

UNIVERSITY OF PITTSBURGH SCHOOL OF MEDICINE | MAY 2003

PITTMED

IN COSTS

DROP PATIENT

MORTALITY BY

29% MAKE

FRIENDS AND

INFLUENCE

PEOPLE

A CHEAPER, BETTER ICU



JUST RESTING

I thoroughly enjoyed the most recent edition of *Pitt Med*, but was just thrilled when I saw the photo on the next to the last page of the sleepers in Scaife Hall ("Last Call," Jan. 2003). In the bottom right corner is the man who, next to my dad, had more influence on me than any other man I have come to know: Dr. Ameene Makdad (MD '53).

Ameene entered my life when he served as a chaperone for the marching band at Greensburg Salem High School. He went on just about every trip that we made over a three-year period. Then, when my mother became ill with cancer, he actually hired me to do odd jobs around his home—not because he had odd jobs that he needed to get done, but because it allowed me (a kid who lived about 12 miles away from the hospital) a way to be near my mother on a daily basis, right up until her death.

I could go on and on about the things he did for me and my family, ranging from making house calls, to saving the life of my father, both my grandmothers, and our youngest son. He believed in giving back to the community, and he did so through the fire department, community nursing association, and by taking in kids who were in tough family situations and nurturing them through difficult times. He was a truly amazing man. He died a few years ago, leaving a great void in the Greensburg community, but I, for one, will never forget him.

Thank you for publishing that photo. He was proud to be a graduate of the School of Medicine. I know he was resting up on that day in 1953. He had to save all of his energy for all of the projects he needed to complete, for all of the patients that would call on him, and for the community that he was compelled to serve over the rest of his life.

Albert J. Novak Jr.
Interim Vice Chancellor for
Institutional Advancement
University of Pittsburgh



KEEP THE CUSTOMER SATISFIED

I look forward to receiving each new issue of *Pitt Med*. You have done an excellent job of highlighting the school's past achievements; detailing its current rapid progress; and providing a glimpse of an even brighter future.

This information builds solidarity and pride among alumni, faculty, and staff and informs the academic and hospital worlds of the school's distinguished position in American medicine.

Thomas J. Gill III
Duxbury, Mass.

Thomas Gill is the Maud L. Menten Professor of Experimental Pathology Emeritus and an emeritus professor of human genetics at the University of Pittsburgh.

THANK YOU, DR. BAHNSON

Once upon a time, there was a baby girl born in Florida with a hole in her heart. As she grew to be a 2-year-old, her skin was blue; her tongue was blue. She could take a few steps on the living room floor, but then she would fall down and fall asleep.

During a visit to Pittsburgh, the little girl's parents and grandparents met with Dr. Hank Bahnson ("The House That Hank Built," Oct. 2002). A doctor in Florida had thought that open-heart surgery would be too risky. Thankfully, Dr. Bahnson tried the surgery anyway.

I was that baby girl. Now, I am 38 years old. My husband and I have been married for 20 years. God has blessed us with four happy, healthy children. I would like to thank Dr. Hank Bahnson for trying to save a "too risky" case like me.

Pam Dornburg
Springs, Pa.

Henry T. Bahnson died Jan. 10, after a stroke. A remembrance may be found on page 38.

With this issue, we've shifted Pitt Med's schedule. The magazine now comes out in February, May, August, and November. (Our old schedule was January, April, July, and October.) You'll receive Pitt Med just a couple of weeks later than usual.

We welcome photos and letters (which we may edit for length, style, and clarity).

Pitt Med
400 Craig Hall
University of Pittsburgh
Pittsburgh, PA 15260
Phone: 412-624-4147
Fax: 412-624-1021
E-mail: medmag@pitt.edu
www.health.pitt.edu/pittmed

Please send address corrections to the alumni office:

Pitt Med Address Correction
ATTN: Crystal Kubic
M-200k Scaife Hall
University of Pittsburgh
Pittsburgh, PA 15261
Phone: 412-648-9090
Fax: 412-648-9500
E-mail: medalum@medschool.pitt.edu



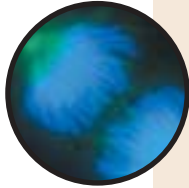
Henry Bahnson (left) and Thomas Starzl

2003 MAGAZINE HONORS

Gold Medal, General Interest Magazines
Council for Advancement and
Support of Education (CASE)
District II Accolades

PITTMED

UNIVERSITY OF PITTSBURGH SCHOOL OF MEDICINE MAGAZINE | MAY 2003, VOL. 5, ISSUE 2



DEPARTMENTS

OF NOTE 3

Diabetes research at the South Pole.
Meet the mentors' mentors.
Expecting teens, unexpected pals.

INVESTIGATIONS 8

Stroke and cellular suicide.
How to cut a tumor's lifeline.
A meeting of minds.

98.6 DEGREES 31

A mall of science: Pitt breaks
ground for what's probably
its most complex building ever.

ATTENDING 32

Ross Musgrave can cut the ties,
but not the cord.
What 50 years in medicine hath wrought.

ALUMNI NEWS 36

Mary Williams Clark was
"a guy like that."
Remembering Tim Oliver
and Hank Bahnson.

LAST CALL 40

Whistle while you dissect.



CONTRIBUTORS

TRINA WOOD —["Cleaning up Blood" and "Crossing the Barrier"] When she was in graduate school studying journalism, Trina Wood often took her daughter, Brittany, who was not yet 8, along with her to videotape news segments. Brittany always wore a fishing vest, stuffed with extra batteries and tapes, video cables, and notepads. "She was a great icebreaker," says Wood, adding that finishing her undergraduate and graduate degrees as a single parent were two of the biggest accomplishments of her life. A California-based freelance science writer, Wood is a frequent contributor to this magazine.

HIEN NGUYEN —["ICU: The Episode You Won't Want to Miss" and Follow-Ups] As a teenager in Vietnam, Hien Nguyen loved art, but his parents warned him that he couldn't make a *living* at it. He spent several unhappy years taking engineering and computer classes until someone showed him a graphic design magazine. There, to his surprise, he saw folks who made their living as artists. Since then, the award-winning Nguyen has followed his heart (and his art). In addition to doing illustrations and design for clients like the National Institutes of Health and Inova Health System, he teaches graphic design at Gibbs College in Tyson's Corner, Va. **EDWIN KIESTER JR.** —["A Hospital Is Born"] The board of directors of Sigma Xi, the scientific research society, recently elected to invite Edwin Kiester to become an honorary member. This November, he'll be initiated into that society. With this honor, he joins the likes of science writers from *The New York Times*, Al Gore, and others who've taken leadership roles in raising awareness about scientific issues. They say you can never go home again. We'll see: After 48 years in New York, Northern California, and abroad, Kiester will return to his hometown, Pittsburgh, with his wife, Sally Valente Kiester.

COVER

Saving lives, saving money, and reducing complications: Pitt researchers say that having intensivists run ICUs could do all three.



