physical Medicine and Rehabilitation B.S. (Vanderbilt 1983); M.D. (UT Health Science Center [Tennessee] 1987) [2012]
- BILLY G. HUDSON, Elliott V. Newman Professor of Medicine; Professor of Medicine; Professor of Pathology, Microbiology and Immunology; Professor of Biochemistry; Professor of Cell and Developmental Biology B.S. (Henderson State 1962); M.S. (Tennessee 1963); Ph.D. (Iowa 1966) [2002]
- DAVID R. HUDSON, Clinical Professor of **Pediatrics**
 - B.S. (Mississippi 1989); M.D. (Vanderbilt 1993) [1996]
- JULIE K. HUDSON, Associate Professor of Medical Education and Administration: Associate Professor of Clinical Anesthesiology B.A. (Point Loma Nazarene 1980); M.A., M.D. (Kansas 1987, 1990) [2002]
- LUIS ENRIQUE HUERTA, Adjunct Assistant Professor of Medicine B.S., M.D., M.S.C.I. (Vanderbilt 2007, 2011, 2018) [2019]
- JOHN G. HUFF, Professor of Clinical Radiology and Radiological Sciences B.S. (Georgia 1973); M.D. (Vanderbilt 1977) [2007]
- ADAM HUGGINS, Assistant Professor of Clinica Obstetrics and Gynecology B.S. (Wake Forest 2001); M.D. (Alabama, Birmingham 2005) [2013]
- CHRISTOPHER G. HUGHES, Associate Profess of Anesthesiology B.S., M.D. (Indiana, Blooming on 2001, 200
- DANA N. HUGHES, Assistant in Medicine B.S. (North Carolina State 2002) M.P.H. (Michigan 2004); M.S.N. (Varderbilt 2017) [2018]
- ELISABETH L. HUGHES, Associate Professor of Clinical Anesthesiology B.S., M.D. (Florida 2002, 2006) [2011]
- JULIE M. HUGHES, Assistant in Pediatrics B.A., M.S.N. (Vanderbilt 2011, 2013) [2015]
- LORENZO THOMAS HUGHES, Assistant Professor of Clinical Anesthesiology B.S., M.D. (Indiana, Indianapolis 2000, 2006) [2017]
- MARK D. HUGHES, Assistant Clinical Professor of **Pediatrics**
 - B.S. (Tennessee, Memphis 1997); M.D. (UT Health Science Center [Tennessee] 2001) [2006]
- SEAN G. HUGHES, Assistant Professor of Clinical Medicine
 - B.S., M.D. (Florida 1995, 1998) [2012]

JACOB JOSEPH HUGHEY, Assistant Professor of Biomedical Informatics; Assistant Professor of **Biological Sciences** B.E. (Vanderbilt 2007); M.S., Ph.D. (Stanford

2009, 2014) [2016]

- WON JAE HUH, Assistant Professor of Pathology, Microbiology and Immunology M.D. (Seoul National [Korea] 2002); B.S. (Korea National Open University 2005); Ph.D. (Washington University 2010) [2016]
- JONATHAN S. HUITINK, Assistant Clinical **Professor of Pediatrics** B.A. (Wheaton 1997); M.D. (Arkansas 2001) [2013]
- TODD M. HULGAN, Associate Professor of Medicine B.S. (South Alabama 1992); M.D. (Alabama, Birmingham 1996); M.P.H. (Vanderbilt 2003)
- MARGARET A. HULL, A. sistent Professor of Clinical Obstetrics and Gynecology B.S.N. (Lipscomb 1993); M.S.N. (Vanderbilt 19)4); D.N.P. (Alabama, Huntsville 2020) [2009]
- PAMELA C. HUEL, Associate Professor of Medicine
 - B.A. (Duke 1995); M.A., Ph.D. (Vanderbilt 2000, 2004) [2011]
- QUENTIN A. HUMBERD, Associate Clinical Professor of Pediatrics
 - B.S. (Tennessee 1975); M.D. (UT Health Science Center [Tennessee] 1978) [2005]
- CANDACE HUMES, Assistant in Medicine B.S. (Middle Tennessee State 1994); M.S. (Vanderbilt 2000) [2017]
- DONNA S. HUMMELL. Professor of Clinical **Pediatrics**
 - A.B. (Rutgers, Camden 1976); M.D. (Johns Hopkins 1980) [1986]
- ROBERT S. HUMPHREY, Clinical Professor of **Pediatrics**
 - B.S. (Arkansas 1981); M.D. (Johns Hopkins 1986) [2007]
- KATHRYN L. HUMPHREYS, Assistant Professor of Psychology & Human Development; Assistant Professor of Psychiatry and Behavioral Sciences B.S. (Vanderbilt 2005); Ed.M. (Harvard 2006); M.A., Ph.D. (California, Los Angeles 2009, 2014) [2018]
- RACHEL JANE HUNDLEY, Assistant Professor of Pediatrics; Assistant Professor of Psychiatry and Behavioral Sciences; Adjunct Assistant Professor of Psychology B.A., M.S. (Harding 1996, 1996); Ph.D.
 - (Memphis 2003) [2010]

- ADRIANA M. HUNG, Associate Professor of Medicine
 - M.D. (Universidad Central de Venezuela 1993); M.P.H. (Vanderbilt 2008) [2006]
- REBECCA R. HUNG, Assistant Professor of Clinical Medicine
 - A.B., Ph.D., M.D. (Harvard 1985, 1993, 1994) [2005]
- CHRISTINE W. HUNLEY, Clinical Professor of Pediatrics
 - B.S. (Vanderbilt 1988); M.D. (UT Health Science Center [Tennessee] 1992) [2006]
- TRACY E. HUNLEY, Associate Professor of Pediatrics
 - B.A. (Vanderbilt 1987); M.D. (UT Health Science Center [Tennessee] 1991) [1997]
- RACHEL LYNETTE HUNTER, Instructor in Clinical Surgery
 - B.S. (Tarleton State 2009); M.S. (North Texas Health Science Center 2010); M.D. (Texas A & M 2014) [2019]
- ROSEMARY J. HUNTER, Assistant Professor of Pediatrics
 - B.S. (Emory 1989); M.D. (Duke 1994) [2001]
- PAULA J. HURLEY, Associate Professor of Medicine; Associate Professor of Urology B.A. (Lawrence 1997); Ph.D. (Chicago 2004) [2019]
- ANDREW M. HUSS, Clinical Professor of Pediatrics B.S. (Oklahoma State 1996); M.D. (Oklahoma 2000) [2007]
- TARA M. HUSS, Assistant Professor of Chinical Pediatrics
 - S.B. (Austin Peay State 1996); M.D. (East Tennessee State 2000) [2007]
- ERIC J. HUSTEDT, Research Associate Professor of Molecular Physiology and Biophysics B.A. (Reed 1981); Ph.D. (University of Washington 1989) [1991]
- JOSEPH W. HUSTON III, Assistant Professor of Medicine
 - B.S. (Washington and Lee 1967); M.D. (Vanderbilt 1971) [2007]
- LAURA J. HUSTON, Senior Associate in Orthopaedic Surgery B.S.E., M.S. (Michigan 1988, 1990) [2005]
- HYUN S. HWANG, Visiting Assistant Professor of Medicine
 - B.S., M.Ed. (Seoul National [Korea] 1995, 1997); M.S. (Texas 2002); Ph.D. (Michigan 2007) [2012]
- STEVE ALAN HYMAN, Professor of Clinical Anesthesiology
 - A.B. (Indiana, Kokomo 1975); M.D. (Indiana, Indianapolis 1979); M.M. (Belmont 2004) [2005]

- JEFFREY L. HYMES, Clinical Instructor in Medicine
 - B.A. (Yale 1974); M.D. (Yeshiva 1977) [1987]
- WADE T. IAMS, Assistant Professor of Medicine B.S. (Notre Dame 2008); M.D. (Michigan 2012) [2018]
- MICHAELA GRACE IBACH, Assistant Professor of Clinical Pediatrics
 - B.A. (Covenant 2007); M.D. (New Jersey Medical 2011) [2014]
- NARDIN TADROS IBRAHIM, Assistant Professor of Clinical Pediatrics
 - B.A. (Siena 2002); M.D. (Albany Medical 2006) [2018]
- IEKUNI ICHIKAWA, Professor of Pediatrics, Emeritus
 - B.S., M.D. (Keio [Japan] 1968, 1972); Ph.D. (Kitasato University School of Medicine [Japan] 1992) [1985]
- RACHEL T. IDOWU, Adjusted Assistant Professor of Health Policy
 - B.S. (Canfornia, Berkeley 1999); M.D. (California, San. Francisco 2004) [2010]
- MAMIAN IOREES, Associate Professor of Surgery M.B.B.S. (Aga Khan [Pakistan] 1999); M.S.C.I., M.S. (Yanderbilt 2016, 2017) [2012]
- REBFCCA A. IHRIE, Associate Professor of Cell & Developmental Biology; Associate Professor of Neurological Surgery
 - B.S. (Michigan 2000); Ph.D. (Stanford 2006) [2011]
- TALAT ALP IKIZLER, Catherine McLaughlin Hakim Chair in Vascular Biology; Professor of Medicine
 - M.D. (Istanbul [Turkey] 1987) [1996]
- REZA ARZHANG IMANI-SHIKHABADI, Assistant Professor of Clinical Radiology & Radiological Sciences B.S. (Iowa 2005); M.S. (New Mexico 2008);
- M.D. (Howard 2012) [2019] TADASHI INAGAMI, Professor of Biochemistry,
 - Emeritus

 P.S. (Vivita [Japan] 1052); M.S. Ph.D. (Vala
 - B.S. (Kyoto [Japan] 1953); M.S., Ph.D. (Yale 1955, 1958); D.Sc. (Kyoto [Japan] 1963) [1966]
- YASMEEN S. IQBAL, Assistant Clinical Professor of Psychiatry and Behavioral SciencesB.S. (Texas Woman's 2004); Ph.D. (Alliant International 2015) [2019]
- WALEED N. IRANI, Assistant Professor of Medicine
 - B.A., M.D. (North Carolina 1985, 1990) [1996]
- SINA IRANMANESH, Assistant Clinical Professor in Surgery
 - B.S., M.D. (South Florida 2003, 2007) [2016]

- JONATHAN M. IRISH, Associate Professor of Cell & Developmental Biology; Associate Professor of Pathology, Microbiology and Immunology B.S. (Michigan 1998); Ph.D. (Stanford 2004) [2011]
- MICHELLE IRWIN, Assistant in Medicine B.S. (Harding 2000); M.S. (Lipscomb 2009); M.S.N. (Vanderbilt 2011) [2019]
- DAVID A. ISAACS, Assistant Professor of Neurology; Assistant Professor of Pediatrics B.S. (Southern Indiana 2007); M.D. (Indiana, Indianapolis 2011) [2015]
- DAWN A. ISRAEL, Research Associate Professor of Medicine B.S., Ph.D. (Alabama, Birmingham 1988, 1994)
- HANA AHMAD ITANI, Adjunct Instructor in Medicine

[2000]

- B.Sc. (Lebanese American [Lebanon] 1999); Ph.D. (Iowa 2008) [2016]
- ALLA V. IVANOVA, Research Assistant Professor of Medicine
 - Ph.D. (Institute of Cytology and Genetics [Russia] 1993) [2009]
- RISSA PRYSE IVENS, Assistant Clinical Professor of Psychiatry and Behavioral Sciences B.A. (Washington University 2008); M.D. (UT Health Science Center [Tennessee] 2013) [2017]
- TINA M. IVERSON, Louise B. McGavock Chair Professor of Pharmacology; Professor of Biochemistry B.S. (St. John's 1995); Ph.D. (California Institut
- MICHELLE IZMAYLOV, Assistant Professor of Clinical Medicine

of Technology 2000) [2005]

- B.S. (Emory 2013); M.D. (VUMC 2017) [2020]
- MANHAL IZZY, Assistant Professor of Medicine M.B.Ch.B (Baghdad [Iraq] 2004) [2018]
- MATTHIEU JABAUDON, Visiting Associate
 Professor of Medicine
 M.D., Ph.D. (Universite d'Auvergne Clermont-Ferrand [France] 2008, 2016) [2019]
- SHAGUFTA JABEEN, Associate Clinical Professor of Psychiatry and Behavioral Sciences M.B.B.S. (Fatimah Jinnah Medical College, Lahore [Pakistan] 1986) [2011]
- KATHY JABS, Associate Professor of Pediatrics B.S. (Trinity College [Connecticut] 1978); M.D. (Columbia 1982) [2000]
- ELIZABETH JACKSON, Assistant Clinical Professor of Oral and Maxillofacial Surgery B.S. (Auburn 2003); D.M.D. (Alabama, Birmingham 2007) [2016]

- GRETCHEN PURCELL JACKSON, Associate Professor of Pediatric Surgery; Associate Professor of Biomedical Informatics; Associate Professor of Pediatrics B.S., M.D., Ph.D. (Stanford 1989, 1996, 1997) [2006]
- HEATHER J. JACKSON, Instructor in Clinical Nursing; Instructor in Medicine B.S.N. (Alabama, Birmingham 2003); M.S.N. (Middle Tennessee State 2009) [2011]
- JAMES C. JACKSON, Research Professor of Medicine; Research Professor of Psychiatry and Behavioral Sciences
 B.S. (Liberty 1991); M.A. (Georgia Professional School of Psychology 1993); M.A., Psy.D. (Biola 1998, 2001) [2003]
- JOHN A. JACKSON, Assistant Clinical Professor of Psychiatry and Behavioral Sciences B.S. (Tennessee Technological 1994); M.D. (UT Health Science Center (Tennessee] 1999) [2007]
- LAUREN PARKER JACKSON, Assistant Professor of Piological Sciences; Assistant Professor of Biochemistry
 - 5.5. (Vanderbik 2003); Ph.D. (Cambridge [U.K.] 2007) [2014]
- PAUL CFRARD JACOB, Assistant Professor of Medicine
 - B.A. (Miami [Ohio] 2004); M.D., M.P.H. (Tulane 2012, 2012) [2019]
- J. KENNETH JACOBS, Professor of Surgery, Emeritus
 - B.A. (Vanderbilt 1950); M.D. (Northwestern 1954) [2008]
- MONICA L. JACOBS, Assistant Professor of Clinical Psychiatry and Behavioral Sciences; Assistant Professor of Clinical Neurology B.S. (Georgia 1997); M.S., Psy.D. (Georgia Professional School of Psychology 2001, 2005) [2007]
- SKYLER GRACE JACOBS, Assistant in Psychiatry and Behavioral Sciences
 B.S. (Peabody 2011); M.S. (Vanderbilt 2013)
- BARBARA H. JACOBSON, Associate Professor of Hearing & Speech Sciences; Associate Professor of Otolaryngology - Head and Neck Surgery B.A., M.A., Ph.D. (Cincinnati 1978, 1984, 1990) [2003]
- DAVID AARON JACOBSON, Associate Professor of Molecular Physiology & Biophysics B.S. (Washington State 1995); Ph.D. (Oregon Health and Science 2003) [2010]
- GARY P. JACOBSON, Professor of Hearing and Speech Sciences B.A. (California State, Fullerton 1974); M.S. (Wisconsin 1975); Ph.D. (Kent State 1978) [2003]

- HARRY R. JACOBSON, Professor of Medicine, Emeritus
 - B.S. (Illinois, Champaign 1969); M.D. (Illinois, College of Medicine, Champaign 1972) [1985]
- NOLAN JAEGER, Instructor in Clinical Plastic Surgery
 - B.A. (Miami 2005); M.D. (Oklahoma 2009) [2020]
- MADAN JAGASIA, Professor of Medicine B.S. (Ramnarain Ruia College 1986); M.B.B.S. (King Edward Memorial [India] 1992); M.S.C.I. (Vanderbilt 2006) [2001]
- SHUBHADA JAGASIA, Professor of Medicine B.S. (Ruparel College [India] 1986); M.D. (Seth G.S. Medical [India] 1992); M.Mgt. (Vanderbilt 2012) [2001]
- AMIR ALEX JAHANGIR, Professor of Orthopaedic Surgery
 - B.S. (George Washington 1999); M.D. (UT Health Science Center [Tennessee] 2003); M.Mgt. (Vanderbilt 2012) [2009]
- EIMAN JAHANGIR, Assistant Professor of Medicine
 - B.A. (George Washington 2001); M.D. (UT Health Science Center [Tennessee] 2005) [2019]
- NITIN B. JAIN, Adjoint Professor of Physical Medicine and Rehabilitation M.B.B.S. (Maharaja Sayajirao [India] 1999); M.S.P.H. (North Carolina 2002) [2014]
- FLORENCIA GISELLE JALIKIS, Assistant Professor of Pathology, Microbiology and Immunology
 - M.D. (Universidad del Salvador 2001) [2019]
- KATHRYN ECKSTEIN JALOVEC, Assistant Clinical Professor of Psychia 12 and Behavioral Sciences
 - B.S. (Northwestern 2001); M.D. (Temessee, Memphis 2005) [2012]
- KAITLIN C. JAMES, Assistant Professor of Pediatrics
 - B.A. (Oberlin 2001); M.D. (Vanderbilt 2006) [2012]
- E. DUCO JANSEN, Senior Associate Dean for Graduate Education and Faculty Affairs; Professor of Biomedical Engineering; Professor of Neurological Surgery
 M.S. (Utrecht [Netherlands] 1990); M.S., Ph.D. (Texas 1992, 1994) [1997]
- DANA R. JANSSEN, Associate Professor of Clinical Pediatrics; Assistant Professor of Clinical Pediatrics
 - B.A. (Abilene Christian 1992); M.D. (Texas, San Antonio 1996) [2007]

- BARRY K. JARNAGIN, Associate Clinical Professor of Obstetrics and Gynecology B.S. (Union [Tennessee] 1980); M.D. (UT Health Science Center [Tennessee] 1984); M.D.,WHNP, [1994]
- SARAH SANDERS JASER, Associate Professor of Pediatrics
 - B.S. (Yale 1995); M.S., Ph.D. (Vanderbilt 2003, 2006) [2012]
- ASHWATH JAYAGOPAL, Adjoint Assistant Professor of Ophthalmology and Visual Sciences B.E., M.S., Ph.D. (Vanderbilt 2003, 2005, 2008) [2008]
- REENA VINOD JAYANI, Assistant Professor of Medicine
 - M.D. (Medical University of Lublin 2010) [2019]
- JENNIFER E. JAYARAM, Assistant in Anesthesiology
 - B.S. (Tennessee 2001); M.S. (Colorado, Denver 2003) [2008]
- GAUTAM AYRAM Assistant Clinical Professor in Urclogy
 - B.A. (Washing on University 2002); M.D. (Vanderlilt 2006) [2017]
- SUSAN BURSCH JEANSONNE, Assistant in Surgery
 - B 5., M.S. (Tulane 2009, 2010); M.S.N. (Vanderbilt 2012) [2012]
- A.RON SLONE JECKELL, Assistant Professor of Psychiatry and Behavioral Sciences
 - B.A. (Florida 2007); M.D. (South Florida 2012) [2017]
- ANGELA L. JEFFERSON, Professor of Neurology; Professor of Medicine
 - B.A. (Lynchburg 1997); M.A. (Loyola College [Maryland] 2000); Ph.D. (Drexel 2003) [2012]
- JENNIFER JEHRIO-BUTLER, Assistant Clinical Professor of Pediatrics
 - B.S. (Miami 1988); M.D. (South Florida 1993) [2012]
- CHRISTINA ANNE JELLY, Assistant Professor of Anesthesiology
 - B.S. (Arizona 2008); M.S., M.D. (Duke 2011, 2012) [2019]
- WILLIAM J. JENKINS, Assistant Clinical Professor of Radiology and Radiological Sciences B.S. (Alabama 2002); M.D. (Alabama, Birmingham 2006) [2011]
- ABIGAIL L. JENNINGS, Assistant Clinical Professor of Pediatrics
 - B.S. (Lipscomb 2004); M.D. (East Tennessee State 2010) [2013]
- BRUCE JENNINGS, Adjunct Professor of Health Policy
 - B.A. (Yale 1971); M.A. (Princeton 1973) [2014]

- HENRY S. JENNINGS III, Assistant Professor of Medicine
 - B.S. (Davidson 1973); M.D. (Vanderbilt 1977) [2007]
- WALTER J. JERMAKOWICZ, Instructor in Clinical Neurological Surgery
 - B.A., B.S. (Southern Indiana 2003, 2003); M.D., Ph.D. (Vanderbilt 2012, 2012) [2019]
- W. GRAY JEROME III, Associate Professor of Pathology, Microbiology and Immunology B.A. (St. Andrews Presbyterian 1971); M.S. (Northeastern 1974); Ph.D. (Virginia 1981) [2001]
- AARON CRAIG JESSOP, Associate Professor of Clinical Radiology & Radiological Sciences B.A. (Utah State 2002); M.D. (Nebraska, Omaha 2006); M.B.A. (Cornell 2014) [2017]
- STEPHANIE JIAN, Instructor in Clinical Ophthalmology & Visual Sciences B.S. (Kansas 2012); O.D. (California, Berkeley 2016) [2017]
- LAN JIANG, Assistant in Medicine M.S. (Auburn 2000); M.S. (Georgia Institute of Technology 2001) [2018]
- XIAOYU JIANG, Research Instructor in Radiology & Radiological Sciences M.S. (Tsinghua [China] 2007); Ph.D.

(Washington University 2013) [2018]

- NATALIA JIMENEZ-TRUQUE, Research Assistant Professor of Pediatrics
 - B.S. (Universidad de Costa Rica 2007); M.S.C.I., Ph.D. (Vanderbilt 2009, 2013) [2013]
- GUAN-NAN JIN, Adjunct Instructor in Medicine M.D. (Tongji [China] 2012) [2018]
- REN JIE JIN, Research Assistant Professor of Urology
 - M.D. (Nanjing Medical [China] 1985); M.S., Ph.D. (Seoul National [Korea] 1992, 2001) [2007]
- SUSAN OOMMEN JOHN, Assistant Professor of Clinical Pediatrics
 - B.S. (Louisiana State, Shreveport 1998); M.D. (Louisiana State, New Orleans 2003) [2012]
- JAMES A. JOHNS, Professor of Pediatrics B.S. (Yale 1976); M.D. (Vanderbilt 1980) [1987]
- JEFFERY SCOTT JOHNS, Associate Professor of Physical Medicine and Rehabilitation B.A. (North Carolina 1991); M.D. (Duke 1995) [2013]
- KARLA J. JOHNS, Associate Professor of Ophthalmology & Visual Sciences B.A. (Wisconsin 1976); M.D. (Vanderbilt 1980) [2000]
- NIELS VASS JOHNSEN, Assistant Professor of Urology

B.S. (Georgetown 2008); M.D. (Tulane 2012) [2019]

- ANDREW S. JOHNSON, Assistant Professor of Emergency Medicine
 - B.S. (U.S. Naval Academy 1988); M.D. (Newcomb 1992); M.P.H. (Utah 2007) [2019]
- ASHLEY B. JOHNSON, Assistant in Surgery B.S.N. (Memphis 2003); M.S.N. (Vanderbilt 2005) [2015]
- CARL H. JOHNSON, Cornelius Vanderbilt Chair in Biological Sciences; Professor of Biological Sciences; Professor of Molecular Physiology and Biophysics
 - B.A. (Texas 1976); Ph.D. (Stanford 1982) [1987]
- CHRISTOPHER N. JOHNSON, Adjunct Instructor in Medicine
 - B.S. (SUNY, Fredonia 2005); M.S., Ph.D. (Georgia State 2008, 2011) [2016]
- CONSTANCE J. JOHNSON, Associate Clinical Professor of Neurology B.S., M.S., M.D. (Maryland 1968, 1972, 1982) [2005]
- CORBIN R JOHNSON, Assistant Professor of Clinical Radiation Oncology B.A. (Harvara 1931); M.D. (Washington University 1985) [2006]
- DAVID H. JOHNSON, Adjunct Professor of Medicine
 - B 5., M.S. (Kentucky, Lexington 1970, 1972); M.D. (Georgia 1976) [1983]
- DAVID P. JOHNSON, Associate Professor of Pediatrics
 - B.S. (Davidson 2003); M.D. (Duke 2011) [2012]
- DEONNA JOHNSON, Assistant Professor of Clinical Pediatrics
 - B.S. (Tennessee 2009); M.D. (Meharry Medical 2013) [2016]
- DEREK K. JOHNSON, Assistant Clinical Professor of Pediatrics
 - B.S. (Maryland 1991); M.D. (Pittsburgh 1995) [2007]
- DONTAL LAMAR JOHNSON, Clinical Instructor in Pediatrics
 - B.S. (Texas Tech University 2007); M.D. (Meharry Medical 2014) [2010]
- DOUGLAS B. JOHNSON, Assistant Professor of Medicine
 - B.S. (Abilene Christian 2004); M.D. (Alabama, Birmingham 2008); M.S.C.I. (Vanderbilt 2014) [2014]
- EMMANUEL TERRANCE JOHNSON, Assistant Professor of Clinical Medicine B.S. (West Georgia 2013); M.D. (Meharry Medical 2017) [2020]
- H. KEITH JOHNSON, Associate Professor of Medicine, Emeritus; Associate Professor of Surgery, Emeritus
 B.A. (Amherst 1959); M.D. (Tufts 1963) [1970]

- JOYCE E. JOHNSON, Professor of Pathology, Microbiology and Immunology
 - B.A. (Rice 1979); M.D. (Vanderbilt 1986) [1992]
- KEVIN B. JOHNSON, Cornelius Vanderbilt Chair; Professor of Biomedical Informatics; Professor of Pediatrics; Chair of the Department of Biomedical Informatics
 - B.S. (Dickinson 1983); M.D. (Johns Hopkins 1987); M.S. (Stanford 1992) [2002]
- LINDA L. JOHNSON, Instructor in Clinical Obstetrics & Gynecology B.S.N. (Vanderbilt 1984); M.S.N. (California, San Francisco 1994) [2017]
- LINDA S. JOHNSON, Assistant in Medicine M.S.N. (Belmont 1996) [2015]
- MARY HEATHER JOHNSON, Clinical Professor of Pediatrics
 - B.S., M.D. (Vanderbilt 1987, 1994) [1998]
- MEGAN ELIZABETH JOHNSON, Assistant Professor of Orthopaedic Surgery B.A. (Boston College 2004); M.D. (Vanderbilt 2009) [2015]
- MERI JOHNSON, Assistant Professor of Emergency Medicine
 - B.A. (Brigham Young 2007); M.D. (Utah 2011) [2018]
- RACHELLE WHITNEY JOHNSON, Assistant Professor of Medicine B.S. (Georgia 2007); Ph.D. (Vanderbilt 2011) [2016]
- RAYMOND F. JOHNSON, Associate in Anesthesiology
 - B.S. (Belmont 1970) [1991]
- ROBERT E. JOHNSON, Associate Professor of Biostatistics
 - B.Sc., M.A. (North Carolina, Greensboro 1976, 1978); Ph.D. (North Carolina 1983) [2012]
- SUSAN G. JOHNSON, Assistant in Medicine B.S. (Carson-Newman 1996); M.S.N. (Vanderbilt 2000) [2012]
- WILLIAM STEPHEN JOHNSON, Clinical Professor of Pediatrics
 - B.S. (Arkansas 1978); M.D. (Ross 1983) [2004]
- BENJAMIN J. JOHNSTON, Assistant Professor of Otolaryngology - Head and Neck Surgery B.S. (Vanderbilt 2003); M.D. (Louisville 2007) [2012]
- DAVID G. JOHNSTON, Associate Clinical Professor of Pediatrics B.S. (Duke 1995); M.D. (UT Health Science Center [Tennessee] 1999) [2005]
- MARGREETE G. JOHNSTON, Clinical Professor of Pediatrics
 - B.S. (Peabody 1974); M.D. (Meharry Medical 1979); M.P.H. (Vanderbilt 2005) [1986]

- MICHAEL N. JOHNSTON, Assistant Professor of Emergency Medicine; Assistant Professor of Pediatrics
 - B.S. (Birmingham-Southern 1990); M.D. (Alabama, Birmingham 1994) [2007]
- PHILIP EARL JOHNSTON, Clinical Professor of Medicine
 - B.S. (Tennessee 1973); Pharm.D. (UT Health Science Center [Tennessee] 1974) [2008]
- SUSAN E. JOHNSTON, Assistant Clinical Professor of Pediatrics
 - B.S. (Mississippi State 1992); M.D. (Mississippi, Jackson 1996) [2008]
- CARISSA P. JONES, Assistant Professor of Pathology, Microbiology and Immunology B.S., M.S. (Brigham Young 2005, 2007); D.V.M. (Oregon State 2014) [2016]
- CARRIE K. JONES, Associate Professor of Pharmacology B.S., Ph.D. (Indiana, Fort Wayne 1992, 2001) [2007]
- CHRISTOPHER SCOTT JONES, Assistant Professor of Gracal Radiology & Radiological Sciences
 - B.S. (Pennsylvania State 2003); M.D. (Drexel 2007 [2018]
- DEBORAH PRICE JONES, Professor of Pediatrics M.D. (UT Health Science Center [Tennessee] 1983); B.S., M.S. (Memphis State 2006, 2006) [2010]
- IAN D. JONES, Associate Professor of Emergency Medicine; Associate Professor of Radiology & Radiological Sciences; Assistant Professor of Biomedical Informatics
 - B.A. (Rhodes College 1986); M.D. (UT Health Science Center [Tennessee] 1993) [1998]
- JILL L. JONES, Assistant Professor of Medicine B.A. (Lawrence 1986); M.D. (Stanford 1991) [1997]
- MARGARET MORRISON JONES, Assistant in Pediatrics
 - B.S.N. (Virginia 2009); M.S.N. (Vanderbilt 2014) [2015]
- MARGARET W. JONES, Assistant Professor of Physical Medicine and Rehabilitation B.A. (Pennsylvania 2003); M.D., M.P.H. (Tulane 2011, 2011) [2019]
- NICHOLAS EDWARD JONES, Assistant Professor of Clinical Pediatrics B.S. (Evansville 2007); M.D. (Kentucky, Lexington 2011) [2018]
- ROBIN M. JONES, Assistant Professor of Hearing and Speech Sciences
 B.S. (Miami [Ohio] 2003); M.A. (Ohio State 2006); Ph.D. (Vanderbilt 2012) [2013]

- TIMOTHY F. JONES, Clinical Professor of Health Policy
 - B.A. (Amherst 1985); M.D. (Stanford 1990) [1999]
- ZACHARY J. JONES, Assistant Professor of Dermatology
 - B.S. (Texas A&M University 2011); M.D. (Texas, Galveston 2015) [2019]
- KAREN M. JOOS, Joseph N. and Barbara H. Ellis Family Chair in Ophthalmology; Professor of Ophthalmology and Visual Sciences; Professor of Biomedical Engineering
 - B.S., M.D., Ph.D. (Iowa 1982, 1987, 1990) [1994]
- CHARLES A. JORDAN, Clinical Professor of Pediatrics
 - B.S. (Tennessee, Martin 1983); M.D. (UT Health Science Center [Tennessee] 1987) [1999]
- LORI CHAFFIN JORDAN, Associate Professor of Pediatrics; Associate Professor of Radiology & Radiological Sciences
 - B.S. (William and Mary 1994); M.D. (Oklahoma 1999); Ph.D. (Johns Hopkins 2009) [2011]
- MARY KATE JORDAN, Assistant Professor of Emergency Medicine B.A. (Gordon 2006); M.D. (Alabama, Birmingham 2014) [2017]
- MARTIN I. JORDANOV, Associate Professor of Clinical Radiology & Radiological Sciences; Associate Professor of Clinical Emergency Medicine
 - B.S. (Tennessee 1997); M.D. (UT Health Science Center [Tennessee] 2001) [2006]
- DORA JORGALI, Assistant in Plastic Surgery B.S.N. (Tennessee Wesleyan 20(2): M.S.N. (Fast Tennessee State 2016) [2017]
- MARY ANN JORISSEN, Assistant in Cardiac Surgery
 - A.S.N. (Western Kentucky 1983), B.S.N. (Belmont 2003); M.S.N. (Vandervilt 2008) [2015]
- ASHA JOSEPH, Assistant Professor of Clinical Pediatrics
 - B.S. (Tennessee, Chattanooga 1998); M.D. (Louisiana State, New Orleans 2003) [2009]
- SEBASTIAN JOYCE, Dorothy B. and Theodore R. Austin Chair in Pathology; Professor of Pathology, Microbiology and Immunology B.Sc. (Bangalore [India] 1979); M.Sc. (Saurashtra [India] 1981); Ph.D. (Medical College of Virginia 1988) [1999]
- ADAM PABLO JUAREZ, Assistant in Special Education; Assistant in Psychiatry and Behavioral Sciences; Senior Associate in Pediatrics B.S. (North Texas 2000); M.Ed. (Vanderbilt 2005) [2011]

- JULIE H. JUDD, Assistant in Obstetrics & Gynecology
 - B.S.N., M.S.N. (Vanderbilt 1979, 2001) [2018]
- RIDAS JUSKEVICIUS, Assistant Professor of Pathology, Microbiology and Immunology M.D. (Vilnius University [Lithuania] 1993) [2015]
- GARRETT A. KAAS, Research Assistant Professor of Pharmacology B.S. (Wisconsin, Stevens Point 2003); Ph.D. (Iowa 2010) [2016]
- JON H. KAAS, Gertrude Conaway Vanderbilt Distinguished Chair in Social and Natural Sciences; Professor of Psychology; Professor of Radiology and Radiological Sciences; Professor of Ophthalmology & Visual Sciences
- B.A. (Northland 1959); Ph.D. (Duke 1965) [1972] BARBARA F. KACZMARSKA, Clinical Professor
- of Pediatrics
 - M.D. (Wrocław Medical ¡Poland] 1973) [2007]
- MARION A. KAINER, Adjunct Associate Professor of Nearth Policy
 - M.B.B.S. (Ma) ourne [Australia] 1989); M.P.H. (Monash [Australia] 1999) [2002]
- ALLEN B. KALSER, Professor of Medicine; Associate Chief of Clinical Staff, VUMC, B.A., M.D. (Vanderbilt 1964, 1967) [1972]
- IZUMI KAJI, Research Assistant Professor of Surgery
 - B.S., Ph.D. (University of Shizuoka 2007, 2012) [2017]
- LANI A. KAJIHARA-LIEHR, Assistant in Pediatrics; Instructor in Nursing B.S. (Tennessee, Memphis 1986); M.S.N. (Vanderbilt 1998); D.N.P. (George Washington 2013) [1998]
- SPYROS A. KALAMS, Associate Professor of Medicine; Associate Professor of Pathology, Microbiology and Immunology B.A. (Harvard 1983); M.D. (Connecticut 1987) [2002]
- MARCIA L. KALISH, Adjunct Research Professor in Medicine
 - B.S. (DePaul 1967); M.S. (Georgia State 1972); Ph.D. (Emory 1990) [2010]
- FATMATA B. KAMARA, Assistant in Medicine B.S.N. (Belmont 2006); M.S.N. (Tennessee State 2010) [2016]
- JAYAKUMAR R. KAMBAM, Adjunct Professor of Anesthesiology
 - M.D. (Andhra [India] 1972) [2005]
- JEFFREY A. KAMMER, Associate Professor of Ophthalmology and Visual Sciences B.A. (Pennsylvania 1992); M.D. (Case Western Reserve 1996) [2002]

- DANA L. KAN, Assistant Professor of Hearing & Speech Sciences
 - B.S. (Vanderbilt 1997); M.A. (Ohio State 1999) [2008]
- ARVINDH N. KANAGASUNDRAM, Assistant Professor of Medicine
 - B.A. (Dartmouth 2001); M.D. (Vanderbilt 2005) [2013]
- RAJASEKHAR V. KANDALA, Associate Clinical Professor in Physical Medicine and Rehabilitation B.A., M.D. (Chicago 1987, 1991) [2017]
- AUDREY H. KANG, Associate Clinical Professor of Obstetrics and Gynecology
 - B.A., M.D. (Brown 1988, 1992) [2008]
- HAKMOOK KANG, Associate Professor of Biostatistics
 - B.S. (Minnesota 1998); M.S., M.S. (Rhode Island 2005, 2006); Ph.D. (Brown 2011) [2011]
- JING-QIONG KANG, Associate Professor of Neurology; Associate Professor of Pharmacology M.D., Ph.D. (Tongji [China] 2001, 2001) [2004]
- PRINCE J. KANNANKERIL, Professor of Pediatrics B.S. (Pennsylvania State 1990); M.D. (Thomas Jefferson 1994); M.S.C.I. (Vanderbilt 2004) [2002]
- C. CHRIS KAO, Research Associate Professor of Neurological Surgery
 M.D., M.S. (Bethune University of Medical Science [China] 1980, 1983); Ph.D. (Virginia Commonwealth 1994) [2001]
- HILLARY R. KAPLAN, Assistant Professor of Clinical Medicine B.A. (Yale 1989); M.D. (Case Western Reservations) [1999]
- MARK RANDALL KAPLAN, Assistant Clinical Professor of Medicine B.S.E. (Pennsylvania 1984); M.D. (Vanderbilt 1988) [2000]
- MEGHAN E. KAPP, Assistant Professor of Pathology, Microbiology and Immunology B.S. (Mercyhurst 2005); M.S. (Case Western Reserve 2007); M.D. (Toledo 2012) [2017]
- APRIL N. KAPU, Professor of Clinical Nursing; Associate Professor of Anesthesiology B.S. (Brigham Young 1992); M.S.N., D.N.P. (Vanderbilt 2005, 2013) [2010]
- ERKAN KARAKAS, Assistant Professor of Molecular Physiology & Biophysics B.S. (Middle East Technical [Turkey] 2002); Ph.D. (Stony Brook 2006) [2016]
- JOHN JOSEPH KARIJOLICH, Assistant Professor of Pathology, Microbiology and Immunology; Assistant Professor of Biochemistry B.A. (Ripon 2005); Ph.D. (Rochester 2011) [2016]

- KAVITA SINGH KARLEKAR, Assistant Clinical Professor of Pediatrics
 - B.A., M.D. (Brown 1998, 2002) [2007]
- MOHANA KARLEKAR, Assistant Professor of Medicine
 - B.S. (Cornell 1991); M.D. (SUNY, Stony Brook 1995) [2006]
- SAAGAR B. KARLEKAR, Associate Clinical Professor of Pediatrics
 - B.S. (Rochester Institute of Technology 1989); M.D. (St. George's, Grenada 1997) [2007]
- JASON HANSEN KARNES, Adjunct Assistant Professor of Biomedical Informatics B.A. (William and Mary 2004); Pharm.D., Ph.D. (Florida 2008, 2012) [2020]
- SETH J. KARP, H. William Scott Jr. Chair in Surgery; Professor of Surgery; Professor of Anesthesiology; Chair of the Section of Surgical Sciences
 - A.B., M.A. (Harvard 1988, 1989); M.D. (Massac jusetts Institute of Technology 1994) [2011]
- ASHI EY JO KAR PINOS, Assistant Professor of Medicine; Assistant Professor of Orthopaedic Surgery; Assistant Professor of Pediatrics B.A. (Kenyon 2003); M.D., M.P.H. (Vanderbilt 2007, 2013) [2011]
- EHAR S. KASASBEH, Assistant Clinical Professor of Medicine
 - B.S., M.D. (Jordan 1996, 2001) [2013]
- ADETOLA KASSIM, Professor of Medicine M.B.B.S. (Lagos [Nigeria] 1989); M.S. (Yeshiva 2000) [2001]
- JASON L. KASTNER, Clinical Professor of Pediatrics
 - B.S. (Kansas State 1994); M.D. (Kansas 1998) [2002]
- JAMES MARTIN KATSIS, Instructor in Medicine B.S. (Illinois, Chicago 2008); M.D. (St. George's, Grenada 2013) [2019]
- SOPHIE E. KATZ, Assistant Professor of Pediatrics B.S. (College of Charleston 2008); M.D. (Louisiana State 2012) [2019]
- RONDI MARIE KAUFFMANN, Assistant Professor of Surgery
 - B.S. (California, Los Angeles 2000); M.D., M.P.H. (Minnesota, Duluth 2003, 2003) [2015]
- MELISSA R. KAUFMAN, Professor of Urology B.A. (Washington University 1987); Ph.D. (Tennessee 1993); M.D. (Arkansas, Little Rock 2002) [2007]

- EGE TANER KAVALALI, William Stokes Chair in Experimental Therapeutics; Professor of Pharmacology; Professor of Biological Sciences; Acting Chair of Pharmacology B.S. (Bogaziçi [Turkey] 1990); Ph.D. (Rutgers 1995) [2018]
- ANN KAVANAUGH-MCHUGH, Associate Professor of Pediatrics B.S. (Yale 1980); M.D. (Johns Hopkins 1984) [1992]
- IRINA KAVERINA, Professor of Cell & Developmental BiologyM.S. (Lomonosov Moscow State [Russia] 1989);Ph.D. (Russian Academy of Sciences 1992)[2005]
- SAARA KAVIANY, Instructor in Pediatrics; Instructor in Clinical Pediatrics B.S. (Michigan 2009); D.O. (Midwestern University Chicago College of Osteopathic Medicine 2013) [2020]
- NICHOLAS LUKE KAVOUSSI, Assistant Professor of Urology; Instructor in Clinical Urology B.S. (Columbia 2008); M.D. (SUNY, Brooklyn 2013) [2018]
- VIVIAN K. KAWAI, Research Assistant Professor of Medicine
 M.D. (Universidad Peruana 'Cayetano Heredia'
 [Peru] 1999); M.P.H. (Université Libre de Bruxelles {Belgium] 2004) [2011]
- KIMBERLY KAYSER, Assistant Professor of Psychiatry and Behavioral Sciences B.A. (Washington University 2003); M.A., Ph.D. (Texas 2008, 2011) [2019]
- RAYMOND W. KE, Assistant Clinical Professor of Obstetrics and Gynecology B.Sc., M.D. (Dalhousie [Canala] 1982, 1986) [2013]
- KATHLEEN R. KEARNEY-GRAY, Assistant Professor of Clinical Medicine B.S. (Kennesaw State 1981): M.D. (Medical College of Georgia 1990) [2006]
- VICKI L. KEEDY, Associate Professor of Medicine B.S. (Indiana, Bloomington 1997); M.D. (Cincinnati 2002); M.S.C.I. (Vanderbilt 2009) [2008]
- CHRISTOPHER J. KEEFER, Assistant Professor of Pediatrics at Meharry Medical College; Associate Clinical Professor of Pediatrics B.S. (University of the South 1992); M.D. (Vanderbilt 2001) [2008]
- KIRK A. KEEGAN III, Assistant Professor of Urology B.A. (California, Berkeley 1992); M.S., M.D. (Georgetown 2000, 2004); M.P.H. (Vanderbilt 2013) [2010]

- ROBERT KEELY, Instructor in Clinical Pediatrics B.A. (Puget Sound 2006); M.D. (Ohio State 2012) [2017]
- MARY ANN KEENAN, Assistant Professor of Radiology and Radiological Sciences M.M.P., D.M.P. (Vanderbilt 2007, 2011) [2012]
- DIANE S. KEENEY, Adjunct Assistant Professor of Dermatology
 - B.S. (Pennsylvania State 1978); M.S. (Iowa State 1983); Ph.D. (Johns Hopkins 1989) [1992]
- JAMES E. KEFFER, Associate Clinical Professor of Pediatrics
 - B.A. (Auburn 1994); M.D. (Alabama, Birmingham 2001) [2009]
- LORI ANN F. KEHLER, Assistant Professor of Ophthalmology and Visual Sciences B.S. (Stetson 1998); O.D. (Illinois College of Optometry 2002) [2003]
- ALLYSA L. KEHRING, Assistant Professor of Clinical Fediatrics M.D. (A izona 2014) [2019]
- WILLIAM J. KELLETT, Associate Professor of Clinical Obstatics and Gynecology B.S. (Wake Forest 1997); D.O. (Nova Southeaster: 2006) [2011]
- VENNIF & CAITLIN KELLEY, Assistant Professor of Pediatrics
 - B.A. (Miami [Ohio] 2005); M.D. (Cincinnati 2009); M.S. (Pennsylvania 2018) [2015]
- MARK C. KELLEY, Associate Professor of Surgery B.S., M.D. (Florida 1986, 1989); M.Mgt. (Vanderbilt 2009) [2016]
- & Speech Sciences
 B.A. (Saint Bonaventure 1981); M.S., Ph.D.
 (Syracuse 1984, 1989) [2007]
- JILL SAUSER KELLY, Assistant Professor of Clinical Pediatrics
 - B.A., M.D. (Northwestern 1993, 1997) [2019]
- KEVIN J. KELLY, Associate Professor of Plastic Surgery
 - B.S. (Maryland 1972); D.D.S. (Columbia 1977); M.D. (SUNY, Downstate Medical Center 1982) [1989]
- LYDIA KELLY, Assistant in Obstetrics & Gynecology

 B.S. (Arizona 2001): B.S.N. M.S. (Column
 - B.S. (Arizona 2001); B.S.N., M.S. (Columbia 2004, 2006) [2016]
- SEAN G. KELLY, Assistant Professor of Medicine B.S., M.D. (Michigan 2005, 2011) [2016]
- DAVID H. KEMP, Assistant Professor of Clinical Oral & Maxillofacial Surgery B.S. (Tennessee, Martin 1980); D.D.S., M.S. (UT Health Science Center [Tennessee] 1984, 1986) [2019]

- DAVID JAMES KENNEDY, Professor of Physical Medicine and Rehabilitation; Chair of the Department of Physical Medicine and Rehabilitation
 - B.A. (Florida State 1999); M.D. (Florida 2004) [2018]
- ELIZABETH P. KENNEDY, Assistant in Pediatrics M.S.N. (Vanderbilt 2004) [2010]
- JENNIFER KENNEDY, Assistant in Pediatrics B.S. (Waterloo [Canada] 2015); M.S. (Long Island 2019) [2019]
- KATHRYN ELISABETH KENNEDY, Assistant in Medicine
 - B.S.N. (South Carolina 2004); M.S.N. (Vanderbilt 2010) [2011]
- WILLIAM D. KENNER, Assistant Clinical Professor of Psychiatry and Behavioral Sciences M.D. (UT Health Science Center [Tennessee] 1969) [1973]
- DAVID T. KENT, Assistant Professor of Otolaryngology - Head and Neck Surgery B.A. (Ithaca 2003); M.D. (Columbia 2010) [2016]
- ELIZABETH CLAIRE KENT, Assistant in Pediatrics B.S.N. (Mississippi 2008); M.S.N. (Vanderbilt 2016) [2017]
- LAURA M. KEOHANE, Assistant Professor of Health Policy B.A. (Wesleyan 2003); M.S. (Harvard 2011); Ph.D. (Brown 2015) [2015]
- MARY E. KEOWN, Clinical Professor of Pedianics B.S. (Samford 1979); M.D. (Alabama Birmingham 1983) [1986]
- TAMARA S. KEOWN, Assistant P of essor of Clinical Obstetrics and Gyne to logy B.S. (Tennessee Technological 1991); M.S.N. (Vanderbilt 1995) [2006]
- JENNIFER P. KER, Assistant Clinical Professor of MedicineB.S. (Miami [Ohio] 1999); M.S. (Northwestern
 - B.S. (Miami [Ohio] 1999); M.S. (Northwestern 2000); M.D. (Medical College of Ohio 2004) [2011]
- VERN ERIC KERCHBERGER, Instructor in Medicine
 - B.S. (Yale 2008); M.D. (Emory 2012) [2020]
- WENDY HITCH KERR, Associate Clinical Professor of Pediatrics B.S. (Houghton 1984); M.S. (Louisiana State 1988); Ph.D. (Emory 1994); M.D. (Medical College of Georgia 1998) [2002]
- DEBORAH L. G. KERRIGAN, Assistant Professor of Neurology B.S. (Vanderbilt 2006); M.A. (Washington University 2010); M.D. (Saint Louis University 2014) [2019]

- MIKLOS DAVID KERTAI, Professor of Anesthesiology M.D. (Semmelweis University 1995); M.Sc. (London [U.K.] 1998); D.Sc., Ph.D. (Erasmus [Netherlands] 2001, 2004) [2017]
- AMIT N. KESWANI, Assistant Professor of Clinical Medicine
 - B.S. (Georgia Institute of Technology 2001); M.D. (St. Georges U. 2008) [2015]
- JENNIFER KETCHUM, Assistant Clinical Professor of Pediatrics
 - B.S. (Alabama, Birmingham 2002); M.D. (East Tennessee State 2008) [2013]
- ALEXANDRA F. KEY, Research Associate Professor of Hearing and Speech Sciences; Research Associate Professor of Psychiatry and Behavioral Sciences
 - B.A., M.A. (Moscow State [Russia] 1997, 1997); Ph.D. (Louisville 2002) [2004]
- WALEED F. KHALAF, Assistent Professor of Clinical Medicine
 - B.A. (Farlham School of Religion 1999); M.D., Ph.D. (Indiana, Indianapolis 2007, 2007) [2010]
- EHTESHAM KHALID, Adjunct Instructor in Neurology
 - F.Sc. (Multan [Pakistan] 1998); M.B.B.S. (Nish ar Medical [Pakistan] 2004) [2018]
- AMAL KHAN, Assistant Professor of Surgery M.B.B.S. (Aga Khan [Pakistan] 2012) [2020]
- MRZA S. KHAN, Instructor in Clinical Medicine B.A. (Northwestern 2009); M.D. (Medical College of Wisconsin 2015) [2018]
- YASMIN WEST KHAN, Assistant Professor of Pediatrics
 - B.S. (North Carolina, Wilmington 2000); M.S. (London [U.K.] 2003); M.D. (Kentucky, Lexington 2010) [2013]
- NIKHIL K. KHANKARI, Research Instructor in Medicine
 - B.S. (Michigan 2007); M.P.H. (Wayne State 2009); Ph.D. (North Carolina 2014) [2017]
- NAJWA KHURI-BULOS, Adjunct Professor of Pediatrics
 - B.S., M.D. (American University of Beirut [Lebanon] 1964, 1967) [2008]
- REBECCA SOKEL KIDD, Assistant Professor of Clinical Pediatrics
 - B.A. (Vanderbilt 2005); M.D. (Texas, San Antonio 2009) [2014]
- COLLEEN M. KIERNAN, Assistant Professor of Surgery
 - B.S. (Michigan State 2005); M.D. (Indiana, Indianapolis 2010); M.P.H. (Vanderbilt 2015) [2019]

- KRISTIN MICHELLE KIGHT, Assistant in Medicine
 - B.S. (Georgia Southern 1996); M.S.N. (Belmont 2009) [2018]
- JILL ERIN KILKELLY, Associate Professor of Clinical Anesthesiology
 - B.A., M.D. (Cornell 1992, 1997) [2007]
- STACY ANN KILLEN, Assistant Professor of Pediatrics
 - B.A. (Rice 1997); M.D. (Texas, Southwestern Medical 2001); M.S.C.I. (Vanderbilt 2008) [2009]
- ANTHONY W. KILROY, Adjunct Associate Professor of Pediatrics
 - M.D. (London [U.K.] 1960) [1976]
- DONGHAK KIM, Visiting Professor of Biochemistry
 - B.S. (Seoul National [Korea] 1994); M.S. (Korea Advanced Institute of Science and Technology 1998); Ph.D. (Vanderbilt 2004) [2012]
- JEE YOON KIM, Assistant in Medicine B.S.N., M.S.N. (Seoul National [Korea] 2001, 2005) [2016]
- JINHO KIM, Adjoint Assistant Professor of Thoracic Surgery
 - B.S., M.S. (Temple 2007, 2009); M.Phil., Ph.D. (Columbia 2012, 2013) [2020]
- JOOHYUN KIM, Research Instructor in Medicine M.S., D.Phil. (Seoul National [Korea] 1990, 1997) [2020]
- SOO HYUN KIM, Associate Professor of Medicine B.S. (Duke 1988); M.P.H. (North Carolina 2001); M.D. (Duke 2002) [2016]
- STEPHEN J. KIM, Professor of Ophthamology Visual Sciences
 - B.S. (Duke 1996); M.D. (Johns Hopkins 2001) [2008]
- TAE KON KIM, Assistant Professor of Medicine; Assistant Professor of Pathology, Merobiology and Immunology
 - M.D. (Seoul National [Kores], 2001); Ph.D. (Texas, Houston 2010) [2010]
- YOUNG JUN KIM, Professor of Otolaryngology -Head and Neck Surgery; Professor of Pathology, Microbiology and Immunology; Barry and Amy Baker Chair in Laryngeal, Head and Neck Research
 - A.B. (Princeton 1990); Ph.D., M.D. (California, San Diego 1997, 1999) [2016]
- LAUREN ELIZABETH KIMBRELL, Assistant in Anesthesiology
 - B.S. (Alabama 2009); M.S. (Alabama, Birmingham 2014) [2016]
- JENNIFER C. KING, Assistant Professor of Pediatrics
 - Pharm.D., B.S. (Ohio Northern 2007, 2007); M.D. (Wright State 2011) [2017]

- JOHN T. KING, Assistant Clinical Professor of Oral and Maxillofacial Surgery
 - B.A. (Tennessee 1989); D.M.D. (Louisville 1996) [1999]
- LAUREN ELIZABETH KING, Assistant in Pediatrics
 - B.A. (Wheaton 2005); B.S.N. (Cincinnati 2006); M.S.N. (Vanderbilt 2009) [2010]
- LLOYD E. KING, JR., Professor of Dermatology B.A. (Vanderbilt 1961); M.D., Ph.D. (UT Health Science Center [Tennessee] 1967, 1970) [1977]
- LLOYD G. KING, Assistant Professor of Clinical Medicine
 - B.S. (SUNY, Buffalo 1981); M.D. (New York 1985) [2000]
- MICHAEL R. KING, J. Lawrence Wilson Chair; Professor of Biomedical Engineering; Professor of Radiology and Radiological Sciences; Chair of the Department of Biomedical Engineering B.S. (Rochester 1995), Ph.D. (Notre Dame 2000)
- MEREDITH ANN KINGETER, Assistant Professor of Anesthesicio zy
 - B.S., M.D. (Omo State 2009, 2013) [2018]
- PHILIP J. KINGSLEY, Assistant in Biochemistry B.S., M.A. (William and Mary 1990, 1992) [2001]
- BREY D. KINZIG, Assistant in Medicine B.S. (Middle Tennessee State 1995); M.S.N. (Vanderbilt 2005) [2013]
- AARON MARSHALL KIPP, Adjunct Assistant Professor of Medicine B.S. (Colorado State 2001); M.P.H. (North Carolina, Asheville 2006); Ph.D. (North Carolina 2009) [2009]
- ANNET KIRABO, Assistant Professor of Medicine; Assistant Professor in the Department of Molecular Physiology and Biophysics D.V.M. (Makerere [Uganda] 2002); M.Sc. (Saint Cloud State 2006); Ph.D. (Florida 2011) [2015]
- FREDERICK KIRCHNER, JR., Associate Professor of Medical Education and Administration, Emeritus
 - B.Sc. (Dickinson 1963); M.D. (Cornell 1967) [1975]
- SANDRA KIRCHNER, Professor of Radiology and Radiological Sciences, Emerita; Professor of Pediatrics, Emerita R A (Wellesley 1962): M.D. (Cornell 1967)
 - B.A. (Wellesley 1962); M.D. (Cornell 1967) [1973]
- ANNA T. KIRK, Associate in Obstetrics & Gynecology
 - B.S. (Tennessee 2004); M.S.N. (Vanderbilt 2007) [2012]

- OLIVIA E. KIRKPATRICK, Assistant in Medicine B.S.N. (Tennessee, Chattanooga 2011); M.S.N. (Vanderbilt 2016) [2016]
- AUSTIN KIRSCHNER, Assistant Professor of Radiation Oncology B.A., M.S. (New York 2000, 2001); Ph.D., M.D. (Northwestern 2007, 2009) [2014]
- HOWARD S. KIRSHNER, Professor of Neurology; Professor of Hearing and Speech Sciences; Professor of Psychiatry and Behavioral Sciences B.A. (Williams 1968); M.D. (Harvard Medical 1972) [1978]
- NEIL E. KIRSHNER, Clinical Professor of Pediatrics B.S. (Rhodes College 1985); M.D. (East Tennessee State 1990) [2000]
- CARRIE L. KITKO, Ingram Professorship in Pediatric Oncology; Associate Professor of Pediatrics; Associate Professor of Medicine B.S. (Denison 1995); M.D. (Ohio State 1999) [2015]
- KOFFI MICHAEL KLA, Associate Professor of Clinical Anesthesiology B.S. (Auburn 1998); M.D. (Maryland, Baltimore 2002) [2009]
- KIRK J. KLEINFELD, Assistant Professor of Clinical Neurology M.D. (UT Health Science Center [Tennessee] 2009) [2017]
- LAWRENCE A. KLINSKY, Clinical Professor of Pediatrics B.S. (Illinois, Champaign 1988); M.D. (Vanderbilt 1992) [1995]
- TRENDA B. KLINSKY, Assistant in Pediatrics B.S.N. (Vanderbilt 1988); N.D. (Rush 1995) [2003]
- CHRISTIEN A. KLUWE, Assistant Professor of Radiation Oncology
 B.S. (Miami 2003); Ph.D. (Texas 2013); M.D. (Texas, Galveston 2015) [2024]
- RUTH T. KNAB, Assistant in Medicine B.S.N., M.S.N. (Tennessee 1978, 1985) [2004]
- ELA W. KNAPIK, Associate Professor of Medicine; Associate Professor of Cell & Developmental Biology
 - M.D. (Jagiellonian [Poland] 1987) [2004]
- HOLLY KNIERY, Assistant in Physical Medicine and Rehabilitation
 - B.S.N., M.S.N. (Belmont 2007, 2012) [2013]
- BJORN C. KNOLLMANN, William Stokes Chair in Experimental Therapeutics; Professor of Medicine; Professor of Pharmacology M.D. (Cincinnati 1993); Ph.D. (Georgetown 1999) [2005]

- DANIELLE KNOX, Assistant in Pediatrics B.S.N. (Texas 2009); M.S.N. (Vanderbilt 2015) [2015]
- HANAKO KOBAYASHI, Research Assistant Professor of Medicine B.S. (Tennessee 1998); Ph.D. (California, Berkeley 2003) [2006]
- GUNEET SINGH KOCHAR, Instructor in Medicine B.A. (Texas 2003); M.A. (Boston University 2009); D.O. (North Texas Health Science Center 2010) [2020]
- LISA M. KODADEK, Instructor in Clinical Surgery B.S. (California, San Diego 2006); M.D. (Medical College of Wisconsin 2011) [2019]
- JOHN ROBERT KOETHE, Associate Professor of Medicine
 - B.A. (Oberlin 1998); M.D. (Yale 2004); M.S.C.I. (Vanderbilt 2012) [2010]
- ZACHARY ADAM KOHUTEK, Assistant Professor of Radiation Oncology

 B.S. (William and Way 2003); Ph.D., M.D. (Virginia 2009, 20(1) [2018]
- CAMELLIA R. KOLEYNI, Instructor in Clinical Medicine; Instructor in Clinical Pediatrics B.S. (California, San Diego 1995); M.D. (UT Health Science Center [Tennessee] 2000) [2007]
- MURAL KRISHNA KOLLI, Assistant Professor of Cinical Medicine
 - P.S. (Birmingham-Southern 1984); M.D. (Alabama, Birmingham 1989) [2009]
- ELENA A. KOLOBOVA, Research Instructor in Surgery
 - M.S. (Moscow State [Russia] 1996); Ph.D. (Russian State Medical 2000) [2007]
- VALENTINA KON, Margaret T. and H. Laird Smith Chair; Professor of Pediatrics B.A. (New York 1974); M.D. (Yeshiva 1977) [1986]
- PETER E. KONRAD, Professor of Neurological Surgery B.A. (Rockford 1983); M.S., Ph.D. (Purdue 1985, 1988) [1998]
- CHRISTINE L. KONRADI, Professor of Pharmacology; Professor of Psychiatry and Behavioral Sciences
 - Ph.D. (Vienna [Austria] 1987) [2006]
- JENNIFER KOONCE, Assistant in Medicine B.S. (Union [Tennessee] 2003); M.S.N. (UT Health Science Center [Tennessee] 2009) [2015]
- HEATHER C. KOONS, Assistant Professor of Neurology
 - B.A. (Virginia 2002); M.D. (Yale 2006) [2011]