12

FEATURES

Modern-Day Schweitzers

Like the good Dr. Schweitzer, these med students felt an impulse to serve.

BY DOTTIE HORN

12

A Hospital Is Born

Thanks heavens it was hard to say "no" to Louise Lyle, founder of UPMC Presbyterian.

BY EDWIN KIESTER JR.

17

A Big Bang

Barry Brenner's work won't shut down dialysis centers, but it will slow them down.

BY ERICA LLOYD

20

ICU: The Episode You Won't Want to Miss

Many believe critical care medicine can cost fewer dollars and fewer lives.

COVER STORY BY JASON TOGYER

24

Cleaning up Blood The Sum of Its Parts

New tools for critical care.

FOLLOW-UPS BY TRINA WOOD AND KRISTIN OHLSON

29

30

PITTMED

PUBLISHER

Arthur S. Levine, MD

EDITOR IN CHIEF

Erica Lloyd

ART DIRECTOR

Elena Gialamas Cerri

SENIOR EDITOR

Jason Togyer

ASSOCIATE EDITOR

Dottie Horn

PRODUCTION COORDINATOR

Chuck Dinsmore

STAFF CONTRIBUTORS

Meghan Holohan, Megan E. Sofilka,
Star Zagofsky

OBITUARIES CONTRIBUTOR

Macy Levine, MD '43

CIRCULATION MANAGER

Crystal Kubic

CHIEF EDITORIAL ADVISOR

Kenneth S. McCarty Jr., MD, PhD

EDITORIAL ADVISORS

Steve N. Caritis, MD, Res '73
Cameron Carter, MD
Lestina Clay, Class of '04
Jonathon Erlen, PhD
Robert Ferrell, PhD
Jennifer Rubin Grandis, MD '87
Joan Harvey, MD
Ronald B. Herberman, MD
Alana Iglewicz, Class of '05
Steven Kanter, MD
Margaret C. McDonald, PhD
George Michalopoulos, MD, PhD
Ross Musgrave, MD '43
Paul Paris, MD '76
David Perlmutter, MD
Gabriel Silverman, Class of '05
Peter Strick, PhD
Simon Watkins, PhD
Marshall Webster, MD, Res '70
Mark Zeidel, MD

OFFICE OF PUBLIC AFFAIRS

Robert Hill
John D. Harvith, JD



University of Pittsburgh

Pitt Med is published by the Office of the Dean and Senior Vice Chancellor for the Health Sciences in cooperation with the alumni and public affairs offices. It is produced quarterly for alumni, students, staff, faculty, and friends of the School of Medicine. PR 3978

The University of Pittsburgh is an affirmative action, equal opportunity institution. Copyright 2003, University of Pittsburgh

In September 1999, 18-year-old Jessie Gelsinger died while taking part in a gene-therapy trial at the University of Pennsylvania. On March 28 this year, largely as a response to his death, the Bush Administration proposed guidelines that would let research institutes decide whether to restrict scientists' financial interests in studies involving human subjects and whether such interests should be reported to the research volunteers. (The director of the Gelsinger clinical trial owned stock in the company that financed the trial.) This guidance represents the next step, short of a mandated and specific nationwide standard, in the response being made by many academic organizations, and now the government, to this and other such trials. The concern: Where outcomes of certain trials actually had the potential to pad researchers' bank accounts—might that factor have clouded objectivity? And might it have influenced the well-being of patients and normal volunteers? The potential for reward influencing the way research is pursued has always been with us—the historic reward being promotion, tenure, or honors. However, it is science itself that has added to the potential for wealth in this milieu. The possibility of very substantial financial gain from human subjects research is rather recent, emerging as biology has evolved from a purely descriptive to an experimental science, with a yield of drugs that have made many researchers wealthy. Furthermore, the Bayh-Dole Act of 1980 encouraged commercialization of academic discoveries and, in fact, mandated the transfer of these technologies to the commercial sector if federal dollars supported the discovery. Thus both science and the law have set the stage for this “duality of interests.” It's important to note that not only may an investigator be conflicted, perhaps unconsciously, but an institution may be conflicted—especially in economic times when institutions are grateful for the royalties accruing to them as research leads to marketable discoveries.

St. Augustine once uttered, “O Lord, help me to be pure, but not yet.” About 25 percent of all biomedical scientists now have financial affiliations with industry, and 70 percent of academic institutions have equity in start-up companies arising from intellectual property. Entrepreneurship has become the “fourth mission” of many academic medical centers, given the extraordinary financial constraints under which most such centers now labor. Nonetheless, economic partnerships between the academy, government, and industry have time and again accelerated research and promoted medical advances. Thus the challenge is to manage conflict when it cannot be avoided. How? Institutions can separate responsibility for financial and research decisions; establish committees to verify the absence of financial interest; verify that IRB members have no conflicts of interest regarding the protocols they consider; assure that an independent third party explains clinical research studies to subjects and obtains consent; provide subjects with information on the source of research funding; and make the same information available in every relevant research grant application and publication.

Biomedical research is sustained by public support and trust, and we must never permit conflict of interest to threaten scientific integrity and the safety of human subjects. Transparency is necessary but not sufficient. Good judgment and rigorous oversight are critical. Entrepreneurship needn't be at the expense of trust, and we certainly do not want its management to become a witch-hunt. If forced to choose between riches and integrity, however, there is no choice.

Arthur S. Levine, MD
Senior Vice Chancellor for the Health Sciences
Dean, School of Medicine



JULIA MAROUS STRAUT



Devoted to noteworthy happenings at the medical school... To stay abreast of school news day by day, see www.health.pitt.edu

Extreme Research

With a sun that never set and temperatures as low as minus 27 degrees Fahrenheit, Bret Goodpaster, assistant professor of medicine, knew he wasn't in Pittsburgh anymore. He recently skied 120 miles to the South Pole as a researcher and participant in the NovoLog Ultimate Walk to Cure Diabetes. His research compared how the physiology of two men changed as they skied 700 Antarctic miles in two months. One man was Will Cross, the expedition leader and a Type 1 diabetic. The other was not diabetic. "Will had doctors tell him he was crazy for doing this," says Goodpaster, a PhD exercise physiologist at the School of Medicine. The descriptive study—along with Cross' successful completion of the trip—suggests that a Type 1 diabetic, with proper training and preparation, can accomplish astonishing physical feats in demanding conditions. His forthcoming paper, Goodpaster jokes, is best suited for the *Journal of Antarctica Research*. —Star Zagofsky



Why does someone with Type 1 diabetes ski to the South Pole? Because it's there.

FOOTNOTE

It's fine to have a song in your heart. But researchers at the University of Cincinnati say 98 percent of test subjects frequently got songs stuck in their heads for several hours. "Who Let the Dogs Out?" by the Baha Men was a frequent offender, Reuters reported. Researchers identified a common quality of the self-replicating tunes: "Stupid lyrics."