- MICHAEL JOHN KORRER, Research Assistant Professor of Otolaryngology - Head and Neck Surgery
 - B.S. (Michigan Technological 2007); Ph.D. (Medical College of Wisconsin 2014) [2019]
- SOPHIA KOSTELANETZ, Instructor in Medicine; Instructor in Pediatrics
 - B.A., M.D., M.P.H. (Tufts 2009, 2015, 2015) [2019]
- RAINELLI B. KOUMANGOYE, Research Instructor in Anesthesiology B.S., M.S. (Laval, Medicine [Canada] 2002, 2002); Ph.D. (Meharry Medical 2012) [2014]
- MARK J. KOURY, Professor of Medicine, Emeritus B.A. (Rutgers 1969); M.D. (Virginia 1973) [1980]
- ALEXANDRA E. KOVACH, Assistant Professor of Pathology, Microbiology and Immunology B.A. (Columbia 2003); M.D. (Case Western Reserve 2013) [2015]
- KEVIN J. KOVATCH, Instructor in Otolaryngology
 Head and Neck Surgery
 B.S. (Pittsburgh 2010); M.D. (Pennsylvania 2014)
 [2020]
- TATSUKI KOYAMA, Associate Professor of Biostatistics
 - B.A. (California, Berkeley 1998); M.A., Ph.D. (Pittsburgh 2000, 2003) [2003]
- MARY ELIZABETH KOZIURA, Assistant in Pediatrics
 - B.A. (Purdue 2010); B.S.N., D.N.P. (Belmon 2011, 2016) [2016]
- GUILLAUME KRAFT, Research Instructor in Molecular Physiology & Biophysics Ph.D. (AgroParisTech [France] 2008) [2015]
- MARK M. KRAKAUER, Clinical Professor of Pediatrics
 - B.A. (Virginia 1999); M.D. (Eastern Virginia 2004) [2008]
- SANFORD B. KRANTZ, Professor of Medicine, Emeritus
 - B.A., B.S., M.D. (Chicago 1954, 1955, 1959) [1970]
- HEATHER KRETH, Assistant Professor of Clinical Pediatrics
 - B.A. (William and Mary 2004); Psy.D. (MSPP 2008) [2013]
- SAPNA P. KRIPALANI, Assistant Professor of Clinical Medicine
 - B.S., M.D. (Emory 1995, 1999) [2007]
- SUNIL KRIPALANI, Professor of Medicine B.A. (Rice 1993); M.D. (Baylor 1997); M.Sc. (Emory 2001) [2007]
- NATHAN IYER KRISHNAN, Assistant Professor of Clinical Medicine
 - B.A. (Grinnell 2011); M.D. (Georgetown 2016) [2019]

- REKHA KRISHNASARMA, Assistant Professor of Clinical Radiology & Radiological Sciences B.A., M.D. (Southern California 2008, 2013) [2019]
- HEATHER K. KROH, Research Instructor in Pathology, Microbiology and Immunology B.S. (Tennessee Technological 1999); Ph.D. (Vanderbilt 0) [2010]
- LAUREN ANNE KROH, Assistant in Pediatrics M.S.N. (Alabama, Birmingham 2017); B.S.N. (Belmont 0) [2017]
- BRETT M. KRONCKE, Assistant Professor of Medicine B.S. (Wisconsin 2007); Ph.D. (Virginia 2012) [2019]
- MARVIN W. KRONENBERG, Professor of Medicine; Professor of Radiology and Radiological Sciences B.A. (Miami [Ohio] 1965), M.D. (Ohio State 1969) [2002]
- SUSAN F. KROOP, As ociate Professor of Medicine B.A., M.D. (Cornell 1978, 1982) [2001]
- JONA THAN AND REW KROPSKI, Assistant Professor of Medicine; Assistant Professor of Cell & Developmental Biology
 - B.S. Davidson 2004); M.D. (Vanderbilt 2008)
- DEREK S. KRUSE, Assistant Professor of Clinical Medicine
 - B.S. (Grove City 2010); M.D. (Northeast Ohio Medical University [Ohio] 2014) [2017]
- DMYTRO OLEKSANDROVYCH KRYSHTAL, Research Instructor in Medicine B.S., M.S. (Taras Shevchenko National [Ukraine] 1999, 2000); Ph.D. (National Academy of Sciences, Kiev [Ukraine] 2008) [2016]
- ALEXANDRA KUCHLER, Assistant in Psychiatry and Behavioral Sciences; Instructor in Clinical Nursing
 - B.A. (Fairleigh Dickinson 2009); B.S.N. (Columbia 2011); M.S.N. (Rutgers, Newark 2012) [2016]
- JOHN G. KUCHTEY, Research Associate Professor of Ophthalmology and Visual Sciences B.A., Ph.D. (Cornell 1985, 1998) [2005]
- RACHEL KUCHTEY, Associate Professor of Ophthalmology and Visual Sciences; Associate Professor of Molecular Physiology & Biophysics M.D. (West China University of Medical Sciences 1991); Ph.D. (Cornell 1999) [2005]
- JOHN E. KUHN, Kenneth Schermerhorn Chair in Orthopaedics and Rehabilitation; Professor of Orthopaedic Surgery B.S. (SUNY, Syracuse 1982); M.D. (Michigan 1988) [2003]

- TARAH M. KUHN, Assistant Professor of Clinical Psychiatry and Behavioral Sciences; Adjunct Assistant Professor of Psychology B.A. (CUNY, Hunter College 1994); M.A., Ph.D. (Adelphi 1998, 2003) [2004]
- KRYSTLE A. LANG KUHS, Assistant Professor of Medicine; Assistant Professor of Otolaryngology Head and Neck Surgery B.S. (Rhode Island 2004); Ph.D. (Pennsylvania 2011); M.P.H. (Johns Hopkins 2012) [2016]
- AUTUMN J. KUJAWA, Assistant Professor of Psychology & Human Development; Assistant Professor of Psychiatry and Behavioral Sciences B.S. (Mary Washington 2006); M.A., Ph.D. (Stony Brook 2010, 2015) [2018]
- YAA ABOAGYEWA KUMAH-CRYSTAL, Assistant Professor of Biomedical Informatics; Assistant Professor of Pediatrics B.A., M.A. (Johns Hopkins 2003, 2003); M.D., M.P.H., M.S. (Vanderbilt 2008, 2014, 2017) [2014]
- AMRENDRA KUMAR, Research Instructor in Pathology, Microbiology and Immunology B.Sc., M.Sc. (Delhi [India] 2001, 2003); Ph.D. (Pune [India] 2011) [2019]
- AVINASH B. KUMAR, Professor of Anesthesiology; Professor of Neurology M.B.B.S. (Mysore [India] 1996) [2012]
- SABI S. KUMAR, Assistant Clinical Professor of Surgery M.B.B.S. (Punjab [India] 1968) [1997]
- RUSSELL J. KUNIC, Assistant in Urology B.S. (John Carroll 1997); M.S.N. (Case Western Reserve 2001) [2014]
- ANNA CLARE KUPCHA, Instructor in Clinical Ophthalmology & Visual Sciences M.D. (Texas, Southwestern Medical 2014) [2018]
- AMETHYST C. KURBEGOV, Associate Professor of Clinical Pediatrics B.A. (Rice 1992); M.P.H. (Texas, Houston 1993); M.D. (Baylor 1997) [2019]
- STEPHANIE C. KURITA, Associate Professor of Clinical Radiology & Radiological Sciences B.S. (Tennessee, Martin 2001); M.D. (UT Health Science Center [Tennessee] 2005) [2010]
- DANIEL KURNIK, Adjunct Research Associate Professor in Medicine M.D. (Aachen [Germany] 1987) [2008]
- BRYAN R. KURTZ, Assistant Professor of Clinical Obstetrics & Gynecology B.S. (Boston College 1982); M.D. (Tennessee 1987) [1991]

- EMILY GRAHAM KURTZ, Assistant Professor of Medicine
 B.S. (Wake Forest 1996); M.D. (UT Health Science Center [Tennessee] 2000); M.S.C.I. (Vanderbilt 2006) [2007]
- MUNIR GUNES KUTLU, Research Instructor in Pharmacology B.A. (Istanbul Bilgi [Turkey] 2006); M.A. (Bogaziçi [Turkey] 2008); M.A., Ph.D. (Duke 2012, 2013) [2017]
- WILLIAM H. KUTTEH, Clinical Professor of Obstetrics and Gynecology B.A. (Wake Forest 1975); Ph.D. (Alabama, Birmingham 1981); M.D. (Wake Forest 1985) [2012]
- JAMES MATTHEW KYNES, Assistant Professor of Anesthesiology B.S. (Florida 2006); M.D. (Vanderbilt 2011)
- ANNETTE L. A. KYZER, Lin cal Instructor in Obstetrics and Gynecology B.A. (Tennesses 1788); M.D. (Tulane 1995)
- POSERT F LABADIE, Professor of Otolaryngology

 Head and Neck Surgery; Professor of
 Biomedical Engineering

 B. C. Notro Dome 10883; Ph. D. M.D. (Bittsburgh)
 - B 5. Notre Dame 1988); Ph.D., M.D. (Pittsburgh 1995, 1996); M.Mgt. (Vanderbilt 2013) [2005]
- Clinical Psychiatry and Behavioral Sciences A.B. (Brown 1973); M.A., Ph.D. (Vanderbilt 1975, 1977) [1978]
- MIGUEL A. LABOY, Assistant Clinical Professor of Pathology, Microbiology and Immunology B.S. (Puerto Rico, Humacao 1992); M.D. (Universidad Autónoma de Guadalajara [Mexico] 1997) [2014]
- LISA L. LACHENMYER, Assistant in Pediatrics B.A. (Guilford 1998); M.S.N. (Vanderbilt 2005) [2007]
- DANA BORDEN LACY, Edward and Nancy Fody Chair in Pathology; Professor of Pathology, Microbiology and Immunology; Professor of Biochemistry
 - B.S. (North Carolina 1994); Ph.D. (California, Berkeley 1999) [2006]
- MICHAEL D. LADD, Clinical Professor of Pediatrics
 - B.S. (Duke 1988); M.D. (Vanderbilt 1992) [1995]
- CHERYL L. LAFFER, Professor of Medicine B.S. (California Institute of Technology 1975); Ph.D. (Wisconsin 1981); M.D. (Miami [Florida] 1985) [2012]

- ASHLEE FAITH LAFONTAINE, Assistant Professor of Orthopaedic Surgery B.S. (Erskine 2008); M.D. (Medical College of Georgia 2013) [2018]
- ANDRE H. LAGRANGE, Associate Professor of Neurology
 - B.S. (University of Washington 1987); Ph.D., M.D. (Oregon Health and Science 1996, 1997) [2002]
- CHAO-HAN LAI, Adjoint Associate Professor of Biostatistics
 - M.D., Ph.D. (National Cheng Kung [Taiwan] 2001, 2012) [2017]
- HIND LAL, Adjoint Associate Professor of Pharmacology
 - B.Sc. (Kamla Nehru Institute [India] 1996); M.Sc., Ph.D. (Avadh [India] 1999, 2005) [2014]
- MICHAEL S. LALLEMAND, Instructor in Clinical Surgery
 - B.S. (Rhodes College 2008); M.D. (Uniformed Services 2013) [2020]
- DANIELLE L. LALONDE, Clinical Professor of Pediatrics
 - B.A. (California, Santa Cruz 2000); M.D. (Vanderbilt 2005) [2008]
- FRED S. LAMB, Cornelius Vanderbilt Chair; Professor of Pediatrics; Professor of Molecular Physiology and Biophysics B.S., M.D., Ph.D. (Michigan 1982, 1989, 1989) [2011]
- ERIC S. K. LAMBRIGHT, Associate Professor of Thoracic Surgery B.S. (Ursinus 1991); M.D. (Pennsylvania 1994) [2004]
- PHILIP E. LAMMERS, Adjunc Feststant Professor of Medicine
 B.S. (Notre Dame 2000); M.S., M.D. (Indiana, Indianapolis 2003, 2006); M.S.C.A. (Vanderbilt 2013) [2013]
- CLAUDIO FRANCO LANA (A., Adjunct Professor of Pediatrics M.D. (Universidad Peruana 'Cayetano Heredia'
 - M.D. (Universidad Peruana Cayetano Heredia [Peru] 1977); M.P.H. (Johns Hopkins 1983) [2014]
- LISA HOOD LANCASTER, Professor of Medicine; Associate Professor of Medicine; Adjunct Associate Professor of Nursing B.S. (Georgia 1989); M.D. (Medical College of Georgia 1993) [1999]
- WILLIAM JAKE LANCASTER, Adjunct Assistant Professor of Medicine B.A. (Mississippi 2009); M.D. (Mississippi, Jackson 2013); M.H.A. (Alabama, Birmingham 2016); M.S. (Vanderbilt 2018) [2018]

- BENNETT A. LANDMAN, Professor of Electrical Engineering, Computer Engineering, and Computer Science; Professor of Biomedical Engineering; Associate Professor of Electrical Engineering, Computer Engineering, and Computer Science; Associate Professor of Radiology and Radiological Sciences; Associate Professor of Biomedical Engineering; Associate Professor of Biomedical Informatics; Associate Professor of Psychiatry and Behavioral Sciences B.S., M.Eng. (Massachusetts Institute of Technology 2001, 2002); Ph.D. (Johns Hopkins 2008) [2009]
- JEFFREY A. LANDMAN, Adjunct Associate Professor of Radiology and Radiological Sciences B.S. (Michigan 1973); M.D. (Michigan State 1979) [1987]
- MICHAEL ERIK LANDMAN, Assistant Professor of Clinical Radiology & Radiological Sciences; Instructor in Clinical Radiology & Radiological Sciences
 - B.S. (Auourn 2009): M.D. (South Alabama 2014) 2(19)
- Pharmacology, Emeritus
 B.S., M.D. (Chicago 1945, 1948); Ph.D.
- (Canfornia, Berkeley 1953) [1959] JANNA S. LANDSPERGER, Assistant in Medicine;
- Adjunct Instructor in Nursing
 B.S. (Indiana, Indianapolis 2004); M.S.N.
 (Vanderbilt 2006) [2010]
- ROBIN R. LANE, Assistant in Obstetrics & Gynecology
 - B.S.N. (Southern Mississippi 1999); M.S.N. (Mississippi University for Women 2007) [2020]
- RALPH J. LANEVE, Assistant Professor of Clinical Surgery
 - B.S. (Pittsburgh 1981); M.D. (Thomas Jefferson 1985) [2004]
- KATHERINE LANG, Associate in Medicine B.S. (James Madison [Virginia] 2001); M.S. (Johns Hopkins 2007); M.S. (Virginia Commonwealth 2012) [2020]
- MATTHEW J. LANG, Professor of Chemical and Biomolecular Engineering; Associate Professor of Molecular Physiology and Biophysics B.S. (Rochester 1992); Ph.D. (Chicago 1997) [2010]
- ALEXANDER J. LANGERMAN, Associate Professor of Otolaryngology - Head and Neck Surgery; Associate Professor of Radiology & Radiological Sciences B.A. (Cornell College 1999); M.D., S.M. (Chicago 2005, 2015) [2010]

- ANTHONY J. LANGONE, Associate Professor of Medicine
 - B.A. (Cornell 1992); M.D. (SUNY, Buffalo 1996) [2002]
- SUSAN E. BEHR LANGONE, Clinical Professor of Pediatrics
 - B.S. (Rochester 1992); M.D. (SUNY, Buffalo 1996) [1999]
- SHANNON M. LANGSTON, Assistant Professor of Emergency Medicine
 - B.A. (East Carolina 2002); M.D. (Ben Gurion [Israel] 2007) [2010]
- DAVID L. LANIER, Clinical Instructor in Emergency Medicine
 - B.A., M.D. (North Carolina 1990, 1995) [2007]
- DEBORAH A. LANNIGAN, Associate Professor of Pathology, Microbiology and Immunology; Associate Professor of Biomedical Engineering; Associate Professor of Cell & Developmental Biology
 - B.Sc. (Guelph [Canada] 1980); M.Sc. (Toronto [Canada] 1982); Ph.D. (Rochester 1987) [2012]
- LOUISE LANTIER, Research Assistant Professor of Molecular Physiology & Biophysics M.E. (Ecole de Biologie Industrielle 2007); Ph.D. (Université René Descartes, Paris V [France] 2010) [2014]
- EMILY C. LAPIER, Assistant in Obstetrics & Gynecology
 - B.S., B.S.N. (Belmont 2009, 2011); M.S.N. (Frontier Nursing University 2019) [2020]
- LYNNE A. LAPIERRE, Research Assistant Professor of Surgery
 - B.S. (Massachusetts, Dartmouth (1981); Ph.D. (Rockefeller 1994) [2002]
- ROBIN E. LAPRE, Assistant Professor of Chical Medicine
 - A.B., M.D. (Dartmouth 1990, 1996) [2001]
- RICHARD W. LARUE, Assistan Professor of Medicine
 - B.S., M.S. (East Tennessee State 1998, 1998); M.D. (UT Health Science Center [Tennessee] 2008) [2014]
- MELISSA K. LASATER, Associate in Orthopaedic Surgery
 - B.S. (Belmont 2004); M.S.N. (Vanderbilt 2010) [2010]
- THOMAS A. LASKO, Associate Professor of Biomedical Informatics
 - B.S., M.D. (California, San Diego 1991, 2000); Ph.D. (Massachusetts Institute of Technology 2007) [2010]
- ROBERT H. LATHAM, Associate Professor of Medicine
 - B.A., M.D. (Vanderbilt 1973, 1977) [2018]

- KEN LAU, Associate Professor of Cell & Developmental Biology B.Sc., Ph.D. (Toronto [Canada] 2002, 2008) [2013]
- AARON ALAN LAVIANA, Instructor in Clinical Urology
 - B.S. (Notre Dame 2007); M.D. (Georgetown 2011) [2017]
- THOMAS J. LAVIE, Assistant Clinical Professor of Psychiatry and Behavioral Sciences B.S., B.A., M.D. (Louisiana State 1982, 1983, 1988) [2006]
- PATRICK J. LAVIN, Professor of Neurology; Professor of Neurology, Emeritus; Professor of Ophthalmology and Visual Sciences M.B.B.Ch., B.A.O. (National University of Ireland 1970, 1970) [1983]
- VIVIANA ALVARADO LAVIN, Clinical Professor of Pediatrics B.S. (Saint Mathew Irstitute [Mexico] 1990); M.D. (Universidad Anáhuac [Mexico] 1996) [2033]
- JANICE C. LAW, Assistant Professor of Ophthalmology and Visual Sciences B.A. (Miami [Ohio] 1999); M.D. (Wright State 2003 [2007]
- DAV'D W. LAWHORN, Assistant Clinical Professor of Emergency Medicine B.A. (Tennessee 1975); M.D. (UT Health Science Center [Tennessee] 1988) [1998]
- ALICE P. LAWRENCE, Assistant Professor of Pediatrics
 - B.A. (Rutgers, Newark 1977); M.D. (Pennsylvania State 2005) [2011]
- LAURIE M. LAWRENCE, Associate Professor of Clinical Emergency Medicine B.S.N., M.D. (Vanderbilt 1977, 1983) [2006]
- CARA K. LAWSON, Assistant in Obstetrics & Gynecology
 - B.S.N. (Calvin 1997); M.S.N. (Phoenix, San Diego 2005); M.S.N. (Frontier Nursing University 2016) [2018]
- JENNIFER LAWSON, Assistant in Pediatrics B.S.N. (Baptist College of Health Sciences 2003); M.S.N. (Vanderbilt 2010) [2011]
- WILLIAM E. LAWSON, Associate Professor of Medicine
 - B.S. (Tennessee Technological 1992); M.D. (UT Health Science Center [Tennessee] 1996) [2004]
- ALEXANDER R. LAWTON III, Professor of Pediatrics, Emeritus
 - B.A. (Yale 1960); M.D. (Vanderbilt 1964) [1980]
- MARGARET MOORE LAXTON, Assistant in Medicine
 - B.S. (New Hampshire 2007); M.P.H. (Colorado 2009) [2016]

- WILLIAM H. LAXTON, Assistant Professor of Clinical Radiology and Radiological Sciences B.S. (Tennessee 2003); M.D. (UT Health Science Center [Tennessee] 2009) [2015]
- ROMAN M. LAZARENKO, Research Instructor in Anesthesiology
 - M.Sc. (National Technical University of Ukraine 2001); Ph.D. (National Academy of Sciences, Kiev [Ukraine] 2005) [2011]
- NAM T. LE, Assistant Professor of Clinical Radiology and Radiological Sciences B.S. (California, Berkeley 1992); M.D. (Meharry Medical 2008) [2013]
- RUSSELL WARREN LEDFORD, Assistant Professor of Clinical Medicine B.A. (Georgia 2005); M.D. (Medical College of Georgia 2015) [2018]
- GRACE LEDLOW, Assistant in Cardiac Surgery B.S.N. (Union [Tennessee] 2008); M.S.N. (Vanderbilt 2012) [2015]
- MONICA LEDOUX, Adjunct Assistant Professor of Dermatology M.D. (Ludwig-Maximilians-Universität

[Germany] 1993) [2014]

- CHRISTOPHER DAVID LEE, Associate Professor of Neurology
 - B.S. (Davidson 2000); M.D. (Wake Forest 2004); M.P.H. (Vanderbilt 2011) [2009]
- DONALD H. LEE, Professor of Orthopaedic Surgery B.S. (Georgetown 1977); M.D. (West Virgin) 1982) [2005]
- ETHAN LEE, Professor of Cell and Developmental Biology; Professor of Pharmacology B.A. (Rice 1987); M.D., Ph.D. (Texas, Southwestern Medical 1997, 1992) [2003]
- EVON BATEY LEE, Associate Professor of Pediatrics; Associate Professor of Psychiatry and Behavioral Sciences B.A., M.A., Ph.D. (Vanderbilt 1976, 1978, 1980) [1981]
- GEORGE R. LEE III, Assistant Clinical Professor of Neurology
 - B.A. (Emory 1992); M.S. (Georgia State 1995); M.D. (Medical College of Georgia 1999) [2005]
- GEORGE S. LEE, Assistant Clinical Professor of Oral and Maxillofacial Surgery B.S. (Weber State 1995); D.D.S. (Northwestern 1999); M.D. (Vanderbilt 2002) [2007]
- JENNIFER J. LEE, Assistant Clinical Professor of Dermatology
 - B.S. (Maryland 1998); M.D. (Harvard Medical 2003) [2010]
- LAURA ANNE LEE, Associate Professor of Pathology, Microbiology and Immunology B.A. (Rice 1987); M.D., Ph.D. (Texas, Southwestern Medical 1996, 1996) [2018]

- MARK A. LEE, Associate Clinical Professor of Pediatrics
 - B.S. (Auburn 1990); M.D. (Alabama, Birmingham 1994) [1997]
- SCOTT S. LEE, Assistant Professor of Medicine B.A. (Harvard 2003); M.Phil. (Cambridge [U.K.] 2004); M.P.A. (Princeton 2006); M.D., Ph.D. (Harvard 2015, 2015) [2018]
- STANLEY M. LEE, Associate Clinical Professor of Medicine; Associate Clinical Professor of Pediatrics
 - B.A., M.D. (Trinity, Dublin [Ireland] 1967, 1970) [1989]
- TAEKYU LEE, Research Assistant Professor of Biochemistry
 - B.Sc. (Roger Williams 1988); M.A. (Johns Hopkins 1991); Ph.D. (Toronto [Canada] 1995) [2009]
- WILLIAM F. LEE, Associate Professor of Clinical Obstetrics and Gynecology

 B.S. (Alabama 1993); M.D. (Mississippi 1997)

 [2033]
- YOUNGMIN ANN A LEE, Assistant Professor of Surgery
 - M.D., Ph.D. (Heidelberg [Germany] 2005, 2006) [2019]
- ASHLEY LEECH,
 - A. sistant Professor of Health Policy B.A. (Lycoming 2007); M.S. (Oxford [U.K.] 2008); Ph.D. (Boston University 2016) [2018]
- H. BRIAN LEEPER, Clinical Professor of Pediatrics B.S. (Tennessee, Martin 1979); M.D. (UT Health Science Center [Tennessee] 1983) [1986]
- RYAN LEFEVRE, Assistant Professor of Anesthesiology B.S. (Iowa State 2010); M.D. (Kentucky,
 - B.S. (Iowa State 2010); M.D. (Kentucky. Lexington 2014) [2019]
- LEWIS LEFKOWITZ, JR., Professor of Preventive Medicine, Emeritus

 P. A. (Denicon 1051): M.D. (Toyas, Southwester)
 - B.A. (Denison 1951); M.D. (Texas, Southwestern Medical 1956) [1965]
- RUSSELL B. LEFTWICH, Adjunct Assistant Professor of Biomedical Informatics B.S. (Arizona State 1974); M.D. (Vanderbilt 1978) [1984]
- VICTOR J. LEGNER, Associate Professor of Medicine
 - B.S. (Loyola 1993); M.D. (Rush 1997); M.S. (University of Washington 2006) [2016]
- JONATHAN MERLE LEHMAN, Instructor in Medicine
 - B.S. (Bradley 2002); Ph.D., M.D. (Alabama, Birmingham 2009, 2010) [2016]

- ASHTON E. LEHMANN, Research Instructor in Otolaryngology - Head and Neck Surgery B.A. (Middlebury 2009); M.D. (Harvard Medical 2014) [2020]
- BRIAN D. LEHMANN, Research Assistant Professor of Medicine B.S. (Illinois, Chicago 2000); Ph.D. (East Carolina 2007) [2012]
- HEATHER R. LEHMANN, Assistant Clinical **Professor of Pediatrics** B.S. (North Carolina 2000); M.D. (East Carolina 2005) [2008]
- MELISSA CARY LEHMANN, Assistant in Medicine B.S., M.S. (DeSales University 2001, 2002) [2017]
- CHARLES LEI, Assistant Professor of Emergency Medicine B.A. (Harvard 2006); M.D. (Harvard Medical 2010) [2014]
- LI LEI, Assistant in Biochemistry M.D., B.S. (Luzhou Medical [China] 1987, 1987) [2004]
- VIVIAN LEI, Assistant Clinical Professor of **Emergency Medicine**

B.S., M.E. (Massachusetts Institute of Technology 2006, 2008); M.D. (Stanford 2014) [2018]

- PHILIP JAMES LEISY, Assistant Professor of Anesthesiology B.S. (North Carolina 2007); M.D. (East Carolina 2014) [2019]
- DANIEL J. LENIHAN, Adjunct Professor in Medicine M.D., B.A. (Tennessee 1988, 1968) [2009]
- CARRIE ANNA LENNEMAN, A liunct Assistant Professor of Medicine B.S. (University of the South 1999)

(Medical University of South Carolina 2003); M.S.C.I. (Vanderbilt 2010) [2010].

- MIRIAM D. LENSE, Assistant Professor of Otolaryngology - Head and Neck Surgery; Assistant Professor of Psychology; Assistant Professor of Psychology & Human Development B.A. (Harvard 2005); M.S., Ph.D. (Vanderbilt 2010, 2014) [2017]
- ROBERT J. LENTZ, Assistant Professor of Medicine; Assistant Professor of Thoracic Surgery

B.A. (Rice 2005); M.D. (Texas 2009) [2012]

TIFFANEE ANDREA LENZI, Assistant Clinical Professor of Obstetrics and Gynecology B.S. (Michigan 1993); Ph.D., M.D. (Wayne State 1997, 1999) [2015]

- JOHN M. LEONARD, Professor of Medicine, **Emeritus**
 - B.A. (Florida State 1963); M.D. (Vanderbilt 1967) [1974]
- MARTHA LEONARD, Assistant Professor of Clinical Medicine
 - B.S. (Lipscomb 1994); M.D. (UT Health Science Center [Tennessee] 1999) [2013]
- GALINA I. LEPESHEVA, Research Professor of **Biochemistry**

M.S. (Belarusian State [Russia] 1983); Ph.D. (Institute of Bioorganic Chemistry [Belarus] 1993) [2002]

- DONNA W. LETT, Associate Clinical Professor of **Pediatrics**
 - B.S. (Austin Peay State 1984); M.D. (UT Health Science Center [Tennessee] 1988) [2007]
- MELISSA MARIE LEVACK, Assistant Professor of Cardiac Surgery

B.S. (Darmouth 2001), M.D. (Emory 2007) [2017]

- REAGAN K. LEVERE T, Associate Professor of Clinical Radiology & Radiological Sciences B.s. (Purdue 1996); M.S., M.D. (Louisville 2000, 2003) [2012]
- EREMY LEVIN, Instructor in Clinical Surgery B.S. (Khodes College 2003); M.D. (George Washington 2013) [2020]
- ARD M. LEVINE, William A. Black Chair in Ophthalmology; Professor of Ophthalmology and Visual Sciences; Professor of Cell and Developmental Biology B.S. (SUNY, Albany 1986); Ph.D. (SUNY, Stony
- Brook 1994) [2015] MARLA CASEY LEVINE, Assistant Professor of **Pediatrics**
 - B.A. (Western Ontario [Canada] 1999); M.D. (Tel Aviv [Israel] 2005) [2020]
- MIA A. LEVY, Adjunct Associate Professor of **Biomedical Informatics** B.S. (Pennsylvania 1998); M.D. (Rush 2003); Ph.D. (Stanford 2011) [2009]
- RACHEL LEVY-OLOMUCKI, Assistant Clinical Professor of Pediatrics M.D. (Hebrew University of Jerusalem [Israel] 1992) [2013]
- JAMES BRADFORD LEWALLEN. Assistant Clinical Professor of Oral & Maxillofacial Surgery

B.A. (Samford 2003); M.S. (Edinburgh [U.K.] 2005); D.D.S. (North Carolina 2009); M.D. (Vanderbilt 2012) [2016]

KANAH M. LEWALLEN, Instructor in Nursing; Instructor in Medicine B.S.N. (Grand Canyon 2006); M.S.N. (Vanderbilt 2009); D.N.P. (Belmont 2015) [2010]

- JAMES SHERIDAN LEWIS, JR., Professor of Pathology, Microbiology and Immunology; Professor of Otolaryngology - Head and Neck Surgery
 - B.A. (Washington University 1993); M.D. (Arkansas, Little Rock 1996) [2015]
- ALAN SETH LEWIS, Assistant Professor of Psychiatry and Behavioral Sciences; Assistant Professor of Neurology B.A. (Pennsylvania 2005); Ph.D., M.D. (Northwestern 2010, 2012) [2018]
- BRIANNA J. LEWIS, Assistant Professor of Psychiatry and Behavioral Sciences B.S. (Vanderbilt 2006); M.Ed. (Harvard 2007); M.A., Ph.D. (Fordham 2011, 2015) [2020]
- CANDICE E. LEWIS, Assistant in Medicine B.S.N., M.S.N. (Belmont 2006, 2007) [2011]
- JENNIFER A. LEWIS, Instructor in Medicine B.S. (George Washington 2004); M.S. (Georgetown 2007); M.D. (George Washington 2011) [2017]
- JULIA B. LEWIS, Professor of Medicine B.S., M.D. (Illinois, Champaign 1976, 1980) [1986]
- KENNETH G. LEWIS II, Assistant Professor of Radiology and Radiological Sciences B.S. (Utah 1999); M.M.P., M.S., Ph.D. (Vanderbilt 2006, 2012, 2013) [2016]
- MICHELLE ELIZABETH LEWIS, Assistant Professor of Clinical Medicine B.S. (Illinois, Champaign 2010); M.D. (Southern Illinois, Springfield 2015) [2019]
- SUSAN M. LEWIS, Assistant Professor of Clinica Obstetrics and Gynecology B.S.N. (Tennessee State 1993). M.S.N. (Vanderbilt 1998) [2012]
- THOMAS J. LEWIS, JR., Assistant Clinical Professor of Medicine B.S. (Georgia Institute of Technology 1985); M.D. (Medical College of Georgia 1989) [1995]
- BINGSHAN LI, Associate Professor of Molecular Physiology & Biophysics M.D. (Beijing Medical [China] 1999); M.S. (Houston 2003); Ph.D. (Baylor 2009) [2011]
- FENG LI, Associate Clinical Professor of Pathology, Microbiology and Immunology M.D. (Zhejiang Medical [China] 1983); M.S. (Shanghai Medical [China] 1986); Ph.D. (Louisville 1992); J.D. (Nashville School of Law 2007) [2000]
- JUN LI, Adjunct Professor of Neurology M.D. (Anhui [China] 1985); Ph.D. (Hahnemann Medical 1995) [2009]

- MUWEI LI, Research Instructor in Radiology & Radiological Sciences
 B.Eng., Ph.D. (Sichuan University [China] 2006, 2014) [2016]
- YIKE LI, Research Assistant Professor of Otolaryngology - Head and Neck Surgery M.D., Ph.D. (Fudan [China] 0, 0) [2018]
- JIANCONG LIANG, Assistant Professor of Pathology, Microbiology and Immunology M.D. (Sun Yat-Sen University of Medical Science [China] 2001); Ph.D. (Baylor 2010) [2016]
- ROMINA P. LIBSTER, Adjunct Assistant Professor of Pediatrics B.S., M.D., M.S. (Buenos Aires [Argentina] 1997, 2003, 2011) [2012]
- TODDRA SHAVELLE LIDDELL, Assistant in Medicine
 - B.S.N. (Phoenix, Grand Rapids 2004); M.S.N. (Middle Tennessee State 2014) [2017]
- DANIEL C. LIEBLER, Adjunct Professor in the Department of Biochemistry of the School of Medicine
 3.3. (Villanova 1)80); Ph.D. (Vanderbilt 1984)
- GFOFFREY D. LIFFERTH, Assistant Clinical Professor of Emergency Medicine B.S. (Brigham Young 1993); M.D. (UT Health Science Center [Tennessee] 1997) [2009]

[20031]

- RCHARD W. LIGHT, Professor of Medicine B.S. (Colorado 1964); M.D. (Johns Hopkins 1968) [1997]
- ROBERT HOWARD LILLARD, JR., Associate Clinical Professor of Pediatrics B.S. (Rhodes College 1989); M.D. (Alabama, Birmingham 1993) [1999]
- LEE E. LIMBIRD, Adjunct Professor of Medical Education and Administration B.A. (Wooster 1970); Ph.D. (North Carolina 1973) [1979]
- TOBIAS B. LIMPERG, Instructor in Clinical Obstetrics & Gynecology B.S., M.D. (Utrecht [Netherlands] 2009, 2010) [2019]
- HELEN H. LIN, Assistant Professor of Clinical Medicine
 - B.S., M.D. (Alabama, Birmingham 2012, 2016) [2019]
- SUSIE LIN, Assistant Professor of Oral and Maxillofacial Surgery B.S. (SUNY, Stony Brook 1993); D.D.S. (New York 1998); M.D. (Vanderbilt 2001) [2013]
- CARRIE HOLLOWAY LIND, Assistant Professor of Clinical Pediatrics M.D., B.A. (Tennessee 2004, 2004) [2012]

- CHRISTOPHER D. LIND, Professor of Medicine B.A. (Pomona 1977); M.D. (Vanderbilt 1981) [1988]
- JOANN LINDENFELD, Professor of Medicine M.D. (Michigan 1974) [2015]
- BRIAN RICHARD LINDMAN, Associate Professor of Medicine
 - B.S. (Duke 1997); M.A. (Reformed Theological Seminary, Orlando 2001); M.D. (Vanderbilt 2003) [2017]
- CHRISTOPHER JOHN LINDSELL, Professor of Biostatistics
 - B.E., Ph.D. (Southampton [U.K.] 1994, 2000) [2017]
- JENNIFER L. LINDSEY, Associate Professor of Ophthalmology & Visual Sciences B.A. (Rice 1994); M.D. (Baylor 1998) [2006]
- CRAIG W. LINDSLEY, University Professor of Pharmacology; University Professor of Biochemistry; University Professor of Chemistry; William K. Warren, Jr. Chair in Medicine B.S. (California State, Chico 1992); Ph.D. (California, Santa Barbara 1996) [2006]
- FRANK WEN-YUNG LING, Clinical Professor of Obstetrics and Gynecology A.B. (Wabash 1970); M.D. (Texas, Southwestern Medical 1974) [2004]
- ANDREW J. LINK, Associate Professor of Pathology, Microbiology and Immunology; Associate Professor of Chemistry; Assistant Professor of Biochemistry B.A., B.S., M.A. (Washington University 1987)
- 1987, 1987); Ph.D. (Harvard 1994) [1999]
 AMANDA GWYNN LINKOUS, Research Associate
 Professor of Biochemistry
 - B.S. (East Tennessee State 2005); Ph.D. (Vanderbilt 2009) [2019]
- CATHERINE R. LINN, Assistant Professor of Clinical Medicine
 - B.A. (William and Mary 1994), M.D. (Vanderbilt 2002) [2005]
- MACRAE F. LINTON, Dr. Stephen J. Schillig, Jr., and Mary Schillig Chair in Medicine; Professor of Medicine; Professor of Pharmacology B.S. (Tulane 1978); M.D. (UT Health Science Center [Tennessee] 1985) [1993]
- ETHAN S. LIPPMANN, Assistant Professor of Chemical and Biomolecular Engineering; Assistant Professor of Biomedical Engineering; Assistant Professor of Neurology B.S. (Illinois, Champaign 2006); Ph.D. (Wisconsin 2012) [2015]
- M. JANIE LIPPS HAGAN, Assistant in Medicine B.S.N., M.S.N. (Medical College of Virginia 1976, 1980) [2002]

- NANCY B. LIPSITZ, Assistant Clinical Professor of Obstetrics and Gynecology B.A. (Brown 1987); M.D. (Rochester 1993) [1998]
- MATTHEW DAVID LIPTON, Assistant Professor of Emergency Medicine
 B.S. (California, San Diego 2006); M.D. (Northwestern 2010) [2015]
- LOREN P. LIPWORTH, Research Professor of Medicine
 - Sc.B. (Brown 1991); Sc.D. (Harvard 1996) [2011]
- MICHAEL R. LISKE, Clinical Professor of Pediatrics
 - B.S. (Oral Roberts 1984); M.D. (Michigan 1989) [2003]
- ROLANDA LAMORA LISTER, Assistant Professor of Obstetrics and Gynecology
 - B.S. (Oakwood 2002); M.D. (Meharry Medical 2006) [2016]
- JOSEPH A. LITTLE III, Assistant Clinical Professor of Pecia rics
 - B.A., M.D. (Vanaerbilt 1972, 1977) [2012]
- DANDAN LIU, A sistant Professor of Biostatistics 5.5. (Fu an [China] 2002); M.A. (Missouri 2005); Ph.D. (Michigan 2010) [2011]
- KEVIN LIU, Assistant Professor of Clinical Medicine
 - B.S. (Emory 2010); M.D. (Louisiana State 2015)
- NETER LIU, Assistant Professor of Clinical Medicine
 - B.S.E. (Princeton 2010); M.D. (Duke 2017) [2020]
- QI LIU, Associate Professor of Biostatistics; Associate Professor of Biomedical Informatics B.S., M.S. (Hunan [China] 1997, 2000); Ph.D. (Shanghai Jiao Tong [China] 2003) [2013]
- YAN X. LIU, Research Assistant Professor of Medicine

 M.D. M.S. (Fourth Military Medical IChin
 - M.D., M.S. (Fourth Military Medical [China] 1978, 1992) [1998]
- JAIME RODRIGO LLOBET, Assistant Professor of Clinical AnesthesiologyB.S. (Purdue 1999); M.D. (Illinois, College of Medicine, Chicago 2004) [2018]
- MARGUERITE COOPER LLOYD, Assistant Professor of Medicine B.A. (Stanford 2010); M.P.H. (Harvard 2015); M.D. (Vanderbilt 2016) [2020]
- C. MICHAEL LOCKE, Assistant Clinical Professor of Oral and Maxillofacial Surgery D.M.D. (Alabama, Birmingham 1993); M.D. (Vanderbilt 1996) [2003]
- CHRISTI M. LOCKLEAR, Assistant in Medicine A.S.N. (Aquinas College [Tennessee] 2002); M.S.N. (Vanderbilt 2006) [2012]

- MARY CAROLINE LOGHRY, Associate Clinical Professor of Pediatrics B.S. (Tennessee Technological 1988); M.D. (Meharry Medical 2003) [2006]
- JOHN T. LOH, Research Assistant Professor of Medicine
 - B.Sc., Ph.D. (Michigan State 1988, 1994) [2002]
- KATHERINE H. LOH, Assistant Professor of Anesthesiology B.S. (Massachusetts Institute of Technology
 - B.S. (Massachusetts Institute of Technology 2011); M.D. (Emory 2015) [2020]
- CHRISTINA M. LOHSE, Assistant Clinical Professor of Pediatrics B.S. (Illinois, School of Nursing 1999); M.D. (Ross 2003) [2007]
- SAMER LOLEH, Assistant Clinical Professor of Pediatrics
 - M.D. (Damascus [Syria] 1996) [2007]
- FREDERICK WILHELM LOMBARD, Associate Professor of Anesthesiology M.B.Ch.B (Stellenbosch [South Africa] 1992) [2016]
- SALVATORE J. LOMBARDI, Clinical Professor of Obstetrics and Gynecology B.A. (Saint Francis [New York] 1973); M.D. (University of Nuevo Leon 1982) [2015]
- SARAH RUTH LOMBARDO, Instructor in Clinical Surgery
 - B.S. (California, Los Angeles 2006); M.D., M.S. (Duke 2012, 2012) [2019]
- JEFFERSON P. LOMENICK, Associate Professor of Pediatrics
 - B.S., M.D. (Vanderbilt 1994, 1998) [2008]
- KIMBERLY D. LOMIS, Adjunct P of Sessor of Medical Education & Administration (VUMC), Adjunct Professor of Surgery B.A. (Texas 1988); M.D. (Texas, Southwestern Medical 1992) [1998]
- BEVAN PATRICK LONDERGAN, Assistant Professor of Anesthesiology B.A. (Williams 2000); M.D. (Connecticut 2007) [2018]
- BRIAN ROBERT LONG, Assistant Professor of Clinical Medicine B.S. (Michigan 1996): M.D. (Vanderbilt 2000
 - B.S. (Michigan 1996); M.D. (Vanderbilt 2000) [2018]
- JIRONG LONG, Associate Professor of MedicineB.A., M.S., Ph.D. (Sichuan AgriculturalUniversity [China] 1994, 1997, 2001) [2004]
- JOHN R. LONG, Clinical Professor of Pediatrics B.A. (Duke 1998); M.D. (Vanderbilt 2002) [2005]
- LIBBY LONG, Assistant Clinical Professor of Pediatrics
 - B.A. (Northwestern 1996); M.D. (Illinois, College of Medicine, Chicago 2000) [2012]

- MELISSA C. LONG, Assistant in Medicine B.S.N. (Western Kentucky 2008); M.S.N. (Belmont 2013) [2014]
- RUTH BARRON LONG, Clinical Professor of Pediatrics B.S. (Auburn 1978); M.D. (Vanderbilt 1982) [2007]
- REID LONGMUIR, Assistant Professor of Ophthalmology and Visual Sciences B.S., M.D. (Iowa 1998, 2002) [2014]
- PETER T. LOOSEN, Professor of Psychiatry, Emeritus M.D., Ph.D. (Munich [Germany] 1970, 1974)
- [1986] SUSAN MARIE LOPATA, Assistant Professor of Clinical Pediatrics
 - B.S. (Franciscan University of Steubenville 2007); M.D. (Marshall 2011) [2019]
- CARLOS F. LOPEZ, Assistant Professor of Biochemistry; Assistant Professor of Pharmacology; Assistant Professor of Biomedical Informatics
 - 3.3. (Miami 1928); Ph.D. (Pennsylvania 2004) [2012]
- MARCOS GAPRIEL LOPEZ, Assistant Professor of Anes besiology
 - B 6. (Trinity [Texas] 2006); M.S. (Mayo Graduate School [MN] 2010); M.D. (Mayo Clinic 2011) [2016]
- A.SHLEY J. LORD, Assistant in Medicine B.S.N. (Clemson 2003); M.S.N. (Vanderbilt 2010) [2010]
- CHRISTOPHER LEVON NAJARIAN LORD, Research Assistant Professor of Cell & Developmental Biology B.S. (Michigan 2006); Ph.D., M.Phil. (California, San Diego 2012, 2012) [2012]
- NANCY M. LORENZI, Professor of Biomedical Informatics; Adjunct Professor of Nursing A.B. (Youngstown State 1966); M.S. (Case Western Reserve 1968); M.A. (Louisville 1975); Ph.D. (Cincinnati 1980) [2001]
- AMANDA N. LORINC, Assistant Professor of Anesthesiology B.S. (Georgia 2001); M.D. (Medical College of Georgia 2007) [2012]
- WHITNEY A. LORING, Assistant Professor of Pediatrics; Assistant Professor of Psychiatry and Behavioral Sciences B.S. (Florida 2002); M.A. (Argosy 2005); Psy.D. (Georgia Professional School of Psychology 2008) [2011]
- RICHARD R. LOTSHAW, Assistant Professor of Clinical Obstetrics and Gynecology B.S. (Ohio State 1981); M.D. (West Virginia 1988) [2008]

ALINA LOU, Assistant Professor of Clinical Ophthalmology & Visual Sciences B.S., M.D. (Michigan 2011, 2016) [2020]

DIANNE IN-HYE LOU, Instructor in

- Anesthesiology B.S. (Houston 2006); Ph.D. (Texas 2014); M.D. (Texas, Galveston 2016) [2020]
- COURTNEY ALISON LOVEJOY, Research
 Assistant Professor of Biochemistry
 - B.A. (Gustavus Adolphus 2001); Ph.D. (Vanderbilt 2009) [2009]
- HANNAH LOVEJOY, Assistant Professor of Clinical Anesthesiology
 - A.B. (Harvard 2006); M.D. (Florida 2010) [2015]
- CHRISTINE M. LOVLY, Ingram Associate Professor of Cancer Research; Associate Professor of Medicine B.A. (Johns Hopkins 1997); M.D., Ph.D. (Washington University 2006, 2006) [2012]
- HAROLD N. LOVVORN III, Associate Professor of Pediatric Surgery; Associate Professor of Pediatrics
 - B.S. (Duke 1987); M.D. (UT Health Science Center [Tennessee] 1993) [2002]
- LISA L. LOWE, Clinical Professor of Pediatrics B.S. (Middle Tennessee State 1980); M.D. (East Tennessee State 1984) [2007]
- DEBORAH E. LOWEN,
 - Associate Professor of Pediatrics B.S. (Duke 1989); M.D. (Wake Forest 1993) [2010]
- JAMES E. LOYD, Professor of Medicine Emeritus, Adjunct Professor of Medicine
 - B.S., M.D. (West Virginia 1969 (1973) [1982]
- M. JAMES LOZADA III, Assis art Professor of Anesthesiology
 - B.A. (North Texas 2000); D.O. (LECOM 2013) [2018]
- MING LU, Visiting Assistant Professor of Radiology & Radiological Sciences
 B.S. (Lanzhou [China] 2009), Ph.D. (Beijing
 - B.S. (Lanzhou [China] 2009), Ph.D. (Beijing [China] 2014) [2019]
- YINGCHANG LU, Research Instructor in Medicine M.D. (Shanghai Medical [China] 2007); M.Sc., Ph.D. (Wageningen [Netherlands] 2008, 2011) [2018]
- ALEXANDER LUBBOCK, Research Assistant Professor of Biochemistry B.Sc. (Leeds [U.K.] 2007); M.Sc. (University College London [U.K.] 2008); Ph.D. (Edinburgh [U.K.] 2014) [2015]
- KATE E. LUCK, Assistant in Pediatrics B.S.N. (Truman State 2008); M.S.N. (Vanderbilt 2013) [2014]

- AMY N. LUCKENBAUGH, Assistant Professor of Urology; Instructor in Clinical Urology B.S. (Syracuse 2008); M.D. (SUNY, Buffalo 2013) [2018]
- GWYNETTA M. LUCKETT, Assistant Clinical Professor of Pediatrics B.S. (Alabama State 1994); M.D. (South Alabama 1998) [2008]
- ABIGAIL GILLMOR LUFFMAN, Assistant in Surgery
 - B.A. (Carleton College 1993); M.A. (Northwestern 1999); A.D.N. (Tennessee State 2005); M.S.N. (Vanderbilt 2015) [2015]
- PAULA BRAZAO MENDES LUIS, Research Instructor in Pharmacology B.S., Ph.D. (Universidade de Lisboa [Portugal] 2004, 2011) [2013]
- WILLIAM E. LUMMUS, Associate Professor of Clinical Emergency Medicine B.S. (Birmagham-Soutiern 1990); M.D. (Alabama, Birmingham, 1994) [1998]
- LEA ANN LUND, Associate Clinical Professor of Pe liatrics
 - 5.5. (Termessee 1998); M.D. (UT Health Science Center [Termessee] 2003) [2008]
- MAOXIANG LUO, Associate Professor of Mechanical Engineering; Associate Professor of Opparyngology Head and Neck Surgery; Associate Chair of Mechanical Engineering B.S., M.S. (Tsinghua [China] 1996, 1999); Ph.D. (California, San Diego 2004) [2007]
- WENTIAN LUO, Research Assistant Professor of Medicine
 - B.S. (Shanghai Medical [China] 1982); M.D. (Xi'an Medical [China] 1990); Ph.D. (Nagasaki [Japan] 1997) [2006]
- YU LUO, Associate Professor of Clinical Radiology & Radiological Sciences B.S., M.S. (China Pharmaceutical 1987, 1992);
- Ph.D., M.D. (Wayne State 1998, 2005) [2012] MARK LUSCO, Assistant Professor of Pathology,
- MARK LUSCO, Assistant Professor of Pathology, Microbiology and Immunology B.S., M.D. (Alabama, Birmingham 1993, 2001) [2014]
- JENNIFER LUSTY, Assistant in Surgery A.D.N. (Aquinas College [Tennessee] 2004); M.S.N. (Vanderbilt 2011) [2014]
- MELANIE LUTENBACHER, Associate Professor of Nursing; Associate Professor of Pediatrics B.S.N. (Texas 1974); M.S.N. (California State 1986); Ph.D. (Kentucky, Lexington 1994) [1993]
- JAMES M. LUTHER, Associate Professor of Medicine; Associate Professor of Pharmacology B.S. (Lipscomb 1997); M.D., M.S.C.I. (Vanderbilt 2001, 2006) [2008]

- HUNG N. LUU, Adjunct Assistant Professor of Medicine

 M.D. (Thei Birth Medical University 1007):
 - M.D. (Thai Binh Medical University 1997); M.P.H. (Tulane 2003); Ph.D. (Texas, Houston 2011) [2016]
- CINDY K. LYBARGER, Assistant in Pediatrics B.S.N. (Evansville 1979); M.S.N. (Vanderbilt 1990) [1991]
- TERRY P. LYBRAND, Professor of Pharmacology; Adjoint Professor of Chemistry B.S. (South Carolina 1980); Ph.D. (California, San Francisco 1984) [2000]
- KIMBERLY ANNE LYNCH, Assistant in Pediatrics B.A., M.B.A. (Cumberland 1991, 1997); M.S.N. (Vanderbilt 2008); Post Masters Certificate (Texas, Arlington 2011) [2015]
- AMOSY E. M'KOMA, Associate Professor of Biochemistry and Cancer Biology at Meharry Medical College; Adjunct Associate Professor of Surgery
 - M.D. (Kharkov Medical Institute [Ukraine] 1984); Licentiate Diploma, Ph.D. (Karolinska Institute [Sweden] 1999, 2001) [2007]
- ZHENZHONG MA, Research Instructor in Pharmacology
 - B.S. (Soochow University [Taiwan] 2002); Ph.D. (Wayne State 2011) [2018]
- IAN G. MACARA, Louise B. McGavock Chair (#8); Professor of Cell and Developmental Biology: Chair of the Department of Cell and Developmental Biology B.Sc., Ph.D. (Sheffield [U.K.] 1970, 1974) [2012]
- LAUREN M. MACCORMICK, Instructor in Clinical Orthopaedic Surgery
 B.S. (Dayton 2009); M.D. (Onio State 2014)
- [2019]
 JAMES R. MACDONALD, Assistant Processor of
 Clinical Medicine; Assistant Professor of Clinical
 - Pediatrics
 B.S., M.D. (Dalhousie [Cn2da] 1991, 1995)
 [2004]
- ROBERT L. MACDONALD, Professor of Neurology; Professor of Molecular Physiology and Biophysics; Professor of Pharmacology S.B. (Massachusetts Institute of Technology 1966); Ph.D., M.D. (Virginia 1969, 1973) [2001]
- RACHEL LENOX MACE, Associate Professor of Clinical Pediatrics
 - B.S. (Purdue 1982); M.D. (Vanderbilt 1986) [1989]
- JOHN W. MACEY, JR., Clinical Instructor in Obstetrics and Gynecology B.A., M.D. (Vanderbilt 1982, 1986) [1991]

- JASON MACGURN, Assistant Professor of Cell and Developmental BiologyB.A. (Chicago 2000); Ph.D. (California, San Francisco 2007) [2013]
- JANA B. A. MACLEOD, Assistant Clinical Professor of SurgeryB.Sc., M.D. (British Columbia [Canada] 1981, 1985); M.Sc. (London School of Hygiene and Tropical Medicine 1999) [2018]
- MARGARET VIRGINIA MACLIN, Assistant Professor of Clinical Oral & Maxillofacial Surgery
 - B.S. (Auburn 2009); D.M.D. (Medical University of South Carolina 2013) [2019]
- JEANNE MADDEN, Assistant in Medicine B.A., M.S. (Buffalo 1994, 1996) [2016]
- MEENAKSHI S. MADHUR, Associate Professor of Medicine; Associate Professor of Molecular Physiology & Biophysics B.S. (Duke 1996); Ph.D. M.D. (Virginia 2003, 2005) [2012]
- MARK A. MAGNUSON, Louise B. McGavock Chair; Professor of Molecular Physiology and Biophysics; Professor of Medicine; Professor of Cell and Developmental Biology
 - B.A. (Lyther 1975); M.D. (Iowa 1979) [1987]
- ANITA MAHADEVAN-JANSEN, Orrin H. Ingram Chair in Biomedical Engineering; Professor of Biomedical Engineering; Professor of Neurological Surgery; Professor of Otolaryngology Head and Neck Surgery B.S., M.S. (Bombay [India] 1988, 1990); M.S., Ph.D. (Texas 1993, 1996) [1997]
- ALEXANDER MAIER, Associate Professor of Psychology; Assistant Professor of Ophthalmology & Visual Sciences B.Sc., M.Sc. (Ludwig-Maximilians-Universität [Germany] 1999, 2002); Dr.rer.nat. (Eberhard-Karls-Universität Tübingen [Germany] 2005) [2011]
- KATHRYN L. MAIER, Instructor in Clinical Ophthalmology & Visual Sciences B.S. (Michigan 2009); M.D. (Texas 2015) [2019]
- NATHALIE L. MAITRE, Adjoint Associate Professor of Hearing and Speech Sciences B.A., M.A. (Boston University 1990, 1990); Ph.D., M.D. (Medical University of South Carolina 1997, 2002) [2008]
- AMY S. MAJOR, Associate Professor of Medicine; Associate Professor of Pathology, Microbiology and Immunology B.S. (Wheeling Jesuit 1991); Ph.D. (West Virginia 1998) [2002]

- ARNOLD W. MALCOLM, Professor of Radiation Oncology, Emeritus
 - B.A. (Kent State 1969); M.D. (Meharry Medical 1973) [2005]
- FABIEN MALDONADO, Professor of Medicine; Professor of Thoracic Surgery; Associate Professor of Mechanical Engineering M.D. (Bourgogne [France] 2002) [2015]
- CHRISTOPHER T. MALEY, Assistant Professor of Clinical Psychiatry and Behavioral Sciences B.A. (Memphis 1994); M.D. (UT Health Science Center [Tennessee] 2006) [2010]
- MEGAN FRANCES MALIK, Assistant Professor of Clinical Pediatrics B.S. (John Carroll 2004); M.D. (Toledo 2008) [2014]
- BRADLEY ADAM MALIN, Professor of Biomedical Informatics; Professor of Biostatistics; Professor of Computer Science B.S., M.S., M.Phil., Ph.D. (Carnegie Mellon 2000, 2002, 2003, 2006) [2006]
- SIMON A. MALLAL, Major E.B. Stahlman Chair in Infectious Diseases and Inflammation; Professor of Pathology, Microbiology and Immunology; Professor of Medicine
 - M.B.B.S. (Western Australia 1983) [2013]
- ROBERT E. MALLARD, Clinical Professor of Pediatrics
 - B.A. (Rochester 1971); M.D. (Vanderbilt 1974)
- JACK DANIEL MALLETTE, Assistant Clinical Professor in Oral and Maxillofacial Surgery B.S. (Middle Tennessee State 2000); D.D.S. (UT Health Science Center [Tennessee, 2005) [2015]
- PAUL MALLORY, Instructor in Clinical Ophthalmology & Visual Sciences B.S. (Augustana [South Dakota] 2012), M.D. (South Dakota 2016) [2020]
- BETH ANN MALOW, Burry Chair in Cognitive Childhood Development; Professor of Neurology; Professor of Pediatrics B.S., M.D. (Northwestern 1984, 1986); M.S. (Michigan 1997) [2003]
- BRAD E. MALTZ, Assistant Professor of Clinical Medicine
 - B.S. (Florida Atlantic 1998); M.D. (Miami 2003) [2006]
- RAVINDER REDDY MANDA, Assistant Professor of Clinical Medicine M.D. (Kakatiya [India] 1990) [2009]
- NICOLE SAPONE MANDRYCKY, Assistant in Surgery
 - B.S. (Georgia 2007); M.S.N. (Alabama, Birmingham 2017) [2018]

- TIMOTHY C. MANGRUM, Clinical Professor of Pediatrics
 - B.S. (Lipscomb 1990); M.D. (Tennessee 1994) [1998]
- CAITLIN M. MANN, Senior Associate in Obstetrics & Gynecology
 - B.A. (Illinois Wesleyan 2012); M.G.C. (Maryland, Baltimore 2014) [2014]
- H. CHARLES MANNING, Professor of Radiology and Radiological Sciences; Professor of Chemistry; Professor in Neurological Surgery; Professor of Biomedical Engineering; Ingram Associate Professor of Cancer Research B.Sc. (Tarleton State 2000); Ph.D. (Texas Tech University 2004) [2008]
- JOHN F. MANNING, JR., Assistant Professor of Medical Education and Administration; Chief Operating Officer, Corporate Chief of Staff B.S. (Worcester Polytechnic Institute 1980); Ph.D. (Notre Dame 1986), M.B.A. (Chicago 1997) [2)04]
- KYLE M. NNION: Associate Professor of Clinical Otolaryngology Head and Neck Surgery B.S. (No th Carolina 1997); M.D. (Connecticut 2002) [2007]
- MEGAN GORDON MANOR, Assistant in Obstetrics & Gynecology B.S. (Lipscomb 2006); M.S.N. (Vanderbilt 2007) [2018]
- VARTGEZ MANSOURIAN, Assistant Professor of Clinical Physical Medicine and Rehabilitation B.S., B.S. (Georgia State 1981, 1982); M.D. (Medical College of Georgia 1988) [2016]
- MICHAEL FERNANDEZ MANTINAN, Assistant Professor of Clinical Anesthesiology B.S., M.D. (Michigan State 2003, 2008) [2019]
- BHAVISH MANWANI, Assistant Professor of Clinical Medicine B.S. (Rutgers 2009); M.D. (Rosalind Franklin University of Medicine and Science 2016) [2019]
- ISAAC V. MANZANERA ESTEVE, Research Assistant Professor of Plastic Surgery B.S. (Valencia [Spain] 2004); Ph.D. (Texas, San Antonio 2012) [2020]
- KEVIN M. MAQUILING, Assistant Professor of Clinical Medicine B.A. (Pennsylvania 1987); M.D. (Rush 1991) [2011]
- CARRIE C. MARCHMAN, Assistant Professor of Clinical Obstetrics & Gynecology B.S. (Middle Tennessee State 2005); M.D. (East Tennessee State 2009) [2018]
- DAVID ELI MARCOVITZ, Assistant Professor of Psychiatry and Behavioral Sciences B.A. (Princeton 2006); M.D. (Vanderbilt 2012) [2018]

- STEVEN RONALD MARCUM, Assistant Professor of Clinical Anesthesiology B.S. (Colorado State 1979); M.D. (New York Medical 1989) [2018]
- RAMZI MARDAM BEY, Assistant Professor of Psychiatry and Behavioral Sciences B.S., M.D. (American University of Beirut [Lebanon] 2006, 2010) [2017]
- NICHOLAS O. MARKHAM, Instructor in Medicine B.A. (Colby 2004); M.D., Ph.D. (Vanderbilt 2014, 2014) [2020]
- JANET G. MARKLE, Assistant Professor of Pathology, Microbiology and Immunology; Adjunct Assistant Professor of Pathology, Microbiology and Immunology B.Med.Sc. (Western Ontario [Canada] 2007); Ph.D. (Toronto [Canada] 2013); M.P.H. (Waterloo [Canada] 2014) [2020]
- TIFFANIE L. MARKSBURY, Assistant in Medicine; Adjunct Instructor in Nursing B.S.N. (Belmont 2000); M.S.N. (Emory 2007); D.N.P. (Georgia State 2017) [2015]
- TIFFANIE MARKUS, Research Assistant Professor of Health Policy
 Ph.D. (Southern Illinois 2002) [2015]
- AIMEE W. MARLAR, Assistant in Anesthesiology B.S. (Auburn 2000); M.S. (Trevecca Nazarene

2012) [2012]

- LAWRENCE J. MARNETT, Dean of Basic Sciences; University Professor of Biochemistry and Chemistry; Mary Geddes Stahlman Chan in Cancer Research; Professor of Chemistry; Professor of Pharmacology B.S. (Rockhurst 1969); Ph.D. (Duke 1973) [1282]
- SAMUEL R. MARNEY, JR., Associate Professor of Medicine, Emeritus B.A., M.D. (Virginia 1955, 1960) [1968]
- RENE MAROIS, Professor of Psychology; Professor of Radiology & Radiological Sciences; Chair of Psychology
 - B.S. (McGill [Canada] 1986), M.S. (Dalhousie [Canada] 1989); Ph.D. (Yale 1996) [1999]
- KYLE ARTHUR MAROSE, Assistant Professor of Clinical Anesthesiology B.S. (Indiana, Bloomington 2010); M.D. (Indiana, Indianapolis 2015) [2020]
- KRISTIN EHST MARTEL, Assistant Clinical Professor of Pediatrics B.S., M.D. (Vanderbilt 1999, 2003) [2007]
- DANN C. MARTIN, Assistant Professor of Radiology & Radiological Sciences B.S., M.S. (Johns Hopkins 2008, 2009); M.D. (Tufts 2013) [2020]

- ELIZABETH N. MARTIN, Assistant Professor of Physical Medicine and Rehabilitation B.S., M.A. (Johns Hopkins 2005, 2006); M.D., M.P.H. (Oregon Health and Science 2012, 2012) [2019]
- GLENROY DEAN A. MARTIN, Adjoint Assistant Professor of Chemistry; Adjunct Assistant Professor of Pharmacology B.Sc., Ph.D. (West Indies [Jamaica] 1996, 2003) [2015]
- HANNAH K. MARTIN, Assistant Professor of Clinical Pediatrics B.S. (Southern Adventist 2013); M.D. (Loma Linda 2017) [2020]
- LEWIS P. MARTIN, Assistant Clinical Professor of Orthopaedic Surgery and Rehabilitation B.S., M.S., M.D. (Medical College of Virginia 1989, 1993, 1997) [2018]
- MARIE H. MARTIN, Assistant Professor of Health Policy B.A. M Ed. (Vanderbik 1995, 2006); Ph.D.

(Tennessee State 20) 6) [2016]

- PETERR. MART N, Professor of Psychiatry and Benavioral Sciences; Professor of Pharmacology B.Sc., M.D. (McGill [Canada] 1971, 1975); M.Sc. (Toropto [Canada] 1979) [1986]
- RAYMOND S. MARTIN III, Associate Clinical Professor of Surgery at St. Thomas Medical Center
 - B.A. (Vanderbilt 1972); M.D. (Johns Hopkins 1976) [1987]
- RITA MANRY MARTIN, Assistant in Surgery B.A. (University of the South 2003); M.S.N. (Vanderbilt 2009) [2011]
- SARA F. MARTIN, Assistant Professor of Medicine B.S., M.D. (North Carolina 2002, 2006) [2010]
- CONCEPCION GABRIELE MARTINEZ, Instructor in Clinical Medicine; Instructor in Pediatrics B.A. (North Texas 1985); M.D. (Texas, San Antonio 1991) [2020]
- J. ANDRES MARTINEZ, Assistant Professor of Clinical Pediatrics
- B.S., M.D. (South Alabama 1995, 1999) [2003] WILLIAM MARTINEZ, Assistant Professor of
- Medicine
 A.B. (Dartmouth 1999); M.S. (California,
 Parkalay 2005); M.D. (California, San Francisco
- Berkeley 2005); M.D. (California, San Francisco 2007) [2013]
 JEFFREY E. MARTUS, Associate Professor of
- Orthopaedic Surgery
 B.S.E., M.S., M.D. (Michigan 1996, 1998, 2001)
 [2007]
- DEBBIE A. MASEMER, Assistant in Neurological Surgery
 B.S.N. (Middle Tennessee State 2000); M.S.N. (Vanderbilt 2006) [2011]

- MONA MASHAYEKHI, Instructor in Medicine B.A. (Chicago 2004); M.D., Ph.D. (Washington University 2013, 2013) [2020]
- EMILY F. MASON, Assistant Professor of Pathology, Microbiology and Immunology A.B. (Harvard 2002); M.D., Ph.D. (Duke 2011, 2011) [2016]
- FRANK M. MASON, Research Assistant Professor of Medicine
 - B.S. (Tennessee 2004); Ph.D. (Duke 2011) [2016]
- LEILANI M. MASON, Associate Professor of Clinical Obstetrics & Gynecology B.S. (Alverno 1998); M.S.N. (Marquette 2001) [2009]
- WENDI MASON, Assistant in Medicine B.S.N. (Tennessee State 1996); M.S.N. (Vanderbilt 2003) [2013]
- PIERRE P. MASSION, Cornelius Vanderbilt Chair in Medicine; Professor of Medicine; Professor of Radiology & Radiological Sciences B.S., M.D. (Université Catholique de Louvain [Belgium] 1983, 1987) [2001]
- KELLEY J. MAST, Assistant Professor of Pathology, Microbiology and Immunology B.S. (Kent State 2001); M.D. (Northeastern Ohio Universities 2005) [2014]
- DORA SZTIPANOVITS MATHE, Assistant Professor of Clinical Ophthalmology and Visual Sciences B.S. (Washington University 2002); M.S. (Vanderbilt 2004); O.D. (California, Berkeley 2008) [2011]
- LESLEE NISSING MATHENY, Assistant Professo of Medicine B.S. (North Carolina 2006); M.D. (Louisiana State 2011) [2016]
- MICHAEL E. MATHENY, Associate Professor of Biomedical Informatics; Associate Professor of Biostatistics; Associate Professor of Medicine B.S., M.D. (Kentucky, Le ington 1997, 2001); M.S. (Massachusetts Institute of Technology 2006); M.P.H. (Harvard 2007) [2007]
- JESSICA L. MATHER, Assistant Professor of Clinical Ophthalmology and Visual Sciences B.S. (Florida State 2006); M.D. (East Tennessee State 2011) [2015]
- ROSHAN K. MATHEW, Assistant Clinical Professor in Medicine M.B.B.Ch. (Kasturba Medical [India] 1993) [2017]
- LETHA MATHEWS, Professor of Clinical Anesthesiology M.B.B.S. (Gauhati [India] 1981) [1994]

- LYNN M. MATRISIAN, Adjunct Professor of Pharmacology B.S. (Bloomsburg 1975); Ph.D. (Arizona 1982); M.B.A. (Vanderbilt 2013) [1986]
- LEA K. MATSUOKA, Associate Professor of Surgery
 - B.A. (Claremont McKenna College 1998); M.D. (Southern California 2002) [2017]
- MELISSA MATTHEWS, Assistant in Pediatric Surgery
 - B.S.N. (Mississippi 2008); M.S.N. (Vanderbilt 2012) [2014]
- ROBERT T. MATTHEWS, Research Associate Professor of Molecular Physiology and Biophysics
 - B.S. (Ursinus 1971); Ph.D. (Florida 1978) [2005]
- JEFFREY MATTINGLY, Assistant Professor of Clinical Ophthalmology & Visual Sciences B.S. (Texas, Dallas 2009), M.D. (Texas, Houston 2015) [2020]
- ROBERT J. MATUSIK, William L. Bray Chair in Urology, Professor of Cell and Developmental Biology; Professor of Urology

 5.5. (Loyola 1970); Ph.D. (Rochester 1976)
- PAWEL J. MATUSZ, Adjoint Professor of Hearing & Speech Sciences
 - Ph.D. (London [U.K.] 2013) [2018]
- and Behavioral Sciences; Adjunct Assistant Professor of Psychiatry and Behavioral Sciences; Adjunct Assistant Professor of Psychology B.A. (Queen's [Canada] 2001); M.S., Ph.D. (Utah 2004, 2007) [2016]
- SUSAN M. MAURER, Assistant Professor of Clinical Surgery
 - B.S. (Indiana, Bloomington 2009); M.D. (Indiana, Indianapolis 2013) [2019]
- LOUISE ANN MAWN, Professor of Ophthalmology and Visual Sciences; Associate Professor of Neurological Surgery B.A. (Duke 1985); M.D. (Wake Forest 1990) [1998]
- G. PATRICK MAXWELL, Assistant Clinical Professor of Plastic Surgery B.S., M.D. (Vanderbilt 1968, 1972) [1981]
- ANGELA C. MAXWELL-HORN, Assistant Professor of Pediatrics
 - B.S. (Wheaton 2002); M.D. (Rush 2007) [2015]
- ADDISON K. MAY, Adjoint Professor of Surgery B.A. (Virginia 1982); M.D. (Medical University of South Carolina 1988) [2001]
- JAMES M. MAY, Professor of Medicine; Professor of Molecular Physiology and Biophysics B.S. (Yale 1969); M.D. (Vanderbilt 1973) [1986]

MICHAEL E. MAY, Assistant Professor of Medicine B.S. (Spring Hill 1971); Ph.D., M.D. (Medical University of South Carolina 1976, 1978) [1986]

- LINDSAY SATTERWHITE MAYBERRY, Assistant Professor of Medicine B.A. (Vanderbilt 2006); M.S. (North Carolina,
 - Greensboro 2008); M.S., Ph.D. (Vanderbilt 2010, 2012) [2014]
- INGRID A. MAYER, Ingram Professor of Cancer Research; Professor of Medicine M.D. (Sao Paulo [Brazil] 1993); M.S.C.I. (Vanderbilt 2006) [2003]
- WILLIAM H. MAYNARD, Assistant Professor of Clinical Medicine
 - B.A. (Vanderbilt 1987); M.D. (UT Health Science Center [Tennessee] 1992) [1996]
- PATRICK O'NEAL MAYNORD, Assistant Professor of Anesthesiology; Assistant Professor of Clinical Pediatrics
 - B.S. (Tennessee 1999); M.D. (UT Health Science Center [Tennessee] 2004) [2011]
- JACKIEL R. MAYO, Assistant Professor of Clinical Radiology and Radiological Sciences M.D. (Cape Town [South Africa] 1968) [1996]
- KATHLEEN A. MAYOR-LYNN, Assistant Clinical Professor of Obstetrics and Gynecology B.S. (Florida 1996); M.D. (Miami [Florida] 2002); M.S.C.I. (Florida 2008) [2015]
- FRANCISCO J. MAYORQUIN, Assistant Clinical Professor of Medicine B.A., M.D. (South Florida 1984, 1989) [1996]
- MURRAY J. MAZER, Associate Professor of Radiology & Radiological Sciences; Assistant Professor of Surgery B.Sc., M.D. (Manitoba [Can. o.], 1965, 1969)
- [1982] STEPHANIE A. MCABEE, Assistant Projessor of Medicine
 - B.S., M.D. (Vanderbilt 1997, 2001) [2008]
- NATALIE NESMITH MCC. The Assistant Professor of Medicine
 B.S. (Georgia 2009); M.D. (Vanderbilt 2013)
 [2018]
- MICHAEL DOUGLAS MCCANN, Assistant Professor of Clinical Medicine B.S. (Allegheny 2012); M.D. (Pennsylvania State 2016) [2020]
- KAREN R. MCCARTY, Assistant in Medicine B.S.N., M.S.N. (Vanderbilt 1986, 1992) [2004]
- DEVIN L. MCCASLIN, Adjunct Associate Professor of Hearing and Speech Sciences B.S. (Northern Michigan 1992); M.S. (Wayne State 1995); Ph.D. (Ohio State 1999) [2003]
- LAUREN N. MCCLAIN, Assistant Clinical Professor of Pediatrics B.S., M.D. (Arkansas 2006, 2010) [2015]

- MARK S. MCCLAIN, Research Associate Professor of Medicine
 - B.S. (Ohio State 1987); Ph.D. (Michigan 1992) [1999]
- ROBERT W. MCCLURE, Assistant Clinical Professor of Medicine
 - B.S. (Lipscomb 1982); M.D. (Vanderbilt 1986) [1992]
- STEPHANIE C. MCCLURE, Adjunct Professor of Medicine
 - B.S. (Free Will Baptist Bible College 1983); M.D. (East Tennessee State 1987) [2014]
- NICOLE STREIFF MCCOIN, Associate Professor of Emergency Medicine
 - B.S., M.D. (Vanderbilt 1999, 2003) [2006]
- JOSHUA M. MCCOLLUM, Clinical Professor of Pediatrics
 - B.S. (Lipscomb 1993); M.D. (UT Health Science Center [Tennessee] 1998) [2003]
- JAMIE LOWE MCCORD, Assistant in Medicine A.S. (Florida College 2003); B.S.N. (Western Kentucky 2006); M.S.N. (Vanderbilt 2011) [2012]
- ALZISON FECK MCCOY, Assistant Professor of Biomedical Informatics
- B.S. Paylor 2006); M.S., Ph.D. (Vanderbilt 2008, 2010) [2018]
- JACOB A. MCCOY, Assistant Professor of Urology M.S. (Baylor 2007); M.D. (Texas 2013) [2018]
- DEBRA J. MCCROSKEY, Assistant Professor of Clinical Pediatrics; Assistant Professor of Clinical Medicine
 - B.S. (Wisconsin, Milwaukee 1983); M.D. (Kansas 1984) [1995]
- TONNA MCCUTCHEON, Assistant in Surgery B.A., B.S.N. (Ohio Wesleyan 1990, 1994); M.S.N. (Southern Indiana 2006) [2010]
- HEATHER L. MCDANIEL, Assistant Professor of Clinical Pediatrics
 - B.S. (Indiana, Bloomington 1999); M.S. (Indiana-Purdue, Fort Wayne 2000); M.D. (Indiana, Indianapolis 2005) [2011]
- JULIA MCDANIEL, Assistant in Medicine B.S.N. (Lipscomb 2010); M.S.N. (Vanderbilt 2014) [2015]
- MICHEL A. MCDONALD, Assistant Professor of Clinical Dermatology
 - A.B. (Duke 1989); M.D. (Louisville 1993); M.B.A. (Tennessee 2005) [1997]
- MORGAN FITZ MCDONALD, Assistant Clinical Professor of Medicine
 - B.A., M.D. (Vanderbilt 1999, 2003) [2008]
- OLIVER MCDONALD, Assistant Professor of Pathology, Microbiology and Immunology B.S. (Tennessee, Chattanooga 2000); Ph.D., M.D. (Virginia 2005, 2007) [2013]

- T. A. MARIE MCDONALD, Research Instructor in Neurology
 - B.A. (California State 2007); M.S., Ph.D. (Wisconsin 2011, 2016) [2018]
- W. HAYES MCDONALD, Research Assistant Professor of Biochemistry
 B.S. (University of the South 1993); Ph.D. (Vanderbilt 1999) [2008]
- KATHERINE E. MCDONELL, Assistant Professor of Neurology
 - B.A. (Washington University 2005); M.D. (Northwestern 2010) [2014]
- JULIE MCELROY, Assistant Clinical Professor of Pediatrics
 - B.S. (Georgia 2002); M.D. (Mercer 2006) [2009]
- MATTHEW D. MCEVOY, Professor of Anesthesiology; Professor of Surgery B.A. (Harvard 1997); M.D. (Medical University of South Carolina 2003) [2013]
- ELIZABETH L. MCFARLIN, Assistant Clinical Professor of Pediatrics B.S. (Lipscomb 2004); M.D. (East Tennessee State 2008) [2012]
- JAMES R. MCFERRIN, Assistant Professor of Clinical Psychiatry and Behavioral SciencesB.A. (Vanderbilt 1971); M.D. (UT Health Science Center [Tennessee] 1974) [1982]
- DANIEL MCGINLEY, Assistant Clinical Professor of Pediatrics B A (Wake Forest 2004): M D (East Tenn Sec.
 - B.A. (Wake Forest 2004); M.D. (East Tennesset 2008) [2012]
- CATHERINE C. MCGOWAN, Associate Professor of Medicine
 - B.A., M.D. (Kansas 1983, 1987) [1995]
- OWEN PATRICK MCGUINNESS, Professor of Molecular Physiology and Biophysics B.S. (SUNY, Stony Brook 1978); Ph.D. (Louisiana State 1983) [1984]
- PHILIP MICHAEL MCGUIRE, Assistant Clinical Professor of Radiology and Padiological Sciences B.S. (Notre Dame 1988); M.D. (Vanderbilt 1992) [2009]
- HASSANE S. MCHAOURAB, Louise B. McGavock Chair; Professor of Molecular Physiology and Biophysics; Professor of Chemistry B.S., M.S. (American University of Beirut [Lebanon] 1987, 1989); Ph.D. (Medical College of Wisconsin 1993) [2000]
- MICHAEL J. MCHUGH, Associate Clinical Professor of Orthopaedic Surgery and Rehabilitation B.S. (Oregon 1980); M.D. (Johns Hopkins 1984) [2000]

- MAUREEN MCHUGO, Research Assistant Professor of Psychiatry and Behavioral Sciences B.S. (Pittsburgh 2003); Ph.D. (Vanderbilt 2014) [2015]
- DAVID RICHARD MCILROY, Associate Professor of Anesthesiology M.B.B.S., M.D. (Monash [Australia] 1993, 2017)
- J. OLIVER MCINTYRE, Research Professor of Pharmacology; Research Professor of Radiology and Radiological Sciences B.A., M.A. (Cambridge [U.K.] 1972, 1975); Ph.D. (Vanderbilt 1978) [1980]
- JAMES A. MCKANNA, Associate Professor of Cell and Developmental Biology, Emeritus B.A. (Saint Olaf 1966); Ph.D. (Wisconsin 1972) [1976]
- TARA MCKAY, Assistant Professor of Medicine, Health and Society; Assistant Professor of Health Policy
 - B.A. (Occidental 2005), M.A., Ph.D. (California, Los Angeles 2008, 2013) [2015]
- SAMUEL J. MC&ENNA, Professor of Oral and Maxillof icial Surgery; Chair of the Department of Oral and Maxillofacial Surgery
 - B.A. (California, San Diego 1976); D.D.S. (California, Los Angeles 1980); M.D. (Vanderbilt 1983) [1985]
- ROBERT KENNETH MCKENZIE, Assistant in Medicine
 - B.A., M.A., M.S. (Trevecca Nazarene 1990, 1994, 2007) [2016]
- LINDSEY COLMAN MCKERNAN, Assistant Professor of Psychiatry and Behavioral Sciences; Assistant Professor of Physical Medicine and Rehabilitation
 - B.A., M.A., Ph.D. (Tennessee 2006, 2010, 2012); M.P.H. (Vanderbilt 2019) [2014]
- ELIOT THOMAS MCKINLEY, Research Instructor in Cell & Developmental Biology B.S.E. (Case Western Reserve 2007); M.S., Ph.D. (Vanderbilt 2011, 2013) [2018]
- JARED JOHN MCKINNEY, Associate Professor of Emergency Medicine B.S. (Purdue 1999); M.D. (Vanderbilt 2003) [2006]
- JEFFRY P. MCKINZIE, Assistant Professor of Emergency Medicine; Assistant Professor of Pediatrics
 - B.S. (Harding 1982); M.D. (Medical College of Virginia 1986) [1991]
- COLIN D. MCKNIGHT, Assistant Professor of Radiology and Radiological Sciences B.S. (Duke 2004); M.D. (Oregon Health and Science 2009) [2016]

- ROBERT JOSEPH MCKNIGHT, Assistant Professor of Clinical Medicine
 - B.S., M.D. (Kansas 2013, 2017) [2020]
- F. JOSEPH MCLAUGHLIN III, Associate Professor of Pediatrics; Associate Clinical Professor of Psychology
 - B.A. (Vanderbilt 1971); M.A., Ph.D. (Peabody 1973, 1979) [1981]
- MICHAEL J. MCLEAN, Associate Professor of Neurology; Associate Professor of Pharmacology A.B. (Chicago 1970); Ph.D., M.D. (Virginia 1976, 1978) [1985]
- ALEXANDER C. MCLEOD, Clinical Professor of Medicine, Emeritus
 - A.B. (Princeton 1956); M.D. (Duke 1960); M.B.A. (Vanderbilt 1988) [1999]
- BRUCE C. MCLEOD, Assistant Clinical Professor of Oral and Maxillofacial Surgery B.S. (Texas Christian 1980); D.D.S. (National Naval Dental School 1993) [2007]
- DENNIS O. MCLEOD II, Assistant Professor of Clinical Physical Medicine and Rehabilitation B.S. (Morehouse 2008); M.S., Ph.D. (Florida 2014, 2017) [2019]
- KARIE A. MCLEVAIN-WELLS, Assistant Clinical Professor of Pediatrics B.A. (Lipscomb 1990); M.D. (East Tennessee State 1996) [2000]
- DOUGLAS G. MCMAHON, Stevenson Chair in Biological Sciences; Professor of Biological Sciences; Professor of Ophthalmology & Visual Sciences; Professor of Pharmacology B.A., Ph.D. (Virginia 1980, 1986) [2002]
- KEVIN T. MCMANUS, Associate Professor of Clinical Radiology and Radiological Sciences B.S. (Gannon 1978); M.D. (H. hneman Medical 1982) [1999]
- ELISE D. MCMILLAN, Senior Associate in Psychiatry and Behavioral Sciences B.A. (Texas Tech University 1974); J.D. (Nashville School of Law 1993) [1995]
- CANDACE D. MCNAUGHTON, Associate Professor of Emergency Medicine M.D. (Washington University 2006); B.S. (Brigham Young 2007); M.P.H. (Vanderbilt 2012) [2010]
- MARY K. MCNEAL, Assistant Clinical Professor of Pediatrics
 - B.S. (Western Kentucky 1994); M.D. (Louisville 1998) [2012]
- TIMOTHY E. MCNUTT, Assistant Clinical Professor of Oral and Maxillofacial Surgery B.A. (Tennessee 1982); D.D.S. (UT Health Science Center [Tennessee] 1986) [1999]

- MELISSA L. MCPHEETERS, Research Professor of Health Policy; Research Professor of Biomedical Informatics
 - B.A. (Wisconsin 1992); M.P.H., Ph.D. (North Carolina 1996, 2003) [2007]
- JOHN A. MCPHERSON, Drs. Sol and Marvin Rosenblum Chair in Medicine; Professor of Medicine
 - B.A. (Princeton 1989); M.D. (California, Los Angeles 1993) [2006]
- KATIE ANN MCPHERSON, Assistant Professor of Medicine
 - B.A. (Hanover 2009); M.D. (Indiana, Indianapolis 2013) [2020]
- JESSICA L. MCQUERRY, Instructor in Clinical Orthopaedic Surgery B.S., M.D. (Kentucky, Lexington 2009, 2013) [2019]
- LAURARUTH MCQUISTON Assistant in Emergency Medicine
 B.S. (Campbell 2007); B.S., M.S. (Nebraska, Onaha 2012, 2013); M.S. (Campbell 2014) 2017
- JOHN R. MCRAE, Assistant Clinical Professor of Medicine
 - B.S. Ceorgia Institute of Technology 1968); M.D. (Duke 1972) [1981]
- DENNIS T. MCWEENEY, Associate Professor of Clinical Obstetrics and Gynecology B.S. (Hahnemann Medical 1997); D.O. (Arizona College of Osteopathic Medicine 2003); M.Sc.
- (Mayo Clinic 2010) [2010] BETH P. MEADOR, Assistant in Medicine B.S.N. (Eastern Kentucky 1975); M.S.N. (Vanderbilt 1977) [1988]
- CLIFTON K. MEADOR, Professor of Medicine, Emeritus
 - B.A., M.D. (Vanderbilt 1952, 1955) [1973]
- KEITH G. MEADOR, Professor of Psychiatry and Behavioral Sciences; Professor of Health Policy; Director, Center for Biomedical Ethics and Society
 - B.A. (Vanderbilt 1978); M.D. (Louisville 1982); Th.M. (Duke 1986); M.P.H. (North Carolina 1988) [2010]
- M. PORTER MEADORS III, Assistant Clinical Professor of MedicineB.S. (Washington and Lee 1979); M.D. (Mississippi 1984) [1990]
- ANNA L. MEANS, Research Associate Professor of Surgery; Research Associate Professor of Cell and Developmental Biology B.S. (Ohio 1984); Ph.D. (Wisconsin, Milwaukee 1991) [2000]

- CLAIRE E. MEENA-LEIST, Assistant Clinical Professor of Pathology, Microbiology and Immunology
 - B.S., M.D. (Louisville 1982, 1987) [2010]
- LESLIE M. MEENDERINK, Instructor in Medicine B.S. (Yale 2000); Ph.D., M.D. (Vanderbilt 2010, 2012) [2019]
- ANTJE MEFFERD, Assistant Professor of Hearing and Speech Sciences

 M.A. (Nobrecke, Omebe 2004): Ph.D. (Nobrecke)
 - M.A. (Nebraska, Omaha 2004); Ph.D. (Nebraska 2008) [2014]
- MITRA MEHRAD, Assistant Professor of Pathology, Microbiology and Immunology M.D. (Shiraz [Iran] 2007) [2016]
- DEEPAK MEHROTRA, Clinical Professor of Pediatrics
 - B.S. (Millsaps 1988); M.D. (Mississippi 1992) [1998]
- MELISSA B. MEIER, Assistant Clinical Professor of Oral and Maxillofacial Surgery B.S. (Vanderbilt 2010); D.M.D. (Tufts 2015) [2017]
- RENATE KRISTINA MEIER, Assistant in Obstetrics & Gynecology B.A., B.S., M.S. (Louisville 2005, 2005, 2009); M.S.N. (Vanderbilt 2014) [2018]
- JENS MEILER, Associate Professor of Pharmacology; Associate Professor of Biomedical Informatics; Research Professor of Chemistry VorDiplom, Diploma (Leipzig {Germany] 1993, 1998); Ph.D. (Frankfurt [Germany] 2001) [2005]
- BRUCE J. MELANCON, Research Assistant Professor of Pharmacology B.S. (Louisiana State 2002); Ph.D. (Notre Dance 2008) [2012]
- GORDON L. MELTON, Assistant in Medicine B.B.A. (Middle Tennessee State 1955, M.S.N. (Vanderbilt 1999) [2010]
- MYLES FRANK MELTON, Instructor in Emergency Medicine
 B.A. (Seattle Pacific 2011); M.D. (Cornell 2016) [2019]
- JONATHAN N. MENACHEM, Assistant Professor of Medicine; Assistant Professor of Pediatrics B.S. (Duke 2000); M.D. (Tulane 2010) [2017]
- GREGORY A. MENCIO, Neil E. Green, M.D. Chair in Pediatric Orthopaedics; Professor of Orthopaedic Surgery A.B., M.D. (Duke 1977, 1981) [1991]
- LISA A. MENDES, Professor of Medicine
- B.A. (Ithaca 1983); M.D. (Connecticut 1987) [2002]
- CARRIE CAMPBELL MCCOY MENSER, Assistant Professor of Clinical Anesthesiology B.S., M.D. (Vanderbilt 2004, 2008) [2013]

- CHRISTOPHER P. MENZEL, Instructor in Clinical Surgery
 - B.A. (Cornell 2007); M.S. (Georgetown 2009); M.D. (Medical University of South Carolina 2014) [2019]
- DAVID F. MEOLI, Assistant Professor of Medicine B.A. (Dartmouth 2000); M.S., M.D., Ph.D. (Rochester 2006, 2011, 2011) [2017]
- STEVEN G. MERANZE, Associate Dean for Faculty Affairs; Professor of Radiology and Radiological Sciences; Professor of Surgery; Professor of Urology; Vice Chair, Department of Radiology and Radiological Sciences B.S. (Philadelphia 1975); M.D. (Thomas Jefferson 1979) [1992]
- SUSAN L. MERCER, Adjunct Assistant Professor of Pharmacology

 B.S. (Soton Hill 2004): Ph.D. (Maryland 2008)
 - B.S. (Seton Hill 2004); Ph.D. (Maryland 2008) [2008]
- CHRISTOPHER NELSON WERRIKH, Research Assistan Professor of Diochemistry B.A. (Phaca 2002) J.A.A. (Brandeis 2009); Ph.D. (University of Massachusetts 2012) [2019]
- Professor of Pathology, Microbiology and Immurology
 - B.S. (Houston 2002); M.S., Ph.D. (Brandeis 2006, 2009) [2018]
- WAZTER H. MERRILL, Professor of Cardiac Surgery; Chief of Staff, Vanderbilt University Hosptial
 - B.A. (University of the South 1970); M.D. (Johns Hopkins 1974) [2012]
- WILLIAM DAVID MERRYMAN, Walters Family Chair; Professor of Biomedical Engineering; Professor of Medicine; Professor of Pediatrics; Professor of Pharmacology; Associate Chair of Biomedical Engineering B.S., M.S. (Tennessee 2001, 2002); Ph.D. (Pittsburgh 2007) [2009]
- HOWARD R. MERTZ, Assistant Clinical Professor of Medicine
 - B.A. (Johns Hopkins 1982); M.D. (Baylor 1986) [1994]
- INGRID M. MESZOELY, Ingram Associate Professor of Cancer Research; Associate Professor of Surgery B.A. (Northeastern 1985); M.D. (Boston University 1993) [2004]
- DIANA METROPULOS, Assistant Professor of Pediatrics
 - B.A., B.S. (Illinois, Champaign 2006, 2006); M.S. (Rosalind Franklin University of Medicine and Science 2007); M.D. (Illinois, College of Medicine, Rockford 2011) [2019]

- JONATHAN M. METZL, Frederick B. Rentschler II Chair; Professor of Medicine, Health & Society; Professor of Sociology; Professor of History; Professor of Psychiatry and Behavioral Sciences; Director of the Center for Medicine, Health and Society
 - B.A. (Missouri, Kansas City 1991); M.A. (Stanford 1995); M.D. (Missouri, Kansas City 1997); Ph.D. (Michigan 2001) [2011]
- ALVIN H. MEYER, JR., Assistant Clinical Professor of Dermatology B.S. (Louisiana State, Shreveport 1963); M.D. (Louisiana State 1967) [1974]
- BARBARA O. MEYRICK-CLARRY, Professor of Pathology, Microbiology and Immunology, Emerita M.Phil., Ph.D. (London [U.K.] 1974, 1976) [1981]
- SARAH MIAN, Clinical Instructor in Pediatrics B.S., M.P.H. (North Carolina 2008, 2012); M.D. (East Carolina 2013) [2016]
- HEATHER A. MICHALAK, Assistant Clinical Professor of Pediatrics B.A. (Wooster 1998); M.D. (Pennsylvania State 2002) [2009]
- GREGORY FRANCIS MICHAUD, Professor of Medicine B.A. (Haverford 1983); M.D. (Maryland, Baltimore 1990) [2017]
- CHRISTINE M. MICHEEL, Research Assistant Professor of Medicine A.B. (Washington University 1999); Ph.D. (California, Berkeley 2005) [2013]
- ANDREW A. MICHEL, Assistant Professor of Psychiatry and Behavioral Sciences B.A. (Baylor 1999); M.D. (Vanderbilt 2003) [2009]
- MARC A. MICKIEWICZ, Assistant Chaical Professor of Emergency Medicine B.S. (Illinois, Champaign 1905), M.D. (Illinois, College of Medicine, Chicago 1999) [2003]
- MICHAEL I. MIGA, Harvie Branscomb Chair; Professor of Biomedical Engineering; Professor of Neurological Surgery; Professor of Otolaryngology - Head and Neck Surgery; Professor of Radiology and Radiological Sciences B.S., M.S. (Rhode Island 1992, 1994); Ph.D. (Dartmouth 1998) [2000]
- MARTIN C. MIHM, JR., Adjunct Professor of Pathology, Microbiology and Immunology A.B. (Duquesne 1955); M.D. (Pittsburgh 1961) [1989]
- CAROL PROOPS MILAM, Assistant Clinical Professor of Psychiatry and Behavioral Sciences B.A., M.D. (West Virginia 1982, 1991) [1992]

- DOUGLAS F. MILAM, Associate Professor of Urology
 - B.S.E. (Pennsylvania 1980); M.S., M.D. (West Virginia 1982, 1986) [1991]
- LISA D. MILAM, Associate in Obstetrics & Gynecology
 - B.S.N. (Bethel College, Nashville [Tennessee] 1991); M.S.N. (Vanderbilt 1996) [2012]
- MERRICK MILES, Assistant Professor of Anesthesiology
 - M.D. (Wake Forest 2010); B.S. (North Carolina State 0) [2015]
- ALISON N. MILLER, Assistant Professor of Medicine
 - B.S., M.D. (North Carolina 1996, 2001) [2007]
- ANNE M. MILLER, Adjunct Research Associate Professor of Anesthesiology
 - B.A. (Monash [Australia] 1993); Ph.D. (Queensland [Australia] 2004) [2007]
- BONNIE M. MILLER, Professor of Medical Education & Administration (VUMC); Professor of Clinical Surgery
 - 3.A. (Coloração College 1975); M.D. (Oklahoma 1980) [1/87]
- DAVID M. MILLER III, Professor Emeritus of Cell and Ive elopmental Biology; Research Professor of Cell & Developmental Biology
 - B.S. (Southern Mississippi 1973); Ph.D. (Rice 1981) [1994]
- PVA KATHRYN MILLER, Assistant Clinical Professor in Medicine
 - B.S. (Abilene Christian 1997); M.D. (Texas A & M 2002); M.P.H. (Vanderbilt 2006) [2007]
- GERALDINE G. MILLER, Professor of Medicine, Emerita
 - S.B. (Massachusetts Institute of Technology 1969); M.D. (California, San Diego 1973) [1990]
- H CATHERINE MILLER, Assistant Professor of Clinical Medicine B.S. (Notre Dame 2012); M.D. (University of
 - B.S. (Notre Dame 2012); M.D. (University of Washington 2017) [2020]
- HOLLY E. MILLER, Assistant in Pediatrics B.S., M.S.N. (Vanderbilt 2006, 2008) [2013] JAMI L. MILLER,
 - Assistant Professor of Dermatology B.A., M.D. (Virginia 1984, 1988) [1996]
- JESSICA L. MILLER, Clinical Instructor in Pediatrics
 - B.S., M.P.H. (Georgia 2008, 2008); M.D. (Wake Forest 2012) [2017]
- KAREN F. MILLER, Senior Associate in Emergency Medicine
 - B.S.N. (Nazareth College [Michigan] 1985); M.P.A. (Western Michigan 2001) [2007]

- MATTHEW S. MILLER, Assistant Professor of Medicine; Assistant Professor of Pediatrics B.S. (Abilene Christian 1997); M.D. (Texas A & M 2002) [2007]
- MEAGAN MEREDITH MILLER, Assistant in Anesthesiology
 - B.S.N. (Alabama 2012); M.S.N. (Alabama, Birmingham 2016) [2017]
- NATHANIEL M. MILLER, Assistant Professor of Emergency Medicine
 - B.S. (Texas 2008); M.D. (North Carolina 2015) [2018]
- NICOLE L. MILLER, Associate Professor of Urology
 - A.D.N. (Gwynedd-Mercy 1993); B.A. (La Salle 1995); M.D. (Pittsburgh 2000) [2007]
- RANDOLPH A. MILLER, Professor of Biomedical Informatics, Emeritus
 - A.B. (Princeton 1971); M.D. (Pittsburgh 1976) [1994]
- RICHARD S. MILLER, Professor of Surgery B.A. (South Florida 1980); M.D. (Universidad CETEC [Dominican Republic] 1983) [2002]
- ROBERT F. MILLER, Patricia and Rodes Hart Chair in Medicine; Professor of Clinical Medicine B.A. (Colorado College 1976); M.D. (Vanderbilt 1982) [2001]
- MEREDITH MILLIGAN-DICK, Assistant Professor of Clinical Neurology
 B.S. (Oklahoma City 2003); M.D. (Oklahoma 2009) [2018]
- BRYAN MILLIS, Research Assistant Professor of Cell & Developmental Biology; Research Assistant Professor of Biomedic al Engineering Ph.D. (George Mason 2012) [2015]
- JAMES B. MILLS, JR., Assistant in Medicine B.S. (Murray State 2007); M.S.N. (Yanderbilt 2012) [2012]
- GINGER LOHR MILNE, Resear in Associate Professor of Medicine; Research Associate Professor of Pharmacology B.S. (Wake Forest 1997); Ph.D. (Vanderbilt 2002) [2005]
- MONICA MARIE MILOVANCEV, Assistant in Pediatric Surgery B.S.N. (Mount Mercy 2007); M.S.N. (Akron 2012) [2014]
- KELLY LOUISE MISHRA, Assistant Professor of Anesthesiology
 - B.S. (Murray State 2008); M.D. (Vanderbilt 2012) [2017]
- PUNEET MISHRA, Assistant Professor of Anesthesiology B.S., M.D. (Vanderbilt 2008, 2013) [2018]

- SMRITI MISHRA, Research Instructor of Molecular Physiology & Biophysics
 - Ph.D. (Jawaharlal Nehru [India] 2000) [2014]
- DINA H. MISHU, Clinical Professor of Pediatrics M.D. (Spartan [Saint Lucia] 1985) [1991]
- RICHA MISRA, Assistant Professor of Clinical Medicine
 - B.A. (Pennsylvania 2000); M.D. (Vanderbilt 2004) [2013]
- SUMATHI K. MISRA, Associate Professor of Medicine
 - M.D., M.P.H. (Pittsburgh 1996, 1996) [2001]
- EVA A. MISTRY,
 - Assistant Professor of Neurology M.B.B.S. (Smt. NHL Municipal Medical College - [India] 2011) [2018]
- KARL EDWARD MISULIS, Professor of Clinical Neurology; Professor of Clinical Biomedical Informatics
 - B.Sc. (Queen's [Canada] 1975); Ph.D. (SUNY, Syracuse 1980); M.D. (Vanderbilt 1982) [1986]
- JASOI (E. MITCHELL) Research Assistant Professor of Michanical Engineering; Research Assistant Professor of Otolaryngology - Head and Neck Surgery
 - B.S. Jennessee Technological 1999); M.S., Ph.D. (Vanderbilt 2002, 2014) [2006]
- KEVIN MAURICE MITCHELL, JR., Assistant Professor of Medicine; Assistant Professor of Pediatrics
 - A.A., Pharm.D. (Florida Agricultural and Mechanical 2004, 2008); M.D. (South Florida 2012) [2016]
- MEGAN C. MITCHELL, Assistant in Pediatrics B.B.A. (Austin Peay State 2007); B.S.N. (Belmont 2009); M.S.N. (Austin Peay State 2017) [2018]
- PHILLIP MICHAEL MITCHELL, Assistant Professor of Orthopaedic Surgery B.A. (Columbia 2009); M.D. (Emory 2013) [2019]
- SABRINA LOUISE MITCHELL, Research Assistant Professor of Ophthalmology & Visual Sciences B.S. (Brescia 1999); Ph.D. (Vanderbilt 2010) [2015]
- WILLIAM M. MITCHELL, Professor of Pathology, Microbiology and Immunology B.A., M.D. (Vanderbilt 1957, 1960); Ph.D. (Johns Hopkins 1966) [1966]
- SHILPI MITTAL, Assistant Professor of Clinical Neurology
 - M.B.B.S. (Aligarh Muslim [India] 2006) [2015]

- AMANDA H. SALANITRO MIXON, Assistant Professor of Medicine B.A. (Earlham School of Religion 1995); M.D. (Texas Tech University 2004); M.P.H. (Alabama, Birmingham 2009) [2010]
- CATHERINE HURLEY MIZE,

Assistant in Pediatrics

- B.A., M.S.N. (Vanderbilt 2010, 2012) [2015]
- DARA ECKERLE MIZE, Assistant Professor of Biomedical Informatics; Assistant Professor of Medicine
 - B.S. (Tennessee 2004); M.D. (Memphis 2008) [2014]
- MATTHEW K. MIZUKAWA, Assistant Clinical Professor of Oral & Maxillofacial Surgery B.S. (Brigham Young 2003); D.M.D. (Nevada, Las Vegas 2007) [2012]
- BRET C. MOBLEY, Associate Professor of Pathology, Microbiology and Immunology A.B. (Stanford 1998); M.S., M.D. (Michigan 2003, 2005) [2010]
- J D. MOCCO, Adjunct Associate Professor of Neurological SurgeryB.S. (Miami 1995); M.D., M.S. (Columbia 2000, 2007) [2011]
- KATHARINA BARBARA MODES, Assistant Professor of Clinical Anesthesiology M.D. (Universität Regensburg [Germany] 2007) [2016]
- MICHAEL T. MODIC, Professor of Radiology & Radiological Sciences
 B.S. (Xavier [Ohio] 1971); M.D. (Case Western Reserve 1975) [2018]
- MARK MOEHLE, Research Instructor in Pharmacology
 B.S. (Centenary College [Lou siana] 2010), Ph.D. (Alabama, Birmingham 2015) [2015]
- SANJAY R. MOHAN, Assistant Professor of Medicine
 B.A. (Johns Hopkins 2000): M.B. (Pennsylvania
- State 2004); M.S.C.I. (Vanderbilt 2014) [2011] HAMED MOJAHED, Adjunct Instructor in Radiology and Radiological Sciences B.S. (Massachusetts 2004); M.S., M.Phil., Ph.D.
- (Columbia 2006, 2009, 2013) [2014] KATHERINE E. MOKE, Assistant in Cardiac Surgery
 - B.S. (California, Los Angeles 2008); B.S.N., M.S.N. (Georgetown 2009, 2014) [2017]
- SUKHBIR S. MOKHA, Professor of Neuroscience & Pharmacology at Meharry Medical College; Adjunct Professor of Pharmacology B.Sc. (Punjab State Medical [India] 1974); M.Sc. (Southampton [U.K.] 1977); Ph.D. (Edinburgh [U.K.] 1981) [1992]

- ANDREW ELMER MOLNAR, JR., Assistant Professor of Psychiatry and Behavioral Sciences B.A. (DePauw 2004); M.A., Ph.D. (Southern Illinois 2008, 2012) [2018]
- KENNETH J. MONAHAN, Assistant Professor of Medicine
 - M.S., M.D. (Virginia 1997, 2001) [2008]
- SALLY H. MONAHAN, Assistant Professor of Clinical Dermatology B.A. (Mississippi State 1997); M.S. (Virginia

1998); M.D. (Mississippi, Jackson 2007) [2011] ABELARDO C. MONCAYO, Senior Lecturer of

- ABELARDO C. MONCAYO, Senior Lecturer of Center for Medicine, Health, & Society; Adjunct Associate Professor of Health Policy B.S., M.S. (Ohio 1988, 1993); Ph.D. (Massachusetts, Boston 1998) [2005]
- DENISE J. MONTAGNINO, Assistant Professor of Clinical Obstetrics & Gynecology B.S. (Florida Atlantic 2003); M.P.H. (Florida State 2007), D.O. (Nova Southeastern 2011) [2020]
- LISA MARIE MONT 3 GIA, Professor of Pharmacology; Professor of Psychiatry and Senavioral Sciences; Professor of Psychology B.S., M.S. (Illinois, Champaign 1989, 1991); Ph.D (Chicago Medical School 1999) [2018]
- MARTIN IGNACIO MONTENOVO, Associate Professor of Surgery
 - M.D. (Universidad Nacional de Rosario [Argentina] 2001) [2019]
- JAY ALAN MONTGOMERY, Assistant Professor of Medicine
 - B.S., M.D. (Kansas 2004, 2008) [2016]
- STEPHEN A. MONTGOMERY, Assistant Professor of Clinical Psychiatry and Behavioral Sciences B.S. (Rhodes College 1990); M.D. (UT Health Science Center [Tennessee] 1994) [2002]
- CECILY MONTGOMERY-IMANI, Instructor in Clinical Medicine; Instructor in Clinical Pediatrics
 - B.S., M.D. (Howard 2008, 2012) [2019]
- LAUREN GOODSON MOODY, Assistant in Obstetrics & Gynecology B.S. (Auburn 2008); M.S. (Vanderbilt 2015) [2015]

Africa] 1986) [2009]

- KARIN C. MOOLMAN, Associate Professor of Clinical Medicine; Associate Professor of Clinical Pediatrics M.B.Ch.B (Universiteit Stellenbosch [South
- SARAH CAITLIN MOON, Lecturer in Law; Instructor in Radiology & Radiological Sciences; Director, PoLI Institute and Innovation Design, Program in Law and Innovation A.M. (Western Kentucky 1998); B.A., J.D. (Vanderbilt 1992, 1998) [2017]

- TROY D. MOON, Associate Professor of Pediatrics B.S. (Florida State 1992); M.P.H. (Alabama, Birmingham 1996); M.D. (Florida 2001) [2007]
- KAREL G. MOONS, Adjunct Professor of Biostatistics
 - M.Sc. (Netherlands Institute for Health Sciences 1994); Ph.D. (Erasmus [Netherlands] 1996) [2005]
- ALEXANDER D. MOORE, Assistant Professor of Anesthesiology
 - A.B. (Bowdoin 2003); M.D. (Tulane 2011) [2017]
- DANIEL J. MOORE, Assistant Professor of Pediatrics; Assistant Professor of Pathology, Microbiology and Immunology A.B. (Harvard 1996); Ph.D., M.D. (Pennsylvania 2003, 2004) [2010]
- DEONNA MOORE, Clinical Instructor in Surgery B.S.N. (Tennessee, Chattanooga 2002); M.S.N., Ph.D. (Vanderbilt 2007, 2016) [2016]
- DONALD E. MOORE, JR., Professor of Medical Education and Administration; Director for the Office of Continuing Professional Development B.A. (Connecticut, Stamford 1972); A.M., Ph.D. (Illinois, Champaign 1975, 1982) [2000]
- JAMES DONALD MOORE, Associate Professor of Clinical Pediatrics
 - B.A., M.D. (Kentucky, Lexington 1987, 1991); M.Mgt. (Vanderbilt 2011) [2000]
- JENNIFER E. MOORE, Clinical Professor of Pediatrics
 - B.S., M.D. (North Carolina 1988, 1992) [1995
- JOHN DAVIS MOORE, Assistant Professor of Clinical Anesthesiology
 - B.S. (Tennessee 1999); M.D. (Wake Forest 2004) [2019]
- KELLY LYNN MOORE, Adjunct Associate Professor of Health Policy B.S., M.D. (Vanderbilt 1994, 2000) M.P.H. (Harvard 2000) [2005]
- MARY E. COURTNEY MOOPE, Research Professor of Molecular Physiology & Biophysics B.S. (Baylor 1974); M.S.N. (Texas, San Antonio 1979); Ph.D. (Vanderbilt 1992) [1983]
- PAUL E. MOORE, Professor of Pediatrics; Associate Professor of Pharmacology; Director, Division of Pediatric Allergy, Immunology and Pulmonary Medicine
 - B.A. (Vanderbilt 1988); M.D. (Harvard 1992) [2001]
- WILLIAM R. MOORE, Clinical Professor of Pediatrics
 - B.S. (Memphis 1978); M.D. (Vanderbilt 1982) [2005]

- SHARON MOORE-CALDWELL, Associate Clinical Professor of Pediatrics B.S. (Grambling State 1986); M.D. (Pittsburgh 1990); M.Div. (Vanderbilt 2009) [1996]
- PAUL L. MOOTS, Professor of Neurology; Associate Professor of Medicine
 - B.S. (Duke 1976); M.D. (Ohio State 1980) [1991]
- ANNA WHORTON MORAD, Associate Professor of Pediatrics
 - B.S. (Auburn 1993); M.D. (Alabama, Birmingham 1997) [2007]
- MANUEL A. MORALES, Assistant Professor of Radiation Oncology B.Sc. (Universidad Nacional de Ingeniería [Peru] 1990); M.S., Ph.D. (Vanderbilt 1997, 2001)
- ALEXANDRA MARIE MORAN, Assistant in Medicine
 - B.S.N. (Auburn 2015); M.S.N. (Vanderbilt 2017) [2018]
- GRACE Q. MORAN. Assistant Clinical Professor of Raciology and Raciological Sciences
 3.3...M.D. (Ph.lippines 1979, 1983) [2011]
- HENRY H. MORAN, Assistant Clinical Professor of Radiology and Radiological Sciences M.D. Caxias do Sul, Rio Grande do Sul 1983) [2013]
- MARY LYNN MORAN, Assistant Clinical Professor of Otolaryngology - Head and Neck Surgery
 - B.S., M.D. (Michigan 1985, 1987) [2019]
- ROBERT SHANNON MORAN, Clinical Instructor in Pediatrics
 - B.A. (Tennessee 2008); M.D. (Meharry Medical 2013) [2020]
- GABRIELA THOMAS MOREL, Assistant Clinical Professor of Pediatrics
 - B.S. (Tulane 1987); M.D. (Louisiana State, New Orleans 1994) [1998]
- VINCENT ANDREW MORELLI, Adjunct Instructor in Medicine
 - M.D. (Southern California 1983) [2015]
- DARIN K. MORGAN, Assistant Clinical Professor of Radiology and Radiological Sciences B.S. (U.S. Air Force Academy 1987); M.D. (Mississippi, Jackson 1998) [2013]
- DAVID S. MORGAN, Associate Professor of Medicine
 - B.A. (Yale 1985); M.D. (Vanderbilt 1990) [1997]
- DOUGLAS R. MORGAN, Adjunct Associate Professor of Medicine
 - B.A., B.E., B.S. (Dartmouth 1977, 1978, 1978); M.P.H. (California, San Francisco 1985); M.D. (Case Western Reserve 1991) [2011]

- JAMES W. MORGAN, Assistant Professor of Physical Medicine and Rehabilitation B.S. (Georgia 2011); M.D. (Tulane 2015) [2020]
- SUSAN L. MORGAN, Clinical Professor of Pediatrics
 - B.S. (Tennessee Technological 1977); M.D. (East Carolina 1987) [1990]
- THOMAS MATTHEW MORGAN, Associate Professor of Pediatrics B.A., M.D. (Boston University 1993, 1997) [2008]
- VICTORIA L. MORGAN, Professor of Radiology & Radiological Sciences; Professor of Neurological Surgery; Professor of Neurology; Associate Professor of Biomedical Engineering B.S. (Wright State 1990); M.S., Ph.D. (Vanderbilt 1994, 1996) [1999]
- WALTER M. MORGAN III, Assistant Professor of Pediatric Surgery; Assistant Professor of Pediatrics B.S.E. (Princeton 1978): M.D. (Vanderbilt 1982)
 - B.S.E. (Princeton 1978); M.D. (Vanderbilt 1982) [1990]
- PETER JOSEPH MORONE, Assistant Professor of Neurological Surgery B.S. (Indiana, Bloomington 2007); M.D. (Indiana, Indianapolis 2012) [2019]
- EMILY ASHTON MORRIS, Assistant Professor of Clinical Pediatrics B.S. (Davidson 2008); M.D. (Florida 2012) [2018]
- JOHN A. MORRIS, JR., Professor of Surgery Professor of Biomedical Informatics; Professor of Surgery at Meharry Medical College B.A. (Trinity College [Connecticus] 1969); M.D. (Kentucky, Lexington 1977) 1284]
- DAVID G. MORRISON, Associate Professor of Ophthalmology and Visual Sciences, Associate Professor of Pediatrics B.S., M.D. (Kentucky, Lexington 1994, 1999) [2003]
- JOSEPH R. MORT, Assistant Chnical Professor of Oral & Maxillofacial Surgery D.D.S. (Buffalo 2014) [2018]
- DOUGLAS P. MORTLOCK, Adjunct Assistant Professor of Molecular Physiology & Biophysics B.A. (Cornell 1990); Ph.D. (Michigan 1997) [2002]
- COLLEEN TRACY MORTON, Associate Professor of Medicine

 M.R.R.Ch. (Witnesterered [South Africal 1002))
 - M.B.B.Ch. (Witwatersrand [South Africa] 1992) [2016]
- MARY HAMILTON MORTON, Assistant in Psychiatry and Behavioral Sciences; Assistant in Pediatrics B.S., M.Ed. (Vanderbilt 2005, 2008) [2011]

- MELISSA M. MORTON, Assistant in Surgery B.S. (Mississippi 2004); M.S.N. (Vanderbilt 2006) [2011]
- MACKENZIE MOSERA, Assistant in Pediatrics B.S., M.A. (College of New Jersey 2015, 2016); M.S. (Michigan 2019) [2019]
- HAROLD H. MOSES, JR., Associate Professor of Neurology
 - B.S., M.D. (North Carolina 1985, 1993) [1997]
- HAROLD L. MOSES, Professor of Cancer Biology, Emeritus; Professor of Medicine; Professor of Pathology, Microbiology and Immunology; Research Professor of Pharmacology B.A. (Berea 1958); M.D. (Vanderbilt 1962) [1985]
- KELVIN A. MOSES, Associate Professor of Urology
 - B.S. (Morehouse 1996); Ph.D., M.D. (Baylor 2003, 2004) [2014]
- JAVID J. MOSLEHI, Associate Professor of Medicin:
 - B. A. (Johns Hopkins 1996); M.D. (Connecticut 20)1) [2014]
- AMES A. MOSLEY, Assistant Professor of Clinical Medicine, Assistant Professor of Clinical Pedictrics
 - B A. (Mt. Vernon Nazarene 1980); M.D. (Ohio State 1985) [2015]
- MATHAN D. MOSLEY, Assistant Professor of Medicine; Assistant Professor of Biomedical Informatics
 - B.S. (Dickinson 1990); M.D., Ph.D. (Case Western Reserve 2009, 2009) [2014]
- CHARLES A. MOSS III, Clinical Professor of Pediatrics
 - B.S. (Rhodes College 1982); M.D. (Alabama, Birmingham 1987) [1990]
- CLAUDIO A. MOSSE, Associate Professor of Pathology, Microbiology and Immunology B.A. (Cornell 1992); M.D., Ph.D. (Virginia 2001, 2001) [2005]
- CARI L. MOTUZAS, Associate Professor of Clinical Radiology & Radiological Sciences B.S. (Auburn 1999); M.D. (South Alabama 2002) [2008]
- KEVIN M. MOTZ, Instructor in Otolaryngology -Head and Neck Surgery B.S. (Stevenson University 2009); M.D. (Georgetown 2013) [2020]
- SANDRA A. MOUTSIOS, Assistant Professor of Medicine; Assistant Professor of Pediatrics B.S.E. (Duke 1989); M.D. (Florida 1993) [1998]
- AMANDA L. MOUVERY, Assistant in Pediatrics B.S.N. (Tennessee 1994); M.S.N. (Vanderbilt 2001) [2012]

- REISHA E. MOXLEY, Assistant Professor of Clinical Physical Medicine and Rehabilitation B.S. (Middle Tennessee State 2005); M.S. (Vanderbilt 2008); Ph.D. (Georgia 2015) [2019]
- RONNIE NCHUCHIA MUBANG, Instructor in Clinical Surgery
 - B.S. (Pace 2008); M.D. (American University of Antigua 2012) [2019]
- JENNIFER C. MUCKALA, Assistant in Otolaryngology - Head and Neck Surgery B.A. (Duke 1999); M.A. (Texas 2001) [2012]
- DOROTHEE ALEXANDRA MUELLER, Assistant Professor of Anesthesiology M.D. (Ruprecht-Karls-Universität [Germany] 2010) [2017]
- GARY L. MUELLER, Assistant Clinical Professor of Medicine
 - B.A., M.D. (Missouri 1968, 1972) [1975]
- MUKHTAR Y. MUHAMMAD, Adjunct Assistant Professor of Health Policy M.B.B.S. (Usmanu Danfodiyo [Nigeria] 1994) [2012]
- MONICAH MUHOMBA, Assistant Professor of Clinical Psychiatry and Behavioral Sciences M.A. (Asbury Theological Seminary 2003); Ph.D. (Kentucky, Lexington 2008) [2014]
- BHASKAR ADITYA MUKHERJI, Assistant Professor of Clinical Physical Medicine and Rehabilitation
 - B.S. (Vanderbilt 1993); M.D. (Tufts 1998) [2906]
- ROBERTA LEE MULDOON, Assistant Professor of Surgery
 - B.S. (Loyola 1985); M.D. (Loyola Chicago 1989) [2004]
- JAMES A. S. MULDOWNEY, Assistant Professor of Medicine
 - A.B. (Princeton 1994); M.D. (Vanderbit 1999) [2006]
- Professor of Medicine
 M.B.Ch.B (Zambia 2002) [2019]
- JOSEPH L. MULHERIN, JR., Clinical Professor of Surgery at St. Thomas Medical Center B.A. (Augusta 1967); M.D. (Medical College of Georgia 1971) [1978]
- ALISON C. MULLALY, Assistant Professor of Clinical Obstetrics and Gynecology M.D., B.S. (Tennessee 1993, 1993) [2012]
- RYAN DAVID MULLER, Assistant Professor of Radiology and Radiological Sciences B.S. (William and Mary 2003); M.D. (South Carolina 2007) [2017]

- SHELAGH A. MULVANEY, Associate Professor of Nursing (Clinical Psychology); Associate Professor of Biomedical Informatics B.S., M.A., Ph.D. (Arizona 1985, 1991, 2002) [2002]
- DANIEL MUNOZ, Assistant Professor of Medicine; Adjunct Instructor in Nursing B.A. (Princeton 2000); M.D., M.P.A. (Harvard 2005, 2005) [2013]
- SARAH MURAWSKI, Assistant in Medicine B.S. (Minnesota 2011); M.P.A.S. (A.T. Still University - [Missouri] 2017) [2017]
- BRETT ROSS MURDOCK, Assistant Professor of Clinical Radiology & Radiological Sciences B.S. (Lipscomb 2003); M.D. (Georgetown 2010) [2019]
- HARVEY J. MURFF, Associate Professor of Medicine
 - B.A. (Mississippi 1992); M.D. (UT Health Science Certer [Tennoseer] 1996); M.P.H. (Harvard 2002) [2002]
- BARBARA A. MURFF Y, Professor of Medicine 3.3. (Duke 1983), M.D. (Wake Forest 1987) [1993]
- STEPHANIE M. MURPHY, Adjunct Instructor in Neurological Surgery B 5. (1roy 2004) [2016]
- KATHERINE T. MURRAY, Professor of Medicine; Professor of Pharmacology
 - B.S., M.D. (Duke 1976, 1980) [1989]
- MICAH M. MURRAY, Adjunct Associate Professor of Hearing and Speech Sciences B.A. (Johns Hopkins 1995); M.S., Ph.D. (Yeshiva 1999, 2001) [2008]
- SAMUEL JUDSON MURRAY II, Clinical Professor of Pediatrics
 - B.S. (Virginia Polytechnic Institute 1991); M.D. (Medical College of Virginia 1996) [2004]
- VELMA MCBRIDE MURRY, University Professor of Human & Org. Development; Lois Autry Betts Chair in Education and Human Development; Professor of Health Policy B.S. (Tennessee 1974); M.S., Ph.D. (Missouri 1985, 1987) [2008]
- WILBROAD MUTALE, Adjunct Assistant Professor of Medicine
 - B.S., M.B.Ch.B (Zambia 2002, 2004); M.Phil. (University of Bergen 2006); Ph.D. (London School of Hygiene and Tropical Medicine 2014); M.Phil. (Cape Town [South Africa] 2015) [2016]
- ANGELA MUTERSPAUGH, Assistant in Psychiatry and Behavioral Sciences
 - B.A. (Tennessee 2006); M.M.F.T. (Trevecca Nazarene 2009) [2013]

- JENNIFER B. MYERS, Assistant Clinical Professor of Pediatrics
 - B.A. (Duke 1992); M.D. (UT Health Science Center [Tennessee] 1997) [2000]
- KEVIN J. MYERS, Assistant Professor of Medicine B.A. (Princeton 1979); M.D. (Vanderbilt 1983) [2009]
- ROBERT CORY MYERS, Associate in Psychiatry and Behavioral Sciences
 - B.A. (Samford 1998); M.S.S.W. (Tennessee 2002); M.S.N. (Vanderbilt 2009) [2012]
- JOHN H. NADEAU, Professor of Medicine B.A., M.D. (Ottawa [Canada] 1967, 1973) [1977]
- ROBERT P. NAFTEL, Associate Professor of Neurological Surgery
 - B.A. (Washington and Lee 2002); M.D. (Alabama, Birmingham 2006) [2013]
- ALLEN J. NAFTILAN, Associate Professor of Medicine
 - B.A. (Oberlin 1972); Ph.D. (Chicago 1979); M.D. (Alabama, Birmingham 1982) [2006]
- ADAM NAGY, Assistant Professor of Neurology B.A., B.S. (Purdue 2009, 2009); M.D. (Indiana, South Bend 2013) [2017]
- RISHI DILIPKUMAR NAIK, Assistant Professor of Medicine
 - B.S. (Tennessee, Chattanooga 2009); M.D., M.S.C.I. (Vanderbilt 2013, 2019) [2019]
- DEVIKA NAIR, Instructor in Medicine B.A. (California, Berkeley 2006); M.A. (Boston University 2008); M.D. (Tulane 2012); M.S.C.I. (Vanderbilt 2019) [2019]
- JENNIFER L. NAJJAR, Associate Professor of Clinical Pediatrics
 - B.A. (Wisconsin 1971); M.D. (Tufts 1977) [1983]
- TERUNAGA NAKAGAWA, As ociate Professor of Molecular Physiology and Biophysics M.D., Ph.D. (Tokyo [Japan] 1996, 2000) [2012]
- KI TAEK NAM, Adjunct Assistant Professor of Surgery
 - B.S., M.S., D.V.M., Ph.D. (Scoul National [Korea] 1991, 1993, 2003, 2003) [2008]
- YOUNG-JAE NAM, Assistant Professor of Medicine; Assistant Professor in Cell and Developmental Biology M.D. (Seoul National [Korea] 1994); Ph.D.