PITT DUO TO RECEIVE MOTT PRIZE

The General Motors Cancer Research Foundation will award a husband-and-wife Pitt team the Charles S. Mott Prize in recognition of their contributions to cancer research.

Patrick Moore and Yuan Chang are best known for their 1994 discovery of KSHV, the herpes virus that causes Kaposi's sarcoma, now one of the most common cancers worldwide. KSHV is an excellent study model, because it is a complete cancer-causing package in and of itself. "The virus carries all the genes that are required to cause a tumor in previously healthy cells," says Chang, a professor of pathology. By dissecting how KSHV works, the scientists hope to shed light on the pathways involved in the development of all types of cancer, notes Moore, a professor of molecular genetics and biochemistry.

"The Mott Prize may be the most prestigious award given worldwide for cancer research, short of the Nobel," says Arthur Levine, dean and senior vice chancellor for health sciences. —Dottie Horn



A&Q

with Beth Fischer and Michael Zigmond

Michael Zigmond, a professor of neurology and psychiatry, is known not only for his work in Parkinson's disease, but for his role as a "mentor's mentor." The PhD rejects a mind-set he has encountered among too many academics, a way of thinking, he says, that amounts to: "The way you train graduate students is you put them in a lab, you close the door, and five years later, you open the door, and there they are." Zigmond and Beth Fischer, an instructor in education, codirect the University's Program in Survival Skills and Ethics. They reach 500 Pitt graduate students each year—as well as academicians all over the world—with their workshops on skills essential to success in academia.

On the most crucial skill they teach

Fischer: "Oral communication. It's important because you need to be able to go out and give a seminar, but it's also how you present yourself, how you're going to network at meetings."

"Michael and I were at a meeting where we heard someone who had won the Nobel Prize give a lecture. ... We went up to him [a day or so later] and said, 'That was a wonderful talk.' I will never forget how he said, 'That was the most exciting moment of my scientific career. You can't believe what it was like to feel that you were connecting with 5,000 people.'"

On how much mentoring is valued in academia

Zigmond: "Faculty get together and talk about science reasonably often, but except in those cases where Beth and I have initiated it, I've never heard faculty members get together and talk about different mentoring strategies the way you might talk about different parenting strategies. ... A lot of faculty members don't realize that you can get, I would say, every bit as much satisfaction from having an impact on people through your mentoring as you can from making an important discovery."

A question for the world

Zigmond: "I would be interested to know, from those people who have left their formal training [at Pitt] and gone out into the 'real world,' what training do they wish we had provided so that they could do better?" —Interview by Dottie Horn

FOR MORE INFORMATION: www.pitt.edu/~survival

Faculty Snapshots

Pitt scientists have used gene therapy to reduce cancer-related pain in mice with tumors. The therapy reduced guarding (the avoidance of using a limb) and limping in mice with a bone tumor in one leg. **David Fink**, professor of neurology and an MD, along with **Joseph Glorioso**, chair of the Department of Molecular Genetics and Biochemistry and a PhD, hope to begin testing the experimental treatment in humans within a year. The researchers created a vector, or gene-transport vehicle, by crippling the herpes virus that causes cold sores—a project under way for 10 years, notes Fink, who's chief of neurology at the VA Pittsburgh Healthcare System. The herpes virus has a unique quality that makes it useful for treating pain: When injected under the skin, it travels to nearby sensory neurons in the skin. The gene carried by the vector stimulates the nerve cells to produce proenkephalin, a pain-killing protein.

Children exposed to alcohol while in the uterus show effects of that exposure at age 14, according to a new paper by **Nancy Day**, professor of psychiatry, pediatrics, and epidemiology. "The most important finding was that there are effects of prenatal exposure to alcohol at such low doses—less than two drinks a week," says Day, a PhD whose ongoing \$20 million study follows 500 mothers and children. Her results showed that children of women who drank during pregnancy were shorter, weighed less, and had smaller heads than children of mothers who did not drink while pregnant. (Head circumference is a measure of brain development.) The bottom line, according to Day: "Women should not drink during pregnancy, not any amount. They should stop drinking as soon as they know they're pregnant. Better yet, if they're planning on being pregnant, they should stop drinking then. Women aren't hearing that message loud and clear ... and they need to be."