(Yeshiva 2004) [2014]

- E. PAUL NANCE, JR., Associate Professor of Radiology and Radiological Sciences, Emeritus B.S., M.D. (North Carolina 1973, 1976) [1980]
- LILLIAN B. NANNEY, Professor of Plastic Surgery, Emerita
 - B.A. (Vanderbilt 1973); M.S. (Austin Peay State 1976); Ph.D. (Louisiana State 1980) [1980]

- EMILY W. NARDONE, Assistant in Medicine B.S. (Georgia 2008); M.S.N. (Vanderbilt 2011) [2018]
- JAMES L. NASH, Associate Professor of Psychiatry, Emeritus
 - M.D. (Duke 1966) [1980]
- ROBERTSON NASH, Assistant in Medicine B.A. (Centre 1983); M.A. (Murray State 1986); M.B.A. (Rochester Institute of Technology 1993); M.S.N. (Vanderbilt 2007) [2008]
- THOMAS C. NASLUND, Professor of Surgery B.A. (Trinity [Texas] 1980); M.D. (Vanderbilt 1984) [1992]
- DAVID WALLACE NEBLETT, Instructor in Clinical Orthopaedic Surgery B.A. (Rhodes College 2001); M.D. (Vanderbilt 2015) [2019]
- WALLACE W. NEBLETT III, Professor of Pediatric Surgery; Professor of Pediatrics B.A. (University of the South 1967); M.D. (Vanderbilt 1971) [1980]
- SARAH J. NECHUTA, Adjunct Assistant Professor of Medicine
 - 5.5. (Michigan State 2003); M.P.H. (Michigan 2005); Ph.D. (Michigan State 2009) [2012]
- ANDREW CHARLES NECK, Assistant Professor of Ernergency Medicine; Assistant Professor of Medicine; Assistant Professor of Pediatrics B.S. (Stetson 1988); M.S. (Southern Methodist 1990); M.D. (Meharry Medical 2002) [2009]
- MAYA K. NEELEY, Assistant Professor of Pediatrics
 - B.S., M.D. (Miami 1999, 2003) [2010]
- ROY C. NEELEY, Assistant Professor of Clinical Anesthesiology
 - B.S. (Miami 1999); M.D. (South Florida 2003) [2009]
- M. DIANA NEELY, Research Associate Professor of Pediatrics
 - M.S. (Swiss Federal Institute of Technology 1984); Ph.D. (Brown 1990) [1999]
- BRIAN NELMS, Adjunct Assistant Professor of Cell and Developmental Biology B.S., Ph.D. (Pennsylvania State 2001, 2006) [2011]
- GEORGE EDWARD NELSON, Assistant Professor of Medicine
 - A.B. (Princeton 2002); M.D. (Case Western Reserve 2006) [2014]
- JILL R. NELSON, Assistant in Medicine B.S. (Tennessee 2002); M.S.N. (Vanderbilt 2007) [2007]

- LYNDSAY ANN NELSON, Research Assistant Professor of Medicine B.S. (Wisconsin, Eau Claire 2009); M.A. (Appalachian State 2011); Ph.D. (East Tennessee State 2014) [2017]
- RACHEL A. NELSON, Instructor in Emergency Medicine
 - B.A. (Furman 2013); M.D. (University of South Carolina 2017) [2020]
- RONALD A. NELSON, Assistant Clinical Professor of Dermatology
 - B.S. (Stanford 1986); M.D. (Vanderbilt 1990); M.S. (Troy 1998) [2002]
- SCOTT D. NELSON, Assistant Professor of Biomedical Informatics B.A., Pharm.D., M.S. (Utah 2010, 2013, 2014) [2016]
- TAMASYN NELSON, Assistant Professor of Pediatrics
 - B.A. (New York 2001); D.O. (New York Institute of Technology 2008) [2014]
- JONATHAN C. NESBITT, Professor of Thoracic Surgery; Chair of the Department of Thoracic Surgery
 - B.A. (Virginia 1977); M.D. (Georgetown 1981) [2008]
- REID M. NESS, Associate Professor of Medicine B.S., M.D., M.P.H. (Indiana, Bloomington 1986, 1990, 1997) [2000]
- JAMES L. NETTERVILLE, Mark C. Smith Chair in Head and Neck Surgery; Professor of Otolaryngology - Head and Neck Surgery B.S. (Lipscomb 1976); M.D. (UT Health Science Center [Tennessee] 1980) [1986]
- ARIE L. NETTLES, Professor of Clinical Pediatrics; Associate Professor of Clinical Pediatrics B.A., M.S. (Tennessee 1976, 1977); Ph.D. (Peabody 1987) [2004]
- GREGOR NEUERT, Assistant Professor of
 Molecular Physiology and Biophysics; Assistant
 Professor of Biomedical Engineering; Assistant
 Professor of Pharmacology
 M.Eng. (Ilmenau University of Technology
 2001); Ph.D. (Ludwig-Maximilians-Universität
 [Germany] 2005) [2012]
- JEFFREY L. NEUL, Annette Schaffer Eskind Chair in the Vanderbilt Kennedy Center; Professor of Pediatrics; Professor of Special Education; Professor of Pharmacology
 B.S. (Illinois, Champaign 1991); Ph.D., M.D. (Chicago 1998, 2000) [2017]
- SHARI KATHLEEN NEUL, Assistant Professor of Clinical Pediatrics; Adjunct Assistant Professor of Psychology B.S. (Illinois, Champaign 1994); Ph.D. (Illinois

Institute of Technology 1999) [2018]

- JAMIE R. NEUMAIER, Assistant in Pediatrics A.S.N. (Aquinas College [Tennessee] 1996); B.S.N. (Middle Tennessee State 2007); M.S.N. (Alabama, Birmingham 2014) [2014]
- MICHAEL J. NEUSS, Assistant Professor of Clinical Medicine
 - B.A. (Pomona 2005); Ph.D., M.A., M.Phil. (Columbia 2013, 2013, 2013); M.D. (Duke 2017) [2020]
- MICHAEL N. NEUSS, Professor of Clinical Medicine
 - B.S. (Michigan 1975); M.D. (Duke 1979) [2011]
- MELINDA S. NEW, Associate Professor of Clinical Obstetrics and Gynecology
 - B.S. (Villanova 1989); M.D. (Pennsylvania 1993) [2005]
- DAWN C. NEWCOMB, Assistant Professor of Medicine; Assistant Professor of Pathology, Microbiology and Immurology B.S. (North Carolina State 2002); Ph.D. (Michigan 2007) [2016]
- PAUL A. NEWHOUSE, Jim Turner Chair in Cognitive Disorders; Professor of Psychiatry and Benavioral Sciences; Professor of Medicine; Professor of Pharmacology
- B.S. (Kansas State 1974); M.D. (Loyola, Chicago 1977), [2011]
- JOHN H. NEWMAN, Elsa S. Hanigan Chair in Pulmonary Medicine; Professor of Medicine A.B. (Harvard 1967); M.D. (Columbia 1971) [1979]
- LESLIE E. NEWMAN, Assistant in Pediatrics A.A.S. (Jackson State Community College 2005); B.S.N. (Memphis 2008); M.S.N. (Vanderbilt 2009) [2009]
- RANDA E. NEWMAN, Assistant in Obstetrics and Gynecology B.S. (UPIKE 2010); M.S. (Cincinnati 2016)

[2017]

[2016]

- ALLEN TIMOTHY NEWTON, Research Assistant Professor of Radiology and Radiological Sciences; Research Assistant Professor of Pediatrics B.E., M.S., Ph.D. (Vanderbilt 2003, 2005, 2009)
- J. MICHAEL NEWTON, Associate Professor of Obstetrics & Gynecology B.S., Ph.D., M.D. (Arizona 1991, 1998, 2005) [2012]
- MARK W. NEWTON, Professor of Clinical Anesthesiology B.S. (Houston Baptist 1983); M.D. (Texas, Galveston 1987) [2007]
- CHOR YIN NG, Associate Professor of Medicine B.Sc., Ph.D. (Chinese University of Hong Kong 1993, 1997) [2018]

- MY-LINH DINH NGO, Assistant Professor of Clinical Pediatrics
 - B.S., M.D. (Mississippi 2008, 2012) [2017]
- DUC Q. NGUYEN, Assistant Professor of Clinical Cardiac Surgery
 - B.A., M.D. (Boston University 1992, 1994) [2019]
- HUI NIAN, Assistant in Biostatistics B.S., M.S. (Beijing Normal [China] 2002, 2005);
- Ph.D., M.S. (Oregon State 2010, 2010) [2018] JAMES H. NICHOLS, Professor of Pathology,
 - Microbiology and Immunology B.A. (California, San Diego 1983); M.S., Ph.D. (Urbana [Ohio] 1986, 1990) [2012]
- AMY G. NICHOLSON, Assistant in Pediatrics; Associate in Pediatrics; Assistant in Psychiatry and Behavioral Sciences; Associate in Psychiatry and Behavioral Sciences
 - B.A., M.A. (Western Kentucky 1993, 1995) [2007]
- GEORGE T. NICHOLSON, Assistant Professor of Pediatrics
 - B.A. (College of the Holy Cross 2004); M.D. (Loyola, Chicago 2008) [2015]
- MARIBETH R. NICHOLSON, Assistant Professor of Pediatrics
 - B.S. (Richmond 2004); M.D. (Pennsylvania State 2008); M.P.H. (Vanderbilt 2013) [2014]
- MICHAEL L. NICKELS, Adjoint Assistant Professor of Radiology and Radiological Sciences B.S. (Northern Kentucky 2001); Ph.D. (Ill.nois, Champaign 2007) [2010]
- JONATHAN ALEC NICONCHUK, Assistant Professor of Anesthesiology B.A. (College of the Holy Cros 2009); M.D. (Harvard Medical 2014) [2015]
- TARA ANNE NIELSEN, Assistant Professor of Clinical Obstetrics and Gynecology B.S. (Wisconsin 2008); M.P.H., D.O. (Des Moines University 2011, 2012) [2016]
- KENNETH J. NIERMANN, Assistant Professor of Radiation Oncology B.S. (Sterling [Kansas] 1997); M.D., M.S.C.I. (Vanderbilt 2002, 2010) [2010]
- SAYEH SANDER NIKPAY, Assistant Professor of Health Policy
 - B.A. (Macalester 2005); M.P.H., Ph.D. (Michigan 2009, 2014) [2015]
- NAREN NIMMAGADDA, Instructor in Clinical Urology
 - B.S. (Virginia Commonwealth 2009); M.D. (Maryland, Baltimore 2013) [2019]
- COLLEEN M. NISWENDER, Research Professor of Pharmacology
 - B.S. (Toledo 1991); Ph.D. (Vanderbilt 1996) [2004]

- KEVIN DEAN NISWENDER, Associate Professor of Medicine; Associate Professor of Molecular Physiology and Biophysics B.S. (Colorado College 1990); Ph.D., M.D. (Vanderbilt 1996, 1998) [2004]
- ANA E. NOBIS, Assistant Professor of Clinical Medicine M.D., M.S.P.H. (Meharry Medical 2007, 2012) [2018]
- WILLIAM P. NOBIS, Instructor in Neurology B.S. (Michigan State 2004); Ph.D., M.D. (Vanderbilt 2009, 2011) [2018]
- JACK H. NOBLE, Assistant Professor of Electrical Engineering, Computer Science, and Computer Engineering; Assistant Professor of Biomedical Engineering; Assistant Professor of Hearing & Speech Sciences; Assistant Professor of Otolaryngology Head and Neck Surgery B.E., M.S., Ph.D. (Vandartilt 2007, 2008, 2011) [2011]
- CHRISTINA CLEVELAND NOBLIT, Assistant in Me licine; Adjunct Distructor in Nursing 3.A., M.S.N. ('anderbilt 2007, 2010) [2010]
- PAVID DOUGLASS NOLEN, Assistant Clinical Professor in Otolaryngology - Head and Neck Surg (7)
 - B 5. (Texas A & M 2003); M.D. (Texas 2008) [2017]
- Developmental Biology, Emerita B.A. (California, Los Angeles 1970); Ph.D. (Vanderbilt 1975) [1978]
- JARED NORDMAN, Assistant Professor of Biological Sciences; Assistant Professor of Cell & Developmental Biology B.Sc. (Massachusetts 2002); Ph.D. (Tufts 2008) [2015]
- STEPHANIE G. NORFOLK, Assistant Professor of Medicine
 - B.A. (Duke 1995); C.E. (Columbia 2001); M.D. (Case Western Reserve 2005) [2016]
- ANDY M. NORMAN, Assistant Clinical Professor of Obstetrics and Gynecology B.S. (Georgia 1973); M.D. (Medical College of Georgia 1976) [2007]
- SHARON A. NORMAN, Clinical Instructor in Obstetrics and Gynecology B.S. (Brenau College 1984); M.Ed., M.D. (Emory 1991, 2001) [2006]
- JEREMY LYNN NORRIS, Research Associate Professor of Biochemistry; Research Associate Professor of Chemistry B.S. (UT Health Science Center [Tennessee] 1998); Ph.D. (Vanderbilt 2003) [2011]

- KELLY NORRIS, Assistant Professor of Clinical Oral & Maxillofacial Surgery B.S. (New Hampshire 2003); D.M.D. (Harvard 2008) [2020]
- ALLISON E. NORTON, Assistant Professor of Pediatrics
 - B.A. (Florida 1999); M.D. (South Alabama 2005) [2011]
- JENNIFER MCMILLAN NOTO, Research Assistant Professor of Medicine
 - B.S. (Mary Washington 2003); Ph.D. (Virginia Commonwealth 2008) [2014]
- MICHAEL JAMES NOTO, Assistant Professor of Medicine; Assistant Professor of Pathology, Microbiology and Immunology M.D., Ph.D. (Virginia Commonwealth 2008, 2008); B.S. (James Madison [Virginia] 0) [2016]
- ALEXANDER NOURSE, Assistant Professor of Clinical Medicine B.S. (Alabama, Birmingham 2010); M.S. (Georgetown 2012); D.O. (Alabama College of
- Osteopathic Medicine 2017) [2020] LAURIE LOVETT NOVAK, Assistant Professor of Biomedical Informatics
 - B.A. (Murray State 1987); M.H.S.A. (Michigan 1994); Ph.D. (Wayne State 2005) [2010]
- VINCENT PAUL NOVAK, Assistant Professor of Clinical Orthopaedic Surgery B.S., M.S., M.D. (Maryland, Baltimore 1990, 1992, 2000) [2015]
- SERGEY V. NOVITSKIY, Research Associa e Professor of Medicine M.D., Ph.D. (Siberian State [Russia] 1999, 2002) [2011]
- NATHAN M. NOVOTNY, Assistant Professor of Clinical Pediatric Surgery B.S. (Kentucky Wesleyan 1998); M.D. (Kentucky, Lexington 2004) [2015]
- PETER M. NTHUMBA, Associate Clinical Professor of Plastic Surgery M.B.Ch.B, M.Med. (Nairobi [Kenya] 1995, 2002)
- VALERIE L. NUNLEY, Instructor in Clinical Obstetrics and Gynecology B.S. (Loyola College [Maryland] 1992); M.S.N. (Vanderbilt 1997) [2013]

[2012]

- JOHN KENNEDY MUMA NYAGETUBA, Clinical Instructor in Surgery M.B.Ch.B, M.Med. (Nairobi [Kenya] 2004, 2011) [2015]
- JEFFRY S. NYMAN, Associate Professor of Orthopaedic Surgery; Associate Professor of Biomedical Engineering B.S., M.S. (Memphis 1996, 1998); Ph.D. (California, Davis 2003) [2006]

- LEE ANNE O'BRIEN, Clinical Professor of Pediatrics
 - B.A. (Johns Hopkins 1983); M.D., Ph.D. (Vanderbilt 1991, 1991); FAAP, PNP, [1995]
- RICHARD M. O'BRIEN, Professor of Molecular Physiology and Biophysics
 - B.Sc. (Bristol [U.K.] 1984); Ph.D. (Cambridge [U.K.] 1988) [1988]
- MICHAEL G. O'CONNOR, Assistant Professor of Pediatrics
 - B.S. (Xavier [Ohio] 2006); M.D. (Indiana, Indianapolis 2010) [2013]
- ANNE ELIZABETH O'DUFFY, Associate Professor of Clinical Neurology
 - B.A. (Brown 1983); M.D. (University College, Dublin [Ireland] 1989) [2001]
- KRISTIN POOLE O'GRADY, Research Instructor in Radiology & Radiological Sciences
 B.S. (Trinity [Texas] 2010; Ph.D. (Vanderbilt 2015) [2013]
- JARED MARTIN O'L EARY, Assistant Professor of Medicine
 - 3.3.E. (Case western Reserve 2006); M.D. (Vanderlilt 2010) [2018]
- MATTHEW ROBERT O'MALLEY, Assistant
 Professor of Otolaryngology Head and Neck
 Surgery
 - B.S. (Florida State 1997); M.D. (Florida 2001) [2017]
- MCHARD THOMAS O'NEIL, Research Instructor in Medicine
 - B.S. (Georgia 2005); Ph.D. (Vanderbilt 2015) [2019]
- JAMES A. O'NEILL, JR., Professor of Surgery, Emeritus
 - B.S. (Georgetown 1955); M.D. (Yale 1959) [1995]
- COLIN O'SHEA, Instructor in Emergency Medicine M.D., M.P.H. (Emory 2016, 2016) [2019]
- WILLIAM TODD OBREMSKEY, Professor of Orthopaedic Surgery
 - A.B., M.D. (Duke 1984, 1988); M.P.H. (North Carolina 1990); M.Mgt. (Vanderbilt 2013) [2002]
- KEITH L. OBSTEIN, Associate Professor of Medicine; Associate Professor of Mechanical Engineering
 - B.S. (Johns Hopkins 2000); M.D. (Northwestern 2004); M.P.H. (Harvard 2010) [2010]
- HARLEY E. ODOM, Assistant Professor of Clinical Medicine
 - B.S. (Duke 1992); M.D. (Florida 1996) [2010]
- THOMAS N. OELTMANN, Associate Professor of Medicine, Emeritus

 P. S. (Georgia State 1063): Ph. D. (Georgia 1067)
 - B.S. (Georgia State 1963); Ph.D. (Georgia 1967) [1979]

- KRISTEN M. OGDEN, Assistant Professor of Pediatrics; Assistant Professor of Pathology, Microbiology and Immunology B.S. (Auburn 2000); Ph.D. (Vanderbilt 2008) [2015]
- HENRY E. OKAFOR, Assistant Professor of Medicine

M.D. (Nigeria 1986) [2012]

- LUIS E. OKAMOTO, Research Assistant Professor of Medicine
 - M.D. (Universidad Peruana 'Cayetano Heredia' [Peru] 2001) [2012]
- DAMARIS M. OLAGUNDOYE, Adjunct Professor of Obstetrics and Gynecology B.S. (Oakwood 2000); M.D. (Meharry Medical 2004) [2008]
- BUNMI O. OLATUNJI, Gertrude Conaay Vanderbilt Chair in Social and Natural Sciences; Professor of Psychology; Associate Professor of Psychiatry and Behavioral Sciences
 - B.S. (Wisconsin, Stevens Point 2000); M.A., Ph.D. (Arkansas 2002, 2006) [2006]
- ELIZABETH L. OLDFIELD, Assistant Clinical Professor of Obstetrics and Gynecology B.S. (Vanderbilt 1977); M.D. (UT Health Science Center [Tennessee] 1983) [1987]
- VERONICA L. OLDFIELD, Assistant in Neurological Surgery B.S.N. (Austin Peay State 1993); M.S.N. (Alabama, Huntsville 2004) [2007]
- ADRIAN OLIVARES, Assistant Professor of Biochemistry

B.Sc. (Baylor 2001); Ph.D. (Yale 2008) [2016]

- DANYVID OLIVARES-VILLAGCMEZ, Assistant Professor of Pathology, Microbiology and Immunology
 - B.S. (Universidad Nacional Autónoma de México 1991); M.S. (Vanderbilt 1996); Ph.D. (New York 2000) [2009]
- KENDRA HELEN OLIVER Agricant Professor of Pharmacology; Senior Lecturer of Communication of Science and Technology Ph.D. (Vanderbilt 2016) [2016]
- LAUREN ALLYSON OLIVER, Assistant in Anesthesiology; Adjunct Instructor in Nursing B.S.N. (Tennessee 2003); M.S.N. (Vanderbilt 2008) [2010]
- THOMAS HAYDEN OLIVER, Assistant Professor of Urology

B.S. (Georgia 1979); M.D. (Medical College of Georgia 1983) [2020]

AMANDA MICHELLE OLSON, Assistant Professor of Clinical Medicine; Assistant Professor of Clinical Pediatrics B.S. (Cornell 2007); M.D. (Wright State 2011)

[2014]

- BARBARA J. OLSON, Assistant Clinical Professor of Neurology
 - B.S. (Wisconsin, Eau Claire 1971); M.D. (Wisconsin 1976) [1982]
- GARY E. OLSON, Professor of Cell and Developmental Biology, Emeritus B.S., M.S. (Oregon 1967, 1968); Ph.D. (Washington University 1974) [1977]
- OLALEKAN O. OLUWOLE, Assistant Professor of Medicine
 - M.B.B.S., M.D. (Ibadan [Nigeria] 1990, 1990); M.P.H. (Rutgers, Camden 2003) [2011]
- LESLEY T. OMARY, Assistant Professor of Clinical Psychiatry and Behavioral Sciences B.A., M.D. (Virginia 1991, 1997) [2013]
- REED A. OMARY, Carol D. and Henry P.
 Pendergrass Chair in Radiology and Radiological
 Sciences; Professor of Radiology and
 Radiological Sciences; Professor of Biomedical
 Engineering: Chair of the Department of
 Radiology and Radiological Sciences
 B. S. M.D. (Northwestern 1989, 1991); M.S.
 (Virginia 1994, 12012]
- CLAYINKA O. CNADEKO, Associate Professor of Pediatrics at Meharry Medical College; Associate Clini Professor of Pediatrics at Vanderbilt University School of Medicine B.S., M.S. (Portland State 1976, 1978); M.D.
- Universidad Mundial [Mexico] 1984) [1990]
 DANIEL JOAQUIN ONTENIENT, Assistant
- Professor of Clinical Medicine B.S. (Florida 2010); M.D. (Louisville 2014) [2019]
- HENRY HEAN LEE OOI, Associate Professor of Medicine
 M.B.B.Ch., M.R.C.P.I. (Trinity, Dublin [Ireland] 1989, 1989) [2007]
- MARIE-CLAIRE ORGEBIN-CRIST, Professor of Obstetrics and Gynecology, Emerita; Professor of Cell and Developmental Biology, Emerita B.S. (NA 1953); M.S. (Paris I [France] 1957); Ph.D. (Université de Lyon [France] 1961) [1964]
- MICHELLE J. ORMSETH, Assistant Professor of Medicine
 - B.S. (Dayton 2002); M.D. (Cincinnati 2006); M.S.C.I. (Vanderbilt 2013) [2013]
- SAMUEL R. ORR, Assistant Clinical Professor of Pediatrics
 - B.S., M.D. (Mississippi 1992, 1998); B.A. (Vanderbilt 0) [2013]
- DANIELLE KATHARINE ORSAGH-YENTIS, Assistant Professor of Pediatrics B.A. (Rice 2008); M.D. (Indiana, Indianapolis 2012) [2019]

- DAVID N. ORTH, Professor of Medicine, Emeritus; Professor of Molecular Physiology and Biophysics, Emeritus Sc.B. (Brown 1954); M.D. (Vanderbilt 1962)
- EDUARDO ORTIZ, Associate Clinical Professor of Medicine B.S. (Armstrong Atlantic State 1984); M.D. (Medical College of Georgia 1989); M.P.H. (Utah 1997) [2018]
- RAYMOND U. OSAROGIAGBON, Adjunct Research Professor of Medicine M.B.B.S. (Ibadan [Nigeria] 1988) [2019]
- SAMANTHA NOEL OSBORNE, Assistant in Medicine
 B.S., M.S. (Lipscomb 2011, 2013); M.S. (Christian Brothers 2016) [2017]
- NANCY E. OSBURN, Assistant Professor of Clinical Obstetrics and Gynecology M.D. (UT Health Science Center [Tennessee] 1997) [2012]
- NEIL OSHEROFF, John Coniglio Chair in Biochemistry; Professor of Biochemistry; Professor of Medicine B.A. (Hobart and William Smith 1974); Ph.D. (Northwestern 1979) [1983]
- ANNA B. OSIPOVICH, Research Assistant Professor of Molecular Physiology & Biophysics B.A., M.A., Ph.D. (Belarusian State [Russia] 1992, 1994, 1999) [2009]
- EVAN C. OSMUNDSON, Assistant Professor of Radiation Oncology B.S. (California State Polytechnic 2000); M.D. Ph.D. (Illinois, College of Medicine Chicago 2009, 2009) [2015]
- SARAH S. OSMUNDSON, Assistant Professor of Obstetrics and Gynecology
 B.S. (Illinois, Champaign 2000); M.D. (Illinois, College of Medicine, Chicago 2005); M.S. (Stanford 2015) [2015]
- ROBERT H. OSSOFF, Professor of Otolaryngology,
 Emeritus

 A.R. (Royndain 1060), D.M.D., M.D. (Tuffs 1073)
 - A.B. (Bowdoin 1969); D.M.D., M.D. (Tufts 1973, 1975); M.S. (Northwestern 1981) [1986]
- KEVIN G. OSTEEN, Pierre Soupart Chair in Obstetrics and Gynecology; Professor of Obstetrics and Gynecology; Professor of Pathology, Microbiology and Immunology; Adjunct Professor of Obstetrics and Gynecology at Meharry Medical College B.S. (South Carolina, Spartanburg 1972); Ph.D. (Medical College of Georgia 1980) [1983]
- JASON OSTENSON, Research Assistant Professor of Radiology & Radiological Sciences B.A. (Vassar 2002); M.S. (Columbia 2007); Ph.D. (Vanderbilt 2020) [2020]

- TRAVIS JOHN OSTERMAN, Assistant Professor of Biomedical Informatics; Assistant Professor of Medicine B.S. (Indianapolis 2003); D.O. (Nova Southeastern 2009); M.S. (Vanderbilt 2017)
- JAIME K. OTILLIO, Assistant Professor of Clinical Pediatrics
 - B.S., M.D. (Louisiana State 2001, 2007) [2013]
- MARYANN OTTO, Instructor in Clinical Anesthesiology

[2016]

- M.D., B.A. (Missouri 2005, 2005) [2013]
- TAINA OVCHINNIKOV, Assistant in Medicine B.S.N. (Trevecca Nazarene 2009); M.S.N. (Belmont 2012) [2017]
- TARA M. OVERBEEKE, Assistant Professor of Emergency Medicine B.A., M.D. (Washington University 2005, 2009)
- NATALIF N. OWEN, Assistant in Pediatrics; Instructor in Nursing
- B.S., M.S.N. (Van erbilt 2005, 2007) [2008] DAVID A. OWENS, Professor of Radiology &
 - Radiological Sciences; Professor of the Practice of Organizational Studies; Professor of the Practice of Engineering Management B.S., W.S., Ph.D. (Stanford 1987, 1993, 1998)
- [1998]
 DEKIC OXFORD, Assistant Clinical Professor in
 Oral and Maxillofacial Surgery
 - B.A. (Texas A & M 1997); D.D.S. (Baylor 2002) [2015]
- BALDEEP SINGH PABLA, Assistant Professor of Medicine
- B.S. (Duke 2009); M.D. (Vanderbilt 2013) [2019]ANDREW J. PADGUG, Assistant Clinical Professor of Radiology and Radiological Sciences
 - B.A. (State University of New York 1974); M.D. (Wisconsin, Milwaukee 1978) [1984]
- DOLLY ANN PADOVANI-CLAUDIO, Assistant Professor of Ophthalmology and Visual Sciences B.S. (Puerto Rico, Mayaguez 1994); Ph.D., M.D. (Case Western Reserve 2006, 2008) [2015]
- DEREK PAE, Assistant Professor of Clinical Medicine
 - B.S. (Pennsylvania State 2009); M.D. (Virginia 2013) [2016]
- LINDSAY M. PAGANO, Assistant Professor of Pediatrics
 - B.A. (William and Mary 2005); M.D. (Eastern Virginia 2009) [2014]
- ANDREA PAGE-MCCAW, Professor of Cell & Developmental Biology A.B. (Harvard 1989); Ph.D. (Massachusetts Institute of Technology 1998) [2010]

- ANITA KOCHIKAR PAI, Assistant Professor of Pediatrics
 - B.S. (Duke 2008); M.D. (Vanderbilt 2012) [2019]
- RAMACHANDER K. PAI, Associate Clinical Professor of Anesthesiology M.B.B.S. (Kakatiya [India] 1978); M.D. (Osmania [India] 1984) [1997]
- RACHEL PAINTER, Assistant in Pediatrics B.S.N. (Belmont 2012); M.S.N. (Alabama, Birmingham 2016) [2017]
- TUYA PAL, Ingram Associate Professor of Cancer Research; Associate Professor of Medicine; Associate Professor of Pediatrics M.D. (McGill [Canada] 1992) [2017]
- PRADEEP SUNNY PALLAN, Research Assistant Professor of Biochemistry B.S., M.S. (Calicut, Thrissur [India] 1991, 1993); Ph.D. (Pune [India] 2002) [2008]
- KENNETH H. PALM, Associate Professor of Emergency Medicine
 - B.A., M.D. (Loma Linda 1982, 1988) [2003]
- THOMAS J. PALMERI, Distinguished Professor of Psychology; Professor of Psychology; Professor of Ophthalmology & Visual Sciences B.S. (Carnegie Mellon 1987); Ph.D. (Indiana, Bloomington 1995) [1995]
- YU PAN, Adjunct Instructor in Medicine M.D. (Shanghai [China] 2003); Ph.D. (Nanjing Univ. 2017) [2019]
- PRATIK P. PANDHARIPANDE, Professor of Anesthesiology; Professor of Surgery M.D. (Nagpur [India] 1993); M.S.C.I. (Vanderbil) 2005) [2001]
- GREGORY E. PANOMITROS, As ociate Professor of Clinical Anesthesiology; As ociate Professor of Clinical Radiology & Radiological Sciences B.A., M.D. (Illinois, Chicago 1989, 1993) [2018]
- WILLIAM PAO, Adjunct Professor of Medicine A.B. (Harvard 1990); Ph.D., M.D. (Yale 1997, 1998) [2009]
- ARON PAREKH, Assistant Professor of Otolaryngology - Head and Neck Surgery; Assistant Professor of Biomedical Engineering B.S., Ph.D. (Pennsylvania State 1996, 2004) [2010]
- KENDRA PAPSON PAREKH, Assistant Dean for Undergraduate Medical Education; Associate Professor of Emergency Medicine B.S. (College of New Jersey 2001); M.D. (Pittsburgh 2005) [2008]
- BIBHASH C. PARIA, Professor of Pediatrics B.Sc., M.Sc., Ph.D. (Calcutta [India] 1974, 1976, 1984) [2002]

- BEN HO PARK, Donna S. Hall Chair in Breast Cancer; Professor of Medicine A.B. (Chicago 1989); M.D., Ph.D. (Pennsylvania 1995, 1995) [2018]
- SERKIN PARK, Adjunct Associate Professor of Medicine; Adjunct Assistant Professor of Medicine
 - D.D.S. (Yonsei [Korea] 1999); M.S. (Korea 2001); Ph.D. (Texas, Houston 2008) [2012]
- SOHEE PARK, Gertrude Conaway Vanderbilt Chair; Professor of Psychology; Professor of Psychiatry and Behavioral Sciences
 - B.A. (Cambridge [U.K.] 1982); M.A. (Columbia 1985); Ph.D. (Harvard 1991) [2000]
- CHRIS S. PARKER, Assistant in Medicine B.B.A. (Harding 2001); M.B.A. (Lincoln Memorial 2003); M.S.M. (Trevecca Nazarene 2014) [2017]
- EVA RAWLINGS PARKER, Assistant Professor of Dermatology
 B.S. (Denver 1997); M.D. (Colorado 2002)
 [2019]
- SARAH SWYERS PARKER, Assistant Professor of Clinical Pediatrics
 - B.S. (South Carolina 2005); M.D. (South Alab ma 2009) [2012]
- SCOTT V. PARKER, Assistant Professor of Neurological Surgery
 - P.S. (Texas 2007); M.D. (Johns Hopkins 2011) [2017]
- SCOTT R. PARKER, Assistant Professor of Clinical Medicine; Assistant Professor of Clinical Pediatrics
 - B.S. (Alabama, Huntsville 1987); M.D. (South Alabama 1991) [1998]
- C. LEE PARMLEY, Adjunct Professor of Anesthesiology
 B.S. (Pacific Union 1973); M.D. (Loma Linda 1976); J.D. (South Texas College of Law 1989);
- M.Mgt. (Vanderbilt 2011) [2004]

 JAMES PARNELL, Clinical Instructor in Emergency
 Medicine
 - B.S. (Lipscomb 2006); M.D. (UT Health Science Center [Tennessee] 2010) [2016]
- SAMUEL THOMAS PARNELL, Instructor in Emergency Medicine B.S. (Texas 2012); M.D. (University of Texas Southwestern 2016) [2019]
- SHARIDAN KRISTEN PARR, Assistant Professor of Biomedical Informatics; Assistant Professor of Medicine
 - B.S., M.D. (Creighton 2001, 2005); M.S.C.I. (Vanderbilt 2015) [2015]

- DAVID A. PARRA, Associate Professor of Pediatrics; Associate Professor of Radiology & Radiological Sciences; Assistant Professor of Medicine
 - M.D. (Universidad Central del Ecuador 1993) [2004]
- CRYSTAL G. PARRISH, Assistant in Anesthesiology
 - M.S.N. (Vanderbilt 2005) [2015]
- C. LEON PARTAIN, Professor of Radiology and Radiological Sciences, Emeritus B.S. (Tennessee 1963); M.S., Ph.D. (Purdue 1965, 1967); M.D. (Washington University 1975) [1980]
- AMIT D. PARULEKAR, Associate Professor of Medicine
 - B.A., M.D. (Missouri, Kansas City 2003, 2004); M.S. (Baylor 2017) [2020]
- CYNTHIA B. PASCHAL, Senior Associate Dean for Undergraduate Education; Associate Professor of Biomedical Engineering; Associate Professor of Radiology and Radiological Sciences S.B., S.M. (Massachusetts Institute of Technology 1986, 1986); Ph.D. (Case Western Reserve 1992) [1992]
- RAY L. PASCHALL, JR., Associate Professor of Clinical Anesthesiology
 - B.A. (Arkansas 1982); M.S. (New Orleans 1986); M.D. (Arkansas 1990) [1994]
- DEVANG J. PASTAKIA, Associate Professor of Clinical Pediatrics B.S. (Duke 1999); M.D. (New Jersey Medical 2003) [2011]
- RACHEL PASTO-CROSBY, Assistant in Pediatrics B.S. (Rhodes College 2002); N. S.N. (Vanderbilt 2011) [2016]
- ANJUL ANIL PATEL, Assistant Professor of Clinical Pediatrics B.S., M.D. (East Tennessee State 2012, 2016) [2020]
- ASHISH PATEL, Assistant Professor of Clinical Radiology & Radiological Sciences B.S., M.S., M.D. (Wayne State 2006, 2008, 2012) [2018]
- BINA PATEL, Adjunct Assistant Professor of Ophthalmology and Visual Sciences B.S. (Virginia Commonwealth 2005); M.D. (Virginia 2009) [2015]
- DHYANESH A. PATEL, Assistant Professor of Medicine
 - B.S. (South Carolina 2008); M.D. (Medical University of South Carolina 2012) [2018]
- ERIN PATEL, Assistant Clinical Professor of Psychiatry and Behavioral Sciences B.S. (Florida 2001); M.S., Psy.D. (Nova Southeastern 2003, 2006) [2014]

- ILABEN BHAGUBHAI PATEL, Instructor in Clinical Medicine; Instructor in Clinical Pediatrics
 - B.S. (Michigan State 1992); M.D. (Wayne State 2002) [2018]
- KANDARP PATEL, Assistant Clinical Professor of Medicine
 - M.B.B.S. (Maharaja Sayajirao [India] 1992) [2009]
- MAULIK R. PATEL, Assistant Professor of Biological Sciences; Assistant Professor of Cell and Developmental Biology B.A. (Grinnell 2001); Ph.D. (Stanford 2009) [2015]
- MAYUR B. PATEL, Associate Professor of Surgery; Associate Professor of Hearing & Speech Sciences; Associate Professor of Neurological Surgery
 - B.A. (Johns Hopkins 1997); M.D., M.P.H. (Vanderbilt 2002, 2012) [20 0]
- NEAL R. PATEL, Professor of Clinical Pediatrics; Professor of Clinical Anesthesiology; Associate Professor of En medical Informatics
 - 5.5. (California State Polytechnic 1987); M.D. (Southern California 1991); M.P.H. (Vanderbilt 2000 [1997]
- NIMFSA P. PATEL, Associate in Anesthesiology B.E., M.S. (Vanderbilt 1990, 1994) [1994]
- Otolaryngology Head and Neck Surgery B.A. (Chicago 2009); M.D. (Wisconsin 2014) [2020]
- SACHIN PATEL, James G. Blakemore Chair in Psychiatry; Professor of Psychiatry and Behavioral Sciences; Associate Professor of Molecular Physiology & Biophysics; Associate Professor of Pharmacology B.S. (California, Santa Barbara 1998); Ph.D., M.D. (Medical College of Wisconsin 2004, 2006) [2010]
- SHRIJI PATEL, Assistant Professor of Ophthalmology and Visual Sciences B.A. (Columbia 2006); M.D. (New Jersey Medical 2010) [2014]
- SOHA S. PATEL, Assistant Professor of Obstetrics & Gynecology
 - B.S. (Vanderbilt 2003); M.S.P.H. (London School of Hygiene and Tropical Medicine 2004); M.S. (Barry 2006); M.D. (South Florida 2011) [2018]
- KRUPA PATEL-LIPPMANN, Assistant Professor of Clinical Radiology & Radiological Sciences B.S. (Illinois, Champaign 2006); M.D. (Medical College of Wisconsin 2010) [2016]

- AMRITA PATHAK, Research Instructor in Biochemistry B.S. (Lucknow [India] 2001); M.S. (Jammu
 - [India] 2003); Ph.D. (Lucknow [India] 2010) [2016]
- NAEEM K. PATIL, Research Assistant Professor of Anesthesiology
 - M.D. (Byramjee Jeejeebhoy Medical College 2009); Ph.D. (Arkansas 2014) [2018]
- AMRITRAJ PATRA, Research Instructor in Biochemistry
 - M.S. (Indian Institute of Technology, Kharagpur 2004); Ph.D. (Karlsruhe [Germany] 2008) [2016]
- ANNA ELIZABETH PATRICK, Assistant Professor of Pediatrics
 - B.A., M.S. (Pennsylvania 2005, 2005); M.D., Ph.D. (University of Texas Southwestern 2013, 2013) [2019]
- DAVID M. PATRICK, Assistant Professor of Medicine
 - B.S. (Trinity [Texas] 2005); M.D., Ph.D. (University of Texas Southwestern 2013, 2013) [2020]
- STEPHEN W. PATRICK, Associate Professor of Pediatrics; Associate Professor of Health Policy B.S. (Florida 2002); M.D., M.P.H. (Florida State 2007, 2007); M.S. (Michigan 2011) [2013]
- BARRON L. PATTERSON, Associate Professor of Pediatrics
 - B.E., M.D. (Vanderbilt 1996, 2000) [2006]
- NATHAN HEATH PATTERSON, Research Instructor in Biochemistry
 - B.S. (Wyoming 2011); Ph.D. (Montreal [Canada] 2016) [2016]
- SARA JANE FLETCHER PATTEPSON, Clinical Professor of Pediatrics
 B.S. (Calvin 1993); M.D. (Vanderbik 1997)
- [2001] STEPHANIE G. PATTERSON, Assistant Professor
 - of Pediatrics

 B.S. (Southern Nazarene 2003); M.S.

 (Connections 2000), M.D. (Toron Took University)
 - (Georgetown 2009); M.D. (Texas Tech University 2013) [2020]
- CHRISTOPHER M. PATTON, Clinical Professor of Pediatrics
 - B.S. (New College of Florida 1990); M.D. (UT Health Science Center [Tennessee] 1994) [1998]
- JAMES A. PATTON, Professor of Radiology & Radiological Sciences, Emeritus; Adjunct Professor of Radiology & Radiological Sciences B.S. (Western Kentucky 1966); Ph.D. (Vanderbilt 1972) [1973]

- JAMES G. PATTON, Stevenson Chair of Biological Sciences; Professor of Biological Sciences; Professor of Cell and Developmental Biology; Professor of Ophthalmology and Visual Sciences B.S. (University of St. Thomas [Minnesota] 1980); Ph.D. (Mayo Clinic 1988) [1993]
- DAVID K. PATZER, Assistant Clinical Professor of Psychiatry and Behavioral Sciences B.A. (Illinois Wesleyan 1984); M.D. (Northwestern 1989) [2017]
- PAISIT PAUEKSAKON, Professor of Pathology, Microbiology and Immunology M.D. (Phramongkutklao College of Medicine [Thailand] 1987) [2009]
- ALEXIS BARTLEY PAULSON, Associate in Radiology and Radiological Sciences B.S.N. (Belmont 2006); M.S.N. (Pennsylvania 2007) [2016]
- SIDDHARAMA PAWATE Associate Professor of Neurology
 - M.D. (Karnatak Medical [India] 1990) [2009]
- ANGELE N. PAYNE Assistant Clinical Professor of Or hthalmology & Visual Sciences
 - M.P.H. (Florida Agricultural and Mechanical 2004) [2018]
- DEBORAH M. PAYNE, Assistant in Medicine B. S., M.S. (Alabama, Birmingham 1996, 1996) [2008]
- Radiological Sciences, Emeritus
 B.A., M.D. (Vanderbilt 1945, 1948) [1960]
- ALLEN PEABODY, Assistant Clinical Professor of
 - B.A. (Tennessee 2000); M.D. (Morehouse 2007) [2012]
- JOHN P. PEACH, Assistant Professor of Clinical Medicine
 - B.S. (Lipscomb 1990); M.D. (Louisville 1994) [1997]
- MATTHEW R. PEACHEY, Assistant Professor of Medicine
 - B.S. (Middle Tennessee State 2002); M.D. (Vanderbilt 2006) [2012]
- ADRIAN SCOTT PEARSON, Professor of Surgery B.A. (Tennessee 1987); M.D. (UT Health Science Center [Tennessee] 1991) [1999]
- ROBIN S. PEARSON, Clinical Professor of Pediatrics
 - B.A. (Southern Methodist 1987); M.D. (UT Health Science Center [Tennessee] 1991) [1999]
- SUN H. PECK, Assistant Professor of Medicine; Assistant Professor of Biochemistry B.A., M.S. (Pennsylvania 2005, 2005); Ph.D. (Harvard 2011) [2019]

- TETYANA V. PEDCHENKO, Research Assistant Professor of Medicine M.S. (Taras Shevchenko National [Ukraine] 1984); Ph.D. (Institute of Pharmacology and Toxicology [Ukraine] 1992) [2019]
- VADIM K. PEDCHENKO, Research Associate Professor of Medicine B.S., M.S. (Kiev State [Ukraine] 1983, 1985); Ph.D. (Palladin Institute of Biochemistry [Ukraine] 1993) [2002]
- R. STOKES PEEBLES,
 Elizabeth and John Murray Chair in Medicine;
 Professor of Medicine;
 Professor of Pathology,
 Microbiology and Immunology
 B.S. (Davidson 1982);
 M.D. (Vanderbilt 1986)
 [1998]
- JULIE T. PEEK, Clinical Professor of Pediatrics B.S. (Yale 1984); M.D. (North Carolina 1988) [1992]
- RICHARD M. PEEK, JR., Mina Cobb Wallace Chair in Immunology; Professor of Medicine; Professor of Pathology, Microbiology and Immunology; Director, Division of Gastroenterology B.S. (Davidson 1984); M.D. (North Carolina 1988) [1995]
- ALLAN B. PEETZ, Assistant Professor of Surgery B.S. (Notre Dame 2004); M.D. (Michigan 2008) [2016]
- KIFFANY J. PEGGS, Assistant Clinical Professor of Medicine B.S. (Tennessee 2004); M.D. (UT Health Science
- Center [Tennessee] 2011) [2019]
 KATIE GREENE PEGRAM, Clinical Instructor in Pediatrics
 - B.A. (Yale 2006); M.D. (UT high Science Center [Tennessee] 2011) [20.7]
- AMANDA C. PELTIER, Associate Professor of Neurology; Associate Professor of Medicine B.A. (Denison 1994); M.D. (Onio State 1998); M.S. (Michigan 2005) [2005]
- JULIE S. PENDERGAST, Adjunct Assistant Professor of Medicine B.S., M.S. (Illinois, Champaign 1999, 2001); Ph.D. (Miami 2007) [2007]
- JENNIFER L. PENDERGRAST, Assistant in Medicine B.S.N. (Austin Peay State 2008); M.S.N. (Vanderbilt 2011) [2012]
- DUNGENG PENG, Research Instructor in Medicine B.S. (Anhui [China] 2001); M.S., Ph.D. (Anhui Science and Technology University [China] 2004, 2007) [2017]

- JOHN S. PENN, Associate Dean for Faculty Affairs; Phyllis G. and William B. Snyder, MD Endowed Chair in Ophthalmology and Visual Sciences; Professor of Ophthalmology and Visual Sciences; Professor in the Department of Molecular Physiology and Biophysics; Professor of Cell and Developmental Biology; Professor of Medical Education & Administration (VUMC) B.A. (University of the South 1978); M.S. (West Florida 1981); Ph.D. (Florida State 1984) [1998]
- JACQUELYN SUE PENNINGS, Research Assistant Professor of Orthopaedic Surgery; Research Assistant Professor of Center for Medicine, Health, & Society B.S. (Belmont 2001); M.S., Ph.D. (Texas Christian 2005, 2009) [2017]
- DAVID F. PENSON, Paul V. Hamilton, M.D. and Virginia E. Howd Chair in Urologic Oncology; Professor of Urology; Professor of Medicine; Professor of Health Policy, Chair of the Department of Urology, Director, Center for Survical Quality and Outcomes Research 3. A. (Pennsylvania 1987); M.D. (Boston University 1994); M.P.H. (Yale 2001); M.Mgt. (Vanderbil: 2014) [2009]
- MERIDICA LEA PERATIKOS, Adjunct Instructor in Brostatistics
 - B.S., B.A., M.S. (Case Western Reserve 2005, 2006, 2006) [2015]
- CALEN PERDIKIS, Professor of Plastic Surgery; Chair of the Department of Plastic Surgery M.B.B.Ch. (Witwatersrand [South Africa] 1988) [2017]
- EDWARD C. PERDUE, Assistant Clinical Professor of Oral and Maxillofacial Surgery B.S. (Alabama 1988); D.D.S. (UT Health Science Center [Tennessee] 1992) [2006]
- MATTHEW L. PERKINS, Clinical Professor of Pediatrics B.S. (Western Kentucky 1990); M.D. (Louisville 1994) [1999]
- JONATHAN B. PERLIN, Clinical Professor of Medicine
 - B.A. (Virginia 1984); Ph.D., M.D. (Virginia Commonwealth 1991, 1992) [2007]
- AIMEE P. PERRI, Assistant Professor of Clinical Pediatrics
 - B.S. (Texas 1994); M.D. (Texas, San Antonio 1999) [2011]
- ROMAN E. PERRI, Assistant Professor of Medicine B.S., M.D. (Wisconsin 1995, 1999) [2006]
- SAMUEL J. PERRY, Instructor in Clinical Medicine; Instructor in Clinical Pediatrics B.S., M.D. (Wake Forest 1979, 1988) [2017]

- ANNA K. PERSON, Associate Professor of Medicine
 - B.A. (Macalester 2000); M.D. (Washington University 2005) [2010]
- JUSTIN PESPISA, Instructor in Clinical Pediatrics B.S., M.D. (Massachusetts 2010, 2017) [2020]
- SARIKA UPPAL PETERS, Associate Professor of Pediatrics; Associate Professor of Psychiatry and Behavioral Sciences
 - B.A. (Austin College 1993); M.A., Ph.D. (Texas 1997, 2000) [2009]
- JOSH F. PETERSON, Professor of Biomedical Informatics; Professor of Medicine B.S. (Stanford 1992); M.D. (Vanderbilt 1997); M.P.H. (Harvard 2002) [2013]
- NEERAJA B. PETERSON, Associate Professor of Medicine
 - B.S. (Duke 1993); M.D. (Vanderbilt 1997); M.Sc. (Boston University 2002) [2002]
- TODD E. PETERSON, Associate Professor of Radiology and Radiological Sciences B.A. (Gustavus Adolphus 1991); B.A. (Oxford [U.K.] 1993); M.S., Ph.D. (Indiana, Bloomington 1994, 2000) [2003]
- MICHAEL R. PETRACEK, Professor of Cardiac Surgery, Emeritus B.S. (Baylor 1967); M.D. (Johns Hopkins 1971) [2006]
- KIMBERLY A. PETRIE, Assistant Professor of Medical Education & Administration (VU) 5 A. (Lawrence 1996); Ph.D. (Vanderbilt 2004) [2008]
- WILLIAM M. PETRIE, Professor of Clinical Psychiatry and Behavioral Sciences; Professor of Clinical Neurology; Director of Geriatric Psychiatry Outpatient Program, Adjunct Professor of Nursing
 - B.A., M.D. (Vanderbilt 1968, 1972) [2011]
- CATHLEEN C. PETTEPHER, Assistant Dean for Assessment, School of Medicine; Professor of Biochemistry; Professor of Medical Education & Administration (VU) B.S., P.S., Ph.D. (South Alabama 1985, 1987, 1990) [1990]
- APRIL C. PETTIT, Associate Professor of Medicine B.S. (Michigan 2000); M.D. (Wayne State 2004); M.P.H. (Vanderbilt 2010) [2011]
- ANDREW N. PFEFFER, Assistant Professor of Emergency Medicine
 - A.B. (Brown 2005); M.D. (Virginia 2010) [2013]
- HUONG T. PHAM, Assistant Professor of Neurology
 - B.A. (Case Western Reserve 2006); M.D. (Marshall 2011) [2016]
- WELLINGTON PHAM, Associate Professor of Radiology and Radiological Sciences; Associate Professor of Biomedical Engineering B.S., Ph.D. (Toledo 1996, 2000) [2006]

- JASON PHAN, Research Assistant Professor of Biochemistry B.S. (California, Irvine 1995): Ph.D. (South
 - Carolina 2001) [2009]
- JOEL M. PHARES, Assistant Professor of Clinical Medicine
 - B.S. (West Virginia 1992); M.D. (Robert Wood Johnson Medical, New Brunswick 1997) [2012]
- AMANDA R. PHELPS, Assistant in Medicine B.S.N. (Belmont 2005); M.H.S. (South College 2010) [2017]
- CHRISTOPHER JOHN PHELPS, Instructor in Clinical Radiology & Radiological Sciences B.S. (East Tennessee State 2006); D.O. (Edward Via College of Ostheopathic Medicine 2014) [2019]
- FENNA T. PHIBBS, Associate Professor of Neurology
 - B.S. (Colorado State 1996); M.D. (Colorado 2002); M.P.H. (Vandero in 2010) [2007]
- MARY PHILIP, Assistant Professor of Medicine; Assistant Professor of Pathology, Microbiology and Immunology
 - *B.S.* (Ya e 1994); Ph.D., M.D. (Chicago 2002, 2004) [2017]
- ELIZABETH J. PHILLIPS, John A. Oates Chair in Clinical Research; Professor of Pathology, Microbiology and Immunology; Professor of Pharmacology; Professor of Medicine

 B.Sc., M.D. (Alberta [Canada] 1987, 1989)

 [2013]
- HEATHER N. PHILLIPS, Clinical Professor of Pediatrics
 - B.S. (Birmingham-Southern 1999); M.D. (Alabama, Birmingham 2003) [2008]
- IRA E. PHILLIPS III, Assistant Professor of Psychiatry and Behavioral SciencesS.B. (Massachusetts Institute of Technology 2003); A.M. (Harvard 2006); M.D. (Vanderbilt 2010) [2014]
- JAMES DAVID PHILLIPS, Assistant Professor of Otolaryngology - Head and Neck Surgery; Assistant Professor of Plastic Surgery B.S., M.D. (Vanderbilt 2005, 2009) [2016]
- JOHN A. PHILLIPS III, David T. Karzon Chair in Pediatrics; Professor of Pediatrics; Professor of Medicine; Professor of Pathology, Microbiology and Immunology; Director, Division of Medical Genetics; Adjunct Professor of Pediatrics at Meharry Medical College M.D. (Wake Forest 1969) [1984]
- KRISTINE PHILLIPS, Associate Professor of
 - Medicine B.S., Ph.D. (Louisiana State 1988, 1993); M.D. (Johns Hopkins 1995); M.S. (Michigan 2016) [2016]

- LISA ANN PHILLIPS, Assistant Professor of Clinical Obstetrics & Gynecology B.A. (College of the Holy Cross 1989); M.D. (Georgetown 1995) [2018]
- RACHEL VICTORIA PHILLIPS, Clinical Instructor in Pediatrics
 - B.S. (Alabama 2010); M.D. (Mississippi 2014) [2017]
- SHARON E. PHILLIPS, Associate in Biostatistics B.S., M.S.P.H. (South Florida 1987, 1998) [2011]
- ROBERT N. PIANA, Professor of Medicine A.B. (Harvard 1980); M.D. (Pennsylvania 1987) [2000]
- MARIA BLANCA PIAZUELO, Research Associate Professor of Medicine
 - M.D. (Universidad del Valle [Colombia] 1986) [2005]
- JAMES W. PICHERT, Professor of Medical Education and Administration (VUMC), Emeritus; Professor of Medical Education and Administration B.S. (Bucknell 1974); M.S., Ph.D. (Illinois, Champaign 1976, 1978) [1979]
- LAURA PICKEL, Assistant in Pediatric Surgery B.S. (Tennessee, Memphis 2010); M.S. (Trevecca Nazarene 2013) [2014]
- DAVID R. PICKENS III, Associate Professor of Radiology and Radiological Sciences B.A. (University of the South 1969); B.E., M.S., Ph.D. (Vanderbilt 1971, 1977, 1981) [1981]
- ERIN M. PICOU, Assistant Professor of Hearing & Speech Sciences
 B.S. (Middle Tennessee State 2003); Au.D., Po.D. (Vanderbilt 2007, 2011) [2011]
- DONALD LEE PIERCE, Assist in Professor of Clinical Psychiatry and Behavioral Sciences B.S. (East Tennessee State 2010); M.D. (UT Health Science Center [Tennessee, 2014) [2019]
- HOLLY R. PIERCE, Assistant in Medicine B.S.N. (Tennessee 1997); M.S.N. (Vanderbilt 2007) [2008]
- RICHARD A. PIERCE, Assistant Professor of Surgery B.S. (Duke 1992); Ph.D., M.D. (Virginia 2001,

B.S. (Duke 1992); Ph.D., M.D. (Virginia 2001, 2002) [2014]

- ASHLEE S. PIERCEY, Assistant in Medicine B.S. (Lipscomb 2000); M.S.N. (Vanderbilt 2003) [2015]
- LISA M. PIERCEY, Assistant Clinical Professor of Pediatrics B.S. (Lipscomb 1998); M.D. (East Tennessee State 2002); M.B.A. (Bethel College, McKenzie [Tennessee] 2009) [2007]

- MONICA PIERSON, Assistant Professor of Clinical Pediatrics

 R.S.N. (Andrews 1976): M.D. (Univ. of Jugger)
 - B.S.N. (Andrews 1976); M.D. (Univ of Juarez 1984) [2014]
- JENNIFER A. PIETENPOL, Benjamin F. Byrd Jr. Chair in Oncology; Professor of Biochemistry; Professor of Otolaryngology - Head and Neck Surgery; Director of the Vanderbilt-Ingram Cancer Center
 - B.A. (Carleton College 1986); Ph.D. (Vanderbilt 1990) [1994]
- JOHN B. PIETSCH, Professor of Pediatrics; Professor of Pediatric Surgery B.S. (Georgetown 1968); M.D. (Michigan 1972) [1986]
- MICHAEL A. PILLA, Professor of Clinical Anesthesiology B.A., B.S. (Widener 1990, 1990); M.D.