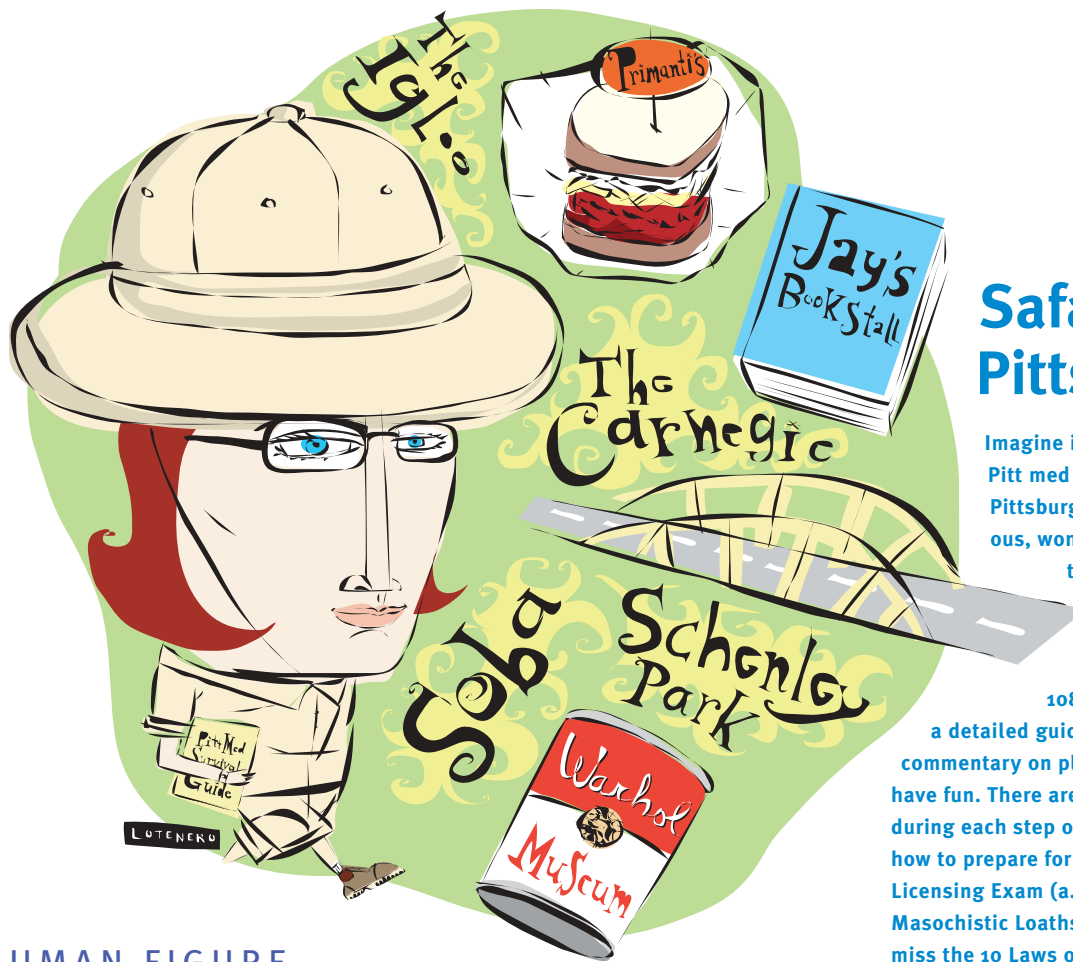


Day

On November 19, **Peter Safar**, Distinguished Service Professor of Resuscitation Medicine, got a surprise. The next day, his colleagues told him, the First Annual Safar Symposium would be held at Pitt in his honor. At the day-long event, he saw many familiar faces—including Max Harry Weil, who initiated the specialty of critical care medicine with Safar. Tore Laerdal was there as well; his father created the first mannequins now widely used in resuscitation education. The annual event pays homage to Safar, who helped develop CPR. This spring, he received an honorary doctorate from the University during its honors convocation. —DH



Safar



Safari Pittsburgh

Imagine it's July, and a soon-to-be Pitt med student is about to move to Pittsburgh from Idaho. She's nervous, wondering what to expect from the next four years. Help arrives in the mail: *The Official Pitt Med Survival Guide*. It's a 108-page powerhouse. There's

a detailed guide to Pittsburgh—including commentary on places to eat, drink, and have fun. There are practical tips for thriving during each step of med school—including how to prepare for the United States Medical Licensing Exam (a.k.a. the "Unsavoury Sado-Masochistic Loathsome Experience"). Don't miss the 10 Laws of Remaining Happy and Fruitful at Pitt Med. (One pointer: "You'll go bananas if you study every minute of your free time.")

Funded by the Medical Alumni Association, the guide is mailed to incoming students each summer. "Before you come to Pittsburgh, the guide helps generate a lot of excitement," says second-year student Elena Balestreire, who edited the Class of '06 edition with classmate Sarah Harper. —SZ

THE HUMAN FIGURE, REVISITED

Ashish Mahajan (Class of '05) had a question: Is there a difference between ornamentation and cosmetic surgery? When Seattle-based sculptor Akio Takamori includes big hairstyles, flowing skirts, and traditional Japanese costumes in his work, is that different from when plastic surgery resident Sean Bidic sculpts a nose or tucks a tummy?

Bidic pointed out that many plastic surgery procedures are reversible. This made the line even fuzzier for Mahajan. There were few easy answers during this recent panel discussion, featuring Bidic; Takamori; Margaret Ragni, a professor of medicine; and Elisabeth Agro, an assistant curator at the Carnegie Museum of Art. Pitt med students attended the discussion on influencing the human figure as part of a pilot program. Modeled after classes offered at Yale and Cornell, the pilot aims to teach students about art while making them aware of how they observe and describe. According to a study published in the *Journal of the American Medical Association* in 2001, such efforts can help train medical students to observe patients more thoroughly. Jennifer Harris (Class of '05), Mahajan's partner in creating the program, believes the program also helps refine descriptive abilities. Last year, groups of med students delineated still-life paintings as part of a discussion on nature led by art historian Charles Pearo. —SZ

BREATHING SPACE

Children's Hospital of Pittsburgh has announced a change in plans for construction of its new \$420 million hospital, ambulatory care center, and pediatric research facility. The structures were to be located on the already densely packed Oakland campus; now, they will occupy the site of the former St. Francis Medical Center in Lawrenceville. Less than a 10-minute drive from Oakland, the Lawrenceville campus includes an additional 9.5 acres, which means Children's can build a larger hospital now and expand in the future. Another advantage: A 230,000 square-foot facility on the new site will allow all of the hospital's pediatric researchers to be housed under one roof. The hospital, which should be completed by 2007, will be one of the first environmentally "green" hospitals in the United States. —SZ





A Painterly Life

Though he has sold dozens of his paintings, 82-year-old Ralph Kniseley (MD '43) laughs at the notion that he's a professional artist. And he knows a good source for cheap canvases: "I'm painting over stuff I did 20 years ago rather than store it." The retired associate chair of the medical division of Oak Ridge Associated Universities, Kniseley lives in Tennessee. His vibrant paintings often depict places he has visited—crumbling Mayan ruins, an Idaho mountain, a Peruvian river. Forty-five of his paintings—most donated by the artist—are on permanent display in Falk Library and Scaife Hall. —SZ



KNISELEY: TOM ATANW

Appointments

Some things are better left alone.

Our DNA is damaged every day by normal living—that's in addition to any harm that hazardous radiation levels or chemicals might inflict. This isn't usually a cause for alarm, however, since our bodies employ tactics like base excision

repair (BER), one of several ways cells repair DNA. BER takes place through a minimum of five steps: In the first step, for example, an enzyme removes the damaged base, leaving a hole in the genome. Yet, if the repair process is not completed—after any of the five known steps along the way—the outcome for the cell can be worse than if the damaged DNA had been left untouched. That's according to studies by **Robert Sobol**, a PhD assistant professor of pharmacology who came to Pitt recently from the National Institute of Environmental Health Sciences. "What we have discovered is that damage that's not



Sobol

repaired properly ends up causing a very, very severe problem," says Sobol. He seeks to understand how interruptions in BER can lead to tumors and cell death.

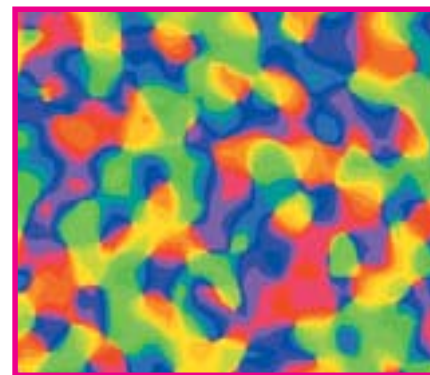
THEY'RE IN

Pitt now boasts 15 faculty members elected to the Institute of Medicine. James Roberts and Karen Matthews are the latest on the school's faculty to be so honored.

Roberts, a professor of obstetrics, gynecology, and reproductive sciences and director of Magee-Womens Research Institute, is changing the way physicians view preeclampsia, which claims the lives of 50,000 expecting women in developing countries each year. Roberts helped show that the disease involves a profound abnormality of endothelial cells lining blood vessels. He heads a new clinical trial that will treat 10,000 women with vitamins C and E to see if the therapy is preventive.