B.A., B.S. (Widener 1990, 1990); M.L. (Pennsylvania 1994) [2064]

- CHRISTOPHER PINELLI, Assistant Professor of Pathology, Microbiology and Immunology D.V.M. (Missiscip ii State 2011); Ph.D. (Guelph [C mada] 2010; D.S. (University of Prince Edward Island 2007) [2020]
- RAM I. PINKLEY, Associate Clinical Professor of Pediatrics
 - B 5. (Vanderbilt 1994); M.D. (East Tennessee State 2001) [2006]
- Professor of Emergency Medicine
 B.S. (Vanderbilt 1986); M.D. (UT Health Science
 Center [Tennessee] 1991) [1997]
- C. WRIGHT PINSON, Senior Associate Dean for Clinical Affairs; Professor of Surgery; Deputy CEO and Chief Health System Officer, VUMC; Adjunct Professor of Nursing
 B.A., M.B.A. (Colorado, Denver 1974, 1976); M.D. (Vanderbilt 1980) [1990]
- COURTNEY L. PIRKLE, Assistant in Otolaryngology - Head and Neck Surgery B.S.N. (Central Florida 2011); M.S.N. (Alabama, Birmingham 2017) [2017]
- MATTHEW JAMES PIROTTE, Assistant Professor of Emergency Medicine B.A. (Kansas 2004); M.D. (Loyola 2008) [2020]
- CLAUDE JOSEPH PIRTLE, Adjunct Assistant Professor of Biomedical Informatics B.S. (Louisiana State 2007); M.D. (Louisiana State, New Orleans 2014) [2018]
- ANDREW PISANSKY, Assistant Professor of Anesthesiology B.A. (Macalester 2006); M.S., M.D. (Minnesota 2013, 2015) [2020]

- ADAM S. PITTS, Assistant Clinical Professor of Oral & Maxillofacial Surgery B.S., D.D.S. (Oklahoma 2000, 2004); M.D. (Vanderbilt 2007) [2010]
- CARLOS A. PLANCARTE, Assistant Professor of Pediatrics
 - B.S. (Texas, Arlington 2011); M.D. (Texas, Galveston 2015); M.S. (Yeshiva 2020) [2020]
- LUCIA RAMEH PLANT, Research Associate Professor of Biochemistry B.S., Ph.D. (Sao Paulo [Brazil] 1987, 1992) [2018]
- VIRGINIA BARNES PLANZ, Assistant Professor of Clinical Radiology & Radiological Sciences B.S. (Auburn 2007); M.D. (Alabama, Birmingham 2012) [2018]
- GREGORY S. PLEMMONS, Associate Professor of Clinical Pediatrics B.S. (Wofford 1987); M.D. (Medical University of South Carolina 1992); M.F.A. (Bennington 2007) [1998]
- ERIN J. PLOSA, Assistant Professor of Pediatrics B.A. (Vanderbilt 1999); M.D. (Wake Forest 2005) [2011]
- CLAUSYL JULIUS PLUMMER II, Assistant Professor of Physical Medicine and Rehabilitation B.S. (Oakwood University 2010); M.D. (George Washington 2014) [2019]
- MIRNA BAJRAMOVIC PODOLL, Assistant Professor of Pathology, Microbiology and Immunology
 - B.S., M.D. (Louisville 2008, 2012) [2018]
- NATHAN ELLIOTT PODOLL, Assistant Professor of Clinical Ophthalmology and Visual Sciences B.S. (Indiana, Bloomington 2006); M.D. (Louisville 2011) [2016]
- LAUREN M. POE, Assistant Professor of Clinical Anesthesiology B.S. (Texas 2011); D.O. (North Texas Health Science Center 2015) [2020]
- LORINA T. POE, Assistant Professor of Clinical Pediatrics; Assistant Professor of Clinical Medicine
 - B.S. (Fisk 2001); M.S.P.H., M.D. (Meharry Medical 2003, 2008) [2013]
- NICOLE A. POIRIER, Assistant in Neurology B.S.N. (Memorial University of Newfoundland 2008); M.S.N. (Lincoln Memorial 2016) [2018]
- ELENA POKIDYSHEVA, Research Assistant Professor of Medicine M.A. (Moscow Institute of Physics and Technology [Russia] 1999); Ph.D. (The Biozentrum of the University of Basel 2004) [2015]

- GREGORY G. POLKOWSKI, Associate Professor of Orthopaedic Surgery B.S., M.D. (Arkansas 2000, 2004); M.Sc. (Connecticut 2012) [2013]
- JASON MICHAEL POLLACK, Assistant Professor of Anesthesiology B.A. (Washington University 2008); M.D. (Loyola 2012) [2017]
- KATHLEEN M. POLLARD, Assistant Professor of Clinical Medicine B.A. (Virginia 2011); M.D. (George Washington 2017) [2020]
- JENNIFER M. POLLICE-MESERVY, Assistant in Medicine B.S.N. (Michigan State 1993); M.S. (Michigan 2000);FNP,MS,RN,WHNP, [2001]
- VASILIY V. POLOSUKHIN, Research Associate Professor of Medicine M.D. (Tomsk Medical Institute [Russia] 1984); Ph.D., Sc.D. (Institute of Chinical and Experimental Medicine, Novosibirsk [Russia] 1991, 1998) [2003]
- SEAN M. POLYIN, Associate Professor of Psychiatry and Behavioral Sciences
 - B.A. (Virginia 1999); M.A., Ph.D. (Princeton 2003, 2005) [2009]
- KRISTEN PONTIFF, Assistant Professor of Clinical Pediatrics
- B.S. (Wagner 2006); M.D. (Ross 2012) [2019]
- KYLE JUDE PONTIFF, Assistant Professor of Clinical Pediatrics
 - B.S. (Louisiana, Lafayette 2006); M.D. (Ross 2011) [2019]
- SABRINA J. POON, Assistant Professor of Emergency Medicine
 - B.A. (Yale 2007); M.D. (Vanderbilt 2012) [2018]
- JOHN C. POPE IV, Professor of Urology; Professor of Pediatrics
 - B.A. (Wake Forest 1985); M.D. (UT Health Science Center [Tennessee] 1989) [1997]
- TANYA PORASHKA, Assistant Clinical Professor of Psychiatry and Behavioral Sciences M.D. (Medical Academy, Sofia [Bulgaria] 1996) [2010]
- MICHAEL K. PORAYKO, Professor of Medicine B.S. (Illinois, Champaign 1977); M.D. (Illinois, Chicago 1981) [2002]
- STEFANIE C. PORTER, Assistant in Cardiac Surgery
 - B.S.B.A. (Spring Hill 1990); B.S.N. (Belmont 2013); M.S.N. (Vanderbilt 2014) [2017]
- ROBERT L. POST, Professor of Molecular Physiology and Biophysics, Emeritus A.B., M.D. (Harvard 1942, 1945) [1948]

- MATTHEW ROSS POTTER, Assistant Professor of Clinical Medicine
 - B.S. (California, Los Angeles 2007); M.D. (Ohio State 2012) [2015]
- MARIA ELLEN GOLLA POWELL, Research Assistant Professor of Otolaryngology - Head and Neck Surgery
 - B.A. (Bob Jones 2004); M.S. (South Carolina 2010); Ph.D. (Cincinnati 2015) [2018]
- DORRIS E. POWELL-TYSON, Assistant Professor of Emergency Medicine B.S., M.S. (Tuskegee 1987, 1989); M.D. (Wisconsin 1994) [2003]
- ALVIN C. POWERS, Joe C. Davis Chair in Biomedical Science; Professor of Medicine; Professor of Molecular Physiology and Biophysics; Director, Division of Diabetes, Endocrinology and Metabolism B.A. (Virginia 1976); M.D. (UT Health Science Center [Tennessee] 1979) [1988]
- JAMES S. POWERS, Professor of Medicine; Adjunct Professor of Nursing B.A. (Wesleyan 1973); M.D. (Rochester 1977) [1983]
- AMBRA POZZI, Professor of Medicine; Professor of Molecular Physiology and Biophysics Ph.D. (Florence [Italy] 1996) [2000]
- SATISH D. PRABHU, Associate Clinical Professor of Pediatrics M.B.B.S. (Kasturba Medical [India] 1983); W.D. (Mangalore [India] 1986) [2005]
- RUDRA PRAKASH, Clinical Professor of Psychiatry and Behavioral Sciences M.B.B.S. (G.S.V.M. Medical [Irdhe] 1972); M.D. (Lucknow [India] 1976) [2009]
- SUBIR PRASAD, Assistant Clinical Professor of Neurology B.S.E.E. (Mississippi 1990); M.D. C7 Health Science Center [Tennessee] 1995) [2004]
- SIDDHARTH PRATAP, Assistant Professor of Meharry; Adjunct Assistant Professor of Biomedical Informatics B.S. (Indiana, Bloomington 1995); Ph.D. (Meharry Medical 2004); M.S. (Vanderbilt 2007) [2004]
- KEVIN PREECE, Instructor in Clinical Anesthesiology B.A., M.D. (Utah 2004, 2008) [2014]
- LAUREN SHORE PRESCOTT, Assistant Professor of Obstetrics and Gynecology B.A., M.D. (Georgetown 2003, 2009); M.P.H. (Texas, Houston 2015) [2017]
- LAUREN D. PRESLEY, Assistant in Pediatrics B.A., M.S.N. (Vanderbilt 2007, 2011) [2015]

- MARTHA K. PRESLEY, Assistant Professor of Clinical Medicine B.S., M.D., J.D. (Vanderbilt 2004, 2010, 2010) [2019]
- ANNA E. PRESTWICH, Assistant in Surgery B.A. (Middle Tennessee State 2004); M.S.N. (Vanderbilt 2012) [2014]
- MIAS PRETORIUS, Associate Professor of Anesthesiology; Associate Professor of Medicine M.B.Ch.B (Pretoria [South Africa] 1993); D.A. (College of Medicine, Durban [South Africa] 1995); M.S.C.I. (Vanderbilt 2002) [2001]
- ANN H. PRICE, Associate Dean for Alumni Affairs; Associate Professor of Medical Education & Administration (VU); Associate Professor of Medicine
 - B.A., M.D. (Vanderbilt 1971, 1978) [1983]
- JAMES S. PRICE, Clinical Professor of Pediatrics B.A. (University of the South 1964); M.D. (Vanderbilt 1968) [1971)
- JAN ELLEN PRICE, Assistant Professor of Clinical Medicine 3.3. (Dickinson, 1993); M.D. (Johns Hopkins
 - 2997) [2001]
- KIM N. PRICE, Assistant in Pediatrics B.S.N. (Tennessee, Martin 1999); M.S.N. (Vanderbilt 2001) [2009]
- MCNAEL J. PRICE, Associate Professor of Padiation Oncology
 - B.S. (Temple 2000); Ph.D., M.S. (Texas, Houston 2004, 2004) [2017]
- RONALD R. PRICE, Professor of Radiology and Radiological Sciences, EmeritusB.S. (Western Kentucky 1965); Ph.D. (Vanderbilt 1971) [1979]
- ANDREA K. PRIMM, Assistant in Anesthesiology B.S. (Middle Tennessee State 2001); M.S.N. (Alabama, Huntsville 2007) [2012]
- RICHARD L. PRINTZ, Research Assistant Professor of Medicine
 - B.S. (Pennsylvania State 1983); Ph.D. (Vanderbilt 1996) [1992]
- ADAM J. PRUDOFF, Assistant Professor of Clinical Medicine
 - B.S. (Pennsylvania State 1993); M.D. (Hahnemann Medical 1998) [2006]
- ARDINA J. PRUIJSSERS, Research Assistant Professor of Pediatrics M.S. (Wageningen [Netherlands] 2003); Ph.D. (Georgia 2008) [2012]
- RONALD E. PRUITT, Assistant Clinical Professor of Medicine
 - B.A., M.D. (North Carolina 1976, 1984) [2001]

- SUMIT PRUTHI, Associate Professor of Radiology and Radiological Sciences; Associate Professor of Pediatrics
 - M.D. (Mumbai [India] 1996) [2010]
- REBECCA C. PRYJMAK, Assistant in Pediatrics B.S.N. (Samford 2006); M.S.N. (Vanderbilt 2012) [2013]
- HEATHER H. PUA, Assistant Professor of Pathology, Microbiology and Immunology B.S., Ph.D., M.D. (Duke 2001, 2008, 2009) [2017]
- MEREDITH EVANS PUGH, Associate Professor of Medicine
 - B.S. (Richmond 2000); M.D. (Virginia Commonwealth 2004); M.S.C.I. (Vanderbilt 2012) [2012]
- JILL M. PULLEY, Research Associate Professor of Medicine
 - B.S. (Yale 1991); M.B.A. (Pennsylvania 1996) [2007]
- CARY WATSON PULLIAM, Assistant Clinical Professor of Surgery
 - B.A., M.D. (Vanderbilt 1975, 1979) [2016]
- MITCHELL A. PULLIAS, Associate Clinical Professor of Pediatrics
 - B.A. (Lipscomb 1994); M.D. (UT Health Science Center [Tennessee] 1999) [2003]
- LYNN R. PUNNOOSE, Assistant Professor of Medicine
 - S.B. (Massachusetts Institute of Technology 2003); M.D. (Harvard Medical 2007) [2018]
- PRIYA PUROHIT, Assistant Clinical Professor in Oral and Maxillofacial Surgery B.S., D.D.S., M.S. (Virginia Commonwealth 2000, 2005, 2007) [2016]
- AI-DONG QI, Research Assistan Professor of Pharmacology
 - M.D. (Binzhou Medical College China] 1985); M.S. (Shandong Medical [China] 1990); Ph.D. (Chinese University of Hong Kong 1997) [2012]
- HUAN QIAO, Research Instructor of Medicine M.D. (Nankai [China] 2002); Ph.D. (Peking [China] 2005) [2014]
- SHIMIAN QU, Research Assistant Professor of Neurology
 - B.A. (Beijing Agricultural [China] 1984); M.S. (Chinese Academy of Sciences 1987); Ph.D. (Vanderbilt 1993) [2013]
- XIANGHU QU, Research Associate Professor of Pediatrics
 - B.S., M.S. (Huazhong Normal [China] 1984, 1987); Ph.D. (Huazhong University of Science and Technology [China] 1999) [2006]
- VITO QUARANTA, Professor of Biochemistry; Professor of Pharmacology M.D. (Bari [Italy] 1974) [2003]

- SUSANNA LEIGH QUASEM, Assistant Clinical Professor of Psychiatry and Behavioral Sciences B.A. (Southern Adventist 1998); M.D. (UT Health Science Center [Tennessee] 2003) [2008]
- VIRGINIA DEBLANC QUINN, Assistant in Medicine
 - B.A., M.S.N. (Vanderbilt 2015, 2017) [2017]
- BARRETT J. RABURN, Assistant in Neurological Surgery
 - B.S., M.S.N. (Trevecca Nazarene 2012, 2014) [2015]
- RYAN T. RABURN, Assistant in Neurological Surgery
 - B.S. (King 2005); M.S.M. (Trevecca Nazarene 2007) [2010]
- ANDREW E. RADBILL, Assistant Professor of Pediatrics
 - B.S. (Vanderbilt 1998); M.D. (Alabama, Birmingham 2003) [2010]
- RAFAEL RADI, Adjunct Profesor of Biochemistry M.D., Pl.D. (Universidad de la República [Uruguay] 1988 1991) [2009]
- MAR. AN RAFAD, Assistant Professor of Chemical & Biomelecular Engineering; Assistant Professor of Biomedical Engineering; Assistant Professor of Radiction Oncology
 - S.B. (Massachusetts Institute of Technology 2006); S.M., Ph.D. (Harvard 2007, 2012) [2018]
- ALJR. RAFATJOO, Instructor in Clinical Medicine; Instructor in Clinical Pediatrics
 - B.S., M.D. (California, Irvine 1990, 1994) [2019]
- STEPHEN P. RAFFANTI, Professor of Medicine B.A. (California, Berkeley 1975); M.D. (Genova [Italy] 1985); M.P.H. (Vanderbilt 2003) [1990]
- AMANDA NELSON RAGLE, Assistant Professor of Clinical Radiology and Radiological Sciences B.S. (Western Kentucky 2000); M.D. (Kentucky, Lexington 2004) [2010]
- JENNIFER M. RAGSDALE, Associate Clinical Professor of Pediatrics B.S. (Notre Dame 1992); M.D. (UT Health Science Center [Tennessee] 1997) [2000]
- S. M. JAMSHEDUR RAHMAN, Research Assistant Professor of Medicine
 - B.Sc., M.Sc. (Dhaka [Bangladesh] 1980, 1981); Ph.D. (Nagoya [Japan] 1991) [2006]
- MEGAN RAHMLOW, Assistant Professor of Clinical Neurology
 - M.D., B.A. (Missouri, Kansas City 2006, 2006) [2017]
- DAVID S. RAIFORD, Senior Associate Dean for Faculty Affairs; Professor of Medical Education and Administration; Professor of Medicine; Chief of Clinical Staff, VUMC, B.S. (Massachusetts Institute of Technology 1981); M.D. (Johns Hopkins 1985) [1991]

- SATISH R. RAJ, Adjunct Associate Professor of Medicine
 - B.Sc. (Rensselaer Polytechnic Institute 1991); M.D. (Queen's [Canada] 1996); M.S.C.I. (Vanderbilt 2004) [2002]
- SEESANDRA V. RAJAGOPALA, Research Assistant Professor of Medicine M.Sc. (Bangalore [India] 1998); Ph.D. (Heidelberg [Germany] 2006) [2017]
- RAMNARAYAN RAMACHANDRAN, Assistant Professor of Hearing and Speech Sciences M.Sc. (Birla Institute of Technology [India] 1991); M.S. (Virginia Commonwealth 1993); Ph.D. (Johns Hopkins 2000) [2012]
- NABIH MANIH RAMADAN, Adjoint Professor of Hearing & Speech Sciences B.S., M.D. (American University of Beirut [Lebanon] 1980, 1985); M.B.A. (DeVry, Oakbrook 2008) [2018]
- DAYANIDHI RAMAN, Adjunct Assistant Professor of Pharmacology D.V.M. (Madras [India] 1988); Ph.D. (Kansas State 1995) [2003]
- RAMEELA RAMAN, Associate Professor of Biostatistics; Associate Professor of Health Policy; Associate Professor of Nursing; Associate Professor of Psychiatry and Behavioral Sciences B.S. (Calicut, Thrissur [India] 2001); M.S. (Madurai Kamaraj [India] 2004); M.A., Ph.D. (SUNY, Buffalo 2008, 2011) [2011]
- SAUMYA RAMANATHAN, Adjunct Assist in Professor in Pharmacology B.S., M.S. (Madras [India] 2002, 2004); Ph.D. (Arizona 2012) [2017]
- NAGENDRA RAMANNA, Assistant Professor of Medicine
 M.B.B.S. (Armed Forces Medical College [India]
 - 1980); M.D. (Postgraduate Institute of Medical Education and Research [India] 1984) [2012]
- RANGARAJ RAMANUJAM, Pichard M. and Betty Ruth Miller Chair in Healthcare Management; Professor of Organizational Studies; Professor of Health Policy
 - B.E. (Anna [India] 1986); M.B.A. (Indian Institute of Management, Calcutta 1988); M.S., Ph.D. (Carnegie Mellon 1995, 2000) [2008]
- ANDREA HAVENS RAMIREZ, Assistant Professor of Medicine
 - B.S. (North Carolina State 2002); M.D. (Duke 2007); M.S. (Vanderbilt 2011) [2009]
- HALEY ELIZABETH RAMSEY, Research Assistant Professor of Medicine B.Sc. (Tennessee 2002); M.Sc. (Bonn [Germany] 2007); Ph.D. (Vienna [Austria] 2012) [2015]

- ELIZABETH VANCE RANDOLPH, Assistant Clinical Professor of Pediatrics B.A., M.D. (Virginia 2006, 2011) [2014]
- TIMOTHY J. RANVAL, Assistant Clinical Professor of Surgery
 - B.S. (Michigan State 1974); M.S., M.D. (Louisville 1980, 1983) [1993]
- VIDYA N. RAO, Assistant Clinical Professor of Anesthesiology
 - M.D. (Bombay [India] 1988) [2001]
- WILLIAM MILLSAPS RASBERRY, JR., Assistant Professor of Clinical Medicine B.S. (Alabama 2001); M.D. (East Tennessee State 2013) [2020]
- MOHAMMAD RASSEKHI, Assistant in Medicine B.A. (Illinois, Champaign 1984); M.S.N. (Vanderbilt 1997) [2004]
- JUDITH A. RASSI, Associate Professor of Hearing and Speech Sciences, Emerita B.S. (Illinois State 1961). MA. (Northwestern 1963) [1)90]
- ANANDE ARAJAN FATHINASABAPATHY, Research Instructor in Medicine M.S. (Arna [India] 2003); Ph.D. (Florida 2015) [2018]
- EFFREY C. RATHMELL, Cornelius Vanderbilt Clarun Immunobiology; Professor of Pathology, Microbiology and Immunology; Professor of Molecular Physiology & Biophysics

 B.S. (Northern Iowa 1991); Ph.D. (Stanford 1997) [2015]
- W. KIMRYN RATHMELL, Cornelius Abernathy Craig Chair; Professor of Medicine; Professor of Biochemistry; Interim Chair of the Department of Medicine
 - B.A., B.S. (Northern Iowa 1991, 1991); Ph.D., M.D. (Stanford 1996, 1998) [2015]
- FRANK JOSEPH RAUCCI, JR., Assistant Professor of Pediatrics; Adjunct Assistant Professor of Medicine
 - B.S., M.S. (Florida 2003, 2004); M.D., Ph.D. (Virginia Commonwealth 2011, 2011) [2019]
- CAROL ANN RAUCH, Adjunct Associate Professor of Pathology, Microbiology and Immunology A.B. (Dartmouth 1982); M.D., Ph.D. (Johns Hopkins 1991, 1991) [2011]
- MUHAMMAD AMEEN RAUF, Instructor in Clinical Surgery
 - M.B.B.S. (Aga Khan [Pakistan] 2007) [2019]
- LINDSAY M. RAUTH, Clinical Professor of Pediatrics
 - B.A. (Virginia 1998); M.D. (Vanderbilt 2002) [2005]

- MARK E. RAWLS, Assistant Professor of Clinical Pediatrics
 - B.E. (Vanderbilt 2002); M.D. (Mississippi 2006) [2010]
- DAVID M. RAY, Assistant Professor of Clinical Radiology & Radiological Sciences B.S. (Birmingham-Southern 2007); M.S. (Mississippi 2008); M.D. (Mississippi, Jackson 2013) [2019]
- WAYNE A. RAY, Professor of Health Policy B.S. (University of Washington 1971); M.S., Ph.D. (Vanderbilt 1974, 1981) [1974]
- COURTNEY P. RAYBON, Instructor in Clinical Radiology & Radiological Sciences B.S. (Berry 2006); M.D. (Medical College of Georgia 2015) [2020]
- BRITANY LYNN RAYMOND, Assistant Professor of Anesthesiology
 - B.S. (Florida 2008); M.D. (Emory 2013) [2018]
- JOSEPH MICHAEL REARDON, Adjoint Assistant Professor of Emergency Medicine B.S. (Duke 2009); M.D. (Harvard Medical 2013) [2016]
- PETER FRANCIS REBEIRO, Assistant Professor of Medicine; Assistant Professor of Biostatistics B.A. (Yale 2005); Sc.M., Ph.D., M.H.S. (Johns Hopkins 2012, 2014, 2014) [2014]
- ANVESH REDDY, Assistant Professor of Ophthalmology and Visual Sciences B.A. (Washington University 2005); M.D. (OI Health Science Center [Tennessee] 2011) 2015]
- AVANIJA REDDY, Assistant Clinical Professor of Oral & Maxillofacial Surgery B.S. (Birmingham-Southern 2007), M.P.H., D.M.D. (A.T. Still University - [Wissouri] 2010, 2012) [2015]
- CHAKRADHAR MADHAVAREDDIGAR'
 REDDY, Adjunct Assistant Professor of Medicine
 B.Sc. (Navodaya Cooperative Junior College
 [India] 1991); M.D. (Kurrocl-Medical College
 [India] 1999) [2015]
- CHURKU M. REDDY, Clinical Professor of Pediatrics M.B.B.S., P.P.C. (Osmania [India] 1966, 1966) [1995]
- NISHITHA M. REDDY, Associate Professor of Medicine
 - M.B.B.S. (Ambedkar Medical [India] 1998); M.S.C.I. (Vanderbilt 2010) [2007]
- SHILPA B. REDDY, Assistant Professor of Pediatrics
 - B.S. (Michigan 2006); M.D. (Iowa 2010) [2015]

- SRIJAYA KARRA REDDY, Associate Professor of Anesthesiology
 - B.A. (Emory 2001); M.D. (Medical University of the Americas 2005); M.B.A. (George Washington 2013) [2018]
- SUJANA K. REDDY, Instructor in Clinical Medicine
 - B.A. (Northwestern 1999); M.D. (UT Health Science Center [Tennessee] 2003) [2014]
- JAMES ANDREW REED, Assistant Clinical Professor of Oral and Maxillofacial Surgery D.D.S. (Tennessee, Memphis 2008); M.S.D. (Virginia Commonwealth 2011) [2016]
- JAMIE L. REED, Research Instructor in Radiology & Radiological Sciences
 B.S. (Indiana, Bloomington 2002); Ph.D.
 (Vanderbilt 2009) [2010]
- PETER W. REED, Associate Professor of Pharmacology, Emeritus B.A. (Syracuse 1961) 75.D (SUNY, Upstate Medical Center 1968) [1975]
- ANDREW DEAN REESE, Assistant Professor of Clinical Anesuresiology
 - B.S. (Ca'ifornia, Santa Barbara 2008); M.D. (Northwestern 2013) [2018]
- OHN JUFFREY REESE, Mildred Thornton St theman Chair in Perinatology; Professor of Pediatrics; Professor of Cell and Developmental Biology
- M.D., B.A. (Kansas 1982, 1982) [2002]
- NIKI REESE, Assistant in Neurological Surgery B.S. (Florida International 0) [2016]
- RUTH REEVES, Assistant Professor of Biomedical Informatics
 - B.A. (CUNY, Queens College 1988); M.S., Ph.D. (CUNY 1994, 2004) [2015]
- KRIS P. REHM, Professor of Clinical Pediatrics B.S. (Ohio 1994); M.D. (Northwestern 1998) [2005]
- CYNTHIA A. REINHART-KING, Cornelius Vanderbilt Chair; Professor of Biomedical Engineering; Professor of Cell & Developmental Biology; Director of Graduate Studies for Biomedical Engineering; Founding Director of the Center for Mechanobiology B.S. (Massachusetts Institute of Technology 2000); Ph.D. (Pennsylvania 2006) [2017]
- LOU REINISCH, Adjunct Associate Professor of Otolaryngology - Head and Neck Surgery B.S. (Missouri, Rolla 1976); M.S., Ph.D. (Illinois, Champaign 1978, 1982) [1991]
- MICHELLE M. REISING, Assistant Professor of Clinical Pediatrics; Adjunct Assistant Professor of Psychology B.S., M.S., Ph.D. (Vanderbilt 2005, 2009, 2013)

[2014]

- MICHAEL S. REMPLE, Adjunct Research Assistant Professor in Neurological Surgery B.Sc. (Lethbridge [Canada] 2000); Ph.D. (Vanderbilt 2006) [2006]
- YI REN, Assistant Professor of Biochemistry B.S., M.S. (Fudan [China] 2000, 2003); Ph.D. (Princeton 2009) [2016]
- ELIZABETH RENDINA-RUEDY, Assistant Professor of Medicine; Assistant Professor of Molecular Physiology & Biophysics B.S., M.S., Ph.D. (Oklahoma State 2007, 2009, 2014) [2019]
- KIMBERLY FAITH CARLSON RENGEL, Assistant Professor of Anesthesiology B.S. (Southern Methodist 2010); M.D. (Texas 2014) [2019]
- MATTHEW J. RESNICK, Associate Clinical Professor of Urology B.S. (Cornell 2001); M.D. (Pennsylvania 2006); M.P.H. (Vanderbilt 2014) [2011]
- TONIA S. REX, Professor of Ophthalmology & Visual Sciences
 B.S. (Oakland 1995); M.S., Ph.D. (California, Santa Barbara 1997, 2001) [2012]
- BRENT N. REXER, Assistant Professor of Medicine B.S. (Baylor 1994); Ph.D., M.D. (Vanderbilt 2001, 2003) [2009]
- SHELBY MORGAN REYES, Assistant Professor of Clinical Physical Medicine and Rehabilitation B.S. (Maryland 2012); M.A., Ph.D. (Tennessee 2013, 2018) [2019]
- MARCELA ANDREA REYNA-NEYRA Research Instructor in Molecular Physiology & Brophysics B.A., Ph.D. (National Autonomous University of Mexico 1998, 2004) [2019]
- ALBERT B. REYNOLDS, Profe sor of Basic Sciences B.A. (Kenyon 1978); Ph.D. (Virginia 1985)
- CAITLYN REYNOLDS, Instructor in Clinical Ophthalmology & Visual Sciences B.S. (Wartburg College 2014); O.D. (Missouri, Saint Louis 2018) [2019]
- WILLIAM STUART REYNOLDS, Associate Professor of Urology A.B. (Princeton 1997); M.D. (Pennsylvania State 2003); M.P.H. (Vanderbilt 2012) [2009]
- ZACHARY C. REYNOLDS, Assistant in Neurological Surgery B.A., M.S.N. (Tennessee 2015, 2015) [2018]
- MICHELLE L. REYZER, Research Assistant Professor of Biochemistry B.S. (William and Mary 1991); Ph.D. (Texas 2000) [2004]

- JULIE WANG REZK, Assistant Professor of Clinical Oral & Maxillofacial Surgery B.S. (Millsaps 2000); D.M.D. (Alabama, Birmingham 2006) [2008]
- KAREN H. RHEA, Associate Clinical Professor of Psychiatry and Behavioral Sciences A.B. (King 1967); M.D. (North Carolina 1973) [1977]
- CHANHAENG RHEE, Assistant Professor of Medicine B.S. (Boston University 1992); M.D. (Kyungpook National [Korea] 2000); M.B.A. (Texas, Dallas 2012) [2018]
- JULIE ANNE RHOADES, Associate Professor of Medicine; Associate Professor of Biomedical Engineering B.S. (Bowling Green State 1998); Ph.D. (Medical

College of Ohio 2003) [2008]

- REA KAE RHODES, Assistant in Neurological Surgery
 B.S.N. (Armstrong Atlantic State 1988); M.S.N. (South Fiorida 2003) [2015]
- Professo of Pediatrics
 B.S.N. (Vanderbilt 1988); M.D. (St. George's, Gren (ca. 1997) [2003]
- ALEC J. RICE, Assistant Professor of Clinical Oral & Maxillofacial Surgery P.S. (Illinois, Champaign 2009); D.M.D.
 - (Southern Illinois 2013); M.S. (Texas A&M International 2016) [2019]
- ELIZABETH ANN RICE, Assistant Professor of Medicine B.S. (Illinois, Champaign 1990); M.D. (Indiana, Indianapolis 1997) [2001]
- MARK J. RICE, Professor of Anesthesiology B.S. (Wisconsin, Eau Claire 1978); M.D. (Wisconsin 1980) [2015]
- TODD W. RICE, Associate Professor of Medicine B.S. (Notre Dame 1993); M.D. (Indiana, Indianapolis 1997); M.S.C.I. (Vanderbilt 2005) [2004]
- GREGORY P. RICHARDSON, Assistant Clinical Professor of Oral and Maxillofacial Surgery B.S. (Western Kentucky 1985); D.M.D. (Louisville 1989) [1999]
- MICHAEL G. RICHARDSON, Professor of Anesthesiology
 - B.A. (Cornell 1985); M.D. (Chicago 1989) [2002]
- THOMAS R. RICHARDSON, Assistant Professor of Clinical Medicine B.A. (William and Mary 1991); M.D. (Virginia
- B.A. (William and Mary 1991); M.D. (Virginia 1995) [2006]
 TRAVIS D. RICHARDSON, Assistant Professor of
- Medicine

 P. G. L. 2006, M.P. (Fl. 11, 2010) (2010)
 - B.S.E. (Duke 2006); M.D. (Florida 2010) [2019]

- TIFFANY MEGAN RICHBURG, Assistant Professor of Anesthesiology B.S. (South Carolina State 2006); M.D. (Meharry Medical 2011) [2016]
- ROBERT E. RICHIE, Professor of Surgery, Emeritus B.S. (Kentucky, Lexington 1955); M.D. (Vanderbilt 1959) [1964]
- ANN RICHMOND, Ingram Professor of Cancer Research; Professor of Pharmacology; Professor of Dermatology B.S. (Louisiana, Monroe 1966); M.N.S. (Louisiana State 1972); Ph.D. (Emory 1979) [1989]
- BRADLEY W. RICHMOND, Assistant Professor of Medicine
 - B.S. (Evansville 2003); M.D. (Louisville 2007); Ph.D. (Vanderbilt 2017) [2015]
- Emergency Medicine B.A. (Bennington 1976); M.A. (City College of New York 1982); M.D. (Mayo Clinic 1988) [2019]

NEAL J. RICHMOND, Associate Professor of

- TODD A. RICKETTS, Professor of Hearing and Speech Sciences B.A., M.A., Ph.D. (Iowa 1989, 1991, 1995) [1999]
- OTIS B. RICKMAN, Associate Professor of Medicine; Associate Professor of Thoracic Surgery
 - B.S., D.O. (Oklahoma State 1994, 1998) [2003]
- MEGHAN CLAYE RIDDLE, Adjunct Assistant Professor of Psychiatry and Behavioral Sciences B.A. (Vanderbilt 2005); M.D. (Texas, Houston 2011) [2016]
- HEATHER A. RIDINGER, Ass such Professor of Medicine
 B.S. (Brigham Young 2005); M.D. (Maryland,

Baltimore 2009) [2013]

DEREK A. RIEBAU, Associate Professor of Neurology B.S. (Wisconsin, Eau Claire 1991); M.D.

(Wisconsin 2001) [2005]

- DIANA C. RIERA, Assistant Professor of Pediatrics B.S. (Brown 1997); M.D. (New York Medical 2002) [2011]
- W. RUSSELL RIES, Carol and John Odess Chair in Facial, Plastic and Reconstructive Surgery; Professor of Otolaryngology - Head and Neck Surgery
 B.S. (Southwestern at Memphis 1975); M.D. (UT Health Science Center [Tennessee] 1978) [1988]
- MATTHIAS LUDWIG RIESS, Professor of Anesthesiology; Professor of Pharmacology M.D. (Albert Ludwigs University of Freiburg [Germany] 1997); Ph.D. (Medical College of Wisconsin 2004) [2014]

- ARIANNA RIGON, Adjoint Assistant Professor of Hearing and Speech Sciences Ph.D. (Iowa 2017) [2019]
- LINDSAY B. RILEY, Assistant in Pediatrics B.S.N. (Medical College of Georgia 2009); M.S.N. (Vanderbilt 2014) [2014]
- BRIAN I. RINI, Ingram Professor of Cancer Research; Professor of Medicine B.A. (Notre Dame 1991); M.D. (Ohio State 1995) [2020]
- HEATHER ROSE MEAD RIORDAN, Assistant Professor of Pediatrics; Assistant Professor of Neurology
 - B.A. (Brigham Young 2004); M.D. (Rochester 2010) [2016]
- RHONDA RIPPY, Assistant in Anesthesiology B.S.N. (Memphis 1992); M.S.N. (Belmont 1998) [2014]
- MICHAEL L. RISNER, Research Assistant Professor of Ophthalhoology & Virtual Sciences B.S. (En manuel [Georgia] 2003); M.A. (Western Kentucky 2005); Ph.D. (Alabama, Birmingham 20 [0] [2010]
- KATHRYN M. RATER, Instructor in Emergency Medicine
 - B.A. (Minnesota 2013); M.D. (Wisconsin 2017)
- CARMELO J. RIZZO, Professor of Chemistry; Professor of Biochemistry; Vice Chair of Chemistry
 - B.S. (Temple 1984); Ph.D. (Pennsylvania 1990) [1992]
- ALAN E. ROACH, Assistant Clinical Professor of Pediatrics B.S. (Denison 2004); M.D. (Cincinnati 2008) [2011]
- MICHELLE KRYSTINA ROACH, Assistant Professor of Clinical Obstetrics and Gynecology B.S. (South Alabama 2007); M.D. (Alabama, Birmingham 2012) [2016]
- HOWARD B. ROBACK, Professor of Psychiatry, Emeritus
 - B.A. (Case Western Reserve 1962); M.S. (Ohio 1964); Ph.D. (York [Canada] 1970) [1972]
- CHRISTOPHER W. ROBB, Assistant Clinical Professor of Dermatology B.S. (Baylor 1994); Ph.D. (Texas, Galveston 1999); M.D. (Texas Tech University 2003) [2007]
- IVAN M. ROBBINS, Professor of Medicine B.A. (Brown 1981); M.D. (Case Western Reserve 1991) [1997]
- JASON B. ROBBINS, Assistant Clinical Professor of DermatologyB.S., M.D. (Vanderbilt 1995, 1999) [2006]

- SAMUEL GWIN ROBBINS, Assistant in Medicine B.A. (University of the South 1998); M.T.S., M.S.N. (Vanderbilt 2001, 2007) [2015]
- SHELLEY TORRES ROBERT, Assistant in Surgery; Lecturer in Nursing B.S.N. (Middle Tennessee State 2007); M.S.N. (Vanderbilt 2010) [2011]
- DAVID ALAN ROBERTS, Assistant Professor of Anesthesiology B.B.A. (Oklahoma 2006); M.D. (Mayo Clinic 2015) [2020]
- L. JACKSON ROBERTS, Professor of Pharmacology, Emeritus B.A. (Cornell College 1965); M.D. (Iowa 1969) [1977]
- RACHEL BLAKE ROBERTS, Clinical Instructor in Pediatrics
 B.S. (Marshall 2011); M.D. (Wake Forest 2015)
 [2018]
- RICHARD ALLEN ROBERTS, Assistant Professor of Clinical Hearing & Speech Sciences B.S., M.S., Ph.D. (South Alabama 1992, 1994, 1997) [2017]
- AMY C. ROBERTSON, Associate Professor of Anesthesiology
 - B.S. (Marquette 1993); M.D. (Wisconsin 2002); M.Mgt. (Vanderbilt 2010) [2006]
- AMY K. ROBERTSON, Assistant in Pediatrics B.S. (Western Kentucky 1995); B.S.N., M.S.N. (Belmont 2007, 2013) [2014]
- DAVID ROBERTSON, Professor of Medicine, Emeritus
 - B.A., M.D. (Vanderbilt 1969, 1973) [1978]
- MARSHA ROBERTSON, Assistan Chinical Professor of Psychiatry and Relavioral Sciences B.S. (Middle Tennessee State 1976); M.S. (Tennessee 1987) [2008]
- ROSE MARIE ROBERTSON, Adjunct Professor of Medicine
 - B.A. (Manhattanville 1966): A.D. (Harvard Medical 1970) [1975]
- ALTHEA A. ROBINSON, Assistant Professor of Neurology
 - B.S. (Florida Atlantic 1999); M.D. (Morehouse 2004) [2009]
- JOSHUA L. ROBINSON, Assistant Professor of Clinical Ophthalmology & Visual SciencesB.S. (Indiana, Bloomington 2009); O.D. (Illinois College of Optometry 2013) [2018]
- PATRICIA F. ROBINSON, Clinical Professor of Pediatrics
 - B.A. (Wake Forest 1975); M.D. (Pennsylvania State 1979) [1982]

- RENA A. S. ROBINSON, Associate Professor of Chemistry; Associate Professor of Neurology B.S. (Louisville 2000); Ph.D. (Indiana, Bloomington 2007) [2017]
- CASSIANNE ROBINSON-COHEN, Assistant Professor of Medicine B.S. (McGill [Canada] 2004); M.S. (Sherbrooke [Canada] 2008); Ph.D. (University of Washington 2012) [2017]
- JENNIFER AYESHA ROBLES, Assistant Professor of Urology B.A. (Rice 2006); M.D. (Case Western Reserve 2011) [2016]
- KEELIN FLANNERY ROCHE, Instructor in Clinical Surgery B.A. (Bard [New York] 2004); M.D., M.P.H. (Tufts 2013, 2013) [2019]
- DAN M. RODEN, Sam L. Clark, M.D., Ph.D. Chair; Professor of Medicine; Professor of Biomedical Informatics, Professor of Pri/rmacology B.Sc., M.D.C.M. (McGirl [Canada] 1970, 1974) [1981]
- ROBERT A. RODGERS, Associate in Radiation Oncology
 - B.S., M.S. (Alabama, Huntsville 1990, 1992); M.S. (Georgia Institute of Technology 1993); M.S. (Texas, Houston 2005) [2018]
- VERTY LEVITT RODRIGUES, Assistant Professor Pediatrics
 - B.A. (Kenyon 2001); M.S., Ph.D. (Oregon 2007, 2009) [2016]
- ALICE L. RODRIGUEZ, Instructor in Pharmacology B.S., Ph.D. (Illinois, Champaign 1996, 2002) [2007]
- AMY ROEDER, Assistant Clinical Professor of Oral and Maxillofacial Surgery
 B.A. (Baylor 1994); D.D.S. (Medical College of Virginia 2001) [2016]
- BAXTER P. ROGERS, Research Associate Professor of Radiology and Radiological Sciences; Research Associate Professor of Psychiatry and Behavioral Sciences; Research Associate Professor of Biomedical Engineering B.S. (Furman 1998); M.S., Ph.D. (Wisconsin 2001, 2004) [2006]
- BRIANA KAY ROGERS, Assistant in Anesthesiology B.S.N. (Tennessee Technological 2008); M.S.N. (Vanderbilt 2012) [2012]
- JOHN P. ROHDE, Assistant Professor of Emergency Medicine
 - B.A. (Hardin-Simmons 1994); M.D. (Texas, San Antonio 1999) [2005]
- SARAH L. ROHDE, Assistant Professor of Otolaryngology - Head and Neck Surgery B.A., M.D. (Virginia 2000, 2004) [2009]

- JEFFREY C. ROHRBOUGH, Research Assistant Professor of Pediatrics
 - B.S., Ph.D. (California, Los Angeles 1985, 1992) [2016]
- ANTONIS ROKAS, Cornelius Vanderbilt Chair in Biological Sciences; Professor of Biological Sciences; Associate Professor of Biomedical Informatics
 - B.Sc. (Crete [Greece] 1998); Ph.D. (Edinburgh [U.K.] 2001) [2007]
- JOSEPH T. E. ROLAND, Research Associate Professor of Surgery B.S., Ph.D. (Illinois, Champaign 1998, 2004) [2009]
- LORI ANN ROLANDO, Assistant Professor of Clinical Medicine B.S. (Illinois, Champaign 1993); M.D. (Southern Illinois, Springfield 1997) [2008]
- LOUISE A. ROLLINS-SMITH, Professor of Pathology, Microbiology and Immunology; Professor of Biological Sciences; Professor of Pediatrics B.A. (Hamline 1969); M.S., Ph.D. (Minnesota
- B.A. (Hamfine 1969); M.S., Ph.D. (Minnesota 1972, 1977) [1987] THOMAS M. ROMANELLI, Assistant Professor of
- Clinical Anesthesiology B.S. (Cornell 1990); M.D. (SUNY, Buffalo 1994)
- AMY L. ROMANO, Assistant in Pediatrics M.S.N. (Stony Brook 2016) [2017]
- MARY E. ROMANO, Associate Professor of Pediatrics
 - B.A. (Dartmouth 1996); M.D. (St. George's, Grenada 2001); M.P.H. (Florida International 2007) [2007]
- SUSAN L. ROMANO, Assistant in Pediatrics B.A. (Barnard 2004); M.S.N. (Yale 2007) [2012]
- JAIME A. ROMERO, JR., Assistant Clinical Professor of Oral & Maxillofa cal Surgery B.S. (Tennessee, Martin 2002); D.D.S. (Tennessee, Memphis 2007) [2014]
- KREIG D. ROOF, Adjunct Assistant Professor of Neurology
 - B.A. (Delaware 1981); M.S., Ph.D. (Pennsylvania State 1984, 1989) [2001]
- JERRI MICHELLE ROOK, Research Assistant Professor of Pharmacology
- B.A. (Drury 2000); Ph.D. (Kansas 2008) [2012]
- CONNIE K. ROOT, Assistant in Medicine B.S. (Middle Tennessee State 1974); A.S.N. (Tennessee, Nashville 1979); B.S.N. (Tennessee State 1982); M.S.N. (Vanderbilt 1990) [1991]
- CHRISTIAN ROSAS-SALAZAR, Assistant Professor of Pediatrics M.D. (Universidad Autónoma de Guadalajara [Mexico] 2002); M.P.H. (Pittsburgh 2013) [2013]

- KIMBERLY M. ROSDEUTSCHER, Clinical Professor of Pediatrics B.A. (Vanderbilt 1988); M.D. (Cincinnati 1994) [1998]
- ELIZABETH S. ROSE, Assistant in Pediatrics B.S. (Xavier [Ohio] 2008); M.S. (Peabody 2014); M.P.H. (Vanderbilt 2015) [2019]
- KRISTIE M. ROSE, Research Assistant Professor of Biochemistry B.S. (Presbyterian [South Carolina] 2000); Ph.D. (Medical University of South Carolina 2005) [2010]
- SAMUEL TRENT ROSENBLOOM, Associate Professor of Biomedical Informatics; Associate Professor of Medicine; Associate Professor of Pediatrics; Associate Professor of Clinical Nursing
 - B.A. (Northwestern 1992); M.D., M.P.H. (Vanderbilt 1996, 2001) [2002]
- MIA A. LEE ROSENFELD. Adjunct Assistant Professor of Hearing and Speech Sciences B.A. (Georgia 1983), M.S. (Vanderbilt 1993); Ph.D. (Kentucky, Lexington 2003) [2002]
- SANLRA J ROSENTHAL, Jack and Pamela Egan Chair; Professor of Chemistry; Professor of Chemical and Biomolecular Engineering Professor of Materials Science & Engineering; Professor of Pharmacology
 - P.S. (Valparaiso 1987); Ph.D. (Chicago 1993) [1996]
- JOHN D. ROSS, Assistant Professor of Clinical Radiology and Radiological Sciences B.A. (Vanderbilt 1994); M.D. (UT Health Science Center [Tennessee] 1999) [2005]
- KERRY W. ROSS, Assistant Clinical Professor of Pediatrics
 - B.A. (Union [Tennessee] 1993); M.D. (UT Health Science Center [Tennessee] 1998) [2012]
- TONY L. ROSS, Associate Professor of Clinical Medicine; Associate Professor of Clinical Pediatrics
 - B.S. (Lipscomb 1977); M.D. (Louisville 1982) [2009]
- BRENT A. ROSSER, Associate Clinical Professor of Pediatrics
 - B.S. (Lipscomb 1996); M.D. (UT Health Science Center [Tennessee] 2000) [2008]
- ALICE M. ROTHMAN, Associate Professor of Clinical Pediatrics
 - B.A. (Cornell 1992); M.P.H. (North Carolina 1996); M.D. (Duke 1997) [2002]
- BRIAN S. ROTHMAN, Associate Professor of Anesthesiology; Associate Professor of Biomedical Informatics; Associate Professor of Surgery
 - B.B.A., M.D. (Cincinnati 1989, 2000) [2007]

- RUSSELL L. ROTHMAN, Ingram Chair in Integrative and Population Health; Professor of Medicine; Professor of Health Policy; Professor of Pediatrics; Director, Vanderbilt Center for Health Services Research B.S., M.D., M.P.P. (Duke 1992, 1996, 1996) [2002]
- CHRISTIANNE L. ROUMIE, Associate Professor of Medicine; Associate Professor of Pediatrics B.A. (Douglass [Canada] 1994); M.D. (New Jersey Medical 1998); M.P.H. (Vanderbilt 2005) [2004]
- BERNARD ROUSSEAU, Adjunct Professor of Otolaryngology - Head and Neck Surgery B.S., M.A. (Central Florida 1998, 2000); Ph.D. (Wisconsin 2004); M.M.H.C (Vanderbilt 2016) [2005]
- CHRISTIANA ELENI ROUSSIS, Assistant Professor of Clinical Anesthesiology B.S. (Emory 2007); M.D. (Tulane 2011) [2020]
- BEN H. ROWAN III, Assistant Professor of Clinical Medicine

 B. F. (Vanderbilt 1989): M.D. (UT Health Science
 - B.E. (Vanderbilt 1989); M.D. (UT Health Science Center [Tennessee] 2001) [2004]
- AMA ARTHUR ROWE, Assistant Clinical Professor of Psychiatry and Behavioral Sciences B.A. (Spelman 2001); M.D. (Meharry Medical 2006) [2011]
- DONALD H. RUBIN, Professor of Medicine, Emeritus; Adjunct Professor of Medicine B.A. (Stony Brook 1969); M.D. (Cornell 1974) [1992]
- Oral & Maxillofacial Surgery
 B.S. (Vanderbilt 1999); D.M.D. Kentucky,
 Lexington 2003) [2015]
- DOUGLAS RUDERFER, Assistant Professor of Medicine; Assistant Professor of Diomedical Informatics; Assistant Professor of Psychiatry and Behavioral Sciences

 B.S., M.S. (Johns Hopkins 2004, 2004); Ph.D. (Cardiff [U.K.] 2013) [2016]
- ERIC B. RUETH, Assistant Professor of Clinical Psychiatry and Behavioral Sciences B.S. (Duke 2001); M.D. (Emory 2006) [2016]
- H. EARL RULEY, Professor of Pathology, Microbiology and Immunology, Emeritus B.A. (Stanford 1974); Ph.D. (North Carolina 1980) [1992]
- PAUL J. RUMMO, Assistant Professor of Orthopaedic Surgery B.A. (Saint Anselm 1990); D.O. (New England College 1994) [2005]

- VICTORIA R. RUNDUS, Clinical Professor of Pediatrics B.S. (Houston 1991); M.D. (Texas, San Antonio 1999) [2003]
- JORDAN DOUGLAS RUPP, Assistant Professor of Emergency Medicine B.A. (Taylor 2007); M.D. (Wright State 2011) [2014]
- CHARLES B. RUSH, Associate Professor of Clinical Obstetrics and Gynecology B.A. (Northwestern 1979); M.D. (Cincinnati 1984) [1988]
- MARGARET G. RUSH, Professor of Clinical Pediatrics; Chief of Staff, Monroe Carell Jr. Children's Hospital at Vanderbilt B.A. (DePauw 1980); M.D. (Cincinnati 1984); M.Mgt. (Vanderbilt 2014) [1989]
- STEPHAN E. RUSS, Associate Professor of Emergency Medicine
 B.S. (Tennessee 1997), M.D. (UT Health Science Center [Tennessee] 2003); M.P.H. (Vanderbilt 2009) [2006]
- ALEX ANDRA C. RUSSELL, Assistant Professor of
 - B.S., M.D. (Duke 2005, 2009) [2016]
- MENRY P. RUSSELL, Associate Professor of Clinical Surgery
 - B.S. (U.S. Military Academy 1969); M.D. (UT Health Science Center [Tennessee] 1978) [2006]
- DORI BETH RUSSELL, Assistant in Medicine B.S.N. (Cumberland 1988); M.S. (Tennessee State 2014) [2017]
- PAUL T. RUSSELL III, Associate Professor of Otolaryngology - Head and Neck Surgery; Associate Professor of Neurological Surgery B.S. (Vanderbilt 1992); M.D. (Texas Tech University 1997) [2004]
- REGINA G. RUSSELL, Assistant Professor of Medical Education & Administration (VU) B.A., M.Ed. (Arkansas 1995, 1997); M.A. (Tennessee 2005); Ph.D. (Tennessee State 2019) [2013]
- RONE P. RUSSELL, Assistant in Medicine B.S., M.S.M. (Trevecca Nazarene 2006, 2008) [2017]
- SHIRLEY BRODY RUSSELL, Research Assistant Professor of Dermatology B.A. (Rochester 1962); Ph.D. (Wisconsin 1969) [2006]
- WILLIAM E. RUSSELL, Cornelius Vanderbilt Chair in Pediatrics #7; Professor of Pediatrics; Professor of Cell and Developmental Biology B.S. (Michigan 1972); M.D. (Harvard 1976) [1990]

- WILLIAM L. RUSSELL, Adjunct Professor of Surgery
 - B.S. (Delta State 1964); M.D. (Arkansas, Little Rock 1969) [2006]
- CHRISTINE MOLLINEAUX RUST,
 - Assistant Professor of Clinical Ophthalmology & Visual Sciences
 - B.S. (Clemson 2008); M.D. (Louisville 2013) [2017]
- CSABA RUSZNAK, Assistant Clinical Professor of Medicine
 - M.D. (Debrecen [Hungary] 1985); Ph.D., D.Sc. (Hungarian Academy of Science 1994, 2001) [2006]
- LAURA H. RUTLEDGE, Assistant in Obstetrics & Gynecology
 - B.S.N., M.S.N. (Vanderbilt 1997, 1998); B.S. (Alabama 0) [2019]
- ABIGAIL RYAN, Assistant Clinical Professor of Pediatricsa
 - B.A. (Saint Louis 2004); M.D. (Saint Louis University 2008) [2013]
- G. KYLE RYBCZYK, Senior Associate in Medicine B.S.N. (MidAmerica Nazarene 1987); M.S.N. (Vanderbilt 1998) [1999]
- SERGEY V. RYZHOV, Adjunct Assistant Professor of Medicine
 - M.D., Ph.D. (Siberian State [Russia] 1995, 1999) [2004]
- PABLO J. SAAVEDRA, Assistant Professor of Medicine
 - B.S., M.D. (Case Western Reserve 1988, 1996) [2005]
- SUZANNE BROWN SACKS, Assistant Professor of Medicine
 - B.A. (Dartmouth 1996); M.D. (Harvard Medical 2002); M.S. (Pennsylvania 2009) [2614]
- GLYNIS A. SACKS-SANDLER, Professor of Clinical Radiology and Radiological Sciences; Associate Professor of Clinical Obstetrics and Gynecology
 - M.B.B.Ch. (Witwatersrand [South Africa] 1978) [2003]
- ASHOK K. SAHA, Adjunct Assistant Professor of Anesthesiology
 - M.B.B.S. (Dhaka [Bangladesh] 1975); M.D. (Shiraz [Iran] 1981) [2007]
- MEGHA SALANI, Assistant Professor of Medicine B.S. (Texas 2007); M.D. (Texas A & M 2012) [2018]
- SAFIA N. SALARIA, Associate Professor of Pathology, Microbiology and Immunology M.B.B.S., B.S. (King Edward Medical [Pakistan] 2004, 2004) [2013]

- JOE-ELIE SALEM, Adjunct Associate Professor of Medicine
 - M.D. (Université René Descartes, Paris V [France] 2013); Ph.D. (Sorbonne Nouvelle, Paris III [France] 2016) [2017]
- MARGARET L. SALISBURY, Assistant Professor of Medicine
 - B.S., M.D. (Missouri 2006, 2010); M.S. (Michigan 2017) [2019]
- JOSEPH G. SALLOUM, Assistant Professor of Medicine
 - B.S., M.D. (American University of Beirut [Lebanon] 1992, 1996) [2005]
- BLAKE L. SALMONY IV, Assistant in Medicine B.S. (Goucher 2006); M.S.N. (Vanderbilt 2010) [2012]
- JESSICA SAMPLES, Assistant Clinical Professor of Psychiatry and Behavioral Sciences B.S. (Vanderbilt 2006); M.D. (East Tennessee State 2010) [2018]
- DAVID C. SAMUELS, Associate Professor of Molecular Physiology and Biophysics B.A. (Washing on University 1983); Ph.D. (Oregon 1990) [2009]
- LAUREN RUTH SAMUELS, Research Assistant
 Professor of Biostatistics
 - B.A. (Yale 1994); M.Ed., Ph.D. (Vanderbilt 2002, 2017) [2017]
- SANDRA SANCHEZ-ROIGE, Adjunct Assistant Professor of Medicine B.Sc., M.Sc. (Barcelona [Spain] 2005, 2010);

Ph.D. (Sussex [U.K.] 2014) [2020]

- WARREN S. SANDBERG, Professor of Anesthesiology; Professor of Biomedical Informatics; Professor of Surgery; Chair of the Department of Anesthesiology B.A. (California, Berkeley 1986); Ph.D., M.D. (Chicago 1991, 1994) [2010]
- CHARLES R. SANDERS II, Associate Dean for Research (Basic Sciences); Professor of Biochemistry; Professor of Medicine B.S. (Milligan 1983); Ph.D. (Ohio State 1988)
- MELINDA E. SANDERS, Professor of Pathology, Microbiology and Immunology B.S. (Duke 1989); M.D. (Thomas Jefferson 1995) [2001]
- WILLIAM ANDREW SANDERS, Clinical Instructor in Pediatrics B.S. (Vanderbilt 2003); M.D. (UT Health Science Center [Tennessee] 2008) [2011]
- WILLIAM J. SANDERS IV, Assistant Professor of Clinical Medicine B.A., M.D. (Vanderbilt 1972, 1976) [2020]

- ELAINE SANDERS-BUSH, Professor of Pharmacology, Emerita B.S. (Western Kentucky 1962); Ph.D. (Vanderbilt 1967) [1968]
- MAUREEN SANDERSON, Professor of Obstetrics & Gynecology at Meharry Medical College; Adjunct Professor of Medicine at Vanderbilt University School of Medicine B.S. (Ohio State 1979); M.P.H. (Texas, Houston 1984); Ph.D. (University of Washington 1996) [2010]
- MARISSA C. SANDIDGE, Assistant Clinical Professor of Oral & Maxillofacial Surgery B.S. (Georgia 2010); D.M.D. (Augusta State 2014); M.S. (Michigan 2016) [2018]
- KIM SANDLER, Assistant Professor of Radiology and Radiological Sciences B.A. (Emory 2005); M.D. (Vanderbilt 2009) [2014]
- MARTIN P. SANDLER, Professor of Radiology and Radiological Sciences; Professor of Medicine M.B.Ch.B (Cape Town [South Africa] 1972) [1983]
- BRINKLEY KWYN SANDVALL, Assistant Professor of Plastic Surgery B.S., M.D. (Baylor 2007, 2011) [2019]
- NEIL S. SANGHANI, Assistant Professor of Medicine
 - B.S., M.D. (Tulane 2001, 2005) [2011]
- REESHA S. SANGHANI, Assistant Professor of Clinical Obstetrics and Gynecology B.S., M.D. (Alabama, Birmingham 2004, 2009) [2013]
- LAUREN ANNE SANLORENZO, Assistant Professor of Pediatrics B.S. (Pennsylvania State 2004); M.S.T. (Pace 2006); M.D. (Michigan 2010) [2018]
- SAMUEL A. SANTORO, Dorothy Beryl and Theodore R. Austin Chair in Pathology; Professor of Pathology, Microbiology and Immunology; Professor of Biochemistry B.S. (Emory 1972); M.D., Ph.D. (Vanderbilt 1979, 1979) [2003]
- SARIKA SARASWATI, Research Assistant Professor of Pathology, Microbiology and Immunology B.S., M.S. (Allahabad [India] 1993, 1995); Ph.D. (Arkansas 2008) [2016]
- ASHLEY ROSE BLACKMON SARB, Assistant Professor of Clinical Pediatrics B.S. (Furman 2003); D.O. (Nova Southeastern 2007) [2019]
- SHABNAM SARKER, Assistant Professor of Medicine B.A. (Mississippi 2008); M.D. (Mississippi, Jackson 2012) [2018]

- ASHA SARMA, Assistant Professor of Radiology & Radiological Sciences
 - B.A. (Dartmouth 2005); M.D. (Utah 2011) [2018]
- BONNIE A. SARRELL, Instructor in Medicine B.S. (Georgia Institute of Technology 2011); M.D. (Mercer 2015) [2020]
- MOHAMMAD MOHSIN SARWAR, Research Instructor in Pharmacology B.S., Ph.D. (Monash [Australia] 2008, 2015) [2019]
- MOHANAKRISHNAN M. SATHYAMOORTHY, Adjoint Professor of Medicine B.S., M.S.E. (Johns Hopkins 1993, 1995); M.D. (SUNY, Stony Brook 2001) [2007]
- SANDEEP ANANTHA SATHYANARAYANA, Adjunct Assistant Professor of Surgery M.B.B.S. (Yenepoya University 2006) [2016]
- GOWRI SATYANARAYANA, Assistant Professor of Medicine B.S. (Wright State 2001); M.D. (Ohio State 2007) [2013]
- CHRISTINE SAUNDERS, Adjunct Associate Professor of Programacology
 - B.A. (Franklin and Marshall 1988); Ph.D. (Philadelphia College of Pharmacy 1994) [2002]
- SUSAN B. SAUNDERS, Associate in Obstetrics & Gynecology
 - A.S. (Volunteer State Community 1996); M.S.N. (Vanderbilt 1998); D.N.P. (Arkansas, Little Rock 2016) [2016]
- BIPIN N. SAVANI, Professor of Medicine M.B.B.S. (B. J. Medical [India] 1987) [2007]
- BENJAMIN R. SAVILLE, Adjunct Assistant Professor of Biostatistics B.S. (Brigham Young 2002); M.S., Ph.D. (North Carolina 2004, 2008) [2008]
- BRENT VERNON SAVOIE, Assistant Professor of Clinical Radiology & Radiological Sciences B.A., M.D. (Vanderbilt 2001, 2009); J.D. (Virginia 0) [2013]
- MICHAEL ROBERT SAVONA, Professor of Medicine B.A. (Davidson 1994); M.D. (Wake Forest 2002) [2014]
- ABHINAV SAXENA, Assistant Professor of Clinical Psychiatry and Behavioral Sciences B.S. (Georgia 2007); M.D., M.B.A. (Mercer 2011, 2017) [2015]
- ANDREW E. SCANGA, Assistant Professor of Medicine
 - B.S., M.D. (North Carolina 1997, 2002) [2009]
- BETHANY ANN SCANLAN, Assistant Professor of Clinical Medicine B.S. (Notre Dame 2012); M.D. (Pittsburgh 2016) [2019]

- KRISTEN R. SCARPATO, Assistant Professor of Urology
 - B.A. (Colorado 2000); M.P.H. (Boston University 2003); M.D. (Tufts 2009) [2014]
- KURT SCAVELLI, Instructor in Clinical Ophthalmology & Visual Sciences B.S. (Cornell 2011); M.D. (Case Western Reserve 2016) [2020]
- STEPHEN SCHAAF, Assistant Professor of Physical Medicine and Rehabilitation B.S. (Ohio State 2009); M.D. (Toledo 2014) [2019]
- ANDREW R. SCHAALE, Assistant in Neurology B.S. (Bryan 2011); M.S.M. (Trevecca Nazarene 2013) [2017]
- ABIGAIL E. SCHACHTER, Clinical Instructor in Pediatrics
 - B.A. (Indiana, Bloomington 2007); M.D. (Saint Louis University 2011) [2017]
- ADAM TROY SCHAEFER, Assistant Clinical Professor of Oral and Maxillofacial Surgery B.S. (Miami [Ohio] 1996); D.M.D. (Pittsburgh 2004); M.D. (Vanderbilt 2007) [2010]
- HEIDI M. SCHAEFER, Associate Professor of Medicine
 - B.S., M.D. (Cincinnati 1994, 1998) [2004]
- LAUREL SCHAEFER, Assistant in Neurology B.A. (Hamilton 2008); M.S.N. (Vanderbilt 2013) [2016]
- SARAH L. SCHAEFER, Assistant Professor of Medicine; Assistant Professor of Pediatric. B.A. (Vanderbilt 2009); M.D. (Kentuck) Lexington 2013) [2017]
- ANGELA MARIE SCHAFER, Instructor in Emergency Medicine
 B.S. (Purdue 2011); M.D. (Inciana, Indianapolis 2015) [2018]
- JENNY C. SCHAFER, Research As in tant Professor of Cell & Developmental Biology B.S. (Rhodes College 1998): Ph.D. (Alabama, Birmingham 2006) [2017]
- KERRY R. SCHAFFER, Assistant Professor of Medicine B.A. (George Washington 2005); M.D. (Virginia 2013) [2019]
- WILLIAM SCHAFFNER, Professor of Health Policy; Professor of Medicine B.S. (Yale 1957); M.D. (Cornell 1962) [1968]
- JEFFREY D. SCHALL, E. Bronson Ingram Professor of Neuroscience; Professor of Psychology; Professor of Communication of Science and Technology; Professor of Ophthalmology and Visual Sciences B.S. (Denver 1982); Ph.D. (Utah 1986) [1989]

- ORLANDO D. SCHARER, Adjunct Professor of Biochemistry M.S. (ETH-Zurich 1991); Ph.D. (Harvard 1996) [2017]
- TRAVIS S. SCHARR, Instructor in Clinical Radiology & Radiological Sciences B.S. (Millsaps 2006); M.A. (Tulane 2008); M.D. (Mississippi 2014) [2019]
- WILLIAM D. SCHENK, Assistant Professor of Clinical Ophthalmology and Visual Sciences B.S., M.D. (Nebraska 1977, 1981) [2011]
- KEVIN L. SCHEY, Professor of Biochemistry; Professor of Ophthalmology and Visual Sciences; Professor of Chemistry B.S. (Muhlenberg 1984); Ph.D. (Purdue 1989) [2008]
- MAX L. SCHIFF, Adjunct Assistant Professor of Psychiatry and Behavioral Sciences B.A. (Columbia 1997); M.D., Ph.D. (New York 2009, 2009, [2015]
- JONATHAN S. SCHILDCROUT, Professor of Biostalistics; Professor of Anesthesiology B.S. (Indiana Ploomington 1994); M.S. (North Carolina 1996), Ph.D. (University of Washington 2004) [2004]
- KURT G. SCHILLING, Research Assistant Professor of Radiology & Radiological Sciences B.S. (Toledo 2013); Ph.D. (Vanderbilt 2017) [2020]
- MCOLE L. SCHLECHTER, Clinical Instructor in Obstetrics and Gynecology B.A., Ph.D. (California, Berkeley 1983, 1987); M.D. (Vanderbilt 1990) [1994]
- KELLY H. SCHLENDORF, Assistant Professor of Medicine B.A., B.S. (Duke 1999, 1999); M.D. (Emory
 - 2005); M.H.S. (Johns Hopkins 2011) [2012]
- JOSEPH J. SCHLESINGER, Associate Professor of Biomedical Engineering; Associate Professor of Hearing & Speech Sciences; Associate Professor of Anesthesiology; Adjunct Associate Professor of Nursing
 - B.A. (Loyola, New Orleans 2004); M.D. (Texas 2008) [2013]
- JONATHAN E. SCHMITZ, Assistant Professor of Pathology, Microbiology and Immunology; Assistant Professor of Urology A.B. (Princeton 2002); M.Phil. (Cambridge [U.K.] 2004); Ph.D. (Rockefeller 2011); M.D. (Cornell 2012) [2014]
- FILIPINA CEVALLOS SCHNABEL, Assistant in Otolaryngology Head and Neck Surgery B.S., M.D. (Santo Tomas [Phillipines] 1988, 1992); M.P.H. (Philippines 1995); B.S.N. (East Tennessee State 2015); M.S.N. (Belmont 2017) [2018]

- BYRON SCHNEIDER, Assistant Professor of Physical Medicine and Rehabilitation B.S., M.D. (Kentucky, Lexington 2006, 2011) [2016]
- CLAUS SCHNEIDER, Associate Professor of Pharmacology M.S., B.A., Ph.D. (Universität Würzburg

[Germany] 1992, 1996, 1997) [2001]

- RICHARD P. SCHNEIDER, Associate Clinical Professor of Medicine B.A. (Emory 1963); M.D. (Columbia 1967) [1973]
- JOHN F. SCHNELLE, Professor of Medicine B.A. (Hanover 1966); Ph.D. (Tennessee 1970) [2006]
- NATHALIE C. SCHNETZ-BOUTAUD, Research Instructor in Pharmacology Maitrise, D.E.A., Ph.D. (Louis Pasteur [France] 1987, 1990, 1994) [2007]
- JONATHAN G. SCHOENECKER, Jeffrey W. Mast Chair in Orthopaedics Trauma and Hip Surgery; Associate Professor of Orthopaedic Surgery; Assistant Professor of Pathology, Microbiology and Immunology; Assistant Professor of Pediatrics; Assistant Professor of Pharmacology B.A. (Middlebury 1996); Ph.D., M.D. (Duke 2002, 2003) [2009]
- MARY WALKER SCHOFIELD, Clinical Instructor in Pediatrics
 B.S. (Louisiana State, Shreveport 1980); M.D.

(Louisiana State 1984) [2010]

- SETH J. SCHOLER, Professor of Pediatric.
 B.A., M.D., M.P.H. (Indiana, Indianapolis 1985)
 1989, 1994) [1995]
- MATTHEW SCHRAG,
 Assistant Professor of Neurology

B.A. (North Dakota 2006); M.D., Ph.D. (Loma Linda 2011, 2011) [2016]

- RACHEL L. SCHREIER, Assistant in Medicine B.S. (Tennessee, Martin 1996); M.S.N. (Vanderbilt 2007) [2011]
- C. MELANIE SCHUELE, Professor of Hearing & Speech Sciences; Professor of Psychology & Human Development; Associate Professor of Special Education
 B.S.Ed. (Miami [Ohio] 1981); M.A. (Texas 1985); Ph.D. (Kansas 1995) [2002]
- JOHN J. SCHUERLEIN, Assistant in Medicine B.S., M.S. (Hofstra 2012, 2013) [2018]
- KATHARINE N. SCHULL, Associate Clinical Professor of Pediatrics B.S., M.D. (Alabama, Birmingham 1981, 1985) [1997]

- STEPHEN J. SCHULTENOVER, Associate Professor of Pathology, Microbiology and Immunology

 P. S. (Spirit John's University (Minnesotal 10)
 - B.S. (Saint John's University [Minnesota] 1968); M.D. (Minnesota 1972) [2000]
- STEPHANIE L. SCHULTZ, Clinical Professor of Pediatrics
 - B.S. (Smith 1991); M.D. (Pennsylvania 1995) [2005]
- DANIEL SCHUSTER, Assistant Professor of Otolaryngology - Head and Neck Surgery B.S. (Michigan 2006); M.D. (Alabama, Birmingham 2011) [2016]
- ALLISON L. SCHWALL, Assistant Professor of Medicine
 - B.S. (Washington and Lee 2001); M.D. (Louisville 2005) [2010]
- DAVID ALLEN SCHWARTZ, Professor of Medicine

B.A. (Pennsylvania 1°90), M.D. (Meharry Medical 1995) [2002]

- HERBERT S. SCIWAXTZ, Professor of Or hopaedic Surgery; Professor of Pathology, Microbic logy and Immunology
 - B.S. (Illineis, Chicago 1977); M.D. (Chicago 1981 [1987]
- JACCB PATRICK SCHWARZ, Assistant Professor of Neurological Surgery
 - P.A. (Washington University 1995); M.D. (Johns Hopkins 1999) [2016]
- MARY RUTH SCOBEY, Assistant Professor of Clinical Pediatrics
 - B.S. (Lipscomb 2002); M.D. (Tennessee, Memphis 2006) [2014]
- JOHN D. SCOTT, Assistant Professor of Clinical Medicine; Assistant Professor of Clinical Pediatrics
 - B.A. (Harding 1988); M.D. (UT Health Science Center [Tennessee] 1993) [2006]
- LEON R. SCOTT, Assistant Professor of Clinical Orthopaedic Surgery
 - B.S. (Virginia 2003); M.D. (Washington University 2007) [2016]
- PATRICIA L. SCOTT, Assistant Clinical Professor of Obstetrics & Gynecology
 - B.S. (Tennessee 1995); M.S. (Tulane 1999); M.D. (UT Health Science Center [Tennessee] 2003) [2010]
- ELIZABETH ANN SCOVILLE, Assistant Professor of Medicine
 - B.S. (Kentucky, Lexington 2007); M.D. (Mayo Clinic 2011); M.S.C.I. (Vanderbilt 2017) [2017]

- JENNIFER A. SCROGGIE, Assistant Professor of Nursing; Associate in Psychiatry and Behavioral Sciences
 - B.S.N. (Belmont 1994); M.S.N. (Vanderbilt 1997) [2003]
- LINDA J. SEALY, Associate Dean for Diversity, Equity, and Inclusion (Basic Sciences); Associate Professor of Cell and Developmental Biology; Associate Professor of Molecular Physiology and Biophysics
 - B.A. (Illinois Wesleyan 1976); Ph.D. (Iowa 1980) [1986]
- CHARLES M. SEAMENS, Associate Professor of Clinical Emergency Medicine

B.S., M.D. (Georgetown 1981, 1985) [1992]

- JENNIFER B. SEAWELL, Assistant Clinical Professor of Pediatrics B.S. (Louisiana State 1998); M.D. (Louisiana State, New Orleans 2002) [2005]
- RAPHAEL SEE, Assistant Professor of Medicine M.D., B.S. (Arizona State 2003, 2003) [2010]
- SARAH H. SEE, Assistant Professor of Clinical Medicine
 - M.D. (Texas, Southwestern Medical 2006) [2012]
- ADAM C. SEEGMILLER, Professor of Pathology, Microbiology and Immunology B.S. (Utah 1997); M.D., Ph.D. (Texas, Southwestern Medical 2004, 2004) [2009]
- NEIL E. SEETHALER, Clinical Professor of Pediatrics
 - B.A. (Pennsylvania 1992); M.D. (Vanderbild 1996) [2003]
- DONNA L. SEGER, Professor of Clinical Emergency Medicine; Professor of Clinical Medicine
 - B.S., M.D. (North Dakota 1975, 1977) [1988]
- JERE PALMER SEGREST, Professor of Medicine B.A., M.D., Ph.D. (Vanderbilt 1962, 1967, 1969) [2016]
- JOHN W. SEIBERT, Assistant Professor of Otolaryngology - Head and Neck Surgery B.S. (Vanderbilt 1994); M.S., M.D. (Arkansas, Little Rock 1997, 2001) [2009]
- MAUREEN FRANCES SEITZ, Assistant Professor of Clinical Medicine
 - B.A. (Earlham School of Religion 1984); M.D. (Meharry Medical 2009) [2016]
- WESLEY H. SELF, Associate Professor of Emergency Medicine B.S. (Davidson 2001); M.D. (Virginia 2005); M.P.H. (Vanderbilt 2011) [2009]
- JESSIE SELLERS, Assistant in Neurology B.A. (Georgia 2013); M.S.N. (Vanderbilt 2016) [2016]

- SAMUEL RILEY SELLS III, Assistant Clinical Professor of Psychiatry and Behavioral Sciences B.S., M.D. (East Tennessee State 1978, 1986) [1990]
- REBECCA JUNE SELOVE, Adjunct Associate Professor of Psychiatry and Behavioral Sciences M.A. (Western Kentucky 1979); Ph.D. (Peabody 1984); M.P.H. (Saint Louis 2002) [2013]
- BRINDA SELVARAJ, Research Instructor in Molecular Physiology & Biophysics B.S., M.S. (Bharathiar [India] 2006, 2008); Ph.D. (Humboldt-Universität zu Berlin [Germany] 2014) [2019]
- MATTHEW W. SEMLER, Assistant Professor of Medicine; Assistant Professor of Biomedical Informatics B.S., M.D. (Virginia 2004, 2008); M.Sc. (Vanderbilt 2016) [2016]
- DANIELLE GOTTLIEB SEN, Adjoint Instructor in Cardiac Surgery B.A. (SUNY, Binghamon 1991); M.D., M.S. (Califorma, Berkeley 2002, 2002); M.P.H. (Huryard 2007, [2017]
- SALYKA SENGSAYADETH, Assistant Professor of Medicine
 - B.A., M.D. (East Tennessee State 2002, 2006)
- PATRICIA P. SENGSTACK, Associate Professor of Nursing; Associate Professor of Biomedical Informatics
 - B.S.N., M.S.N., Post Masters in Nursing (Maryland, Baltimore 1982, 1988, 2002); D.N.P. (Vanderbilt 2010) [2011]
- SAIKAT T. SENGUPTA, Research Assistant Professor of Radiology and Radiological Sciences B.E. (Mumbai [India] 2000); M.S. (Memphis 2002); Ph.D. (Vanderbilt 2010) [2015]
- LILIYAS SEPASSI, Assistant Professor of Clinical Psychiatry and Behavioral Sciences B.A. (California, Berkeley 2003); M.D. (Ross 2012) [2019]
- ANA PAULA MOREIRA SEREZANI, Research Assistant Professor of Medicine B.S. (Sao Paulo State University - [Brazil] 2001); M.S., Ph.D. (Sao Paulo [Brazil] 2004, 2012) [2016]
- CARLOS HENRIQUE SEREZANI, Assistant Professor of Medicine; Assistant Professor of Pathology, Microbiology and Immunology Ph.D. (Sao Paulo [Brazil] 2005) [2016]
- JOHN S. SERGENT, Professor of Medicine B.A., M.D. (Vanderbilt 1963, 1966) [1988]
- SHANNON E. SERIE, Assistant Professor of Clinical Medicine B.S. (Wake Forest 1997): M.D. (UT Health
 - B.S. (Wake Forest 1997); M.D. (UT Health Science Center [Tennessee] 2001) [2007]

- PATRICIA SERRANO, Assistant Professor of Psychiatry and Behavioral Sciences M.D. (Pontificia Universidad Javeriana [Colombia] 2011) [2019]
- DONNA R. SESSION, Associate Professor of Obstetrics and Gynecology B.S. (Allegheny 1983); M.D. (Eastern Virginia 1986) [2015]
- MANISH K. SETHI, Associate Professor of Orthopaedic Surgery B.A., B.Sc. (Brown 2000, 2000); M.D. (Harvard Medical 2005) [2010]
- TARSHEEN KAUR SETHI, Instructor in Medicine M.B.B.S., M.D. (Delhi [India] 2005, 2008) [2018]
- LANDREW SAMUEL SEVEL, Assistant Professor of Clinical Physical Medicine and Rehabilitation; Assistant Professor of Clinical Psychiatry and Behavioral Sciences
 - B.A., B.M. (Bowling Green State 2012, 2012); M.S., Ph.D. (Florida 2014, 2017) [2018]
- CARLA M. SEVIN, Associate Professor of Medicine B.A. (Duke 1997); M.D. (South Florida 2004) [2011]
- KATHERINE A. SEYMOUR, Assistant Clinical Professor of Pediatrics
 - M.D. (Kansas 211); B.S. (Denison 2007) [2015]
- SHAZMA ALI SHABAN, Assistant in Surgery B.S.N. (Belmont 2010); M.S.N. (Vanderbilt 2012) [2014]
- R. BRUCE SHACK, Adjunct Professor of Plasto Surgery
 - M.D. (Texas, Galveston 1969) [2002]
- CLAUDE EDWARD SHACKELFORD, Assistant Professor of Clinical Medicine; Assistant Professor of Clinical Pediatrics B.A. (Harvard 1995); M.D. (Alabama, Birmingham 2000) [2008]
- LAURIE SHACKLEFORD, Assistantin Medicine B.S. (Alabama 1989); M.S.N. D.N.P. (Vanderbilt 1993, 2013) [2014]
- HAYDEN SHAFER, Instructor in Clinical Medicine B.S. (Tennessee, Chattanooga 2013); M.D. (East Tennessee State 2017) [2020]
- DAVID SHAFFER, Professor of Surgery B.A. (Yale 1978); M.D. (Columbia 1982) [2001]
- VALERIE ANGELA SHAFFER, Assistant in Pediatrics
 - M.S.N. (Nevada, Las Vegas 2010); Post Masters in Nursing (Vanderbilt 2016) [2016]
- ASHISH SURESH SHAH, Professor of Cardiac Surgery; Professor of Biomedical Engineering; Chair of the Department of Cardiac Surgery B.S.E. (Duke 1991); M.D. (Pittsburgh 1995) [2015]

- CHIRAYU SHAH, Associate Professor of Clinical Radiology & Radiological Sciences B.S. (Lipscomb 1998); M.D. (Meharry Medical 2004) [2012]
- HAMID M. SHAH, Assistant Professor of Neurological Surgery; Assistant Professor of Anesthesiology B.S. (Wichita State 1998); M.D. (Kansas 2005) [2016]
- MALEE V. SHAH, Assistant Professor of Clinical Pediatrics M.D. (Medical University of Silesia [Poland] 2001) [2009]
- RAHUL PRAKASH SHAH, Assistant Professor of Clinical Pediatrics B.S., M.S. (Johns Hopkins 2009, 2009); M.D. (Pittsburgh 2015) [2018]
- SHAILJA C. SHAH, Assistant Professor of Medicine B.S., M.D. (Drexel 2007, 2011) [2017]
- AMANDA ER DGET SVA KA L, Assistant Professor of Clinical Anesthesiology B S (Okiahom; 200); M.S., D.O. (North Texas Health Science Center 2010, 2014) [2018]
- CHEVIS N. SHANNON, Research Professor of Neurological Surgery; Research Professor of Pediatrics
 - B 5. (Alabama, Birmingham 1993); M.B.A. (Porida State 1998); M.P.H., Dr.P.H. (Alabama, Birmingham 2002, 2009) [2013]
- ANGELIQUE M. SHAPMAN, Assistant in Medicine B.S. (Austin Peay State 2005); M.S.N. (Saint Louis 2008) [2011]
- ASHISH P. SHARMA, Assistant Professor of Oral & Maxillofacial Surgery
 M.S.D. (Loma Linda 2014) [2019]
- DEVA SHARMA, Assistant Professor of Pathology, Microbiology and Immunology; Instructor in Medicine; Instructor in Pathology, Microbiology and Immunology
 - B.A. (Pennsylvania 2004); M.S. (Johns Hopkins 2006); M.D. (Maryland, Baltimore 2011) [2019]
- MANISHA SHARMA, Research Instructor in Cell and Developmental Biology B.S. (Delhi [India] 1996); B.A.S., Ph.D. (University of New South Wales 1997, 2002) [2015]
- KENNETH W. SHARP, Professor of Surgery B.S. (Florida 1973); M.D. (Johns Hopkins 1977) [1984]
- LAURA NOELLE SHASHY, Assistant Professor of Clinical Pediatrics B.A. (Wake Forest 2009); M.D. (Virginia Commonwealth 2014) [2020]
- KARTHIK SHASTRI, Instructor in Otolaryngology Head and Neck Surgery
 - B.S. (Virginia 2011); M.D. (Drexel 2015) [2020]

- UMA SHASTRI, Assistant Professor of Anesthesiology B.Sc. (Windsor [Canada] 2001); M.D. (McMaster [Canada] 2005) [2015]
- AARON C. SHAVER, Associate Professor of Pathology, Microbiology and Immunology B.S. (Rice 1997); Ph.D. (Pennsylvania 2003); M.D. (Chicago 2007) [2012]
- CIARA MARTIN SHAVER, Assistant Professor of Medicine
 - B.A. (Rice 1999); Ph.D., M.D. (Northwestern 2005, 2007) [2015]
- ANDREW SHAW, Adjunct Professor of Anesthesiology B.Sc. (Imperial College of Science and Technology [U.K.] 1991); M.B.B.S. (London [U.K.] 1992) [2014]
- SAED HUSSEIN SHAWAR, Assistant Professor of Medicine
 - M.B.B.S. (Jordan University of Science and Technology [Jordan] 2008) [2018]
- ROMAN V. SHCHEPIN, Adjunct Assistant Professor of Radiology and Radiological Sciences B.S. (Perm State [Russia] 2000); Ph.D. (Nebraska 2006) [2007]
- JOHN K. SHEA, Assistant Clinical Professor of Oral and Maxillofacial SurgeryB.S. (Bradley 1982); D.M.D. (Southern Illinois 1986) [2009]
- JOANNA LEIGH SHECHTEL, Instructor in City cal Radiology & Radiological Sciences B.S. (Florida 2011); M.D. (Georgetown 2015) [2020]
- JONATHAN H. SHEEHAN, Adjoint Associate Professor of Biochemistry A.B. (Harvard 1988); Ph.D. (Vanderbil 2006) [2009]
- JULIA M. SHEFFIELD, Assistant Professor of Psychiatry and Behavioral Sciences A.B. (Chicago 2010); Ph.D. Washington University 2018) [2019]
- EMILY SARA SHEKARABI, Clinical Instructor in Pediatrics
 - B.A., B.S. (Georgia 2012, 2012); M.D. (Medical College of Georgia 2016) [2019]
- MARLON SHELL, Assistant Clinical Professor of Pediatrics
 - B.S., M.D. (Michigan 2002, 2006) [2010]
- JAMES R. SHELLER, Professor of Medicine B.A. (University of the South 1967); M.A. (Oxford [U.K.] 1970); M.D. (Vanderbilt 1973) [1981]
- ELAINE L. SHELTON, Assistant Professor of Pediatrics; Assistant Professor of Pharmacology B.A. (Miami [Ohio] 2002); Ph.D. (Cincinnati 2008) [2013]

- JIN-HUI SHEN, Research Assistant Professor of Ophthalmology and Visual Sciences B.S., M.S. (Tianjin [China] 1984, 1987); Ph.D. (Shanghai Institute of Optics and Fine Mechanics [China] 1991) [1996]
- SHARON T. SHEN, Assistant Professor of Medicine B.S. (Massachusetts Institute of Technology 1999); M.D. (Northwestern 2003) [2013]
- JAYANT P. SHENAI, Professor of Pediatrics, Emeritus
 - M.B.B.S. (Seth G.S. Medical [India] 1969); D.C.H. (College of Physicians and Surgeons, Mumbai [India] 1971); M.D. (Seth G.S. Medical [India] 1972) [1978]
- QUANHU SHENG, Assistant Professor of Biostatistics
 - B.S. (Nanjing Univ. 1995); M.S., Ph.D. (Chinese Academy of Sciences 2003, 2008) [2014]
- BRYAN E. SHEPHERD, Professor of Biostatistics B.S. (Brigham Young 1399) M.S., Ph.D. (University of Washington 2001, 2005) [2005]
- KIMBEL D. SHEPHERD, Clinical Professor of Pe liatrics
 - 5.A. (Mississippi State 1992); M.D. (Mississippi, Jackson 1996) [2004]
- MARTHA ELLEN SHEPHERD, Assistant Professor of Crinical Pediatrics; Assistant Professor of Crinical Medicine
 - P.S. (Tennessee, Martin 1997); D.O. (Kansas City 2001) [2008]
- STEPHEN SCOTT SHEPHERD, Assistant Clinical Professor of Oral and Maxillofacial Surgery B.S. (Mississippi State 1978); D.M.D. (Alabama, Birmingham 1982) [2018]
- DEBORAH D. SHERMAN, Assistant Clinical Professor of Ophthalmology and Visual Sciences B.S. (Baylor 1982); M.D. (East Tennessee State 1986) [1991]
- KRISTEN SHERMAN, Assistant in Neurology B.S. (Lipscomb 2008); M.S. (Trevecca Nazarene 2012) [2015]
- MICHAEL H. SHERMAN, Assistant Professor of Clinical Psychiatry and Behavioral Sciences B.S. (Colorado State 1972); M.D. (Colorado 1976) [1990]
- WREN H. SHERRILL, Assistant in Medicine B.S.N. (Belmont 2011); M.S.N. (Vanderbilt 2016) [2018]
- DAVID H. SHERWOOD, Instructor in Physical Medicine and Rehabilitation B.S. (Truman State 2010); D.O. (Kansas City 2016) [2020]

- EDWARD R. SHERWOOD, Cornelius Vanderbilt Chair in Anesthesiology; Professor of Anesthesiology; Professor of Pathology, Microbiology and Immunology B.S. (Southwestern [Texas] 1981); Ph.D. (Tulane 1986); M.D. (Chicago 1994) [2012]
- CYNDYA A. SHIBAO, Associate Professor of Medicine
 M.D., B.Sc. (Universidad Peruana 'Cayetano Heredia' [Peru] 2001, 2001); M.S.C.I. (Vanderbilt 2011) [2006]
- BIH-HWA SHIEH, Associate Professor of Pharmacology B.S., M.S. (National Taiwan 1979, 1981); Ph.D. (Stony Brook 1986) [1991]
- CHRISTINE SHIEH, Assistant Professor of Ophthalmology and Visual Sciences B.S., M.S. (Maryland, Baltimore 2005, 2006); M.D. (Duke 2010) [2016]
- ALLISON BAKER SHIELDS, Assistant in Pediatrics; Lecturer of Nursing B.S., M.S.N., D.N.P. (Vanderbilt 2014, 2015, 2018) [2016]
- ANGELA D. SHIELDS, Assistant Clinical Professor of PsychiatryB.S. (Cornell 2003); Ph.D., M.D. (Vanderbilt 2009, 2011) [2015]
- VALERIE A. SHIELDS, Assistant in Medicine B.S. (Northeastern 2014); M.P.A.S. (Tufts 2017) [2017]
- OK-HO SHIN, Research Instructor in Pharma clogy B.A., M.A. (Seoul National [Koreal 1987, 1989) Ph.D. (North Carolina 1996) [1996]
- MYRICK CLEMENTS SHINALL JR. Assistant Professor of Surgery; Assistant Professor of Medicine
 - B.A. (Harvard 2003); M.D., M.Div., Ph.D. (Vanderbilt 2009, 2009, 2016) [2013]
- ANDREW ALAN SHINAR, Associate Professor of Orthopaedic Surgery B.A. (Stanford 1984); M.D. (Columbia 1988)
 - B.A. (Stanford 1984); M.D. (Columbia 1988) [2001]
- ASHWIN SHINDE, Assistant Professor of Clinical Radiation Oncology B.S., M.D. (Drexel 2010, 2015) [2019]
- ALEXANDRA SHINGINA, Assistant Professor of Medicine
 - B.S., M.D. (McGill [Canada] 2006, 2010); M.H.S. (British Columbia [Canada] 2014) [2018]
- ERIC TATSUO SHINOHARA, Associate Professor of Radiation Oncology; Chair of the Department of Radiation Oncology B.S. (Maryland 1999); M.D., M.S.C.I. (Vanderbilt 2003, 2005) [2010]

- AYUMI K. SHINTANI, Adjunct Professor of Biostatistics
 - B.S. (Nara Women's [Japan] 1991); M.P.H., M.S., Ph.D. (Yale 1996, 1999, 2000) [2001]
- CHIYO SHIOTA, Research Instructor in Molecular Physiology & Biophysics B.S., M.S. (Hokkaido [Japan] 1975, 1978); Ph.D. (Osaka [Japan] 1989) [2001]
- MASAKAZU SHIOTA, Research Associate Professor of Molecular Physiology & Biophysics D.V.M., B.S. (Ministry of Agriculture, Forestry and Fisheries 1976, 1976); M.S., Ph.D. (Osaka Prefecture [Japan] 1978, 1987) [1996]
- JONATHAN K. SHIPLEY, Assistant in Medicine A.A.S. (Roane State Community 2012); B.S.N. (Tennessee 2014); D.N.P. (Rush 2018) [2019]
- ASHLEY H. SHOEMAKER, Assistant Professor of Pediatrics
 B.S. (William and Mary 2002); M.D. (Virginia Common wealth 2006), Nr.5 C.I. (Vanderbilt 2012) [2)10]
- M. BENJAMIN SPOŁNIAKER, Assistant Professor of Medicine
 - B.S. (Wi liam and Mary 2002); M.D. (Virginia 2006); M.S.C.I. (Vanderbilt 2013) [2014]
- SEPIDE+ SHOKOUHI, Research Assistant Professor of Psychiatry and Behavioral Sciences M. S.E. (Technische Universität Graz [Austria] 2001); Ph.D. (SUNY, Stony Brook 2005) [2012]
- SARAH PALMER SHORT, Research Instructor in Medicine
 - B.S. (Middle Tennessee State 2006); Ph.D. (Vanderbilt 2015) [2019]
- MATTHEW S. SHOTWELL, Associate Professor of Biostatistics; Associate Professor of Anesthesiology
 - B.S., M.S. (East Tennessee State 2004, 2006); Ph.D. (Medical University of South Carolina 2010) [2011]
- MARTHA J. SHRUBSOLE, Research Professor of Medicine
 - B.S. (Cedarville 1996); M.S. (Ohio State 1998); Ph.D. (South Carolina 2001) [2004]
- XIANG SHU, Research Instructor in Medicine B.Med.Sc. (Harbin Medical [China] 2010); M.S. (Texas, Houston 2012); Ph.D. (Texas, San Antonio 2016) [2019]
- XIAO OU SHU, Ingram Professor of Cancer Research; Professor of Medicine M.D., M.P.H. (Shanghai Medical [China] 1984, 1987); M.Phil., Ph.D. (Columbia 1992, 1993) [2000]
- HARRISON J. SHULL, JR., Associate Clinical Professor of Medicine B.S. (Vanderbilt 1966); M.D. (UT Health Science Center [Tennessee] 1970) [1977]

EDWARD K. SHULTZ, Associate Professor of Biomedical Informatics, Emeritus A.A. (Montgomery College, Rockville [Maryland] 1972); B.S. (Oregon 1975); M.D. (Yale 1979); M.S. (Minnesota, Duluth 1984) [1997]

ELIZABETH K.B. SHULTZ,

Assistant Professor of Clinical Psychiatry and Behavioral Sciences

B.S. (Indiana, Bloomington 2005); D.O. (Kansas City 2009) [2013]

JACQUELINE M. SHUPLOCK, Assistant Professor of Pediatrics

B.S. (San Diego State 2005); M.D. (Ohio State 2009); M.S. (Vanderbilt 2015) [2016]

JOHN L. SHUSTER, JR., Clinical Professor of Psychiatry and Behavioral SciencesB.A. (Tennessee, Chattanooga 1983); M.D. (Emory 1987) [2010]

KATHERINE A. SHUSTER, Assistant Professor of Pathology, Microbiology and Immunology B.S., D.V.M. (Michigan State 2005, 2009) [2017]

YU SHYR, Harold L. Moses Chair in Cancer Research; Professor of Biostatistics; Professor of Biomedical Informatics; Professor of Health Policy; Chair of the Department of Biostatistics; Director of the Center for Quantitative Sciences B.B.A. (Tamkang [Taiwan] 1985); M.S. (Michigan State 1989); Ph.D. (Michigan 1994) [1994]

GHODRAT A. SIAMI, Professor of Medicine Emeritus B.S., M.D. (Tehran [Iran] 1952, 1953); Ph.D (Vanderbilt 1971) [1983]

KATHERINE L. SIBLER,

Assistant in Surgery

B.S.N. (Florida State 2006); M.S.N. (Anderbilt 2008) [2010]

CODY ALEXANDER SICILIANO, Assistant Professor of Pharmacology B.A. (SUNY, Binghamton 2011); Ph.D. (Wake Forest 2015) [2019]

VIVIAN SIEGEL, Research Professor of Medicine A.B. (Bowdoin 1981); Ph.D. (California, San Francisco 1987) [2019]

KARA KIMBERLY SIEGRIST, Assistant Professor of Anesthesiology B.S. (Pittsburg State 2007); M.D. (Oklahoma 2011) [2016]

JOHANNA CAROLINA SIERRA, Research Assistant Professor of Medicine Ph.D. (Texas, Galveston 2010) [2017]

RIGOBERTO L. SIERRA-ANDERSON, Assistant Clinical Professor of Anesthesiology B.S. (Georgia State 2000); M.D. (Medical College of Georgia 2004) [2008] EDWARD D. SIEW, Associate Professor of Medicine

B.A. (Johns Hopkins 1995); M.D. (Chicago 1999); M.S.C.I. (Vanderbilt 2007) [2008]

MOHAMMED SIKA, Research Professor of Medicine

B.S. (Institute of Agronomy and Veterinary Medicine [Morocco] 1979); M.S. (University of St. Thomas [Minnesota] 1981); Ph.D. (Illinois, Champaign 1991) [1992]

JOSEPH ROBERT SIKON, Instructor in Emergency Medicine

B.S. (Kent State 2012); M.D. (Northeast Ohio Medical University [Ohio] 2016) [2019]

BANTAYEHU SILESHI, Assistant Professor of Anesthesiology

B.S. (California, San Diego 2000); M.D. (Johns Hopkins 2004) [2014]

ALLEN K. SILLS, JR., Professor of Neurological Surgery: Professor of Orthor aedic Surgery B.S. (Mississippi State 1986); M.D. (Johns Hopkins 1990) [2009]

HE.D. J. SILVE's Research Professor of Medicine 5.5. (Massachusetts 1977); M.S., Ph.D. (Florida International 1991, 2001) [2003]

NABIL (JMAAN, Professor of Mechanical Er greering; Professor of Computer Science; Professor of Otolaryngology - Head and Neck Surgery

B.S., M.Sci., Ph.D. (Technion [Israel] 1994, 1999, 2002) [2010]

RICHARD SIMERLY, Louise B. McGavock Chair in Molecular Physiology and Biophysics; Professor of Molecular Physiology and Biophysics

A.B. (California, Berkeley 1976); Ph.D. (California, Los Angeles 1984) [2016]

ALETA SIMMONS, Assistant Professor of Dermatology

B.S. (Alabama Agricultural and Mechanical 2003); M.S. (Murray State 2006); M.D. (Loyola 2012) [2018]

GALILEO ALOHA-OLA SIMMONS, Assistant in Surgery

B.S.N. (Murray State 2012); M.S.N. (Vanderbilt 2016) [2017]

JILL H. SIMMONS, Professor of PediatricsB.A. (Tennessee 1995); M.D. (UT Health Science Center [Tennessee] 2000) [2006]

MEGAN P. SIMMONS, Assistant Professor of Nursing; Assistant in Psychiatry and Behavioral Sciences

B.A. (Elon 2003); M.S.N., D.N.P., Post Masters Certificate (Vanderbilt 2005, 2013, 2013) [2013]

- SANDRA F. SIMMONS, Paul V. Hamilton, M.D. Chair in Geriatrics; Professor of Medicine; Professor of Psychology B.A., M.A. (Middle Tennessee State 1989, 1991); Ph.D. (Pennsylvania State 1998) [2006]
- BARBARA CRUTCHER SIMPSON, Assistant in Medicine

M.S.N. (Vanderbilt 2011) [2017]

- LUCIEN C. SIMPSON, Clinical Instructor in DermatologyB.A. (Lipscomb 1969); M.D. (Washington University 1973) [1978]
- TERESA L. SIMPSON, Assistant in Medicine A.D. (Aquinas College [Tennessee] 1993); M.S.N. (Vanderbilt 2009) [2010]
- ANGELA F. SIMS EVANS, Associate in Obstetrics & Gynecology
 - B.S. (Tennessee State 1993); M.S.N. (Tennessee 1996) [2010]
- ROBERT J. SINARD, Professor of Otolaryngology -Head and Neck Surgery A.B. (Harvard 1985); M.D. (Michigan 1989) [2005]
- ROBBIN B. SINATRA, Assistant Clinical Professor of Ophthalmology and Visual Sciences B.A. (Allegheny 1984); M.D. (Vanderbilt 1988) [2003]
- ANIRUDDHA SINGH, Adjunct Research Assistant Professor of Neurology M.B.B.S. (Jawaharlal Nehru Medical College 2006) [2020]
- BHUMINDER SINGH, Assistant Professor of Medicine
 B.Sc., M.Sc. (Delhi [India] 2000; 2002); Ph.D. (Max Planck Institute of Bioch mistry 2007) [2013]
- NARENDRA K. SINGH, Assistant Professor of Orthopaedic Surgery B.S. (Regina [Canada] 1978); M.D. (Saskatchewan [Canada] 1982) [2007]
- PRADUMNA PRATAP SINGH, Assistant Professor of Neurology at Meharry Medical College; Adjunct Associate Professor of Neurology M.B.B.S. (Sawai Man Singh Medical [India] 1986) [2002]
- SUDHA P. SINGH, Associate Professor of Clinical Pediatrics; Associate Professor of Clinical Radiology & Radiological Sciences M.B.B.S., M.D. (Sawai Man Singh Medical [India] 1987, 1990) [2002]
- ASHLEY N. SINGLETON, Assistant in Medicine B.S. (Middle Tennessee State 2004); M.S.N. (Vanderbilt 2008) [2016]

- ANUJ SINHA, Assistant Professor of Clinical Pediatrics B.S. (California, Irvine 1993); D.O. (Western University of Health Sciences [California] 1998)
- DI'NET SINTIM-AMOAH, Assistant Clinical Professor of Pediatrics B.S. (Spelman 2000); M.D. (Morehouse 2004) [2013]
- MARCY ANN SIPES, Assistant Professor of Hearing and Speech Sciences B.S., M.S. (Western Kentucky 1985, 1987) [2008]
- PRIYANKA SISTA, Assistant Professor of Emergency Medicine B.A. (Duke 2010); M.D. (North Carolina 2016) [2020]
- CHRISTOPHER M. SIZEMORE, Assistant Professor of Clinical Obstetrics and Gynecology B.S. (North Florida 2001), D.O. (Nova Southeaster, 2005) [2014]
- ERIC P. SKAAR, Ernest W. Goodpasture Chair in Pathology #2; Professor of Pathology, Microbiology and Immunology; Director, Microbia Path Program B.S. (Wisconsin 1996); Ph.D., M.P.H.
- (Northwestern 2002, 2002) [2005]
- RYAN KAY SKEENS, Assistant Professor of Clinical Pediatrics
- P.S., M.D. (Marshall 2008, 2012) [2019] MAJA SKIKIC, Assistant Professor of Psychiatry and Behavioral Sciences
 - B.S. (Newcomb 2005); M.D. (Vanderbilt 2012) [2016]
- SHANNON L. SKINNER, Assistant Clinical Professor of Medicine B.S.E. (Duke 2010); M.D. (Vanderbilt 2014) [2019]
- EMILY A. SKOTTE, Assistant in Medicine; Instructor in Clinical Nursing B.S. (Louisiana State 2008); M.S.N. (Vanderbilt 2012) [2012]
- DENNIS CARL SLAGLE II, Assistant Professor of Clinical Pediatrics B.S. (Clarion 2001); D.O. (Philadelphia College
- of Osteopathic Medicine 2006) [2020]

 JASON M. SLAGLE, Research Associate Professor
- of Anesthesiology
 B.S. (Texas Tech University 1995); M.S., Ph.D.
 (Alliant International 1998, 2004) [2005]
- STACEY BOURG SLAGLE, Assistant Professor of Clinical Pediatrics
 - B.S. (Christian Brothers 2003); M.D. (Louisiana State, Shreveport 2007) [2019]

- JILL R. SLAMON, Senior Associate in Obstetrics & Gynecology
 - B.S. (Michigan State 2003); M.A. (National-Louis University [Illinois] 2005); M.G.C. (Northwestern 2011) [2011]
- JAMES C. SLAUGHTER, Associate Professor of BiostatisticsB.S. (Tulane 1998); M.S. (University of Washington 2000); Dr.P.H. (North Carolina 2007) [2007]
- CHRISTOPHER SLOBOGIN, Milton R. Underwood Chair in Law; Professor of Law; Professor of Psychiatry and Behavioral Sciences; Director, Criminal Law Program A.B. (Princeton 1973); J.D., LL.M. (Virginia 1977, 1979) [2008]
- EMILY S. SLOCUM, Assistant in Obstetrics & Gynecology B.A. (Michigan 1997); M.S.N. (Yale 2004) [2019]
- DAVID ALAN SLOSKY, Assistant Professor of Medicine; Assistant Professor of Emergency Medicine
 - B.S. (Tulane 1972); M.D. (Colorado 1976) [2005]
- BONNIE S. SLOVIS, Professor of Medicine, Emerita
 - A.B. (Wesleyan [Georgia] 1966); M.Ed. (Georgia State 1975); M.S. (Georgia Institute of Technology 1981); M.D. (Emory 1990) [1996]
- COREY M. SLOVIS, Professor of Emergency Medicine; Professor of Medicine; Chair of the Department of Emergency Medicine B.S. (Hobart and William Smith 1971); M.D. (New Jersey Medical 1975) [1992]
- WALTER E. SMALLEY, JR., Professor of Medicine; Professor of Surgery; Associate Professor of Health Policy
 B.S. (Emory and Henry 1981); M.P. (Duke 1985); M.P.H. (Vanderbilt 1997), 1991]
- GEOFFREY H. SMALLWOOD, Crinical Instructor in Obstetrics and Gynecology
 B.A. (Vanderbilt 1980); M.D. (Tulane 1985)
 [1993]
- KATELYN SMELSER, Instructor in Clinical Medicine; Instructor in Clinical Pediatrics B.S., M.D. (Missouri 2011, 2015) [2020]
- WOODSON W. SMELSER, Instructor in Clinical Urology
 - B.S., M.D. (Missouri 2011, 2015) [2020]
- CHRISTOPHER P. SMELTZER, Clinical Professor of Pediatrics
 - B.A. (Baylor 1989); M.D. (Vanderbilt 1993) [1997]

- ANDREW HAROLD SMITH, Associate Professor of Anesthesiology; Associate Professor of Clinical Pediatrics

 B.S. (Washington and Lee 1997); M.D. (Maryland, Baltimore 2001); M.S.C.I., M.Mgt.
- ANTHONY L. SMITH, Clinical Professor of Pediatrics

(Vanderbilt 2007, 2012) [2010]

- B.A. (Tennessee 1982); M.D. (UT Health Science Center [Tennessee] 1986) [2006]
- AUSTIN SMITH, Adjoint Assistant Professor of Emergency Medicine B.A., B.B.A. (Texas 2010, 2010); M.D. (Texas,
 - B.A., B.B.A. (Texas 2010, 2010); M.D. (Texas, San Antonio 2014) [2017]
- BRIANNA N. SMITH, Instructor in Pediatrics B.S. (Augustana [Illinois] 2009); M.S., M.D. (Rosalind Franklin University of Medicine and Science 2010, 2014) [2020]
- CAMERON P. SMITH, Instructor in Clinical Radiology & Radiological Sciences B.S. (West Texas A & M 2008); D.O. (LECOM 2014) [2019]
- CARLENDA SMITH, Assistant Professor of Clinical
 - B.S. (Hampton 2003); M.D. (East Tennessee State 2007 (2011]
- CHRISTINE MOORE SMITH, Assistant Professor of Clinical Pediatrics
 - P.A. (Vanderbilt 2009); M.D. (East Tennessee State 2013) [2019]
- CLAY BARTON SMITH, Associate Professor of Emergency Medicine; Associate Professor of Medicine; Associate Professor of Pediatrics B.S. (Union [Tennessee] 1995); M.D. (UT Health Science Center [Tennessee] 1999) [2004]
- DAVID SAMUEL SMITH, Research Assistant Professor of Radiology and Radiological Sciences B.S. (Texas 2001); A.M. (Harvard 2002); Ph.D. (Texas 2006) [2014]
- DEREK K. SMITH, Assistant Professor of Biostatistics; Research Instructor in Oral & Maxillofacial Surgery B.A. (DePauw 2004); D.D.S. (Indiana, Bloomington 2008); Ph.D. (Vanderbilt 2017) [2013]
- GARY T. SMITH, Professor of Clinical Radiology and Radiological Sciences B.S. (Tennessee 1978); M.D. (Texas, Southwestern Medical 1983) [2009]
- HEIDI A. B. SMITH, Associate Professor of Anesthesiology B.S. (Nebraska 1995); M.D. (South Dakota 1999); M.S.C.I. (Vanderbilt 2005) [2014]

- JARROD A. SMITH, Research Associate Professor of Biochemistry
 - B.Sc. (California, Santa Barbara 1992); Ph.D. (Scripps Research Institute 1999) [1999]
- JEFFREY R. SMITH, Associate Professor of Medicine
 - A.B. (Harvard 1985); M.D., Ph.D. (Texas, Southwestern Medical 1992, 1992) [1999]
- JODY BARNWELL SMITH, Assistant in Surgery B.S. (Tennessee Technological 2006); D.N.P. (UT Health Science Center [Tennessee] 2013) [2016]
- JONATHAN DANIEL SMITH, Assistant Professor of Psychiatry and Behavioral Sciences B.A., B.S. (Ithaca 2009, 2009); M.D. (West Virginia 2013) [2018]
- JOSEPH A. SMITH, JR., William L. Bray Chair in Urology; Professor of Urology B.A. (Tennessee 1971); M.D. (UT Health Science Center [Tennessee] 1974) [1991]
- JOSHUA CARL SMITH, Assistant Professor of Biomedical Informatics B.S. (Murray State 2006); M.S. (Illinois, Champaign 2009); M.S., Ph.D. (Vanderbilt 2012, 2016) [2016]
- JOSHUA PORTER SMITH, Instructor in Clinical Surgery B.S. (Ohio State 2008): D.O. (WVSOM 2013)
 - B.S. (Ohio State 2008); D.O. (WVSOM 2013) [2020]
- KEEGAN M. SMITH, Associate Clinical Professor of Pediatrics
 - B.S. (Tennessee, Chattanooga 1998); M.D. (UT Health Science Center [Tennessee] 2002) [2008]
- KRISTINA SMITH, Assistant Professor of Clinical Pediatrics
 - B.S., M.D. (Baylor 2002, 2006) [2020]
- KURT A. SMITH, Associate Professor of Emergency Medicine; Associate Professor of Pediatrics
 - B.A. (Rice 2001); M.D. (Harvard Medical 2005) [2009]
- LOREN ELISA SMITH, Assistant Professor of Anesthesiology
 - B.A. (DePauw 2004); Ph.D., M.D. (Cincinnati 2010, 2012) [2016]
- M. KEVIN SMITH, Assistant Professor of Clinical Medicine
 - B.S. (Mississippi 1986); Ph.D., M.D., M.Mgt. (Vanderbilt 1991, 1993, 2011) [1997]
- MARIAH P. SMITH, Assistant Professor of Clinical Psychiatry and Behavioral Sciences B.A. (Arizona 2006); M.D. (St. George's, Grenada 2014) [2019]
- MARYLOU SMITH, Assistant Professor of Clinical Obstetrics and Gynecology B.S.N. (Saint John Fisher 2005); M.S.N. (Vanderbilt 2006) [2013]

- MICHAEL CHRISTOPHER SMITH, Assistant Professor of Surgery B.S. (Boston College 2008); M.D. (New York Medical 2012) [2018]
- MICHAEL LEE SMITH, Associate Clinical Professor of Dermatology B.S. (Davidson 1977); M.S., M.D. (East Carolina 1979, 1983) [1994]
- PAIGE J. SMITH, Associate Clinical Professor of Pediatrics
 - B.S. (Tennessee 1998); M.D. (UT Health Science Center [Tennessee] 2002) [2005]
- RAPHAEL F. SMITH, Professor of Medicine, Emeritus
 - B.A. (Vanderbilt 1955); M.D. (Harvard Medical 1960) [1969]
- RICHARD P. SMITH, Assistant Clinical Professor of Pediatrics
 - B.S. (Samford 1998); M.D. (Mercer 2004) [2007]
- RYAN S. SMITH, Assistant Professor of Clinical Anesthe: iology
 - B. S. (Acadia [Canada] 2001); M.Sc. (Alberta [Canada] 2004), M.D. (Calgary [Canada] 2008) [2019]
- SCOTT ALAN SMITH, Assistant Professor of Medicine; Assistant Professor of Pathology, Microbiology and Immunology B.S., Ph.D., M.D. (Louisville 1997, 2002, 2006) [2011]
- SETH A. SMITH, Professor of Radiology & Radiological Sciences; Professor of Ophthalmology & Visual Sciences; Associate Professor of Biomedical Engineering B.S. (Virginia Polytechnic Institute 2001); Ph.D. (Johns Hopkins 2006) [2009]
- TATANISHA P. SMITH, Assistant Clinical Professor of Pediatrics

 B.S. (Florida Agricultural and Mechanical 2)
 - B.S. (Florida Agricultural and Mechanical 2001); M.D. (Meharry Medical 2005) [2014]
- TERRENCE A. SMITH, Assistant Professor of Medicine
 - A.A., B.S. (Ohio State 1985, 1990); M.D. (Wright State 1997) [2003]
- VALERIE SMITH-GAMBLE, Assistant Clinical Professor of Psychiatry and Behavioral Sciences B.S. (Ohio 1975); M.D., M.Sc. (Indiana, Indianapolis 2003, 2003) [2016]
- BRENT SNADER, Assistant Clinical Professor of Medicine B.S. (Dickinson 1996); M.D. (VUMC 2000) [2020]
- JAMES D. SNELL, JR., Professor of Medicine, Emeritus B.S. (Centenary (New Jersey) 1954); M.D. (Vanderbilt 1958) [1963]

- DAVID J. SNODGRASS, Assistant Clinical Professor of Oral and Maxillofacial Surgery B.S. (East Tennessee State 1978); D.D.S. (UT Health Science Center [Tennessee] 1984) [1995]
- S. STEVE SNOW, Clinical Professor of Psychiatry and Behavioral Sciences B.A. (Arkansas 1973); M.D. (Arkansas, Little

Rock 1977) [1982]

- ELIZABETH J. SNYDER, Assistant Professor of Clinical Radiology & Radiological Sciences B.A. (Rice 2008); M.D. (Case Western Reserve 2012) [2018]
- STANLEY O. SNYDER, JR., Associate Clinical Professor of Surgery at St. Thomas Medical Center
 - B.A. (Centre 1968); M.D. (Louisville 1972) [1995]
- RACHEL SOBEL, Assistant Professor of Ophthalmology and Visual Sciences B.A. (Harvard 1999); M.D. (California, San Francisco 2006) [2015]
- CHRISTOPHER M. SOBEY, Assistant Professor of Clinical Anesthesiology B.A. (Wake Forest 2005); M.D. (Texas, San

Antonio 2009) [2014]

- JENNA M. HELMER SOBEY, Assistant Professor of Anesthesiology B.S. (Texas A & M 2005); M.D. (Texas, San Antonio 2009) [2014]
- ANDREW G. SOKOLOW, Assistant Professor Pediatrics

B.A., M.D. (SUNY, Buffalo 2001, 2005) [2011]

- KIRA SOLDANI, Assistant in Surgery
 B.S.N. (Lipscomb 2007); M.S.N. (Relmont 2013)
 [2014]
- EMILY P. SOLEM, Assistant in Pediatrics
 B.S. (Colorado 2016); M.S. (Long Isiand 2019)
 [2019]
- BARBARA J. SOLOMON, Assistant Professor of Clinical Pediatrics M.D. (McGill [Canada] 1998) [2016]
- CARMEN C. SOLORZANO, John L. Sawyers Chair
- in Surgical Sciences; Professor of Surgery; Chair of the Department of Surgery
 B.S., M.D. (Florida 1989, 1993) [2010]
- SUSEELA SOMARAJAN, Research Instructor in Surgery
 - B.Sc. (Kerala [India] 1990); M.Sci. (University College, Warangal [India] 1992); B.Ed. (Kerala [India] 1993); M.Phil. (University College, Warangal [India] 1996); Ph.D. (Vanderbilt 2010) [2011]
- BYEONGWOON SONG, Adjunct Associate Professor of Pharmacology B.S. (Seoul National [Korea] 1987); Ph.D. (Columbia 1997) [2017]

- HYUN DEOK SONG, Research Assistant Professor of Medicine
 - B.S. (Konkuk [Korea] 2002); Ph.D. (Cincinnati 2012) [2018]
- WENLIANG SONG, Assistant Professor of Medicine
 - M.D. (Shandong Medical [China] 2003); M.S. (Pennsylvania 2012) [2019]
- HASAN H. SONMEZTURK, Associate Professor of Neurology
 - M.D. (Marmara [Turkey] 1999) [2010]
- KELLY L. SOPKO, Assistant Professor of Medicine B.S. (Notre Dame 1997); M.D. (Kentucky, Lexington 2001) [2007]
- LAURA SORABELLA, Assistant Professor of Anesthesiology

B.S. (Illinois, Champaign 2007); M.D. (California, Los Angeles 2011) [2017]

- MARY ROGERS SOREY, Assistant in Medicine B.S. (Mills.ps 2009); M.S.N. (Vanderbilt 2011) [2016]
- JONA THAIN H. SOSLOW, Assistant Professor of Pe liatrics
 - 5.A. (Williams 1999); M.D. (Louisiana State, New Orleans 2003); M.S.C.I. (Vanderbilt 2014) [2010]
- JEFFREY A. SOSMAN, Adjunct Professor of Medicine
 - P.A. (Brandeis 1976); M.D. (Yeshiva 1981) [2001]
- CINQUE SOTO, Research Associate Professor of Pediatrics
 - B.S. (Rutgers 1997); Ph.D. (Columbia 2006) [2016]
- E. MICHELLE SOUTHARD-SMITH, Associate Professor of Medicine; Associate Professor of Cell and Developmental Biology B.S. (Oklahoma 1987); Ph.D. (Texas, Southwestern Medical 1992) [1999]
- GREGORY ALAN SOWD, Research Instructor in Pathology, Microbiology and Immunology B.S. (Virginia Polytechnic Institute 2005); Ph.D. (Vanderbilt 2013) [2019]
- ANTHONY J. SPAHR, Adjoint Assistant Professor of Hearing and Speech Sciences B.S., M.S., Ph.D., M.B.A. (Arizona State 1999, 2001, 2004, 2010) [2011]
- LUCY B. SPALLUTO, Associate Professor of Radiology & Radiological Sciences B.A., M.D. (Virginia 2001, 2006) [2014]
- JONATHAN M. SPANIER, Clinical Professor of Pediatrics
 - B.S. (Duke 1999); M.D. (Vanderbilt 2003) [2006]

- MATTHEW D. SPANN, Assistant Professor of Surgery
 - B.S. (Samford 2004); M.D. (Alabama, Birmingham 2008) [2013]
- CHRISTY L. SPARKMAN, Assistant in Medicine A.A.S. (Itawamba Community 1990); M.S.N. (Vanderbilt 2000) [2004]
- HOLLY C. SPARKS, Assistant Professor of Clinical Pediatrics
 - B.S. (Samford 1996); D.O. (Nova Southeastern 2001) [2015]
- NIKKI SLOANE SPARKS, Assistant in Psychiatry and Behavioral Sciences
 - B.A., M.S.N., D.N.P. (Vanderbilt 2014, 2016, 2020) [2017]
- STEPHANIE M. SPENCE, Assistant in Pediatrics B.S.N. (Tennessee, Chattanooga 2002); M.S.N. (Vanderbilt 2006) [2010]
- C. NORMAN SPENCER, Clinical Professor of Pediatrics
 - B.A., M.D. (Vanderbilt 1972, 1976) [1979]
- KATHERINE SPENCER, Assistant Professor of Clinical Pediatrics
 - B.A. (Vanderbilt 2004); M.A., Psy.D. (Argosy 2007, 2010) [2020]
- DAN M. SPENGLER, Professor of Orthopaedic Surgery, Emeritus
 - B.S. (Baldwin-Wallace 1962); M.D. (Michigan 1966) [1983]
- THEODORE SPEROFF, Professor of Medicine Emeritus
 - B.S., Ph.D., M.S. (Akron 1974, 1979, 1984); Ph.D. (Case Western Reserve 1987) [1999]
- Professor of Obstetrics ad Gyncology B.S., M.A. (American 1979, 1985); M.D. (Vanderbilt 1991) [1995]
- JAMIE BRADFORD SPICER, Adjunct Listructor in Medicine
 - B.S. (Lipscomb 1983); MSN (Vanderbilt 1996) [2012]
- W. ANDERSON SPICKARD, JR., Professor of Medicine, Emeritus
 - B.A., M.D. (Vanderbilt 1953, 1957) [1963]
- W. ANDERSON SPICKARD III, Assistant Dean for Educational Design and Informatics; Professor of Medicine; Associate Professor of Biomedical Informatics
 - B.A. (North Carolina 1985); M.D. (Vanderbilt 1989); M.S. (Virginia 1995) [1995]
- ANDREW J. SPIEKER, Assistant Professor of Biostatistics
 - B.S. (Northeastern 2011); M.S., Ph.D. (University of Washington 2015, 2016) [2018]

- BENJAMIN W. SPILLER, Associate Professor of Pharmacology; Associate Professor of Pathology, Microbiology and Immunology B.S. (California, Davis 1994); Ph.D. (California, Berkeley 1999) [2006]
- KURT P. SPINDLER, Adjoint Professor of Orthopaedic Surgery B.A. (Rutgers, Newark 1981); M.D.
- (Pennsylvania 1985) [1991] DAVID W. SPIVEY, Assistant Clinical Professor of Oral and Maxillofacial Surgery
 - B.A. (Hendrix 1987); D.D.S. (Tennessee 1992) [2016]
- RYAN SPLITTGERBER, Associate Professor of Surgery
 - B.S. (Wayne State 2002); Ph.D. (Alabama, Birmingham 2008) [2018]
- KELLY E. SPONSLER, Associate Professor of Medicine.
 - B.S. (Emory 1999); M.D. (2) nnsylvania State 2004) [2)08]
- JOHN SPOUNER, Assistant Clinical Professor of Neurological Surgery
 - B.A., B.S., M.D. (Arizona 1991, 1996, 2001) [2014]
- STEPH/ME E. SPOTTSWOOD, Professor of Redictory and Radiological Sciences, Emerita B.A. (Michigan 1972); M.S.P.H., M.D. (North Carolina 1978, 1987) [2005]
- NATALIE M. SPRADLIN, Assistant Professor of Clinical Medicine
 - B.S. (Lipscomb 2001); M.D. (Vanderbilt 2005) [2012]
- JEFFREY M. SPRAGGINS, Research Assistant Professor of Biochemistry; Research Assistant Professor of Chemistry
 - B.A. (Wooster 2003); Ph.D. (Delaware 2009) [2012]
- MICHELE D. SPRING, Adjunct Assistant Professor of Pediatrics
 - B.S. (Notre Dame 1988); M.A.T., M.S.P.H. (SUNY, Binghamton 1992, 1992); M.D. (Vanderbilt 1999) [2005]
- CHARLES F. SPURLOCK III, Adjunct Assistant Professor of Medicine

 P. S. (University of the South 2000): Ph.D.
 - B.S. (University of the South 2009); Ph.D. (Vanderbilt 2014) [2015]
- SUBRAMANIAM SRIRAM, William C. Weaver III Chair in Neurology; Professor of Neurology; Professor of Pathology, Microbiology and Immunology
 - M.B.B.S. (Madras [India] 1973) [1993]
- DOLLADA SRISAI, Research Instructor in Molecular Physiology & Biophysics D.V.M. (Kasetsart [Thailand] 1998); Ph.D. (Mahidol [Thailand] 2010) [2016]

- GITANJALI SRIVASTAVA, Associate Professor of Medicine
 - B.S. (Louisiana State 1999); M.D. (Louisiana State, New Orleans 2003) [2019]
- PAUL J. ST. JACQUES, Professor of Anesthesiology; Professor of Biomedical Informatics
 - B.A., M.A. (Clark 1988, 1988); M.D. (Johns Hopkins 1992) [1996]
- LAWRENCE B. STACK, Professor of Emergency Medicine; Professor of Pediatrics B.S. (South Dakota State 1983); M.D. (Oral Roberts 1987) [1995]
- JACQUELINE STAFFORD, Assistant Professor of Clinical Obstetrics and Gynecology B.S. (Lipscomb 1987); M.D. (Tennessee, Memphis 1991) [2012]
- JOHN M. STAFFORD, Associate Professor of Medicine; Associate Professor of Molecular Physiology & Biophysics B.A., Ph.D., M.D. (Vanderbilt 1995, 2001, 2003) [2008]
- STEPHEN M. STAGGS, Clinical Instructor in Obstetrics and Gynecology B.S. (Lipscomb 1975); M.D. (UT Health Science Center [Tennessee] 1978); M.T.S. (Vanderbilt 2013) [1983]
- ROXANNE R. STAHL, Assistant in Pediatrics A.S., B.S.N. (Nebraska 1984, 1986); M.S.N. (Colorado, Denver 1994) [2016]
- MILDRED T. STAHLMAN, Professor of Peciairics; Professor of Pathology, Microbiology and Immunology
 - B.A., M.D. (Vanderbilt 1943, 1946) [1951]
- ALACIA TRENT STAINBROOK, Assistant in Pediatrics
 - B.A., M.S., Ph.D. (Vanderbilt 2002 2004, 2007) [2012]
- SARAH C. STALLINGS, Research Assistant Professor of Medicine B.A. (Oberlin 1988); Ph.D., M.Phil. (Yale 1997, 1997) [2016]
- TIMOTHY W. STAMBAUGH, Associate in Psychiatry and Behavioral Sciences B.A. (Ohio Christian 1991); M.A. (Asbury Theological Seminary 1994) [2008]
- BRADLEY B. STANCOMBE, Professor of Clinical Pediatrics
 - B.S. (Vanderbilt 1980); M.D. (Baylor 1984) [1996]
- SCOTT CRAWFORD STANDARD, Adjunct Assistant Professor of Neurological Surgery A.B. (Princeton 1985); M.D. (Alabama, Birmingham 1989) [1996]
- CHANTELLE R. STANLEY, Assistant in Pediatrics M.S.N. (Vanderbilt 2015) [2015]

- ANN ROBBINS STARK, Adjunct Professor of Pediatrics
 - A.B. (Mount Holyoke 1967); M.D. (Harvard Medical 1971) [2011]
- JULIE E. STARK, Assistant Professor of Pediatrics B.S. (Indianapolis 2008); M.D. (Indiana, Indianapolis 2012) [2020]
- RYAN JORDAN STARK, Assistant Professor of Pediatrics
 - B.S. (Southern California 2002); M.D. (George Washington 2006) [2013]
- DANIEL L. STARNES, Assistant Professor of Clinical Radiology and Radiological Sciences B.A. (Tennessee 1975); J.D. (Nashville School of Law 1991); M.D. (UT Health Science Center [Tennessee] 0) [1984]
- ADAM C. STATER, Assistant in Medicine B.A. (Colorado College 2008); M.S.N. (Vanderbilt 2017) [2017]
- NICHOLAS JAMES STATZER, Assistant Professor of Anest resiology
 - B. S. (Saint Louis 2009); M.D. (Michigan State 2014) [2019]
- MILNER BENELICT OWENS STAUB, Instructor in Medicine
 - B.A. P.S. (Georgia 2009, 2009); M.D. (Alabama, Bi mingham 2013) [2019]
- JOHN STAUBITZ, Assistant in Pediatrics P.S. (Ohio State 2004); M.Ed. (Vanderbilt 2006) [2014]
- GENEVIEVE ELAINE STAUDT, Assistant Professor of Anesthesiology B.A. (Yale 2008); M.D. (Iowa 2012) [2018]
- SHAUN R. STAUFFER, Adjunct Assistant Professor in Pharmacology
 - B.S. (Southern Illinois 1992); Ph.D. (Illinois, Champaign 1999) [2008]
- WILLIAM W. STEAD, McKesson Foundation Chair in Biomedical Informatics; Professor of Biomedical Informatics; Professor of Medicine; Chief Strategy Officer, Vanderbilt University Medical Center
 - B.A., M.D. (Duke 1970, 1973) [1991]
- WILLIAM G. STEBBINS, Assistant Professor of Dermatology
 - B.S. (Williams 1999); M.D. (Mount Sinai 2005) [2010]
- THILO STEHLE, Adjunct Professor of Pediatrics M.S., Ph.D. (Freiburg [Germany] 1988, 1992) [2004]
- ELI STEIGELFEST, Assistant Professor of Clinical Medicine
 - M.D. (Yeshiva 1995) [2007]
- JILL E. STEIGELFEST, Assistant Professor of Clinical Pediatrics
 - B.A. (Cornell 1991); M.D. (Yeshiva 1995) [2007]