Matthews, a professor of psychiatry, studies behavioral factors that put adolescents and postmenopausal women at risk for cardiovascular disease. She has shown that in teens higher physiologic responses to stress predict higher blood pressure later in life. Matthews tries to unravel which groups of adolescents are most physiologically reactive to everyday stressors. One finding: Children who grow up in families that are cohesive and warm (where family members care about each other overtly) are less reactive to stress than kids whose families are less so. —DH

When neural activity in one part of the brain increases, blood flow to that region also increases. Functional MRIs measure changes



Do fMRIs tell us what we think they do?

in blood flow, so scientists use them to study which parts of the brain are active when a person performs a particular task. But how accurate an indicator of neuronal activity is the technology? The relationship between activation of neurons and increased blood flow is not well-defined, notes Seong-Gi Kim. The professor of neurobiology came to Pitt last June from the University of Minnesota. A PhD chemist, he would like to improve current fMRI technology, develop new imaging methods, and better define the relationship between blood flow and neuronal activation. —DH

EXPECTING TEENS, UNEXPECTED PALS

BY MEGAN E. SOFILKA

Fourteen-year-old Marlana Jernigan was going to her prenatal appointments alone last year. Then she was asked if she would like a medical student to accompany her. Sure, whatever. She wasn't very interested in a stranger coming along. That's before she knew Sandy Fernando (Class of '05), a volunteer with the Pregnant Adolescents Learning with Students (PALS) program offered by the School of Medicine. Fernando was paired with Jernigan and met her less than two months before the teen was due to give birth.

"At first I didn't care if I had a PAL or not," says Jernigan, who turns 15 in May, a tall girl whose hair is pulled back in elaborate twists. "But then I was really happy when I met Sandy."

For the next several weeks, the two went to prenatal classes and



When Marlana Jernigan (left) delivered Khaliya, med student Sandy Fernando was there.

doctor's appointments together. Fernando was there for support, but, if needed, could also serve as a bridge between physicians and the teen, explaining medical options and language. As the due date grew near, Fernando made sure Jernigan had her cell-phone number, so that she could hurry to Magee-Womens Hospital as her PAL went into labor.

Fernando is one of the approximately 20 Pitt med students each year who volunteer with PALS. The program is designed to help pregnant teens lacking a strong support network. Sometimes, teens' families are too busy to accompany the girls to their doctor's visits, or they simply don't see the need to go. Often, the babies' fathers are uninvolved.

When it was time to deliver, Jernigan was happy to have Fernando by her side. The 11-hour birth included seven hours of cramping before the girl received pain relief. Fernando wheeled a television set up to the room so that the two could review birthing videos to help put Jernigan at ease. She also made a trip to the gift shop for hard candy, a treat for the mom-to-be.

After the birth of Khaliya in October, the two women kept in contact. Jernigan talked to the med

student about her weight concerns. Fernando helped the teen understand different options for birth control, including side effects to expect. Meeting again for the first time in a few months, they hug and tell each other how great they look.

"Did you cut your hair?"

"Yeah! Do you like it?" replies the petite Fernando, whose short dark hair accents her large brown eyes.

"Yeah it looks nice! I just did mine the other day, too. All my friends have been asking me to style theirs, too!"

They speak as if they've known each other for years, as though most of their time together hasn't been while one was wearing a paper gown.

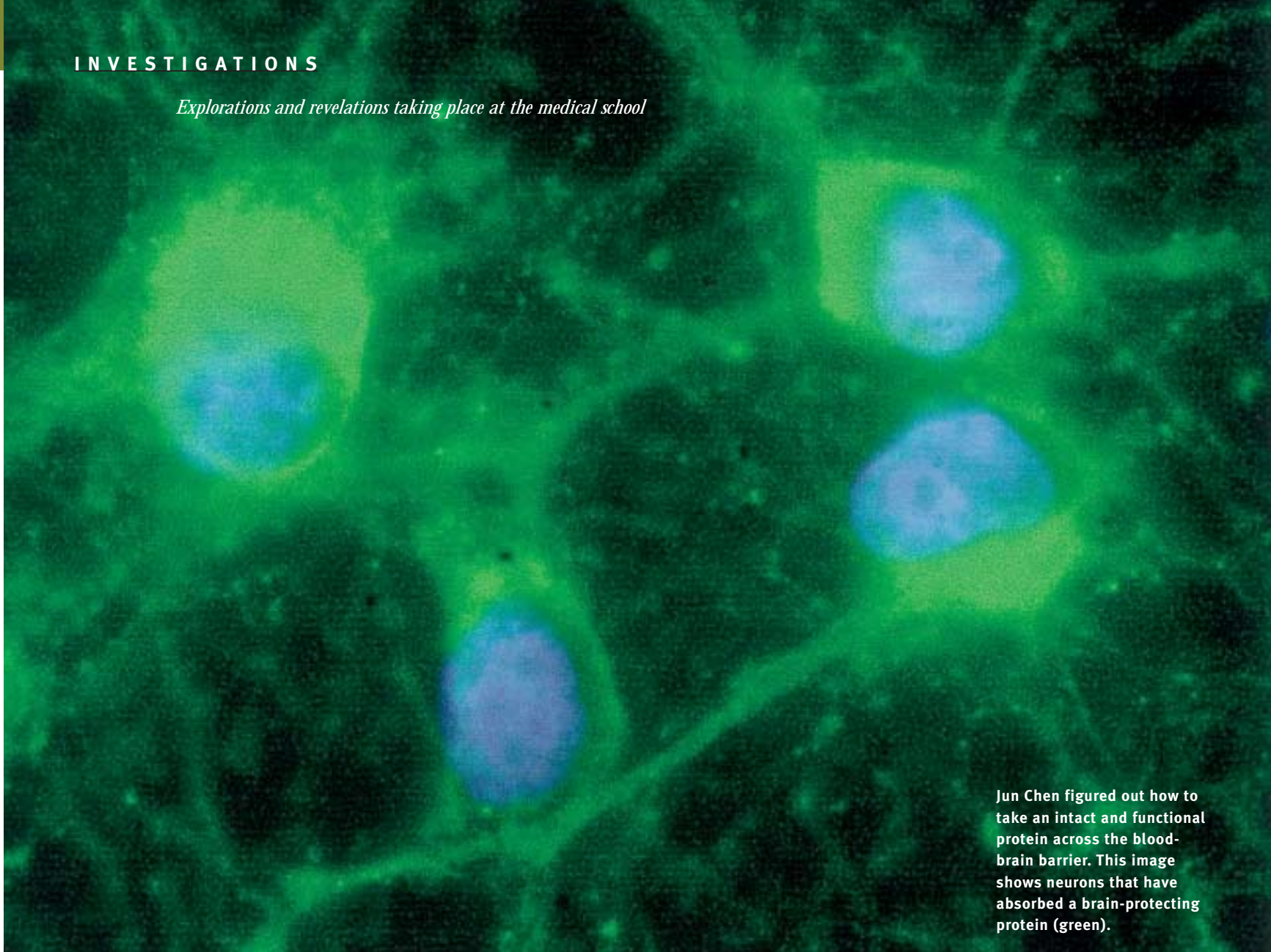
For Fernando, the program was a chance to help someone in a meaningful way and gain clinical exposure during her first year. "Delivery was the most interesting part," she says. "Besides the doctor, I was the only person who could actually see the progress of the birth. I could give Marlana feedback on what was helping in the process, such as what kinds of pushes helped."