- C. MICHAEL STEIN, Dan May Chair; Professor of Medicine; Professor of Pharmacology M.B.Ch.B (Cape Town [South Africa] 1978) [1993]
- PRESTON M. STEIN, Assistant Clinical Professor of Pediatrics
 - M.A. (York [Canada] 1969); M.D. (Calgary [Canada] 1975) [2000]
- RICHARD A. STEIN, Research Assistant Professor of Molecular Physiology & Biophysics B.A. (California, San Diego 1986); M.S., Ph.D. (Minnesota 1989, 1992) [2011]
- RICHARD S. STEIN, Professor of Medicine, Emeritus
 - A.B. (Harvard 1966); M.D. (Harvard Medical 1970) [1977]
- ROLAND W. STEIN, Professor of Molecular Physiology and Biophysics; Professor of Cell and Developmental Biology B.A. (California, Los Angeles 1975); M.A., Ph.D. (Yeshiva 1980, 1982) [1986]
- KRISTY STENGEL, Research Assistant Professor of Biochemistry
 - Ph.D. (Cincinnati 2011) [2011]
- SHANE P. STENNER, Assistant Professor of Biomedical Informatics; Assistant Professor of Medicine
 - B.S. (Maryland 2000); M.D. (Johns Hopkins 2005); M.S. (Vanderbilt 2011) [2011]
- SCOTT J. STEPHAN, Assistant Professor of Otolaryngology - Head and Neck Surgery B.S., M.D. (Vanderbilt 1999, 2005) [2011]
- BYRON F. STEPHENS, Assistant Professor of Neurological Surgery; Assistant Professor of Clinical Orthopaedic Surgery B.S. (Vanderbilt 2005); M.D. UT Healin Science Center [Tennessee] 2010) [2016]
- LISA D. STEPHENS, Assistant in Coctetics & Gynecology
 B.S.N. (Middle Tennesser State 1996); M.S.N. (Vanderbilt 2002); Certificate (Philadelphia 2005) [2017]
- SUSAN E. STEPHENS, Assistant in Neurological Surgery B.S.N. (Vanderbilt 1983): M.S.N. (Simmons
 - B.S.N. (Vanderbilt 1983); M.S.N. (Simmons 1991) [2017]
- TIMOTHY R. STERLING, David E. Rogers Professorship; Professor of Medicine B.A. (Colgate 1985); M.D. (Columbia 1989) [2003]

- PAUL STERNBERG, JR., Associate Dean for Clinical Affairs; George Weeks Hale Professorship of Ophthalmology; Professor of Ophthalmology and Visual Sciences; Chair of the Department of Ophthalmology and Visual Sciences; Chief Medical Officer, Vanderbilt Medical Group B.A. (Harvard 1975); M.D. (Chicago 1979) [2003]
- JENNIFER A. STEVENS, Assistant in Pediatrics B.S. (Birmingham-Southern 2005); M.S.N. (Vanderbilt 2007) [2008]
- DAVID G. STEVENSON, JR., Professor of Health Policy
 - B.A. (Oberlin 1991); S.M. (Harvard 1997); Ph.D. (Harvard Medical 2004) [2013]
- LYNNE WARNER STEVENSON, Lisa M. Jacobson Chair in Cardiovascular Medicine; Professor of Medicine
 - A.B. (Princeton 1975), A.D (Stanford 1979) [2017]
- WILLIAM GREGORY STEVENSON, Professor of Medicine
 - B.A. (So tth Florida 1975); M.D. (Tulane 1979) [2017]
- RUTH CAPR STEWART, Assistant Professor of Clinical Medicine; Assistant Professor of Clinical Pediatrics
 - P.S. (Milligan 1985); M.D. (UT Health Science Center [Tennessee] 1991) [2013]
- THOMAS G. STEWART, Assistant Professor of Biostatistics
 - B.A., B.S., M.S. (Brigham Young 2006, 2006, 2008); Ph.D. (North Carolina 2015) [2015]
- JOSEPH M. STIDHAM, Instructor in Clinical Pediatrics
 - B.A., B.S. (Florida 2011, 2011); M.D. (South Florida 2016) [2019]
- ERIC F. STILES, Assistant Clinical Professor of Pediatrics
 - B.A., M.A. (Stanford 1989, 1990); M.D. (Cornell 1995) [2002]
- SARAH JO STIMPSON, Clinical Instructor in Pediatrics
 - B.S. (Union College [New York] 2005); M.D. (Massachusetts, Worcester 2010) [2017]
- CARY W. STIMSON, JR., Assistant Professor of Urology
 - B.S. (William and Mary 2003); M.D., J.D. (Vanderbilt 2010, 2010) [2017]
- MORGAN B. STINE, Assistant in Medicine B.S. (Loyola Marymount 2007); M.P.A.S., M.S. (Southern California 2011, 2011) [2016]

- DANIEL J. STINNER, Assistant Professor of Orthopaedic Surgery B.S. (U.S. Military Academy 2002); M.D. (Chicago 2006) [2018]
- CATHERINE V. STOBER, Assistant Professor of Clinical Medicine B.S. (Florida 1995); M.D. (Johns Hopkins 1999)
- DENNIS CLIFTON STOKES, Professor of **Pediatrics** A.B. (Wabash 1969); M.D. (Kentucky, Lexington 1973); M.P.H. (Indiana-Purdue, Indianapolis 2007) [2018]
- LEANN SIMMONS STOKES, Associate Professor of Clinical Radiology and Radiological Sciences B.S. (Davidson 1992); M.D. (Kentucky, Lexington 1997) [2003]
- WILLIAM A. STOKES III, Instructor in Otolaryngology - Head and Neck Surgery B.S. (Washington and Lee 2008); M.D. (Medical University of South Carolina 2014) [2019]
- AMANDA LEIGH SHERMAN STONE, Assistant Professor of Pediatrics; Research Assistant Professor of Anesthesiology; Adjunct Assistant Professor of Psychology B.A. (Cedarville 2010); M.S., Ph.D. (Vanderbilt 2011, 2017) [2018]
- CAITLIN STONE, Assistant in Pediatrics B.A. (Tufts 2002); M.A., Ph.D. (North Carolina, Greensboro 2005, 2009) [2020]
- COSBY ALLEN STONE, JR., Instructor in Medicine B.S. (Vanderbilt 2004); M.D., M.P.H. (Alabama: Birmingham 2010, 2010) [2019]
- MICHAEL P. STONE, Professor of Chemistry: Professor of Biochemistry B.S. (California, Davis 1977); Ph.D. (California, Irvine 1981) [1984]
- PATRICK ALAN STONE, Professor Surgery M.D. (Marshall 1999) [2018]
- R. EDWARD STONE, JR., Assertate Professor of Hearing and Speech Sciences, Emeritus; Associate Professor of Otolaryngology, Emeritus B.S. (Whitworth 1960); M.Ed. (Oregon 1964); Ph.D. (Michigan 1971) [1987]
- WILLIAM S. STONEY, JR., Professor of Cardiac and Thoracic Surgery, Emeritus B.S. (University of the South 1950); M.D. (Vanderbilt 1954) [1963]
- MERRILL M. STOPPELBEIN, Associate in **Pediatrics**
 - B.S., M.S.N. (Vanderbilt 1990, 1994) [2011]
- KRISTINA LYNN STORCK, Clinical Instructor in Obstetrics and Gynecology B.S. (University of Washington 1997); M.D. (Vanderbilt 2001) [2005]

- ALAN B. STORROW, Associate Professor of **Emergency Medicine** B.A. (Transylvania 1985); M.D. (Cincinnati 1989) [2016]
- JEFFREY G. STOVALL, Associate Professor of Clinical Psychiatry and Behavioral Sciences; Adjunct Associate Professor of Nursing B.A. (Carleton College 1979); M.D. (UT Health Science Center [Tennessee] 1987) [2008]
- KEVIN STRANGE, Professor of Anesthesiology B.S., M.A. (California, Davis 1977, 1978); Ph.D. (British Columbia [Canada] 1983) [2018]
- CHARLES W. STRATTON, Associate Professor of Pathology, Microbiology and Immunology; Associate Professor of Medicine B.S. (Bates 1967); M.D. (Vermont 1971) [1979]
- THOMAS P. STRICKER, Assistant Professor of Pathology, Microbiology and Immunology B.S. (Iowa 1997); M.D., Th.D. (Washington University 2005, 2005; [2012]
- STEPHEN A. STRICKLAND, Assistant Professor of Medicine B.S., M.D. (Logisiana State 1995, 2009); M.S.C.I. (Vanderbilt 2010) [2008]
- JOHN C. STRUTIKUS, Assistant Clinical Professor of One and Maxillofacial Surgery B.S. (Auburn 1993); D.D.S. (UT Health Science Center [Tennessee] 1997) [2000]
- CHELSEA ELIZABETH STROBEL, Clinical Instructor in Pediatrics B.S. (Notre Dame 2009); M.D. (Virginia 2013)
- DENISE F. STUART, Associate Clinical Professor of Pediatrics B.A. (Saint Louis 1997); M.D. (Saint Louis University 2001) [2006]
- KASSANDRA L. STUBBLEFIELD, Assistant in Neurology B.S. (Florida State 1996); M.S.N. (Vanderbilt 2001) [2009]
- WILLIAM-MAY BOLLINGER STUBBLEFIELD, Instructor in Emergency Medicine B.A., B.S. (Utah 2009, 2009); M.S., M.D. (Indiana, Indianapolis 2014, 2015) [2019]
- ERIC PETER STUROS, Assistant Professor of Clinical Physical Medicine and Rehabilitation B.S. (Michigan Technological 2011): M.D. (Michigan State 2015) [2019]
- TIMOTHY SU, Research Assistant Professor of Medicine M.D. (Shanghai Medical [China] 1984); M.S. (Anhui [China] 1990); Ph.D. (Shanghai Medical [China] 2000) [2003]
- YAN RU SU, Research Professor of Medicine M.D. (Wannan Medical [China] 1982); M.Sc. (Nanjing Medical [China] 1987) [2000]

- GIOVANNI SUAREZ, Research Assistant Professor of Medicine
 - B.S., D.M.Sc. (Bogotá [Colombia] 1995, 2002); Ph.D. (Texas, Galveston 2010) [2017]
- JENNIFER S. SUCRE, Assistant Professor of Pediatrics; Assistant Professor of Cell & Developmental BiologyB.S. (Georgia 2003); M.D. (Harvard Medical 2009) [2016]
- STACI L. SUDENGA, Assistant Professor of Medicine B.A. (Luther 2007); M.P.H., Ph.D. (Alabama, Birmingham 2009, 2013) [2016]
- GARY ALLEN SULIKOWSKI, Stevenson Chair of Chemistry; Professor of Chemistry; Professor of Pharmacology
 - B.S. (Wayne State 1983); Ph.D. (Pennsylvania 1989) [2004]
- JARON SULLIVAN, Assistant Professor of Orthopaedic SurgeryB.A. (Brigham Young 2004); M.D. (Texas A & M 2008) [2014]
- WILLIAM J. SULLIVAN, Professor of Physical Medicine and Rehabilitation B.S. (Michigan State 1988); M.D. (Emory 1993) [2019]
- WILLIAM M. SULLIVAN, Assistant Professor of Medicine; Assistant Professor of Pediatrics B.S. (Notre Dame 2008); M.D., M.Ed. (Peabory 2013, 2013) [2017]
- FRIDOLIN SULSER, Professor of Psychiatry
 Emeritus; Professor of Pharmacology, Emeritus
 M.D. (Zurich [Switzerland] 1955) [1365]
- TANAYA SUMMERS, Assistant ir Medicine B.S. (Tennessee State 1999); M.S.N. (Venderbilt 2010) [2016]
- J. BLAIR SUMMITT, Assistant Professor of Clinical Plastic Surgery B.A. (Rhodes College 1984); M.D. (UT Health

Science Center [Tennesse 1 1955] [2004]

- ROBERT LAYMAN SUMMITT, JR., Clinical Professor of Obstetrics and Gynecology B.S. (Rhodes College 1979); M.D. (UT Health Science Center [Tennessee] 1983) [2004]
- ERIC L. SUMNER, Assistant Professor of Medicine B.S. (Georgia 1997); M.D. (Medical College of Georgia 2001) [2008]
- SINJU SUNDARESAN, Research Assistant Professor of Surgery B.Sc., M.Sc. (Calcutta [India] 2001, 2003); Ph.D. (Texas Woman's 2010) [2017]
- JOHN P. SUNDBERG, Adjunct Professor of DermatologyB.S. (Vermont 1973); D.V.M. (Purdue 1977); Ph.D. (Connecticut 1981) [1997]

- HAKAN W. SUNDELL, Professor of Pediatrics, Emeritus
 - M.D. (Karolinska Institute [Sweden] 1963) [1970]
- BONG HWAN SUNG, Research Assistant Professor of Cell & Developmental Biology M.S. (Inje [Korea] 2000); Ph.D. (Gwangju Institute of Science and Technology [Korea] 2008) [2014]
- KRISTA ANN SUOJANEN, Assistant Professor of Clinical Medicine B.A. (Williams 2007); M.D. (Columbia 2014) [2017]
- SHAILENDRA SURGRIM, Adjunct Assistant Professor of Ophthalmology and Visual Sciences M.B.B.S. (Guyana 2001) [2019]
- CRAIG R. SUSSMAN, Associate Professor of Clinical Medicine B.A. (Franklin and Marshall 1969); M.D. (Temple 1973) [2001]
- JAMES S. SUTCLIFFE, A. Sociate Professor of Molecul ir Physiology and Biophysics; Associate Professor of Psychiary and Behavioral Sciences 3.3. (Auburn (1986); Ph.D. (Emory 1992) [1997]
- KANZO SUZUKI, Research Instructor in Pharmacology
 - B.Sc (M.Sci. (Kitasato University School of Medicine [Japan] 2006, 2008); Ph.D. (Tokyo [Japan] 2012) [2018]
- MICHAEL C. SWAN, Clinical Instructor in Obstetrics and Gynecology B.S. (Pacific Lutheran 1986); M.D. (Medical College of Wisconsin 1990); M.B.A. (Vanderbilt 2008) [1997]
- REBECCA R. SWAN, Assistant Dean for Graduate Medical Education; Associate Professor of Pediatrics
 - B.S. (Randolph-Macon Woman's College 1986); M.D. (Medical College of Virginia 1990) [1997]
- MATTHEW S. SWARM, Assistant Professor of Emergency Medicine M.D. (Indiana, Indianapolis 2011); B.S. (Indiana, Bloomington 0) [2016]
- PETER J. SWARR, Assistant Clinical Professor of Pediatrics B.A. (Haverford 1994); M.D. (Vermont 1999)
 - B.A. (Haverford 1994); M.D. (Vermont 1999) [2003]
- J. DAVID SWEATT, Allan D. Bass Professor of Pharmacology; Professor of Pharmacology; Professor of Molecular Physiology & Biophysics; Chair of the Department of Pharmacology B.S. (South Alabama 1981); Ph.D. (Vanderbilt 1986) [2016]
- ANN BOLEY SWEENEY, Assistant Professor of Clinical Pediatrics B.A. (Connecticut 2001); M.D. (Utah 2010) [2017]

- RAESHELL S. SWEETING, Assistant Professor of Surgery
 - B.S. (Vanderbilt 2002); M.D. (New York 2008) [2015]
- LARRY L. SWIFT, Professor of Pathology, Microbiology and Immunology B.S. (Indiana Central 1967); Ph.D. (Vanderbilt 1971) [1971]
- WILLIAM H. SWIGGART, Assistant in Medicine B.S., M.S. (Tennessee 1980, 1986) [1998]
- RHONDA SWITZER, Assistant Clinical Professor of Oral and Maxillofacial Surgery D.M.D. (Manitoba [Canada] 1991) [2004]
- KRISTIN ARCHER SWYGERT, Associate Professor of Orthopaedic Surgery; Associate Professor of Physical Medicine and Rehabilitation B.A. (Colby 1993); M.S.P.T., D.P.T. (Colorado, Denver 2000, 2004); Ph.D. (Johns Hopkins 2007) [2008]
- JOLANTA SZCZARKOWSKA, Associate Clinical Professor of Pediatrics
 - M.D. (Jagiellonian [Poland] 1982) [2007]
- DAVID S. TABER, Associate Professor of Emergency Medicine; Associate Professor of Clinical Radiology & Radiological Sciences B.S. (Vanderbilt 1973); M.D. (Indiana, Indianapolis 1977) [2000]
- MEGAN TACKETT, Assistant Clinical Professor of Pediatrics
 - B.S. (Tennessee 2005); M.D. (UT Health Science Center [Tennessee] 2009) [2014]
- HIROHIDE TAKAHASHI, Research Instructor in Molecular Physiology & Biophysics B.S. (University of Shizuoka 2005): M.S., Ph.D. (Kyoto [Japan] 2007, 2011) [2018]
- TAKAMUNE TAKAHASHI, As ociate Professor of Medicine
 - M.D., Ph.D. (Jikei [Japan] 1988 1994) [1999]
- MEGHA H. TALATI, Research Assistant Professor of Medicine
 - B.S. (Mumbai [India] 1988); M.S. (Maharaja Sayajirao [India] 1990); Ph.D. (Mumbai [India] 1996) [2005]
- DEANNA TALBERT, Assistant in Obstetrics & Gynecology
 - B.F.A. (College of Santa Fe 1997); B.S.N., M.S.N. (Florida 2007, 2010) [2018]
- HELEN KEIPP TALBOT, Associate Professor of Medicine; Associate Professor of Health Policy; Associate Professor of Pediatrics
 B.S. (Illinois, Champaign 1995); M.D. (Medical College of Georgia 1999); M.P.H. (Vanderbilt 2007) [2006]
- THOMAS R. TALBOT III, Professor of Medicine B.S. (Duke 1992); M.D., M.P.H. (Vanderbilt 1996, 2003) [2003]

- HEATHER MCDONAGH TAMEZ, Instructor in Clinical Ophthalmology & Visual Sciences B.A. (Kenyon 2009); M.D. (Ohio State 2014) [2018]
- MARCUS C. B. TAN, Assistant Professor of Surgery M.B.B.S. (University of New South Wales 2001) [2018]
- STACY T. TANAKA, Professor of Urology; Professor of Pediatrics B.A. (Princeton 1990); M.S. (California, Berkeley 1993); M.D. (California, Davis 2001) [2009]
- RANDIP S. TANEJA, Assistant Professor of Clinical Neurology
 - B.A. (George Washington 2003); M.D. (Ross University School of Medicine 2009) [2018]
- YASAS CHANDRA TANGUTURI, Assistant Professor of Clinical Psychiatry and Behavioral Sciences
 - M.B.B.S. (Kilpauk Medical [India] 2007); M.P.H. (Texas 2011) [2017]
- HARIKRIS HNA TANIORE, Research Assistant Professor of Medicire M.Sc. (Sri Ventaeswara [India] 1994); M.Sc. (Kasturb i Medical [India] 1997); Ph.D. (Hyderabad [India] 2004) [2008]
- SIMPSON BOBO TANNER IV, Assistant Professor of Medicine
 - B.A. (Harvard 1977); M.D. (Wake Forest 1983)
- VILMARIE J. TANON-SANTINI, Clinical Instructor in Pediatrics B.S. (Puerto Rico, Rio Piedras 2001); M.D. (Puerto Rico, San Juan 2010) [2014]
- WILLIAM P. TANSEY, Professor of Cell and Developmental Biology; Professor of Biochemistry B.Sc., Ph.D. (Sydney [Australia] 1988, 1991)
- MOHAMMED N. TANTAWY, Research Assistant Professor of Radiology and Radiological Sciences B.S. (Mutah [Jordan] 1996);Grad.Dip (Jordan 1998); Ph.D. (Tennessee 2005) [2009]
- HUAN TAO, Research Assistant Professor of Medicine
 - M.D. (Nanjing Medical [China] 1986); Ph.D. (Nanjing Univ. 2004) [2016]
- RAN TAO, Assistant Professor of Biostatistics B.S. (Tsinghua [China] 2010); Ph.D. (North Carolina 2016) [2016]
- YUANKAI TAO, Assistant Professor of Biomedical Engineering; Assistant Professor of Ophthalmology & Visual Sciences B.S.E., Ph.D., M.S. (Duke 2006, 2010, 2010) [2016]

- JOHN LEEMAN TARPLEY, Professor of Surgery, Emeritus
 - B.A., M.D. (Vanderbilt 1966, 1970) [1993]
- MARGARET J. TARPLEY, Adjunct Instructor in Surgery
 - B.A. (Vanderbilt 1965); M.L.S. (Peabody 1966) [2001]
- EMILY M. TARVIN, Assistant Professor of Clinical Medicine
 - B.A. (Maryland 1998); M.D. (Vanderbilt 2007) [2011]
- STEVEN M. TATE, Clinical Professor of Pediatrics B.A. (Tennessee 1973); M.D. (UT Health Science Center [Tennessee] 1976) [1982]
- KRISTINE TATOSYAN-JONES, Instructor in Clinical Medicine; Instructor in Clinical Pediatrics
 - B.S. (California, Los Angeles 1998); M.D. (Loma Linda 2007) [2018]
- KENNETH JOHN TAUBENSLAG, Instructor in Clinical Ophthalmology & Visual Sciences B.A. (Williams 2009); M.Phil. (Cambridge [U.K.] 2011); M.D. (Vanderbilt 2015) [2019]
- KAREEM O. TAWFIK, Assistant Professor of Otolaryngology - Head and Neck Surgery B.A. (Kansas 2008); M.D. (New York 2012) [2020]
- ABBY SUSANNE TAYLOR, Assistant Professor of Urology; Assistant Professor of Pediatrics B.S. (Ohio State 2006); M.D. (Northeastern Chio Universities 2011) [2018]
- EMILY J. TAYLOR, Assistant in Obstetrice & Gynecology; Assistant in Pediatrice B.S.N. (Tennessee 2002); M.S.N. (Vanderbile 2013) [2015]
- F. WILLIAM TAYLOR, Clinical Instructor in Oral and Maxillofacial Surgery
 B.S. (Clemson 1976); D.D.S. (Errory 1981); M.S. (North Carolina 1983) [1984]
- JULIE LOUNDS TAYLOR, Associate Professor of Pediatrics; Associate Professor of Psychiatry and Behavioral Sciences
 - B.A. (Wheaton 1999); M.A., Ph.D. (Notre Dame 2002, 2004) [2008]
- KELLY A. TAYLOR, Senior Associate in Medicine B.A. (Boston University 1992); M.S. (Michigan 1995) [2002]
- SHAYNE SEBOLD TAYLOR, Assistant Professor of Medicine; Assistant Professor of Pediatrics B.S. (Emory 2009); M.D. (Drexel 2014) [2018]
- STEPHANIE LEIGH TAYLOR, Assistant Professor of Clinical Neurology; Instructor in Clinical Neurology B.A. (Johns Hopkins 2008); M.D. (Marshall

2015) [2019]

- VICTORIA C. TAYLOR, Assistant in Medicine B.S.N. (Tennessee 2013); M.S.N. (Vanderbilt 2016) [2016]
- WARREN D. TAYLOR, James G. Blakemore Chair in Psychiatry; Professor of Psychiatry and Behavioral Sciences B.S., M.D. (South Florida 1992, 1996); M.H.S.
- JOANNE S. TENNYSON, Assistant Professor of Clinical Obstetrics and Gynecology; Instructor in Nursing

(Duke 2008) [2012]

- B.A. (California, Los Angeles 1987); M.S.N. (Vanderbilt 1995); Certificate (SUNY, Brooklyn 2000) [2010]
- LESLIE TENPENNY, Assistant in Cardiac Surgery B.S.N. (Lipscomb 2009); M.S.N. (Union [Tennessee] 2013) [2015]
- BRIANNA KIRK TER HAAR, Assistant Professor of Clinical Pediatrics
 B.A. (Baylor 2002); M.D. Jexas Tech University 2006) [2)19]
- KYLAP. TERHUNE Associate Dean for Graduate Medical Education; Associate Professor of Surgery; Associate Professor of Anesthesiology M.D., A.B. (Pennsylvania 2004, 2004) [2011]
- PAUL E ESCHAN, Professor of Medicine, Erieritus
 - B.S., M.B., M.D., M.S. (Minnesota 1946, 1947, 1948, 1948) [1969]
- MRK THAME, Associate Professor of Clinical Pediatrics
- M.B.B.S. (West Indies [Jamaica] 1992) [2014] ANNE MARIE THARPE, Professor of Hearing and Speech Sciences; Professor of Otolaryngology -Head and Neck Surgery; Chair of the Department of Hearing and Speech Sciences B.S. (Arizona 1979); M.S., Ph.D. (Vanderbilt 1980, 1994) [1986]
- WESLEY P. THAYER, Associate Professor of Plastic Surgery; Associate Professor of Orthopaedic Surgery B.S. (Tennessee 1993); Ph.D., M.D. (Emory 1999, 2000) [2008]
- CECELIA N. THEOBALD, Associate Professor of Medicine
 - B.S. (Richmond 2004); M.D. (Virginia Commonwealth 2008); M.P.H. (Vanderbilt 2014) [2011]
- RICHARD N. THIGPEN, Assistant Professor of Clinical Obstetrics & Gynecology B.S. (Fisk 2003); M.D. (Michigan 2010) [2020]
- CAROLINE SPEDALE THOMAS, Assistant Professor of Clinical Pediatrics B.A. (Rice 2009); M.D. (Texas 2013) [2019]

- JAMES W. THOMAS II, Professor of Pathology, Microbiology and Immunology; Professor of Medicine
 - B.A. (Rhodes College 1970); M.D. (UT Health Science Center [Tennessee] 1973) [1992]
- JOHN C. THOMAS, Professor of Urology; Professor of Pediatrics
 - B.S. (Xavier [Ohio] 1994); M.D. (Cincinnati 1998) [2006]
- LANCE R. THOMAS, Research Assistant Professor in Cell and Developmental Biology B.S. (Utah 1998); Ph.D. (Wake Forest 2004) [2010]
- LORA D. THOMAS, Assistant Professor of Medicine
 - B.S. (Wright State 1995); M.D. (Medical College of Ohio 2000); M.P.H. (Vanderbilt 2007) [2007]
- RETHA B. THOMAS, Assistant in Medicine B.S.N. (North Alabama 1996); M.S.N. (Tennessee State 1999) [2016]
- SUSAN THOMAS, Assistant Clinical Professor of Pediatrics
 - B.A. (Tennessee 2007); M.D. (UT Health Science Center [Tennessee] 2011) [2015]
- TIMOTHY HARRIS THOMAS, Associate Professor of Clinical Pediatrics
 - B.M.E. (Georgia Institute of Technology 1996); M.D. (Emory 2000) [2014]
- NICHOLAS RUSSELL THOMASON, Assistant in Neurological Surgery; Lecturer of Nursing B.S. (Aurora 2015); M.S.N. (Vanderbilt 2017) [2017]
- CALLIE MARIE THOMPSON, Assistant Professor of Surgery
 - B.S. (University of Washing on 2003); M.D. (Meharry Medical 2008) [2015]
- HAROLD D. THOMPSON, Clinical Professor of Radiology & Radiological Science, B.S. (South Carolina State 1967); M.D. (Howard 1972) [2005]
- IVANA S. THOMPSON, Assistant Professor of Obstetrics and Gynecology B.S. (Massachusetts Institute of Technology 2004); M.D. (North Carolina 2010) [2016]
- JENNIFER L. THOMPSON, Assistant Professor of Obstetrics and Gynecology B.S. (Vanderbilt 2003); M.D. (Toledo 2007) [2014]
- KEITH S. THOMPSON, Clinical Professor of Pediatrics
 - B.A. (Lipscomb 1990); M.D. (UT Health Science Center [Tennessee] 1994) [1997]

- REID C. THOMPSON, William F. Meacham Chair in Neurological Surgery; Professor of Neurological Surgery; Professor of Otolaryngology - Head and Neck Surgery; Chair of the Department of Neurological Surgery B.A. (Maryland, Baltimore 1985); M.D. (Johns Hopkins 1989) [2002]
- ISAAC P. THOMSEN, Assistant Professor of Pediatrics; Assistant Professor of Medicine B.S. (Rhodes College 2000); M.D. (Arkansas, Little Rock 2004); M.S.C.I. (Vanderbilt 2013) [2008]
- KELLY F. THOMSEN, Assistant Professor of Pediatrics
 - B.S. (Georgia 2000); M.D. (Mercer 2004); M.S.C.I. (Vanderbilt 2010) [2010]
- DORSEY RICKARD THORLEY, Assistant Clinical Professor of Pediatrics
 - B.S. (Duke 2003); M.D. (Vanderbilt 2007) [2011]
- ANTHONY JAY THORNTON Assistant Clinical Professo: of Psychiatry and Behavioral Sciences B.S. (Emory and Penry 1979); M.D. (Virginia 1933) [2019]
- ALYSSA D THROCKMORTON, Assistant Clinical Professor of Surgery
 - B.A. (Oklahoma 1998); M.D.C.M. (Texas 2002)
- BEN, AMIN F. TILLMAN, Assistant Professor of Medicine; Assistant Professor of Pathology, Microbiology and Immunology B.A. (Millsaps 2005); M.D. (Mississippi, Jackson

2011) [2018]

- JASON RYAN TILLMAN, Assistant in Medicine B.S.N. (Mercer 2006); M.S.N. (Vanderbilt 2015) [2018]
- STACEY D. TILLMAN, Assistant Professor of Clinical Medicine

 P. S. (Millsons 2005), M.D. (Mississippi, Joseph
 - B.S. (Millsaps 2005); M.D. (Mississippi, Jackson 2011) [2017]
- HILARY A. TINDLE, William Anderson Spickard Jr., M.D. Chair in Medicine; Associate Professor of Medicine
 - B.A., M.D. (Chicago 1992, 1996); M.P.H. (Harvard 2004) [2014]
- VENKATASWARUP TIRIVEEDHI, Adjunct Assistant Professor in Pharmacology M.D. (Osmania [India] 2002); Ph.D. (Southern Mississippi 2007) [2015]
- VIKRAM TIWARI, Associate Professor of Anesthesiology; Associate Professor of Biomedical Informatics; Associate Professor of Owen Graduate School of Management M.B.A. (Illinois Institute of Technology 2002); Ph.D. (Indiana, Bloomington 2008) [2012]

- ERIC ROBERT TKACZYK, Assistant Professor of Dermatology; Assistant Professor of Biomedical Engineering
 - B.S., B.S.E.E. (Purdue 2003, 2003); M.S.E., M.D., Ph.D. (Michigan 2007, 2010, 2010) [2016]
- SHINJI TOKI, Research Assistant Professor of Medicine
 - B.Sc., M.Sc. (Tokyo University of Agriculture and Technology [Japan] 1996, 1998); Ph.D. (Kochi University 2008) [2015]
- NORMAN H. TOLK, Professor of Physics; Professor of Radiology and Radiological Sciences A.B. (Harvard 1960); Ph.D. (Columbia 1966) [1984]
- JAMES J. TOLLE, Assistant Professor of Medicine B.A. (Rice 1997); M.D. (Texas, Southwestern Medical 2001) [2009]
- ANDREW J. TOMARKEN, Associate Professor of Psychology; Associate Professor in Psychology & Human Development; Associate Professor of Biostatistics
 - A.B. (Harvard 1977); M.S., Ph.D. (Wisconsin 1982, 1988) [1989]
- COURTNEY MILES TOMBLINSON, Assistant Professor of Radiology & Radiological Sciences B.S. (Western Kentucky 2007); M.D. (Louisville 2012) [2019]
- FRANK TONG, Centennial Chair in Psychology Professor of Psychology; Professor of Ophthalmology & Visual Sciences B.S. (Queen's [Canada] 1995); M.A., Ph.D. (Harvard 1998, 1999) [2004]
- G. JOAQUIN TOON, Associate in Emergency Medicine
 - A.S.N. (Tennessee State 1990) [2008]
- MICHAEL C. TOPF, Assistant Professor of Otolaryngology - Head and Neck Syngery B.S. (Villanova 2010); M.D. (Rochester 2014) [2020]
- MADELINE SWAYZE TORREZ, Assistant in Surgery
 - B.A., M.S.N. (Vanderbilt 2011, 2013) [2015]
- ALEXANDER S. TOWNES, Professor of Medicine, Emeritus
 - B.A., M.D. (Vanderbilt 1949, 1953) [1987]
- PHYLLIS L. TOWNSEND, Associate Clinical Professor of Pediatrics B.A. (College of the Holy Cross 1984); M.D. (Cornell 1988) [1996]
- THEODORE F. TOWSE, Adjunct Assistant Professor of Radiology and Radiological Sciences B.S., M.S. (Massachusetts 1996, 2001); Ph.D. (Michigan State 2008) [2012]

- AMANDA DIANE TOYE, Assistant Professor of Clinical Anesthesiology B.S. (Oklahoma Baptist 2003); M.D. (Oklahoma 2007) [2020]
- MICHAEL G. TRAMONTANA, Associate Professor of Neurology; Associate Professor of Pediatrics; Associate Professor of Psychiatry and Behavioral Sciences
 - B.S. (Fordham 1971); M.A. (Columbia 1973); Ph.D. (Washington University 1977) [1989]
- UYEN L. TRAN, Associate Professor of Clinical Ophthalmology and Visual Sciences B.A. (Catholic University of America 1992); M.D. (Medical College of Virginia 1997) [2001]
- LINDSAY GEBHART TRANTUM, Assistant in Anesthesiology B.A. (Tennessee 2005); M.S.N. (Vanderbilt 200
 - B.A. (Tennessee 2005); M.S.N. (Vanderbilt 2007) [2009]
- DAVID B. TRENNER, Senio: Associate in Orthopaedic Surgery B.S. (Po tland State 1986); D.P.M. (California College of Podiatric Medicine 1990) [2006]
- NORMAN EDWI CREVATHAN, Amos Christie Chair; Professor of Pediatrics; Professor of Neurology
 - B.S. Loscomb 1977); M.D., M.P.H. (Emory 1982, 1982) [2016]
- KRISTEN TRICKETT, Assistant Professor of Clinical Pediatrics
 - B.S., M.D. (West Virginia 2011, 2016) [2019]
- ELIZABETH G. TRIGGS, Clinical Professor of Pediatrics
 - B.S. (North Carolina 1977); M.D. (Mississippi 1981) [1986]
- ANIL JULIUS TRINDADE, Assistant Professor of Medicine
 - B.S. (Lehigh 2001); M.D. (Duke 2005) [2019]
- MARIA M. TROCHE-PEREZ, Assistant in Surgery; Lecturer of Nursing
 - B.S.N. (Samford 2009); M.S.N. (Vanderbilt 2011) [2011]
- TIMOTHY H. TRONE, Assistant Professor of Otolaryngology - Head and Neck Surgery B.S. (Trinity [Texas] 1970); M.D. (Texas, Southwestern Medical 1974) [2015]
- SUSANNE TROPEZ-SIMS, Professor & Associate Dean of Clinical Affiliations at Meharry Medical College; Adjunct Professor of Pediatrics at Vanderbilt University School of Medicine B.S. (Bennett 1971); M.D., M.P.H. (North Carolina 1975, 1981) [1999]
- JORDAN ASHLEY TROTTER, Assistant in Pediatrics B.S. (Tennessee 2013); M.S.N. (Vanderbilt 2015) [2017]

- MOLLY TRUESDALE, Assistant in Surgery B.A. (Mississippi 2002); M.S.N. (Vanderbilt 2004) [2014]
- LISA M. TRUETT, Assistant in Surgery B.S.N., M.S.N. (Alabama, Huntsville 2001, 2008) [2011]
- CARMEN RODRIQUEZ TUCHMAN, Assistant Professor of Medicine B.S. (Purdue 2010); M.D. (Vanderbilt 2014) [2017]
- LAURIE DAWN TUCKER, Clinical Instructor in Pediatrics B.S. (Freed-Hardeman 2008); M.P.H. (North Carolina 2010); M.D. (East Tennessee State 2014) [2017]
- DAULAT R. TULSIANI, Professor of Obstetrics and Gynecology, Emeritus B.S. (Ewing Christian [India] 1962); M.S., Ph.D. (Allahabad [India] 1964, 1968) [1976]
- KEDIR N. TURI, Research Assistant Professor of Medicine
 - M.S. (Wageningen [Netherlands] 2009); M.S., Ph.D. (Illinois, Champaign 2012, 2015) [2015]
- JESSICA TURNBULL, Assistant Professor of Pediatrics
 - B.S. (John Carroll 2002); M.D. (Cincinnati 2006); M.A. (University of Washington 2013) [2013]
- JUSTIN HARRIS TURNER, Associate Professor of Otolaryngology - Head and Neck Surgery B.E. (Vanderbilt 1998); M.D., Ph.D. (Medical University of South Carolina 2006, 2006) [2012]
- GRACE T. TYLER, Assistant Professor of Clinical Pediatrics B.A. (Texas 2007); M.D. (Texas Southwestern Medical 2012) [2020]
- SHARON KELLY TYLER, Assistant in Surgery B.A. (Tennessee 2000); M.S.N. (Vanderbilt 2007)
- MATTHEW JOHN TYSKA, Cornelius Vanderbilt Chair in Cell & Developmental Biology; Professor of Cell and Developmental Biology B.S. (Notre Dame 1992); M.S. (Wyoming 1994); Ph.D. (Vermont 1999) [2004]
- DARREN R. TYSON, Research Assistant Professor of Biochemistry B.S. (Illinois, Champaign 1990); M.S., Ph.D.

B.S. (Illinois, Champaign 1990); M.S., Ph.D (Saint Louis 1995, 2003) [2008]

- MD IMAM UDDIN, Assistant Professor of Ophthalmology & Visual Sciences; Assistant Professor of Biomedical Engineering B.S., M.S. (Jahangirnagar [Bangladesh] 2000, 2002); Ph.D. (Kochi University 2008) [2015]
- MD. JASHIM UDDIN, Research Associate Professor of BiochemistryB.S., M.S. (Dhaka [Bangladesh] 1991, 1993);

Ph.D. (Shinshu [Japan] 2001) [2005]

FLORA A. M. UKOLI, Adjunct Professor of Medicine

M.P. P. S. (Ibadan Nicorial 1075), D.P. H.

M.B.B.S. (Ibadan [Nigeria] 1975); D.P.H. (Glasgow [U.K.] 1980); M.P.H. (Pittsburgh 1998) [2006]

- SHERLYN PEROLINA UMAYAM, Assistant in Medicine
 - B.S.N. (Cumberland 2010); M.S.N. (Vanderbilt 2017) [2017]
- EBELE UMEUKEJE, Assistant Professor of Medicine M.D. (Nigeria 2003); M.P.H. (Vanderbilt 2015)
- [2014]
 KIM M. UNERTL, Assistant Professor of
 Biomedical Informatics
 - B.S. (Marquette 1996); M.S., Ph.D. (Vanderbilt 2006, 2009) [2010]
- DEBORAH M. UNGER, Assistant Clinical Professor of Medicine
 - B.A. (Vassar 2006); M.D. (Jexas A & M 2011) [2017]
- JACOR G UNGEP, Assistant Clinical Professor of Plastic Surgery
 - 5.5. (Tu ane 2005); M.D. (New York 2009) [2015]
- RAGHUP, UPENDER, Associate Professor of Clinical Neurology
 - B.S. (Connecticut, Stamford 1990); M.D. (Connecticut 1995) [2011]
- JEFFREY SCOTT UPPERMAN, Professor of Pediatric Surgery; Chair of the Department of Pediatric Surgery
 - A.B., A.M. (Stanford 1987, 1987); M.D. (New Jersey Medical 1991) [2019]
- SARAH J. URBAN, Assistant in Surgery B.S. (Kentucky, Lexington 2011); M.S.N. (Vanderbilt 2016) [2016]
- RICHARD C. URBANO, Research Professor of Pediatrics
 - B.S. (Florida State 1965); M.A., Ph.D. (Illinois, Champaign 1968, 1970) [2003]
- MEGHAN KEATING URQUHART, Assistant in Surgery
 - B.S. (Georgia 2007); B.S.N. (Kennesaw State 2011); M.S.N. (Arkansas, Little Rock 2016) [2017]
- ANDREA L. UTZ, Assistant Professor of Medicine B.S.E. (Duke 1992); M.D., Ph.D. (Vanderbilt 2000, 2000) [2009]
- MICHAEL F. VAEZI, Professor of Medicine; Professor of Otolaryngology - Head and Neck Surgery
 - B.S. (Birmingham-Southern 1983); Ph.D., M.D. (Alabama, Birmingham 1988, 1992); M.S. (Case Western Reserve 2005) [2005]

- DAVID R. VAGO, Associate Professor of Physical Medicine and Rehabilitation; Associate Professor of Psychiatry and Behavioral Sciences B.A. (Rochester 1997); M.S., Ph.D. (Utah 2002, 2005) [2016]
- SARAH D. VALENTI, Assistant in Radiology and Radiological Sciences B.S., M.S.N. (Vanderbilt 1999, 2003) [2011]
- LAURA J. VAN DE LAAR, Instructor in Otolaryngology - Head and Neck Surgery B.S. (Texas A & M 2011); M.D. (Texas, Houston 2015) [2020]
- RAF VAN DE PLAS, Adjunct Assistant Professor of Biochemistry M.S., Ph.D. (Catholic University of Leuven [Belgium] 2003, 2010) [2012]
- YURI VAN DER HEIJDEN, Assistant Professor of Medicine B.S. (Furman 2001); M.D., M.P.H. (Vanderbilt 2005, 2014) [2013]
- SARA L. VAN DRIEST, Assistant Professor of Pediatrics; Assistant Professor of Medicine B.A. (Minnesota 1998); M.D., Ph.D. (Mayo Clinic 2006, 2006) [2012]
- JAN VAN EYS, Clinical Professor of Pediatrics, EmeritusPh.D. (Vanderbilt 1955); M.D. (University of Washington 1966) [1957]
- LARRY VAN HORN, Associate Professor of Economics/Strategy; Associate Professor of Law, Associate Professor of Health Policy; Faculty Director, Health Care Program B.A., M.P.H., M.B.A. (Rochester 1989, 1990, 1992); Ph.D. (Pennsylvania 1997) [2006]
- LUC VAN KAER, Elizabeth and John Shapiro Chair; Professor of Pathology, Microbiology and Immunology B.S., M.S., Ph.D. (Ghent [Belgium] 1983, 1985, 1989) [1993]
- DYLAN VAN LITH, Assistant in Anesthesiology B.S.N. (Wisconsin 2012); M.S.N. (Vanderbilt 2016) [2017]
- RYAN J. VAN NOSTRAND, Assistant Professor of Emergency Medicine B.S. (Connecticut 2010); M.D. (SUNY, Upstate Medical Center 2015) [2018]
- NELLEKE VAN WOUWE, Adjunct Research Assistant Professor of Neurology M.Sc., Ph.D. (Leiden University [Netherlands] 2004, 2009) [2016]
- ROBERTO M. VANACORE, Associate Professor of Medicine M.S. (Universidad Austral de Chile 1996); Ph.D. (Kansas 2005) [2008]

- ELIZABETH HALEY VANCE, Associate in Neurological Surgery B.S. (Auburn 2005); B.S.N., M.S.N., D.N.P. (Alabama, Birmingham 2007, 2009, 2013) [2013]
- SIMON N. VANDEKAR, Assistant Professor of Biostatistics
 - B.S. (Pennsylvania State 2009); Ph.D. (Pennsylvania 2018) [2018]
- ANN M. VANDER WOUDE, Assistant in Pediatrics B.S.N. (Iowa 1982); M.S.N. (Vanderbilt 1990) [1993]
- DAWN M. VANDERHOEF, Associate Professor of Nursing; Assistant Professor of Psychiatry and Behavioral Sciences A.D.N. (Western Technical 1994); B.S.N. (Wisconsin, Milwaukee 1999); M.S.N. (Vanderbilt 2000); D.N.P., Ph.D. (UT Health Science Center [Tennessee] 2009, 2012); Post Masters Certificate (Vanderbilt 2013) [2013]
- F. KARL VANDEVENDER, A sistant Clinical Professo: of Medicin:

 B. A. (University of the South 1969); M.A. (O ford [U.K.) 1972); M.D. (Mississippi 1979) [1982]
- RENE G. VANDEVOORDE III, Associate Professor of Petratrics
 - B.S., M.D. (Vanderbilt 1992, 1996) [2016]
- KAVYA VANKINENI, Assistant Professor of Clinical Pediatrics
 - B.A. (Pennsylvania 2004); M.D. (Alabama, Birmingham 2011) [2020]
- ANNETTE VANNILAM, Assistant Professor of Pediatrics
 - B.S. (Rensselaer Polytechnic Institute 2009); M.D. (Albany Medical 2013) [2019]
- EDUARD E. VASILEVSKIS, Associate Professor of Medicine
 - B.S. (California, San Diego 1997); M.D. (Oregon Health and Science 2001); M.P.H. (Vanderbilt 2013) [2008]
- GINA D. VAUGHN, Assistant in Pediatrics B.S. (Tennessee, Martin 2002); M.S.N. (Vanderbilt 2006) [2008]
- RICHARD VAUGHN, Clinical Instructor in Pediatrics
 - B.S. (Lipscomb 1992); M.D. (Tennessee, Memphis 1997) [2016]
- STEPHANIE VAUGHN, Adjunct Assistant Professor of Psychology; Assistant Clinical Professor of Psychiatry B.A. (Georgia 2000); M.A., Psy.D. (Argosy 2004, 2007) [2012]
- RUTH ANN VEACH, Research Instructor in Medicine
 - B.S. (Wake Forest 1977) [2002]

- OLIVIA J. VEATCH, Adjunct Instructor in Neurology
 - B.S. (Kansas 2003); M.S. (Hawaii, Honolulu 2006); Ph.D. (Vanderbilt 2013) [2015]
- VANI V. VEERAMACHANENI, Assistant Clinical Professor of Pediatrics M.D. (Andhra [India] 1991) [2000]
- LUIS VEGA, Associate Professor of Clinical Oral and Maxillofacial Surgery
 - B.S. (San Luis Gonzaga College 1993); D.D.S. (Universidad de Costa Rica 1999) [2013]
- AMY E. VEHEC, Associate Clinical Professor of Pediatrics
 - B.S.N., M.D. (Indiana, Indianapolis 1988, 2001) [2004]
- DIGNA R. VELEZ EDWARDS, Professor of Obstetrics & Gynecology; Associate Professor of Biomedical Informatics

 B.S. M.S. Ph.D. (Vandarbill 2003, 2007, 2008)
 - B.S., M.S., Ph.D. (Vanderbilt 2003, 2007, 2008) [2010]
- BRYAN J. VENTERS, Adjunct Assistant Professor of Molecular Physiology and Biophysics B.S. (Oklahoma State 2000); Ph.D. (Pennsylvania State 2008) [2013]
- KIMBERLY B. VERA, Assistant Professor of Pediatrics B.S. (Rhodes College 1997); M.D. (UT Health Science Center [Tennessee] 2001); M.S.C.I. (Vanderbilt 2009) [2010]
- JOHN VERBOS, Assistant Clinical Professor
 Psychiatry and Behavioral Sciences
 B.A. (Washington College 2000); M.F.A.
 (Emerson 2002); Ph.D. (Duquesne 2018) [2019]
- INGRID M. VERHAMME, Research Associate Professor of Pathology, Microbiology and Immunology B.S., M.S., Ph.D. (Universiteit Gent [Pelgium] 1977, 1980, 1986) [1999]
- CRYSTAL N. VERNON, Associate Clinical Professor of Pediatrics B.S. (Lipscomb 1997); M.D. (UT Health Science Center [Tennessee] 2003) [2006]
- PILAR VETSCH, Assistant in Urology B.S.N. (Universidad Nacional de Colombia 1994); M.S.N. (Fairfield 2012) [2014]
- ROSE M. VICK, Assistant Professor of Nursing; Assistant in Psychiatry and Behavioral Sciences B.S. (Belmont 2001); M.S.N. (Vanderbilt 2007); Ph.D. (Arizona 2018) [2012]
- KASEY C. VICKERS, Assistant Professor of Medicine; Assistant Professor of Molecular Physiology and Biophysics B.S. (Texas Tech University 2001); Ph.D. (Baylor 2008) [2012]

- MEGAN L. VICKERS, Assistant in Medicine B.S. (Texas Tech University 2002); M.S. (Baylor 2007) [2014]
- NANCY J. VIDIC, Assistant in Obstetrics & Gynecology B.S. (Bradley 1994); M.S. (Illinois, Chicago
 - B.S. (Bradley 1994); M.S. (Illinois, Chicago 1999) [2017]
- DAVID J. VIGERUST, Adjunct Assistant Professor of Neurological Surgery
 B.S. (Texas, El Paso 1992); M.S. (Texas Tech University 1999); Ph.D. (Vanderbilt 2004) [2010]
- JOSE A. ARRIOLA VIGO, Assistant Professor of Clinical Psychiatry and Behavioral SciencesM.D. (Universidad Peruana 'Cayetano Heredia' [Peru] 2009); M.P.H. (Vanderbilt 2018) [2019]
- VIANNEY E. VILLARUZ, Clinical Instructor in Medicine
 - B.S., M.D. (Philippines 1983, 1987) [1996]
- ANNA VINSON, Research Assistant Professor of Pharmacology B.S. (So ith Alabama 1992); Ph.D. (Emory 1997)

B.S. (30 ith Alabama 1992); Ph.D. (Emory 1997)

- JANICE M. VINSON, Assistant Professor of Clinical Medicine
 - B.S. (Middle Tennessee State 1980); M.D. (UT Health Science Center [Tennessee] 1984) [2011]
- KIMFERLY N. VINSON, Associate Dean for Diversity Affairs; Associate Professor of Ctolaryngology Head and Neck Surgery B.S. (Birmingham-Southern 1999); M.D. (Vanderbilt 2003) [2008]
- FRANK W. VIRGIN, JR., Associate Professor of Clinical Otolaryngology - Head and Neck Surgery M.D., B.A. (Medical College of Georgia 2006, 2006) [2012]
- SERGEY A. VISHNIVETSKIY, Research Instructor in Pharmacology B.Sc., M.Sc. (Moscow State [Russia] 1986, 1986); Ph.D. (Russian Academy of Sciences, Moscow 1992) [2004]
- NANDAKUMAR BANGALORE VITTAL, Associate Professor of Neurology at Meharry Medical College; Adjunct Assistant Professor of Neurology
 - M.B.B.S. (Bangalore [India] 1999) [2008]
- CINDY L. VNENCAK-JONES, Professor of Pathology, Microbiology and Immunology; Professor of Pediatrics B.S. (South Carolina 1980); Ph.D. (Medical College of Virginia 1985) [1988]
- VAL YVETTE VOGT, Associate Clinical Professor of Obstetrics and Gynecology B.A. (Washington University 1986); M.D. (Rush 1990) [2004]

- MICHAEL L. VOIGHT, Adjunct Associate Professor of Orthopaedic Surgery B.S. (Portland State 1981); M.Ed. (Virginia 1982); D.H.SC. (University of St. Augustine 1995) [2015]
- EMMANUEL J. VOLANAKIS, Assistant Professor of Pediatrics
 - B.A. (Brown 1994); M.D. (Alabama, Birmingham 2001) [2010]
- YEVGENIY VOROBEYCHIK, Adjoint Associate Professor of Electrical Engineering & Computer Science; Adjoint Associate Professor of Biomedical Informatics B.S. (Northwestern 2002); M.S.E., Ph.D. (Michigan 2004, 2008) [2013]
- NGOCHANH H. VU, Assistant Professor of Pediatrics
 - B.S. (Georgia Institute of Technology 2006); M.D. (Medical College of Georgia 2011) [2016]
- MEGAN VUCOVICH, Assistant Professor of Plastic Surgery
 - B.A. (Dartmouth 2007); M.D. (Vanderbilt 2012) [2018]
- BRIAN E. WADZINSKI, Associate Professor of Pharmacology
 - B.Sc., Ph.D. (Wisconsin 1984, 1989) [1993]
- BETHANY R. WAGNER, Assistant in Medicine M.S.N. (Vanderbilt 2004) [2009]
- CONRAD WAGNER, Professor of Biochemistry Emeritus
 - B.A. (City College of New York 1951); M.S., Ph.D. (Michigan 1952, 1956) [1961]
- JENNIFER L. WAGNER, Clinical Instructor in Pediatrics
 - B.S. (Harding 2011); M.D. (Texas Tech University 2015) [2018]
- LILIANA WAGNER, Assistant Professor of Pediatrics
 - B.A. (Emerson 2007); M.Ed. (Vanderbilt 2013); Ph.D. (Georgia 2018) [20 9]
- MARTIN H. WAGNER, Assistant Clinical Professor of Neurology
 - M.D., B.S. (Baylor 1978, 1978) [2008]
- JULIANNE HAINES WAGNON, Assistant in Medicine
 - B.A. (Rhodes College 1988); J.D. (Mississippi 1991); M.S.N. (Vanderbilt 2001) [2004]
- JEREMY PHILIP WALCO, Assistant Professor of Anesthesiology
 - B.A. (Cornell 2009); M.D. (Louisville 2013) [2018]
- TEDRA A. WALDEN, Professor of Psychology, Emerita; Professor of Hearing and Speech Sciences B.A., M.A., Ph.D. (Florida 1974, 1976, 1978) [1981]

- ALBERT H. WALENTA, Adjoint Research Professor of Radiology & Radiological Sciences Diploma, Ph.D. (Heidelberg [Germany] 1969, 1972) [2002]
- ANN WALIA, Professor of Clinical Anesthesiology M.B.B.S., M.D. (Government Medical, Rohtak [India] 1983, 1984) [1992]
- ASHLEY R. WALKER, Assistant Clinical Professor of Pediatrics
 - B.A. (Hendrix 2005); M.D. (Arkansas 2009) [2012]
- ELISA A. WALKER, Assistant in Medicine M.S.N. (Tennessee State 2014) [2016]
- JEREMY TODD WALKER, Assistant Professor of Clinical Anesthesiology
 - B.A. (Vanderbilt 2007); M.D. (UT Health Science Center [Tennessee] 2011) [2019]
- JESSICA NICOLE WALKER, Assistant Professor of Clinical Psychiatry and Denavioral Sciences; Instructor in Nursing
 - B.S.N. (Belmont 2010), M.S.N., D.N.P. (Vanderbilt 2015, 2017) [2016]
- LYNN S. WALKER, Professor of Psychology; Professor of Psychiatry and Behavioral Sciences; Professor of Pediatrics
- B.A. Oberlin 1973); M.S., Ph.D. (Peabody 1978, 1981) [1993]
- MATCHEW WALKER III, Professor of the Practice of Biomedical Engineering; Associate Professor of Radiology and Radiological Sciences B.S. (Tennessee 1987); Ph.D. (Tulane 2000) [2011]
- DEBORAH E. WALLACE, Assistant in Medicine B.S.N. (Louisville 1999); M.S.N. (Georgia Southern 2008) [2010]
- JEANNE M. WALLACE, Associate Professor of Pathology, Microbiology and Immunology; Associate Professor of Molecular Physiology and Biophysics; Director, Division of Animal Care B.S., D.V.M. (Kansas State 1984, 1986) [2006]
- MARK T. WALLACE, Dean of the Graduate School; Louise B. McGavock Chair; Professor of Hearing and Speech Sciences; Professor of Psychiatry and Behavioral Sciences; Professor of Psychology; Professor of Pharmacology B.A., M.A., Ph.D. (Temple 1985, 1987, 1990) [2005]
- CHRISTOPHER J. D. WALLIS, Instructor in Clinical Urology M.D. (British Columbia [Canada] 2011); Ph.D.
- (Toronto [Canada] 2017) [2019] DONNA C. WALLS, Assistant Clinical Professor of
- Oral and Maxillofacial Surgery B.S. (Ouachita Baptist 1992); D.D.S. (Oklahoma 1997) [2005]

- COLIN WALSH, Assistant Professor of Biomedical Informatics; Assistant Professor of Medicine; Assistant Professor of Psychiatry and Behavioral Sciences
 - B.S.E. (Princeton 2002); M.D. (Chicago 2008); M.A. (Columbia 2014) [2015]
- ELIZABETH G. WALSH, Assistant Professor of Clinical Physical Medicine and Rehabilitation B.A. (Brown 2003); M.A., Ph.D. (Texas 2014, 2016) [2017]
- JOHN J. WALSH, JR., Research Instructor in Radiation Oncology B.A. (Oklahoma 1973); M.S. (Oklahoma City
 - B.A. (Oklahoma 1973); M.S. (Oklahoma City 1980); Ph.D. (Northumbria [U.K.] 2014) [2019]
- MICHELE M. WALSH, Assistant Professor of Clinical Pediatrics B.S. (Miami [Ohio] 1992); M.D. (Ohio State 1997) [2012]
- RYAN M. WALSH, Assistant Professor of Emergency Medicine B.A. (Villanova 2005); M.D. (Eastern Virginia 2009) [2017]
- WILLIAM F. WALSH, Professor of Pediatrics; Adjunct Professor of Nursing B.S. (U.S. Air Force Academy 1972); M.D. (Texas, San Antonio 1976) [1992]
- CHARLA E. WALSTON, Assistant in Medicine B.S.N. (Tennessee Technological 2001); M.S.N. (Vanderbilt 2015) [2015]
- ARTHUR S. WALTERS, Professor of Neurology B.A. (Kalamazoo 1965); M.S. (Northwestern 1967); M.D. (Wayne State 1972) [2008]
- CAMILA B. WALTERS, Assistant Professor of Anesthesiology
 - B.S. (Virginia Polytechnic Institute 2005); M.D. (Pennsylvania State 2009) [2014]
- JENNA LEIGH WALTERS, Assistant Professor of Clinical Anesthesiology B.S. (College of Charleston 2006), M.D. (Medical University of South Carol no 2010) [2016]
- TRAVIS T. WALTERS, Clinical Professor of Pediatrics
 - B.S., M.D. (Vanderbilt 1995, 1999) [2002]
- MICHELLE WALTHER, Assistant Clinical Professor of Emergency Medicine B.S. (Pennsylvania 2005); M.D. (Vanderbilt 2009) [2012]
- WILLIAM JAMISON WALTON, Assistant Professor of Clinical Radiology & Radiological Sciences
 - B.S. (Tennessee 2008); M.D. (UT Health Science Center [Tennessee] 2012) [2017]
- WILLIAM NICHOLAS WAN, Assistant Professor of Biochemistry B.S. (SUNY, Binghamton 2008); Ph.D. (Vanderbilt 2014) [2020]

- JONATHAN PORTER WANDERER, Associate Professor of Anesthesiology; Associate Professor of Biomedical Informatics B.A. (Pennsylvania 2003); M.Phil. (Cambridge [U.K.] 2004); M.D. (Pennsylvania 2008) [2012]
- FENG WANG, Assistant Professor of Radiology & Radiological Sciences B.S., M.S. (Sichuan University [China] 1991, 1994); Ph.D. (Vanderbilt 2002) [2002]
- HUIYING WANG, Assistant Professor of Pathology, Microbiology and Immunology M.D. (Anhui Medical University 1998) [2018]
- JING WANG, Research Assistant Professor of Biostatistics
 - B.S., M.S. (Shandong [China] 2006, 2009); Ph.D. (Shanghai Jiao Tong [China] 2013) [2019]
- QUAN WANG, Research Instructor in Molecular Physiology & Biophysics
 - B.S., Ph.D. (Peking [China] 2006, 2012) [2015]
- SHAN WANC, Research in Structor in Medicine B.Eng. (Beijing Technology and Business University [China] 1) 97); Ph.D., M.Sc. (Concordia, Montreal [Canada] 2004, 2004) [2011]
- THOMAS J. WANG, Adjunct Professor of Medicine B.S. (Parvard 1992); M.D. (Harvard Medical 1996) [2013]
- XIACHEI WANG, Adjunct Associate Professor of Pharmacology
 - B.S., M.S. (Sichuan University [China] 1983, 1987); Ph.D. (University of Hong Kong 1999) [2015]
- YINQIU WANG, Research Assistant Professor of Medicine
 - B.S. (Luzhou Medical [China] 1999); M.S. (Lanzhou [China] 2002); Ph.D. (Kunming Medical [China] 2006) [2013]
- ZHEN WANG, Research Assistant Professor of Biochemistry
 - B.S., M.S. (Ocean [China] 1997, 2000); Ph.D. (Northern Illinois 2005) [2009]
- ZHIJIAN WANG, Assistant in Medicine B.S.N. (Second Military Medical [China] 1985); M.S.N. (Vanderbilt 2010) [2011]
- CELESTINE N. WANJALLA, Instructor in Medicine
 - B.S. (Cornell 2003); M.D., Ph.D. (Jefferson 2013, 2013) [2018]
- AARON R. WARD, Assistant Clinical Professor of Pediatrics
 - B.S. (Ouachita Baptist 1997); M.D. (Arkansas, Little Rock 2001) [2012]

- MICHAEL JEFFREY WARD, Associate Professor of Emergency Medicine; Assistant Professor of Emergency Medicine; Assistant Professor of Biomedical Informatics B.S., M.D., M.B.A. (Emory 0, 2006, 2006); Ph.D. (Cincinnati 2016) [2013]
- RENEE M. WARD, Assistant Professor of Obstetrics and Gynecology B.A. (Pomona 1996); M.D. (California, San

B.A. (Pomona 1996); M.D. (California, Sar Francisco 2001) [2008]

- TARA Y. WARD, Assistant in Pediatrics B.S.N. (Middle Tennessee State 2002); M.S.N. (Vanderbilt 2007) [2009]
- LORRAINE B. WARE, Ralph and Lulu Owen Chair in Medicine; Professor of Medicine; Professor of Pathology, Microbiology and Immunology B.A. (Claremont McKenna College 1988); M.D. (Johns Hopkins 1992) [2002]
- LAUREN WAREHAM, Research Assistant Professor of Ophthalmology & Visual Sciences Ph.D. (Sheffield [U.K.] 2015) [2017]
- LINDSEY ANNE WARGO, Clinical Instructor in Pediatrics
 B.S. (Alabama 2008); M.D. (Louisiana State, Shreveport 2012) [2016]
- JEREMY L. WARNER, Associate Professor of Medicine; Associate Professor of Biomedical Informatics

 B.S. (Massachusetts Institute of Technology 1999); M.S. (California, San Diego 2001); M.D.
- (Boston University 2005) [2012] JOHN S. WARNER, Professor of Neurology, Emeritus

B.S. (University of the South 1962): M.D. (Vanderbilt 1956) [1965]