And PALS has a new ambassador:

"I try to get all my friends to come here so they can have the same thing I had," says Jernigan. ■

FLASHBACK

In his 1927 book *Pioneer Medicine in Western Pennsylvania*, Theodore Diller wrote that late-18th-century doctors commonly had their apprentices care for the horses and stables, clean offices, shine shoes, chop wood, catch leeches, and, it was rumored, help "the doctor's good wife with the family washing." They also were expected to pull teeth and assist in surgery. The patients, who didn't have the benefit of anesthetics, probably weren't the only ones biting bullets.



Jun Chen figured out how to take an intact and functional protein across the blood-brain barrier. This image shows neurons that have absorbed a brain-protecting protein (green).

CROSSING THE BARRIER

A NEW STRATEGY FOR STROKE | BY TRINA WOOD

Jun Chen sat near the man's bedside, struggling to find a way to tell him there was no more the doctors could do. Paralyzed down the right side of his body by a stroke, the patient could never hope to regain an active life. And though his mind remained sharp, the 50-year-old could no more communicate his thoughts than could a young child.

As a neurosurgery resident at Beijing Neurosurgery Institute, Chen felt helpless each time a stroke patient was brought to the hospital. At the time, during the late '80s, there were no methods to prevent or

interfere with the development of symptoms following cerebral ischemia or stroke. Eventually, his frustration led Chen to give up the bedside for the lab bench.

Now Chen, an associate professor of neurology at the University of Pittsburgh, studies how cells die in cerebral ischemia. In this type of stroke, the blood supply to major brain vessels is blocked. Without sufficient blood, brain cells die a messy death, necrosis, caused by a lack of oxygen and glucose. Scientists once believed that necrosis was the only way cells died during and after a stroke. But Chen is among the first to accumulate evidence that cerebral ischemia also activates apoptosis—in other words, some cells die not from lack of blood, but because they commit suicide.

The only drugs currently available to treat stroke aim to open the blood vessels and re-establish normal blood flow. If cells are dying from apoptosis, reasoned Chen, there might be other ways of treating the disease.

Chen's lab has recently focused on Bcl-xL, an anti-apoptotic protein normally expressed

at high levels in the brain. Previous studies showed that following ischemic stroke, Bcl-xL levels in the brain were much lower than normal. Administering the protein, Chen thought, might help prevent brain damage from stroke. But since a protein cannot be injected directly into the brain, the researchers needed to find a way to cross the blood-brain barrier. Protein molecules, in general, cannot cross this barrier because they are too large or are otherwise ill equipped.

So Chen and his colleague, Guodong Cao, research assistant professor of neurology, constructed a fusion protein. They took the Bcl-xL molecule and latched onto it a sequence of 11 amino acids from HIV, a virus known to cross the blood-brain barrier. (The small HIV sequence does not contain a pathogenic domain of the virus.)

Once Chen and his colleagues had created the fusion protein, they tested it in a mouse model.

In the first part of the study, mice were injected with the Bcl-xL fusion protein before being induced with ischemic stroke. In the

second part, mice were first induced with ischemic stroke and then treated with the fusion protein. The protein provided protection to neurons in both cases, even when administered 45 minutes after the onset of ischemia. That's very promising in terms of a future clinical application, Chen says. The results were published in the July 2002 issue of the *Journal of Neuroscience*.

Chen's research is the first to show that it is possible to take an intact and biologically functional protein across the blood-brain barrier. The new type of therapy is called peptide-mediated protein transduction.

Stroke is one of the top three causes of death in the United States, with medical costs of \$20 billion each year. The National Institutes of Health and the American Heart Association have awarded Chen and his colleagues \$4.6 million to study stroke and Parkinson's disease.

"This technology potentially can be used not only for ischemic stroke," Chen says, "but for other types of stroke and neurological disorders such as traumatic brain injury and epileptic seizures." ■


INTERCEPTING CANCER'S HIT MEN

OLIVER NORTH HAS NOTHING ON

THESE SHREDDERS | BY DOTTIE HORN

No protein lasts forever. Each has its own life span. When it's time, each is degraded and replaced.

The agent of destruction is the proteasome. Its octopus-like tentacles wave and grasp and beckon—pulling proteins into one end of a cylinder. The proteins enter whole and come out the other end chopped into bits and pieces. Think of the cylinders, the proteasomes, as a bunch of shredding machines inside the cell.



Protein-shredding proteasomes get involved in important cellular events like chromosomes being pulled toward opposite poles (shown here). Understanding how these shredders work could lead to new cancer therapies.

In cancer cells, some proteins have a drastically shortened life span. Normally, tumor-suppressor proteins would help stop the out-of-control growth of the cell. But in the case of cancer, the cell degrades the tumor-suppressor protein almost as fast as it is produced. It's as though the cancer cell has put out a contract on all the good guys.

One novel cancer treatment strategy prevents the proteasome from functioning. This is like taking the gun away from the hit man. Without the proteasome, the tumor-suppressor proteins cannot be destroyed. They keep trying to stop the cancer cell from dividing, while the cancer cell's own deviant proteins try to speed division. Then the cancer cell becomes confused from the conflicting messages it receives—Divide! Don't divide! In response, it self-destructs.

But drugs that inhibit the proteasome affect both cancerous and healthy cells. Imagine a more sophisticated approach—one that would have less impact on the function of normal cells. Instead of knocking out the proteasome altogether, what if you could prevent just the tumor-suppressor proteins from being destroyed?

This is where a sophisticated understanding of the steps that lead to a protein's being degraded could prove handy. Yong Wan, an assistant professor of cell biology and physiology, is helping the cancer community better understand those predegradation events. He joined the faculty this spring after completing his postdoc at the Harvard School of Medicine.