- MELISSA A. WARREN, Assistant Professor of Medicine
 - B.S. (Angelo State 2007); M.D. (Texas, Houston 2011) [2017]
- ZACHARY E. WARREN, Professor of Pediatrics; Professor of Psychiatry and Behavioral Sciences; Associate Professor of Special Education B.S. (William and Mary 1997); M.S., Ph.D. (Miami 2002, 2005) [2006]
- CYNTHIA M. WASDEN, Assistant in Medicine B.S.N. (Tennessee Technological 1993); M.S.N. (Vanderbilt 1997) [2004]
- MARY KAY WASHINGTON, Professor of Pathology, Microbiology and Immunology B.S. (Mississippi State 1979); Ph.D., M.D. (North Carolina 1982, 1986) [1996]

- DAVID H. WASSERMAN, Annie Mary Lycle Chair; Professor of Molecular Physiology and Biophysics; Director, Mouse Metabolic Phenotyping Center B.Sc., M.Sc. (California, Los Angeles 1979, 1981); Ph.D. (Toronto [Canada] 1985) [1985]
- MICHAEL R. WATERMAN, Professor of Biochemistry, Emeritus B.A. (Willamette 1961); Ph.D. (Oregon Health and Science 1969) [1992]
- ALEX G. WATERSON, Research Associate Professor of Pharmacology; Research Associate Professor of Chemistry B.S. (Mississippi State 1994); Ph.D. (Emory 1999) [2008]
- KENNETH E. WATFORD, Assistant Professor of Clinical Otolaryngology - Head and Neck Surgery B.S., B.S. (Delta State 1986, 1994); M.S.N., D.N.P. (Vanderbilt 1996, 2011) [2001]
- JACLYN C. WATKINS. A sist int Professor of Pathology, Microbiology and Immunology B S (Cornell 2008): M.S. (California, Berkeley 2011); M.D. (California, San Francisco 2013) [2017]
- CAROLINE SARAH WATNICK, Assistant
 Professor of Clinical Pediatrics
 B.S. (Duke 2007); M.D. (Michigan 2011) [2015]
- PAULA L. WATSON, Assistant Professor of Medicine
 - B.S. (Louisiana, Monroe 1986); M.D. (Arkansas, Little Rock 1990) [2004]
- SALLY A. WATSON, Assistant Professor of Clinical Pediatrics; Assistant Professor of Clinical Anesthesiology B.S. (Indiana, Indianapolis 1990); M.D. (Vanderbilt 1994) [2001]
- JULIA J. WATTACHERIL, Adjunct Assistant Professor of Medicine B.S. (Brandeis 1999); M.D. (Baylor 2004); M.P.H. (Vanderbilt 2010) [2008]
- ELIZABETH B. WATTS, Assistant in Pediatrics B.S. (Rhodes College 2010); M.S.N. (Alabama, Birmingham 2015) [2017]
- LAURA L. WAYMAN, Professor of Ophthalmology & Visual Sciences

B.A. (National, San Diego 1983); M.S. (Maryland 1985); M.D. (Mayo Clinic 1998) [2005]

- ALISSA M. WEAVER, Cornelius Vanderbilt Chair; Professor of Cell & Developmental Biology; Professor of Pathology, Microbiology and Immunology B.A., B.S. (Stanford 1991, 1991); Ph.D., M.D.
- (Virginia 1997, 1998) [2003]C. DAVID WEAVER, Associate Professor of Chemistry; Associate Professor of Pharmacology B.S., Ph.D. (Tennessee 1989, 1994) [2003]

- ELEANOR O. WEAVER, Assistant Professor of Clinical Medicine
 - B.A. (Rice 2008); M.D. (Baylor 2012) [2015]
- LAUREN A. WEAVER,
 - Assistant in Pediatrics
 - B.A. (Alabama, Huntsville 2006); M.S. (Auburn, Montgomery 2011) [2014]
- SHEENA M. WEAVER, Associate Professor of Clinical Anesthesiology B.S. (Baldwin-Wallace 2001); M.D. (Case Western Reserve 2006) [2011]
- LIZA M. WEAVIND, Professor of Anesthesiology; Professor of Surgery M.B.B.Ch. (Witwatersrand [South Africa] 1990); M.Mgt. (Vanderbilt 2014) [2007]
- LYNN E. WEBB, Assistant Dean for Faculty
 Development; Assistant Professor of Medical
 Education & Administration; Adjunct Assistant
 Professor of Nursing
 B.S., M.S. (Illinois State 1971, 1973); M.B.A.
 (Illinois, Champaign 1983); Ph.D. (Southern
 Illinois 1997) [1997]
- MEGAN R. WEBB, Assistant in Obstetrics & Gynecology
 A.S. (Aquinas College [Tennessee] 2007); B.S.N. (Middle Tennessee State 2008); M.S.N. (Vanderbilt 2014) [2019]
- TRENIA LYN WEBB, Assistant Professor of Clinical Obstetrics and Gynecology B.S. (Lipscomb 1994); M.D. (Tennessee, Memphis 2003) [2009]
- CHASE JEFFREY WEBBER, Assistant Professor Clinical Medicine B.A. (Tufts 2009); D.O. (Kirksville College of Osteopathic Medicine 2014) [2317]
- STEVEN A. WEBBER, James C. Overall Chair in Pediatrics; Professor of Pediatrics; Chan of the Department of Pediatrics
 M.B.Ch.B (Bristol [U.K.] 1987) [2012]
- ALEXIS JEAN WEBER, As istant in Anesthesiology B.S.N. (Millikan 2012); M.S.N. (St. Francis [Illinois] 2017) [2017]
- ROBERT J. WEBSTER III, Richard A. Schroeder Chair in Mechanical Engineering; Professor of Mechanical Engineering; Professor of Electrical Engineering; Professor of Neurological Surgery; Professor of Otolaryngology Head and Neck Surgery; Associate Professor of Medicine; Associate Professor of Urology B.S. (Clemson 2002); M.S., Ph.D. (Johns Hopkins 2004, 2007) [2008]
- AMY GREGORY WEEKS, Associate Professor of Clinical Obstetrics and Gynecology B.A. (Vanderbilt 1981); M.D. (UT Health Science Center [Tennessee] 1985) [2005]

- LIPING WEI, Adjunct Professor of Biostatistics M.S. (Brown 1994); Ph.D. (Stanford 2000) [2018]
- WEI-QI WEI, Assistant Professor of Biomedical Informatics
 - M.Med. (Peking Union Medical [China] 2005); Ph.D. (Minnesota 2012) [2014]
- DOUGLAS R. WEIKERT, Associate Professor of Orthopaedic Surgery; Associate Professor of Plastic Surgery
 - B.S., M.D. (Vanderbilt 1983, 1987) [1993]
- P. ANTHONY WEIL, Professor of Molecular Physiology and Biophysics, Emeritus B.S. (Northern Illinois 1972); Ph.D. (Texas, Houston 1976) [1986]
- STUART T. WEINBERG, Associate Professor of Biomedical Informatics; Associate Professor of Pediatrics
 - B.A. (Dartmouth 1981); M.D. (Cincinnati 1985) [2004]
- ELIZABETH F. WEINER, Sen or Associate Dean for Informatics; Centennial Independence Foundation Professor of Nursing; Professor of Biomedical Informatics
 - B.S.N. (Kentucky, Lexington 1975); M.S.N. (Cincinnat: 1978); Ph.D. (Kentucky, Lexington 1983 [12000]
- JEFF (EY GRANT WEINER, Instructor in Clinical Pediatrics
 - P.S. (North Carolina 2006); M.S., M.D. (Toledo 2009, 2013); M.S.C.I. (Vanderbilt 2019) [2020]
- ANGELA JOANNE WEINGARTEN, Assistant Professor of Medicine; Assistant Professor of Pediatrics
 - B.S., M.D. (Virginia Commonwealth 2005, 2010); M.S. (Vanderbilt 2017) [2019]
- MATTHEW BRET WEINGER, Norman Ty Smith Chair in Patient Safety and Medical Simulation; Professor of Biomedical Informatics; Professor of Medical Education & Administration (VUMC); Professor of Civil and Environmental Engineering; Professor of Anesthesiology B.S., M.S. (Stanford 1978, 1978); M.D. (California, San Diego 1982) [2004]
- VIVIAN LEE WEISS, Assistant Professor of Pathology, Microbiology and Immunology B.A. (Columbia 2004); M.D., Ph.D. (Johns Hopkins 2012, 2012) [2017]
- APRIL MAE WEISSMILLER, Research Assistant Professor of Cell & Developmental Biology B.S. (San Diego State 2007); M.S. (Stanford 2009); Ph.D. (California, Los Angeles 2013) [2014]
- ASLI WEITKAMP, Associate Professor of Biomedical Informatics B.S. (Anadolu [Turkey] 1994); M.S., Ph.D., M.S. (Vanderbilt 1996, 2001, 2004) [2004]

- JORN-HENDRIK WEITKAMP, Associate Professor of Pediatrics
 - M.D. (Ulm [Germany] 1995) [2006]
- AMY S. WEITLAUF, Assistant Professor of Pediatrics
 - B.A. (Texas 2003); M.S., Ph.D. (Vanderbilt 2006, 2011) [2013]
- GLENN A. WEITZMAN, Assistant Clinical Professor of Obstetrics and Gynecology B.S. (Stony Brook 1978); M.D. (Johns Hopkins 1982) [1996]
- EDWARD BRIAN WELCH, Assistant Professor of Biomedical Engineering; Adjunct Assistant Professor of Radiology and Radiological Sciences B.S. (Southern California 1998); Ph.D. (Mayo Clinic 2003); M.B.A. (Tennessee Technological 2010) [2004]
- JOHN C. WELLONS, Cal Turner Chair in Pediatric Neurosurgery; Professor of Neurological Surgery; Professor of Pediatrics; Professor of Radiology & Radiological Sciences; Chief of Pediatric Neurosurgery
 B.S. (Mississippi 1991); M.D. (Mississippi, Jackson 1995); M.S.P.H. (Alabama, Birmingham
- 2012) [2012] MELISSA F. WELLONS, Associate Professor of Medicine
 - B.A., M.D., M.H.S. (Duke 1994, 2001, 2001) [2012]
- JACK N. WELLS, Professor of Pharmacology Emeritus
 - B.S. (Park [Missouri] 1959); M.S., Ph D (Michigan 1962, 1963) [1973]
- QUINN STANTON WELLS, Assistant Professor of Medicine; Assistant Professor of Pharmacology B.S. (East Tennessee State 19)7); Pharm. C. (Samford 2002); M.D. (Alabama, Birmingham 2006); M.S.C.I., M.S. (Vanderbil 2013, 2014) [2013]
- ROBERT A. WELLS, Assist int Professor of Clinical Anesthesiology
 - B.A. (Transylvania 2001); M.D. (Louisville 2005) [2009]
- WANQING WEN, Research Associate Professor of Medicine
 - M.D., M.P.H. (Hunan Medical [China] 1984, 1987) [2000]
- J. JASON WENDEL, Assistant Clinical Professor of Plastic Surgery
 - B.A. (Wabash 1992); M.D. (Indiana, Indianapolis 1996) [2002]
- RICHARD J. WENDORF, Associate Professor of Clinical Pediatrics
 - B.S. (Illinois, Chicago 1989); M.D. (Southern Illinois, Springfield 1993) [2013]

- SUSAN RAE WENTE, Interim Chancellor; University Provost and Vice Chancellor for Academic Affairs; Professor of Cell and Developmental Biology B.S. (Iowa 1984); Ph.D. (California, Berkeley 1988) [2002]
- MARTIN C. WERE, Associate Professor of Biomedical Informatics; Associate Professor of Medicine
 - B.S. (Harvard 1997); M.D. (Harvard Medical 2001); M.S. (Indiana, Indianapolis 2008) [2016]
- JAY A. WERKHAVEN, Professor of Clinical Otolaryngology - Head and Neck Surgery B.A. (Wittenberg 1978); M.D. (Wake Forest 1982) [1989]
- JOHN R. WERTHER, Associate Clinical Professor of Oral and Maxillofacial Surgery B.S. (SUNY, Syracuse 1981); D.M.D. (Harvard 1986); M.D. (Vanderbilt 1988) [1991]
- ROBERT T. WERTZ, Professor of Hearing and Speech Sciences, Friends
 A.E. (Long Beach 1959); A.M., Ph.D. (Stanford 1954, 1967) [1992]
- RALPA E. WESLEY, Clinical Professor of Ophthalmelogy and Visual Sciences A.B. (Kentucky, Lexington 1967); M.D. (Vanderbilt 1972) [1979]
- AMANDA WESSELL, Assistant Professor of Emergency Medicine
- B.S. (Saint Xavier 2012); M.D. (Loyola, Chicago 2016) [2020]
- DOUGLAS CASEY WEST, Assistant in Medicine B.S.N., M.S.N. (Medical University of South Carolina 1989, 1990) [2009]
- JAMES DAVID WEST, Professor of Medicine; Professor of Biomedical Engineering B.S. (Missouri 1989); Ph.D. (Georgia Institute of Technology 1996) [2007]
- JULE J. WEST, Assistant Professor of Medicine; Adjunct Assistant Professor of Nursing B.A. (Wheaton 1997); M.S.N., M.D. (Vanderbilt 1991, 1997) [2008]
- KEVIN D. WEST, Assistant Clinical Professor of Oral and Maxillofacial Surgery B.S. (Western Kentucky 1999); D.M.D., M.S. (Louisville 2003, 2003) [2007]
- W. SCOTT WEST, Assistant Clinical Professor of Psychiatry and Behavioral Sciences
 B.A. (Tennessee 1976); M.D. (UT Health Science Center [Tennessee] 1982) [1986]
- C. WILLIAM WESTER, Professor of Medicine B.A. (Bowdoin 1987); M.D. (Dartmouth 1991); M.P.H. (Harvard 2010) [2008]
- HOLLY WESTERVELT, Associate Professor of Clinical Neurology B.A., Ph.D. (SUNY, Albany 1992, 1999) [2014]

- MARGARET M. WHALEN, Adjunct Professor of Pharmacology
 - B.S. (South Dakota School of Mines and Technology 1979); Ph.D. (New Mexico 1984) [2013]
- BRIAN F. WHALEY, Assistant in Pediatrics B.A. (Tennessee 1994); M.S.N. (Medical University of South Carolina 2009) [2016]
- VALERIE N. WHATLEY, Assistant Professor of Clinical Pediatrics
 - B.S. (Kentucky, Lexington 1993); M.D. (South Alabama 1997) [2007]
- ALEXANDRIA N. WHEELER, Assistant in Medicine
 - B.S. (Lipscomb 2014); M.S.M. (Trevecca Nazarene 2017) [2018]
- ALLISON PAROSKIE WHEELER, Assistant Professor of Pathology, Microbiology and Immunology; Assistant Professor of Pediatrics B.S., M.D. (Massachusetts 2001, 2006); M.S.C.I. (Vanderbilt 2013) [2011]
- FERRIN C. WHEELER, Assistant Professor of Pathology, Microbiology and Immunology B.S. (Purdue 1996); Ph.D. (Washington University 2002) [2011]
- PAUL W. WHEELER, Assistant Clinical Professor of Medicine
 - B.S. (Samford 1973); M.D. (Alabama, Birmingham 1977) [1983]
- LEE EMERSON WHELESS, Instructor in Dermatology
 B.S. (Davidson 2005); M.S.C.R, Ph.D. M.D. (Medical University of South Carolina 2010, 2012, 2014) [2018]
- WILLIAM O. WHETSELL, JR. Professor of Pathology, Emeritus B.S. (Wofford 1961); M.S., M.D. (Medical University of South Carolina 1964, 1966) [1983]
- AMY S. WHIGHAM, Assistant Professor of Otolaryngology - Head and Neck Surgery B.A., B.S. (Rhodes College 1999, 1999); M.D. (Emory 2004) [2015]
- ROSS DREW WHITACRE, Assistant Professor of Clinical Physical Medicine and Rehabilitation B.S. (West Virginia Wesleyan 1999); M.D. (West Virginia 2003) [2018]
- AUSTIN WOODARD WHITAKER, Clinical Instructor in Pediatrics B.A. (Tennessee 2010); M.D. (East Tennessee State 2014) [2017]
- BOBBY J. WHITE, Assistant Professor of Clinical Medicine B.S. (Middle Tennessee State 1980); M.D. (UT Health Science Center [Tennessee] 1985) [1995]

- CHRISTOPHER JULES WHITE, Associate Professor of Computer Science and Computer Engineering; Associate Professor of Biomedical Informatics
 - B.A. (Brown 2001); M.S., Ph.D. (Vanderbilt 2006, 2008) [2011]
- DAVID J. WHITE, Clinical Instructor in Pediatrics B.S. (Texas A & M 1988); M.D. (Texas, Houston 1995) [1998]
- JOAN W. WHITE, Clinical Professor of Pediatrics B.S. (Virginia Polytechnic Institute 1981); M.D. (Medical College of Virginia 1986) [1989]
- KATIE D. WHITE, Assistant Professor of Medicine B.S., B.S. (Alabama 2000, 2001); Ph.D., M.D. (Alabama, Birmingham 2008, 2010) [2013]
- NICOLA WHITE, Assistant Professor of Clinical Obstetrics & Gynecology B.A. (Pennsylvania 2006): M.D. (Tufts 2011)
 - B.A. (Pennsylvania 2006); M.D. (Tufts 2011) [2016]
- TERESA S. WHITE, Assistant Professor of Clinical Pediatrics
 - B.A. (Goucher 1995), M.D. (Eastern Virginia 20)1) [2006]
- THOMAS C. WHYTFIELD, Associate Professor of Clinical Medicine; Associate Professor of Clinical Pediatros
 - B. 6. (Lipscomb 1974); M.D. (UT Health Science Center [Tennessee] 1977) [1990]
- JONNA H. WHITMAN, Assistant Professor of Clinical Medicine
 - B.A. (Williams 1990); M.D. (Virginia 1994) [2005]
- CHRISTINE C. WHITMORE, Research Assistant Professor of Health Policy
 - B.S. (Birmingham-Southern 1991); M.A., Ph.D. (Johns Hopkins 1993, 1998) [2014]
- DONNA C. WHITNEY, Assistant Professor of Clinical Pediatrics
 - B.S. (San Diego State 1988); M.D. (Uniformed Services 1992) [2012]
- ELIZA WHITTEN, Assistant Clinical Professor of Pediatrics
 - B.S. (Tennessee, Martin 2002); M.D. (East Tennessee State 2008) [2011]
- THERESE L. WHITTEN, Assistant Professor of Clinical Obstetrics & Gynecology B.A. (Oregon 1982); M.D. (Oregon Health and Science 1986) [2018]
- PAT WHITWORTH III, Assistant Professor of Clinical Radiology & Radiological Sciences B.S. (Tulane 2008); M.D. (Boston University 2014) [2020]
- ANDREW EVERETT WICKE, Assistant Clinical Professor of Oral and Maxillofacial Surgery B.S. (Belmont 2009); D.M.D. (Louisville 2013) [2017]

- CRAIG WIERUM, Assistant Clinical Professor of Medicine
 - B.S. (Duke 1984); M.D. (North Carolina 1990) [1995]
- ANDREW D. WIESE, Assistant Professor of Health Policy
 - B.S. (Southeast Missouri State 2010); M.P.H. (Saint Louis 2012); Ph.D. (Vanderbilt 2017) [2019]
- GEORGIA L. WIESNER, Ingram Professor of Cancer Research; Professor of Medicine B.A. (Northern Colorado 1976); M.S., M.D. (Minnesota 1981, 1985) [2012]
- MARK A. WIGGER, Assistant Professor of Medicine; Medical Director, Adult Heart Transplant
 - B.A. (Tennessee 1978); M.S. (Tennessee State 1980); M.D. (East Tennessee State 1984) [2006]
- CATHERINE OLESCHIG WIGGLETON, Assistant Clinical Professor of Pediatrics B.A. (Stanford 1998); M.Sc. (Harvard 2001); M.D. (Vanderbilt 2006) [2010]
- JAMIE G. WIGGLETON, Assistant in Otolaryngology - Head and Neck Surgery B.S. (Bethel College, McKenzie [Tennessee] 1999); M.S.N. (Vanderbilt 2003) [2005]
- JOHN P. WIKSWO, JR., Gordon A. Cain University Professor; A. B. Learned Professor of Living State Physics; Professor of Biomedical Engineering; Professor of Molecular Physiciogy and Biophysics B.A. (Virginia 1970); M.S., Ph.D. (Stanford 1976)
 - B.A. (Virginia 1970); M.S., Ph.D. (Stenford 1972) [1977]
- LYNDY JANE WILCOX, Assistan Professor of Otolaryngology Head and Ne. L. Surgery B.S. (Furman 2007); M.D. (Eastern Virginia 2011) [2018]
- GEOFFREY E. WILE, Associate Professor of Clinical Radiology and Radiological Sciences B.S. (Belmont 1998); M.D. (UT Health Science Center [Tennessee] 2002) [2008]
- LAURA KATHERINE WILEY, Adjunct Assistant Professor of Biomedical Informatics B.S. (Denver 2009); M.S., Ph.D. (Vanderbilt 2014, 2016) [2016]
- RONALD G. WILEY, Professor of Neurology, Emeritus
 - B.S., M.D., Ph.D. (Northwestern 1972, 1975, 1975) [1982]
- ERIN M. WILFONG, Instructor in Medicine B.A. (Ohio State 2003); M.D., Ph.D. (Duke 2011, 2011) [2020]
- KARINA WILKERSON, Assistant in Medicine B.A. (Fisk 2006); B.S.N., M.S.N. (Tennessee State 2012, 2014) [2014]

- SARAH C. WILKERSON, Assistant in Pediatrics B.S. (Wofford 1998); B.S.N. (Middle Tennessee State 2002); M.S.N. (Vanderbilt 2010) [2014]
- CONSUELO H. WILKINS, Associate Dean for Health Equity; Professor of Medicine; Director, Meharry-Vanderbilt Alliance B.S., M.D. (Howard 1992, 1996); M.S.C.I. (Washington University 2002) [2012]
- JAMES DEAN WILKINSON, Research Professor of Pediatrics
 - B.A., M.D. (South Florida 1975, 1978); M.P.H. (Miami 1999) [2017]
- SARAH WILLARD, Clinical Instructor in Pediatrics B.A. (Saint Louis 2011); M.D. (Saint Louis University 2015) [2019]
- JOSEPH G. WILLIAM, Assistant Professor of Physical Medicine and Rehabilitation B.S. (Texas 2007); M.P.H. (Texas, Houston 2009); D.O. (North Texas Health Science Center 2014) [2012]
- CHRISTOPHER S. WILLIAMS, Associate Dean for Physician Research Education; Professor of Medicine
 - B.sc. (Brigham Young 1992); Ph.D., M.D. (Vanderbilt 2000, 2002) [2005]
- D. BRANDON WILLIAMS, Assistant Professor of Surgery
 - B.S. (Stanford 1995); M.D. (UT Health Science Center [Tennessee] 2000) [2008]
- DEREK JUSTIN WILLIAMS, Associate Professor of Pediatrics
 - B.S. (Georgia 2001); M.D. (Medical College of Georgia 2005); M.P.H. (Vanderbilt 2010) [2010]
- HEATHER NICOLE WILLIAMS, Assistant Professor of Clinical Pediatrics
- B.S., M.D. (West Virginia 2008, 2012) [2018] IDA MICHELE WILLIAMS, Associate Clinical
 - Professor of Pediatrics B.S., M.D. (Vanderbilt 1989, 1993) [1996]
- JENNIFER R. WILLIAMS, Assistant Professor of Clinical Radiology and Radiological Sciences B.S. (North Carolina 1994); M.D. (Texas, San Antonio 2001) [2007]
- JOHN V. WILLIAMS, Adjunct Associate Professor of Pediatrics
 - B.S. (Virginia 1990); M.D. (Medical College of Virginia 1994) [2002]
- LAURA L. WILLIAMS, Assistant Clinical Professor of Obstetrics and Gynecology
 - B.A., M.D. (Wake Forest 1980, 1984) [1990]
- MEGAN ANN WILLIAMS, Instructor in Pharmacology
 - B.S. (North Dakota 2009); Ph.D. (Vanderbilt 2015) [2020]

- MOLLY TASHIRO WILLIAMS, Assistant in Medicine
 - B.S. (Georgia 2006); B.S. (Mercer 2008); M.S.N. (Vanderbilt 2014) [2015]
- PATRICIA STICCA WILLIAMS, Clinical Professor of Pediatrics
 - B.A. (Rochester 1989); M.D. (SUNY, Buffalo 1993) [1999]
- PHILLIP E. WILLIAMS, Research Professor of Surgery, Emeritus
 - B.S. (Middle Tennessee State 1974) [1984]
- SARAH ELIZABETH WILLIAMS, Assistant Professor of Pediatrics
 - B.A. (Georgia 1999); M.D. (Medical College of Georgia 2005); M.P.H. (Vanderbilt 2013) [2010]
- SARALYN R. WILLIAMS, Associate Professor of Clinical Emergency Medicine; Associate Professor of Clinical Medicine; Associate **Professor of Clinical Pediatrics** B.S. (Erskine 1986); M.D. (Duke 1990) [2006]
- SHAWNIQUA T. WILLIAMS, Assistant Professor of Neurology; Assistant Professor of Biomedical Engineering
 - B.S., M.Eng. (Massachusetts Institute of Technology 1995, 1995); M.D. (Cornell 2010) [2018]
- SUZANNE WILLIAMS, Assistant in Pediatrics Diploma in Nursing (Baptist College of Health Sciences 1982); B.S.N. (Kentucky, Lexington 1985); M.S.N. (Vanderbilt 1989); Post Masters Certificate (North Carolina 1997) [2015]
- VERNON F. WILLIAMS, Instructor in Clinical Radiology & Radiological Sciences B.S. (Texas 2008); M.S., D.O. (North Texas Health Science Center 2011, 2015) [2020]
- CLARLYNDA WILLIAMS-DEVANE, Advinct Associate Professor of Biomedical Informatics B.S. (North Carolina Central [North Carolina] 2002); Ph.D. (North Carolina State 2009) [2019]
- EDWIN D. WILLIAMSON, Assistant Professor of Psychiatry and Behavioral Sciences B.A. (Middlebury 1996); M.D. (Columbia 2003) [2010]
- DAVID MILLS WILLIS, Assistant Professor of Clinical Anesthesiology B.S. (Brigham Young 1996); M.D., Ph.D. (Washington University 2004, 2004) [2020]
- JESSICA H. WILLIS, Assistant Professor of Clinical Medicine
 - B.S. (Auburn 2010); M.D. (Alabama, Birmingham 2016) [2019]
- JOSIE WILLIS, Assistant in Obstetrics & Gynecology B.A. (Lawrence 2014); M.S.N. (Vanderbilt 2016)
 - [2019]

- ALYSON ANN WILLS, Assistant Clinical Professor of Pediatrics
 - M.D., B.A. (Boonshoft 2005, 2005) [2012]
- MORGAN JACKSON WILLS, Assistant Clinical Professor of Medicine
 - B.A. (Princeton 1990); M.D. (Vanderbilt 1996)
- ALEXANDRIA M. WILSON, Assistant in Medicine B.S.N. (Valdosta State 2005); M.S.N. (Walden U 2015) [2017]
- AMANDA GRACE WILSON, Assistant Professor of Psychiatry and Behavioral Sciences B.S. (Alabama 1998); M.D. (Alabama, Birmingham 2002) [2007]
- ANDREW J. WILSON, Research Assistant Professor of Obstetrics and Gynecology B.S., Ph.D. (Melbourne [Australia] 1994, 1998) [2008]
- ANJELI WILSON, Assistant Clinical Professor of Pediatrics B.S. (Illinois, Champaign 1993); M.D. (Southern Illinois Springfield 1997) [2011]
- GRECORY J. WO.SON, Associate Professor of Clinical Pediatrics
- B.A., M.D. (Johns Hopkins 1982, 1987) [1992]
- ESSICAROSE WILSON, Adjoint Instructor in Medicine
 - B.S., M.D., M.S.C.I. (Vanderbilt 2007, 2011, **2**016) [2017]
- JO ELLEN WILSON, Assistant Professor of Psychiatry and Behavioral Sciences B.S. (Belmont 2004); M.D., M.P.H. (Vanderbilt 2009, 2016) [2014]
- JONATHAN E. WILSON, Assistant Professor of Clinical Anesthesiology
 - B.S., M.D. (Arizona 2000, 2008) [2019]
- KEITH T. WILSON, Thomas F. Frist Sr. Chair in Medicine #2; Professor of Medicine; Professor of Pathology, Microbiology and Immunology B.A. (Cornell 1982); M.D. (Harvard Medical 1986) [2005]
- MATTHEW H. WILSON, Associate Professor of Medicine; Associate Professor of Pharmacology B.S. (Georgetown College 1994); Ph.D., M.D. (Vanderbilt 1999, 2001) [2013]
- MEGHANN D. WILSON, Assistant in Medicine B.S.N. (King 2005); M.S.N. (Vanderbilt 2008) [2015]
- STEPHEN MURRAY WILSON, Associate Professor of Hearing & Speech Sciences; Associate Professor of Psychology & Human Development B.A. (Sydney [Australia] 1998); M.A., Ph.D. (California, Los Angeles 2002, 2006) [2016]

- ANGELA M. WILSON-LIVERMAN, Associate Professor of Clinical Obstetrics and Gynecology B.S. (North Carolina 1990); M.S.N. (Vanderbilt 1999) [2007]
- DANNY G. WINDER, Bixler-Johnson-Mayes Chair in Basic Sciences; Professor of Molecular Physiology and Biophysics; Professor Pharmacology; Professor of Psychiatry and Behavioral Sciences B.S. (North Georgia College and State University
- 1990); Ph.D. (Emory 1995) [1999] ANNIKA L. WINDON, Assistant Professor of
- Pathology, Microbiology and Immunology A.B. (Princeton 2008); M.D. (Meharry Medical 2014) [2020]
- TAYLOR WINKLER, Assistant in Urology B.S. (Tennessee 2015); M.S.M. (Trevecca Nazarene 0) [2017]
- JASON J. WINNICK, Adjoint Assistant Professor of Molecular Physiology and BiophysicsB.S. (SUNY, Brockport 1998); M.S. (South Carolina 2000); Ph.D. (Ohio State 2006) [2011]
- JULIAN WINOCOUR, Assistant Professor of Plastic Surgery

M.D. (McGill [Canada] 2008) [2017]

- DANA C. WIRTH, Assistant in Medicine B.S. (Middle Tennessee State 1997); M.S.N. (Vanderbilt 1999) [2004]
- RACHEL D. WISE, Assistant in Surgery B.S. (Lipscomb 2007); M.S.N. (Vanderbilt 2012) [2012]
- GAMINI H. WIYATHUNGE, Assistant in Medicino M.S.N. (Vanderbilt 2008) [2017]
- HEIDI M. WOJCIECHOWSKI, As is tent in Urology B.S. (Illinois State 2008); M.S. (Chicago 2011) [2018]
- RUTH QUILLIAN WOLEVER, Associate Professor of Physical Medicine and Rehabilitation; Associate Professor Psychiatry and Behavioral Sciences
 - B.A. (Virginia 1986); M.S., Ph.D. (Miami 1991, 1994) [2015]
- MICHAEL SETH WOLF, Assistant Professor of Pediatrics
 - B.A. (California, Berkeley 2007); M.D. (Vanderbilt 2012) [2019]
- RACHEL BLOCH WOLF, Assistant Professor of Medicine; Assistant Professor of Pediatrics B.A. (Dartmouth 2007); M.D. (Vanderbilt 2015) [2019]
- CARMEN C. WOLFE,
 - Assistant Professor of Emergency Medicine B.A., M.D. (Vanderbilt 2006, 2011) [2015]
- LAWRENCE K. WOLFE, Professor of Clinical Medicine, Emeritus B.A., M.D. (Vanderbilt 1957, 1960) [1968]

- HANNAH NICOLE WOLFSHOHL, Assistant in Obstetrics & Gynecology B.A. (Texas A & M 2010); B.S.N. (Belmont 2016); M.S.N. (Vanderbilt 2018) [2019]
- BENJAMIN D. WOMACK, Assistant Professor of Clinical Medicine
 - B.S. (Mississippi State 2000); M.D. (Washington University 2005) [2008]
- STEPHANIE WOMBLES, Assistant in Obstetrics & Gynecology
 Associate Diploma (Gulf Coast State College

Associate Diploma (Gulf Coast State College 2009); M.S.N. (Frontier Nursing University 2014) [2016]

- HONG YUEN WONG, Research Assistant Professor of Medicine
 - B.S. (Nanyang Technological [Singapore] 2008); Ph.D. (Johns Hopkins 2014) [2019]
- ALASTAIR J. J. WOOD, Professor of Medicine, Emeritus M.B.Ch.B (St Andrews [C.K.] 1970); M.R.C.P. (Royal College of Physicians [U.K.] 1974) [1977]
- G. WAYNE WOOD, Assistant in Medical Education and Administration
 - B.S. (Ternessee 1980); M.L.A.S. (Vanderbilt 2007) [1996]
- MARY ELIZABETH WOOD, Assistant Professor of Psychiatry and Behavioral Sciences; Adjunct Assistant Professor of Psychology B.S. (Kennesaw State 2009); M.A., Ph.D. (Alabama 2013, 2016) [2017]
- CYNTHIA C. WOODALL, Assistant Professor of Clinical Obstetrics and Gynecology B.S. (Tennessee 1990); M.D. (UT Health Science Center [Tennessee] 1996) [2012]
- LAUREN E. WOODARD, Assistant Professor of Medicine; Assistant Professor of Biomedical Engineering
 - B.S. (Texas 2004); Ph.D. (Stanford 2009) [2013]
- GEOFFREY F. WOODMAN, Associate Professor of Psychology; Associate Professor of Ophthalmology & Visual Sciences B.A., Ph.D. (Iowa 1997, 2002) [2006]
- MOLLY MCGOWAN WOODS, Assistant in Medicine B.S.N. (Auburn 2010); M.S.N. (Vanderbilt 2014) [2016]
- MEGAN KATHLEEN WOODWARD, Clinical Instructor in Pediatrics B.S. (Wyoming 2009); M.D. (University of Washington 2013) [2016]
- NEIL DAVID WOODWARD, Bixler-Johnson-Mayes Chair; Associate Professor of Psychiatry and Behavioral Sciences B.S. (Alberta [Canada] 1999); M.A., Ph.D. (Vanderbilt 2003, 2007) [2009]

- STEPHEN C. WOODWARD, Professor of Pathology, Emeritus M.D. (Emory 1959) [1985]
- ANDREW ROBERT WOOLDRIDGE, Assistant Professor of Medicine B.E. (Vanderbilt 2003); M.D. (Tennessee, Memphis 2010) [2014]
- KATHLEENE THORNTON WOOLDRIDGE, Assistant Professor of Clinical Medicine B.A. (Columbia 2006); M.D. (Tennessee, Memphis 2011) [2014]
- WILHELM WOOLERY, Assistant Professor of Clinical Pediatrics B.A. (Yale 1993); M.D. (George Washington 1998) [2016]
- CHRISTOPHER T. WOOTTEN, Associate Professor of Otolaryngology Head and Neck Surgery B.A. (Birmingham-Southern 1998); M.D. (Baylor 2002) [2009]
- LINDA L. M. WORLEY, Adjunct Professor of Medicine B.S. (Puget Sound 1983); M.D. (Oklahoma 1988) [2010]
- JOHN A. WORRELL, Professor of Radiology and Radiological Sciences, Emeritus B.S. (McNeese State 1968); M.D. (Vanderbilt 1971) [1989]
- TIFFANY G. WOYNAROSKI, Assistant Professor of Hearing and Speech Sciences B.S. (Valparaiso 2002); M.S., Ph.D. (Vanderpin 2009, 2014) [2014]
- KEITH D. WRENN, Professor of Emergency Medicine, Emeritus
 - B.S. (Baylor 1972); M.D. (Emory 1976) [1992]
- ADAM WRIGHT, Professor of Biomedical Informatics
 - B.S. (Stanford 2004); Ph.D. (Oregor Health and Science 2007) [2019]
- ALYSSA M. WRIGHT, Assistant in Pediatrics B.S.N. (Villanova 2011); VISIV. (Vanderbilt 2015) [2017]
- AMANDA H. WRIGHT, Assistant in Neurological Surgery
 - B.S. (Evansville 1997); M.S. (South University [Georgia] 2005) [2016]
- CHRISTOPHER V. WRIGHT, Louise B. McGavock Chair; Professor of Cell and Developmental Biology
 - B.Sc. (Warwick [U.K.] 1980); D.Phil. (Oxford [U.K.] 1984) [1990]
- J. KELLY WRIGHT, JR., Professor of Surgery B.S. (Vanderbilt 1977); M.D. (Johns Hopkins 1981) [1990]
- JORDAN J. WRIGHT, Instructor in Medicine B.A. (Utah 2007); M.D., Ph.D. (Michigan 2015, 2015) [2020]

- LINDSEY R. WRIGHT, Assistant in Pediatrics A.S.N. (Jackson State Community College 2005); B.S.N. (Tennessee, Martin 2007); M.S.N. (Vanderbilt 2008) [2010]
- PATTY WALCHAK WRIGHT, Professor of Medicine
 - B.S. (Western Kentucky 1993); M.D. (Alabama, Birmingham 1997) [2002]
- PETER F. WRIGHT, Adjunct Professor of Pediatrics A.B., B.Med.Sc. (Dartmouth 1964, 1965); M.D. (Harvard Medical 1967) [1974]
- RICK W. WRIGHT, Dan Spengler, M.D. Chair in Orthopaedics; Professor of Department of Orthopaedic Surgery; Chair of the Department of Orthopaedic Surgery
 - B.S., M.D. (Missouri 1984, 1988) [2019]
- SHERRY D. WRIGHT, Assistant in Medicine B.S. (Western Kentucky 1990); M.S.N. (Vanderbilt 2010) [2015]
- TONI-ANN WRIGHT, Assistant Clinical Professor of Pecia rics
 - B.S. (Cakwood University 2007); M.D. (Loma Lii da 2011) [2216]
- LYDIA E. VROLLEWSKI, Research Instructor in Medicine
 - B.Sc. (2h.D. (Liverpool U.K.) 1999, 2003) [2011]
- LAN WV, Research Associate Professor of Pathology, Microbiology and Immunology M.D., M.S. (Tongji [China] 1982, 1990) [2001]
- DANG WU, Adjunct Instructor in Medicine B.S. (Wuhan [China] 2010); Ph.D. (Mayo Clinic 2015) [2015]
- PINGSHENG WU, Research Associate Professor of Medicine; Research Associate Professor of Biostatistics
 - B.S., M.S. (Shanxi Agricultural [China] 1994, 1997); Ph.D., M.S. (Kentucky, Lexington 2004, 2004) [2009]
- VICTOR YUNG-TAO WU, Adjunct Associate Professor of Health Policy M.D., B.E., M.P.H. (Emory 0, 0, 0) [2019]
- KENNETH N. WYATT, Assistant Clinical Professor of Pediatrics
 - B.A., M.D. (Michigan State 1968, 1979) [1984]
- KIMBERLEE D. WYCHE-ETHERIDGE, Adjunct Instructor in Pediatrics
 - B.A. (Amherst 1987); M.D. (Massachusetts, Worcester 1993); M.P.H. (Harvard 2000) [2004]
- DAVID A. WYCKOFF, Clinical Professor of Pediatrics
 - B.A. (Princeton 1996); M.D. (UT Health Science Center [Tennessee] 2000) [2007]
- LUKASZ S. WYLEZINSKI, Adjunct Instructor in Medicine
 - B.S., Ph.D. (Vanderbilt 2008, 2016) [2017]

- KENNETH W. WYMAN, Assistant Professor of Medicine
 - B.S. (Murray State 1986); M.D. (Louisville 1990) [2000]
- ZIXIU XIANG, Research Assistant Professor of Pharmacology
 - B.S., M.S. (Fudan [China] 1986, 1986); Ph.D. (Yale 1995) [2006]
- LIANG XIAO, Research Instructor in Medicine Bachelor in Medicine (Guangzhou Medical [China] 2007); Ph.D. (Nebraska, Omaha 2012) [2016]
- YIHU XIE, Research Assistant Professor of Biochemistry
 - B.S., M.S. (Fudan [China] 2000, 2003); Ph.D. (Cornell 2010) [2017]
- HUA XU, Adjunct Associate Professor of Biomedical Informatics
 B.S. (Nanjing [China] 1998); M.S. (New Jersey Institute of Technology 2001); M.Phil., Ph.D. (Columbia 2007, 2008) [2008]
- JIE XU, Adjunct Assistant Professor of Anesthesiology
 - B.E., B.S. (Dong Hua [China] 2009, 2009); M.S., Ph.D. (Wisconsin 2011, 2016) [2016]
- JUNZHONG XU, Assistant Professor of Radiology and Radiological Sciences; Assistant Professor of Biomedical Engineering B.S. (University of Science and Technology of China 2002); M.S., Ph.D. (Vanderbilt 2007 2008) [2011]
- YAOMIN XU, Assistant Professor of Bioscutistics; Assistant Professor of Biomedical Informatics B.S. (University of Science and Technology of China, Hefei 1994); M.S. (University of Science and Technology of China, Anjui 1998), M.S. (Idaho 2002); Ph.D. (Case Western Reserve 2008) [2013]
- YAQIONG XU, Associate Professor of Electrical Engineering; Associate Professor of Physics; Associate Professor of Ophthalmology & Visual Sciences
 - B.S. (Wuhan [China] 1997); Ph.D. (Chinese Academy of Sciences, Beijing 2002); Ph.D. (Rice 2006) [2009]
- PATRICK S. YACHIMSKI, Associate Professor of Medicine
 - A.B. (Harvard 1996); M.D. (Harvard Medical 2002); M.P.H. (Harvard 2008) [2009]
- EDWARD ANTHONY YAGHMOUR, Associate Professor of Anesthesiology B.S. (Southern California 1990); M.D. (Northwestern 1995) [2019]

- ELIZABETH A. YAKES, Associate Professor of Medicine
 - B.A., B.S. (Stetson 1996, 1996); M.D. (Florida 2001) [2005]
- KYOJI YAMAGUCHI, Research Assistant Professor of Medicine
 - B.S., M.S., Ph.D. (Nagoya [Japan] 1982, 1984, 1995) [2019]
- CHI YAN, Research Instructor in Pharmacology B.E. (Shandong Normal [China] 2008); M.S. (Saint Mary's, Halifax [Canada] 2011); Ph.D. (Dalhousie [Canada] 2017) [2020]
- FANG YAN, Research Professor of Pediatrics; Research Professor of Medicine B.S. (Nankai [China] 1986); M.D. (Tianjin Medical [China] 1991); Ph.D. (Louisville 1997) [2001]
- XINQIANG YAN, Research Assistant Professor of Radiology & Radiological Sciences B.S. (Lanzhou [China] 2009); Ph.D. (Chinese Academ) of Sciences Beijing 2014) [2016]
- PATRICIA G. YANCEY, Research Assistant Professor of M. dicine
 - B.S. (Averett 1986); Ph.D. (Wake Forest 1993) [2002]
- AARON ANG, Assistant Professor of Physical Medicine and Rehabilitation
 - B.S. (Syracuse 2005); M.D. (SUNY, Upstate Medical Center 2009) [2014]
- ONG YANG, Research Professor of Medicine M.D. (Zhejiang [China] 1984); M.P.H. (Shanghai Medical [China] 1990) [2000]
- HAICHUN YANG, Research Assistant Professor of Pathology, Microbiology and Immunology; Research Assistant Professor of Pediatrics B.S., M.D. (Shanghai Medical [China] 1994, 1996); Ph.D. (Fudan [China] 2005) [2013]
- JULIANA F. YANG, Assistant Professor of Medicine
 - B.S. (Texas 2006); M.D. (Medical College of Wisconsin 2011) [2019]
- PAI-FENG YANG, Research Instructor in Radiology and Radiological Sciences B.S., M.S. (Chung-Yuan Christian [Taiwan] 1999, 2001); Ph.D. (National Taiwan 2011) [2016]
- SHIAYIN F. YANG, Assistant Professor of Otolaryngology - Head and Neck Surgery B.A. (Pennsylvania 2008); M.D. (Toledo 2013) [2019]
- TAO YANG, Research Professor of Medicine; Research Professor of Pharmacology B.S., M.S. (Hubei Medical [China] 1980, 1987); Ph.D. (Three Gorges Medical [China] 1992) [1995]

- ZHENJIANG YANG, Research Assistant Professor of Medicine
 - Ph.D. (Xinjiang [China] 1994); M.D. (Shanghai Research Institute of Materials [China] 1998) [2011]
- MARY I. YARBROUGH, Associate Professor of Clinical Medicine; Assistant Professor of Health Policy
 - B.S., M.D. (Vanderbilt 1976, 1981); M.P.H. (Johns Hopkins 1990) [1994]
- PATSY C. YARBROUGH, Assistant in Pediatrics B.S.N. (Vanderbilt 1975); M.S.N. (Tennessee 1988) [2004]
- AIDA YARED, Associate Professor of Pediatrics B.S., M.D. (American University of Beirut [Lebanon] 1976, 1980) [1986]
- FEI YE, Associate Professor of Biostatistics B.S. (Southwestern University of Finance and Economics [China] 2001); M.S.P.H., Ph.D. (South Carolina 2004, 2007) [2007]
- MADHU S. YELAMELI, Adjunct Assistant Professor of Anesthesiology M.B.B.S. (Government Medical, Mysore [India] 1989) [2007]
- ASHWINI K. YENAMANDRA, Assistant Professor of Pathology, Microbiology and Immunology M.S., Ph.D. (Andhra [India] 1976, 1982) [2009]
- JOHN E. YEZERSKI, Assistant Clinical Professor of Oral and Maxillofacial Surgery B.S. (Samford 2002); D.M.D. (Kentucky, Lexington 2006) [2009]
- MAAME YAA A. B. YIADOM, Assistant Professor of Emergency Medicine
 A.B. (Princeton 2000); M.P.H. (Harvard 2006); M.D. (Robert Wood Johnson Medical, New Brunswick 2007); M.S.C.I. (Vanderbilt 2018) [2014]
- ZHIJUN YIN, Assistant Professor of Richaedical Informatics; Assistant Professor of Computer Science
 - B.E., M.E. (Beijing University of Posts and Telecommunications [China] 2009, 2012); M.S., Ph.D. (Vanderbilt 2017, 2018) [2018]
- CHRISTINA YNARES, Assistant Clinical Professor of Medicine
 - B.S., M.D. (Philippines 1968, 1972) [1981]
- ADAM DOUGLAS YOCK, Assistant Professor of Radiation Oncology
 - B.A. (Harvard 2008); Ph.D. (Texas, Houston 2014) [2016]
- PAUL J. YODER, Professor of Special Education, Emeritus; Research Professor of Hearing and Speech Sciences B.S. (Louisiana State 1978); M.S. (Peabody
 - 1979); Ph.D. (North Carolina 1985) [1986]

- ZACHARY TARO YONEDA, Instructor in Medicine
 - B.A. (Harvard 2008); M.D. (Vanderbilt 2013) [2020]
- TADAYUKI YONEYAMA, Associate Clinical Professor of Pediatrics
 - B.S. (Duke 1990); M.D. (Medical College of Virginia 1994) [1998]
- JOHN D. YORK, Natalie Overall Warren Chair in Biochemistry; Professor of Biochemistry; Chair of the Department of Biochemistry B.S. (Iowa 1986); Ph.D. (Washington University 1993) [2012]
- SALLY J. YORK, Assistant Professor of Medicine B.S. (Iowa 1986); M.D., Ph.D. (Washington University 1996, 1996) [2012]
- WEI-CHENG YOU, Adjunct Professor of Medicine M.D. (Beijing Medical [China] 1977) [2016]
- DAVID NATHAN YOUNC, Assistant Clinical Professor of Psychiatry and Behavioral Sciences B.A. (Journ Hopkins 2003); M.D. (Vanderbilt 20(8) [2017]
- HILARY P. YOU (C, Assistant in Pediatrics 5.S.N. (Texas 2011); M.S.N. (Vanderbilt 2016) [2016]
- AMEY D. YOUNG, Professor of Chemical & Biomolecular Engineering; Associate Professor of Wolecular Physiology & Biophysics; Director of Graduate Recruiting for Chemical and Biomolecular Engineering B.S. (Kentucky, Lexington 1999); Ph.D. (Purdue
- JESSICA L. YOUNG, Associate Professor of Clinical Obstetrics & Gynecology B.A. (Chicago 1995); M.D., M.P.H. (Vanderbilt 2007, 2013) [2011]

2005) [2008]

- KEVIN M. YOUNG, Assistant Professor of Clinical Medicine
 - B.S. (Vanderbilt 1992); M.D. (Meharry Medical 1999) [2019]
- LISA R. YOUNG, Adjunct Associate Professor of Pediatrics
 - B.A. (Virginia 1993); M.D. (Duke 1997) [2011]
- PAMPEE PAUL YOUNG, Adjunct Professor in the Department of Cell and Developmental Biology; Adjunct Professor of Pathology, Microbiology and Immunology
 - B.A. (Rice 1990); Ph.D., M.D. (Texas, Southwestern Medical 1996, 1998) [2003]
- SEAN M. YOUNG, Assistant Clinical Professor of Oral and Maxillofacial Surgery D.D.S. (California, Los Angeles 2008); M.D. (Vanderbilt 2011) [2015]

- CHANG YU, Associate Professor of Biostatistics B.S. (University of Science and Technology of China, Hefei 1990); M.S. (Southern Maine 1993); M.S. (Minnesota 1995); Ph.D. (Yale 1998) [2004]
- DANXIA YU, Assistant Professor of Medicine B.S. (Beijing Normal [China] 2007); Ph.D. (Chinese Academy of Sciences 2012) [2016]
- ERIN N.Z. YU, Assistant Professor of Pathology, Microbiology and Immunology B.S. (West Virginia 2002); D.V.M. (Ohio State 2006) [2008]
- MI YU, Assistant Clinical Professor of Psychiatry and Behavioral Sciences M.D. (Shanghai Medical [China] 1987); Ph.D. (Missouri 1996) [2010]
- SOPHIA YU, Instructor in Medicine B.S. (Stanford 2007); M.D. (California, Los Angeles 2013) [2018]
- FIONA E. YULL, Associate Professor of Obstetrics & Gynecology; Associate Professor of Pharmacology B.Sc. (St Andrews [U.K.] 1985); D.Phil. (Oxford [U.K.] 1989) [1998]
- AMANDA C. YUNKER, Associate Professor of Obstetrics and Gynecology B.S. (Texas Christian 1999); D.O. (North Texas 2004); M.S. (North Carolina 2010) [2010]
- SYEDA SADIA ZAIDI, Assistant Professor of Medicine
 - M.B.B.S. (Dow Medical [Pakistan] 2002) [2012]
- OLAMIDE ZAKA, Assistant Professor of Clinical Medicine B.S. (Georgia 2006); M.D. (Wisconsin 2010) [2013]
- ARWA W. ZAKARIA, Assistant Professor of Clinical Medicine
 - B.S. (Tennessee 2009); D.O. (Lincoln Memorial 2014) [2019]
- MARINA ZAKY, Assistant Professor of Clinical Pediatrics
 - B.S. (Austin Peay State 2012), M.D. (VUMC 2017) [2020]
- SANDIP K. ZALAWADIYA, Assistant Professor of Medicine
- M.B.B.S. (Smt. NHL Municipal Medical College [India] 2006) [2016]IRVING JOSE ZAMORA, Assistant Professor of
- Pediatric Surgery B.S. (Cornell 2004); M.D. (Florida 2009); M.P.H. (Texas, Houston 2014) [2019]
- LINDSEY E. ZAMORA, Assistant Professor of Clinical Obstetrics & Gynecology B.A., M.D. (Florida 2004, 2009); M.P.H. (London School of Hygiene and Tropical Medicine 2017) [2019]

- RICHARD M. ZANER, Professor of Medicine (Medical Ethics), Emeritus B.S. (Houston 1957); M.A., Ph.D. (New School for Social Research 1959, 1961) [1981]
- MARIJA ZANIC, Assistant Professor of Cell and Developmental Biology; Assistant Professor of Biochemistry; Assistant Professor of Chemical and Biomolecular Engineering M.S. (University of Zagreb [Croatia] 1998); Ph.D. (Texas 2007) [2014]
- SARA ZARNEGAR-LUMLEY, Assistant Professor of Pediatrics B.A. (Chicago 2002); M.S., M.D. (Georgetown 2007, 2011) [2018]
- EDWARD Y. ZAVALA, Transplant Center Administrator; Research Professor of Surgery B.S. (San Diego State 1978); M.B.A. (Phoenix, San Diego 1992) [2003]
- DAVID L. ZEALEAR, Professor of Otolaryngology
 Head and Neck Surgery
 B.S. (Ca ifornia, Davis 1970); Ph.D. (California, Sar. Francisco 1979) [1986]
- KARI F. ZELIK, Assistant Professor of Mechanical Engineering; Assistant Professor of Biomedical Engineering, Assistant Professor of Physical Medicine and Rehabilitation

 B. S., M.S. (Washington University 2006, 2007);

 Ph.D. (Michigan 2012) [2014]
- Head and Neck Surgery
 B.A. (Boston University 1997); M.S. (Rush 2005)
- HATUN ZENGIN-BOLATKALE, Adjoint Assistant Professor of Hearing and Speech Sciences M.A. (Illinois, Champaign 2006); B.A. (Bogaziçi [Turkey] 2008); Ph.D. (Vanderbilt 2016) [2017]
- ROY ZENT, Thomas F. Frist Sr. Chair in Medicine; Professor of Medicine; Professor of Cell and Developmental Biology M.B.B.Ch. (Witwatersrand [South Africa] 1984); M.Med. (Cape Town [South Africa] 1992); Ph.D. (Toronto [Canada] 1997) [2000]
- BING ZHANG, Adjunct Professor of Biomedical Informatics B.S., M.S. (Nanjing [China] 1993, 1996); Ph.D.
 - Shanghai Institute of Plant Physiology and Ecology [China] 2000) [2006]
- DAWEI ZHANG, Visiting Assistant Professor of Radiology & Radiological Sciences Ph.D. (Sun Yat-Sen [China] 2012) [2018]
- MING-ZHI ZHANG, Associate Professor of Medicine M.D., M.Sc. (Xuzhou Medical [China] 1985, 1990) [1997]

- QI ZHANG, Adjunct Assistant Professor of Pharmacology B.S. (Fudan [China] 1997); Ph.D. (Pennsylvania 2004) [2010]
- QIN ZHANG, Research Assistant Professor of Medicine
 - B.S. (Shaan'xi Normal University [China] 1995); M.S. (Chinese Academy of Sciences 1998); Ph.D. (Illinois, College of Medicine, Champaign 2005) [2014]
- DAVID XIAO-MING ZHAO, Adjunct Professor of Medicine
 - M.D. (Shanghai Medical [China] 1985); Ph.D. (Queensland University of Technology [Australia] 1992) [2001]
- GANG ZHAO, Visiting Assistant Professor of Pediatrics
 - B.S., M.S., Ph.D. (Tianjin Medical [China] 2010, 2012, 2016) [2019]
- JUAN ZHAO, Research Assistant Professor of Biomedical Informatics
 - B.S. (Shandong [China] 2006); Ph.D. (Chinese Academy of Sciences 2012) [2017]
- SHILIN ZHAO, Assistant Professor of Biostatistics B.S. (Sichuan University [China] 2005); Ph.D. (Chinese Academy of Sciences 2012) [2013]
- ZHONGMING ZHAO, Adjunct Professor of Biomedical Informatics B.S. (Zhejiang [China] 1991); M.S. (Peking [China] 1996); Ph.D. (Texas, Houston 2000); M.S. (Houston 2002) [2009]
- WEI ZHENG, Anne Potter Wilson Chair in Medicine; Professor of Medicine; Prector, Vanderbilt Epidemiology Center, Chlef, Division of Epidemiology
 - M.D., M.P.H. (Shanghai Medical [China] 1983, 1986); Ph.D. (Johns Hopkins 1992) [2003]
- OKSANA ZHIVOTENKO, Instructor in Physical Medicine and Rehabilitation B.S. (SUNY, Stony Brool 2010); D.O. (New York Institute of Technology 2016) [2020]
- LIN ZHONG, Research Assistant Professor of Medicine
 - M.D. (Xiangya School of Medicine [China] 1990); Ph.D. (Central South University of Technology [China] 1999) [2018]
- TAO PETER ZHONG, Adjunct Professor of Medicine
 - B.S. (Fudan [China] 1987); Ph.D. (Stony Brook 1995) [2001]
- XUE ZHONG, Research Assistant Professor of Medicine
 - B.S. (Nanjing Univ. 2001); M.S., Ph.D. (Idaho 2005, 2009); M.S. (Vanderbilt 2015) [2015]

- CHENGWEN ZHOU, Assistant Professor of Neurology
 - B.S. (Southwest China Normal 1993); M.S. (Chinese Academy of Sciences 1996); Ph.D. (Alabama, Birmingham 2004) [2012]
- QIANGJUN ZHOU, Assistant Professor of Cell & Developmental Biology
 B.E. (Central South University of Technology [China] 2006); Ph.D. (Chinese Academy of Sciences 2012) [2020]
- SHAN-REN ZHOU, Assistant Clinical Professor of Neurology
 - M.D. (Hsu-Chou Medical [China] 1978); M.Sc. (Nanjing Medical [China] 1983) [1999]
- WEISONG ZHOU, Research Associate Professor of Medicine
 - B.S., M.S. (Yangzhou [China] 1983, 1989); Ph.D. (Kentucky, Lexington 2001) [2003]
- CHONG-BIN ZHU, Associate Professor of Clinical Nursing (Medicine); Associate Professor of Physical Medicine and Rehabilitation M.D., M.S. (Arhui [China] 1986, 1989); Ph.D. (Fildan [China) 1995) [2005]
- M.D. (Tianjin Medical [China] 1994); Ph.D. (Gue ph [Canada] 2008) [2017]
- WENDAN ZHU, Assistant Professor of Pathology, Microbiology and Immunology
 - P.Sc. (Sun Yat-Sen [China] 2008); Ph.D. (Purdue 2015) [2020]
- XIANGZHU ZHU, Research Assistant Professor of Medicine
 - M.D. (Fudan [China] 1990); M.P.H. (Nantong Medical [China] 2004) [2017]
- YUWEI ZHU, Senior Associate in Biostatistics M.D. (Shanghai Medical [China] 1993); M.S. (Texas, Houston 1998) [2004]
- JOHN A. ZIC, Professor of Dermatology B.S. (Notre Dame 1987); M.D. (Vanderbilt 1991) [1995]
- JOSEPH ZICKAFOOSE, Assistant Professor of Clinical Pediatrics
 - B.S., M.D. (Case Western Reserve 2000, 2004) [2015]
- JOZEF ZIENKIEWICZ, Research Associate Professor of Medicine M.S., Ph.D. (Wroclaw [Poland] 1994, 2000) [2001]
- ANDRIES ZIJLSTRA, Associate Professor of Pathology, Microbiology and Immunology; Associate Professor of Cell & Developmental Biology; Adjunct Associate Professor of Pathology, Microbiology and Immunology B.S., Ph.D. (Washington State 1993, 1998) [2006]

- CARL W. ZIMMERMAN, Frances and John C. Burch Chair in Obstetrics and Gynecology; Professor of Obstetrics and Gynecology B.S. (Peabody 1969); M.D. (UT Health Science Center [Tennessee] 1972) [1978]
- ELI ZIMMERMAN, Assistant Professor of Neurology B.A. (Washington University 2006); M.D. (Vanderbilt 2010) [2015]
- SANDRA S. ZINKEL, Associate Professor of Medicine; Associate Professor of Cell and Developmental Biology M.D., Ph.D., B.S. (Chicago 0, 0, 0) [2005]
- TERESA MEGAN ZOFFUTO, Assistant Professor of Clinical Medicine B.S. (Vanderbilt 2008); M.D., M.P.H. (Texas, San Antonio 2012, 2012) [2015]
- ZHONGLIANG ZU, Research Associate Professor
 of Radiology & Radiological Sciences
 B.S. (Hebei [China] 2001); M.S. (Chinese
 Academy of Sciences 2004); Ph.D. (Peking
 [China] 2008) [2012]

 LAURENCE J.
 Chair in Biok
 Biological Scit
 B.S. (St ny Bro
 Ph.D.) Brandeix

- SCOTT L. ZUCKERMAN, Adjunct Instructor in Neurological Surgery B.S. (Cornell 2008); M.D. (Vanderbilt 2012);
 - M.A., M.P.H. (Harvard 2017, 2017) [2019]
- LISA C. ZUCKERWISE, Assistant Professor of Obstetrics and Gynecology
 - B.S. (Cornell 2004); M.D. (Yeshiva 2009) [2016]
- MARY M. ZUTTER, Louise B. McGavock Chair; Professor of Pathology, Microbiology and Immunology
 - B.S. (Newcomb 1976); M.D. (Tulane 1981) [2003]
- JEFFREY P. ZWERNER, Assistant Professor of Dermatology
 - B.A. (Washington University 1995); Ph.D. (Alabama, Huntsville 2002); M.D. (Alabama, Birmingham 2004) [2010]
- LAURENCE J. ZWIEBEL, Cornelius Vanderbilt Chair in Biological Sciences; Professor of Biological Sciences; Professor of Pharmacology B.S. (Steny Brook 1980); M.S. (Michigan 1982); Ph.D. (Brandeit 1992) [1998]