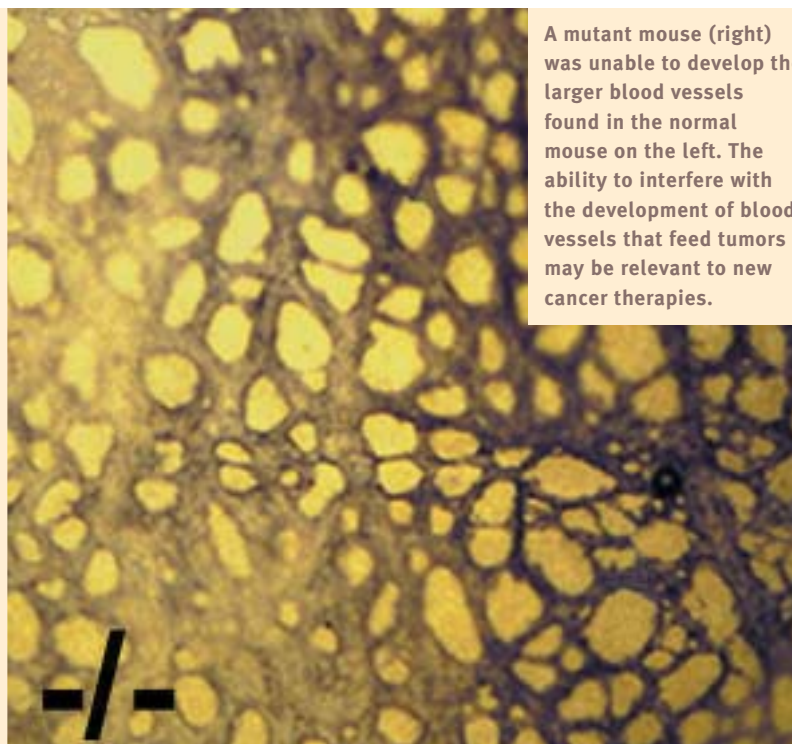
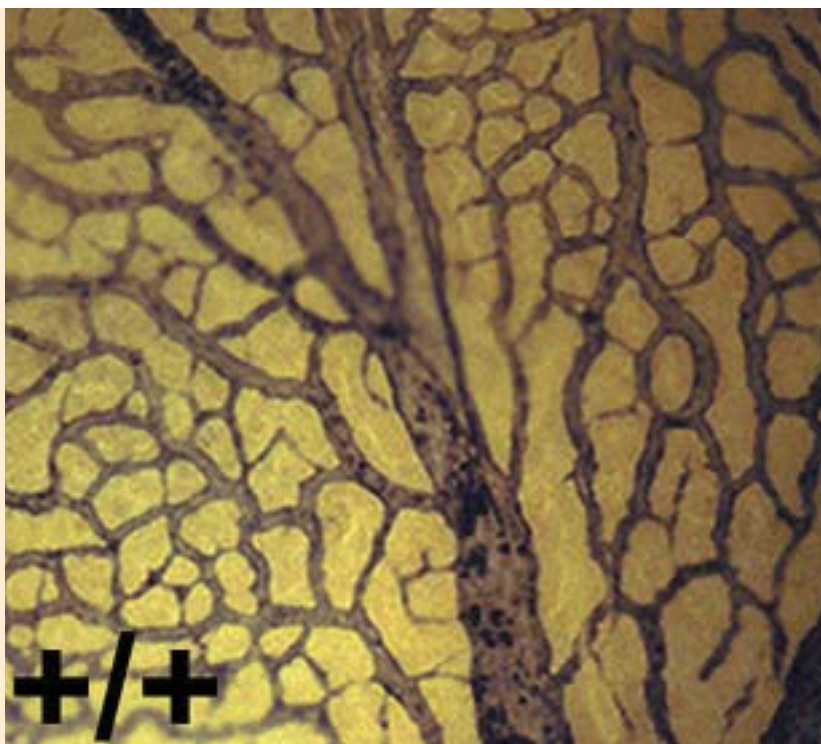
Wan explains that the cell has a system for letting the proteasome know which proteins

to destroy—it tags them with a marker (the protein ubiquitin). Marker molecules form a chain on the ill-fated protein. One enzyme, E3, plays the critical role of linking this marker to proteins. There are some 250 different types of E3—each one specialized, attaching the marker only to certain types of proteins. Say you could inhibit a type of E3 that works only on tumor-suppressor proteins. You would stop the destruction of those proteins, but otherwise proteasome degradation would continue as normal.

Wan has identified four activators and one inhibitor of a type of E3 called anaphase-promoting complex, which is a master regulator for cell division.

“Future therapeutic drug design could be focused on E3,” says Wan.

“This field is very hot.” ■



A mutant mouse (right) was unable to develop the larger blood vessels found in the normal mouse on the left. The ability to interfere with the development of blood vessels that feed tumors may be relevant to new cancer therapies.

COURTESY KWON

HOW TO CUT A TUMOR'S LIFELINE

Cut off a cancer's lifeline and the tumor will die.

That lifeline sprouts up as cancer cells trick the body into growing new blood vessels to feed their incessant division. Controlling the development of those blood vessels has been a focus of new cancer treatment strategies.

Normally, blood vessels form in two steps. In the first stage, a spider web-like network of microscopic capillaries forms. In the second stage, the network is remodeled to include large blood vessels. Yong Tae Kwon, an assistant professor in the School of Pharmacy who recently came to Pitt from the California Institute of Technology, has managed to stop the network's development in its tracks. He has created mutant mice that form the initial network of capillaries but are unable

to accomplish the remodeling—they can't form mature blood vessels. The mice, who also have deformed hearts, die as embryos.

Kwon's work could put a gash in cancer's lifeline. His mice lack what's considered an E3 enzyme (called ATE1). If researchers could inhibit this enzyme in human adults, he explains, they might be able to prevent tumor-feeding new blood vessels from developing—without affecting existing circulatory structures. Kwon's insight was reported in *Science* last July 5.

His findings came about from his investigation of proteasomes—cell structures that do away with proteins by chopping them into bits. In Kwon's knockout mice, the proteasome isn't able to shred certain proteins, leading to deformed hearts and blood vessels. —DH

A MEETING OF MINDS

AS GOES SCIENCE, SO GOES THE

PHD PROGRAM | BY MIKE RANSELL

Holly Scott didn't know what to do. Her research had hit a wall. A few years ago, the graduate student was studying how immune cells move to the lungs to fight tuberculosis infection. To continue her project, however, she needed to dissect a small cluster of inflammatory cells, called a granuloma, from a diseased lung using a laser-capture microscope. Just one problem: The high-powered microscope was in New York City.

Then, at an annual symposium for University of Pittsburgh School of Medicine PhD students, Scott stood next to her poster board in the lobby of the Biomedical Science Towers explaining her research—and dilemma—to Sergio Onate, an assistant professor of cell biology and physiology.

"No problem," Onate said. "You can use our lab." The machine that Scott thought was hundreds of miles away was within walking distance. Stunned, she accepted his offer. Since then, the two labs have formed a strong collaboration.

The graduate program is set up to spur such happy happenstances. There was a time, however, when the multidisciplinary symposium did not exist. Back then, the many PhD programs in the medical school were compartmentalized. Students went straight into their departments of choice; nothing existed to bring students from different departments together.

That changed in 1997 with the creation of the school's Interdisciplinary Biomedical Graduate Program. Now, before students choose a specialty, they spend their first year soaking up a broad cross section of disciplines through course work and three research rotations—each in a different field. Only in their second year do students specialize—choosing from one of nine PhD-granting programs like molecular genetics and neuroscience.

The format requires a little patience for new students champing at the bit to apply themselves to one specialty, but most appreciate the breadth, and program organizers say it helps

students make informed decisions. "Now students who think they want to do biochemistry can apply to our interdisciplinary program and test that interest—have research experiences in cell biology or pharmacology or immunology," says Stephen Phillips, associate dean of graduate studies.

Phillips and others decided to reshape the program because biomedical research was evolving, requiring more cross-disciplinary skills and techniques. For example, genetic engineering was becoming (and is now) a tool common to many biomedical fields. Also, by creating a shared entry point into the program—replete with symposia, seminars, and team-taught courses—students and faculty from different departments could more easily establish bonds that might lead to ongoing scientific conversations and long-lasting research collaborations.

As part of the program's overhaul, the school also tightened its admission standards, requiring a more extensive undergraduate research experience.

The results? In the past two years, the applicant pool has more than doubled, boosted primarily by a larger number of out-of-state and international applicants. The 2002-03 pool numbered a record-high 586.

In addition, applicants' GRE scores are up substantially since 1997.



Scott says she looked at a lot of schools before choosing Pitt. The interdisciplinary nature of the program helped her make up her mind.

"There were a lot of good collaborations going on here," she says, "which is always a sign of a good program." ■

KNEE-KNOCKING PRESENTATIONS

The first poster exhibit we see in the lobby of the Biomedical Science Tower is "Prolongation of Cardiac Allograft Survival in CCL19/CCL21-Deficient Mice." Recognizing only three words—"cardiac," "survival," and "mice"—we read the abstract until our knees start wobbling. Luckily, Bridget Colvin, an immunology PhD student, takes pity on us. She's one of 170 PhD candidates showcasing work during the annual Biomedical Graduate Student Research symposium.

Colvin explains that she tried to determine whether mice lacking two proteins that regulate immune-system response were less likely to reject transplants. She had a microsurgeon graft tissue from normal mice into mutant mice and found that the grafts lasted much longer than those implanted into normal mice.

We walk away, feeling sure of our bearings again, until David Werner's presentation has us leaning toward the refreshment table. Then Werner, like Colvin, makes his work sound simple. The pharmacology PhD student has been investigating whether a certain amino acid influences how mammals respond to anesthesia. Using mice that lacked the receptor for that amino acid, he tested their responses to four chemicals, but their reactions weren't consistent with his hypotheses. "Disappointed?" we ask.

"Just because you don't get what you expect to see, doesn't mean it isn't good data," he replies. "There's always something you can see from the experimental process. It can open up whole new doors, new pathways, new procedures." —JT



MODER SCH

N-DAY WEITZERS

TO CHANGE A CORNER OF THE WORLD

BY DOTTIE HORN

Julian Escobar (Class of '04) was 15 when his mother discovered a lump in her breast. His family, originally from Colombia, had moved to Dallas from Costa Rica a few months before. At the time, Escobar knew only a little English; his mother knew even less. She asked her son to come with her to the doctor.

At the clinic, the staff handed his mother a 10-page medical questionnaire. She gave it to Escobar so he could translate and fill in the answers for her. Some of the words were easy, like *name* and *address*. Some of the questions he thought he could decipher but wasn't sure. He worried that if his translation wasn't right, his mother might get the wrong treatment. And then the teen saw

PHOTOGRAPHY | MARTHA RIAL

other questions to ask his mom: *How many sexual partners have you had? Have you had sexually transmitted diseases? What contraception do you use?*

"It was absolutely horrendous," says Escobar. "My mother reminded me of it the other day. She was incredibly bothered by it, but she had no choice."

When he came to medical school, Escobar wanted to help address healthcare needs among Pittsburgh Latinos, who number about 11,000.

"I know what it is to be in a new place and not speak the language, not know the culture, not know how the system works," he says.

His first week at Pitt, he met Melisha Krejci (Class of '04). As a college student in Tacoma, Wash., Krejci had volunteered at a local emergency room, where she met patients who spoke a variety of first languages.

In time, Escobar and Krejci teamed up to form Students and Latinos United Against Disparities ("SALUD"), to help local Latinos access medical services and health information. A plan took shape for one SALUD project: Every Saturday from 10 a.m. to 1 p.m., the Birmingham Free Clinic on the South Side, run by the Program for Health Care to Underserved Populations and the Salvation Army, offers free medical care to walk-in patients. The students would place volunteers who speak Spanish at the clinic to translate. Then they would promote the clinic among the Latino population as a place where a Spanish interpreter was available.

They began work on the project in January 2002; in April that year they received a U.S. Schweitzer Fellowship to help bring it about.

Nearly 90 years before Escobar and Krejci started their clinic program, the Alsatian physician Albert Schweitzer opened a hospital in Lambaréné, in what is today the West African country of Gabon. He was 37 at the time and devoted his life to tending to the healthcare needs of that region. In 1953, Schweitzer won the Nobel Peace Prize for his humanitarian efforts. The fellowship program named for him helps graduate students in health-related fields launch projects that address unmet health needs by working with existing community organizations. As fellows, Escobar and Krejci are expected to put in at least 200 hours on their project (it has been

more like 700 hours); they share a \$2,000 stipend; and they attend monthly meetings to discuss the progress of their projects. Seven University of Pittsburgh med students were Schweitzer fellows this academic year. Their projects included developing support or educational programs for teens, women over 50 with alcohol or substance abuse problems, and women with HIV or AIDS who miss many of their doctor's appointments. A total of 40 Pitt med students have

received fellowships since the Pittsburgh Schweitzer program started in 1997. (U.S. Schweitzer Fellowships support student initiatives in seven American cities.)

Kerry Sutherland and Jessie Smith (Class of '05) had a plan. In downtown Pittsburgh were former homeless shelters, no longer in use. They would persuade local businesses to donate money. They would deck out one of the unused shelters with nice furniture—creating a club for the homeless that would be a point of contact about services, a place they would take care of together. The students wanted to encourage homeless people to get medical care, so only those who were going to all their doctor's appointments would have access to the club.

They enlisted the help of Jim Withers (MD '84) as a project mentor, hoping to work through Operation Safety Net, a Mercy Hospital outreach program founded by Withers, which provides free healthcare on the streets to Pittsburgh's homeless.

Talking to Withers, they realized—*they were setting up another barrier for the homeless person. They were saying, "Unless you meet our requirements, you're not even allowed into this place that's supposed to be created for your community."*

They vastly revised their plan, developing one that seemed more manageable, more likely to reap benefits: They would create a buddy program for the homeless. Sutherland and Smith would first spend the summer doing research—talking to the homeless, learning about the population. In the fall, they would recruit and train med student volunteers. In the spring, each volunteer would be paired with a homeless person and act as his or her advocate. The students received a Schweitzer Fellowship to help implement the project.

By the summer of 2002, the research leg of Sutherland and Smith's project was in full swing. Their Schweitzer stipend, with funding from Bridging the Gaps and the Medical Alumni Association, allowed them to spend every weekday immersed in homeless culture. They went out with Operation Safety Net night after night, canvassing Pittsburgh's streets and alleyways. One diabetic man they met had a huge sore on his leg. "You need to have that looked at," they said. "But

One diabetic man they met had a huge sore on his leg. "You need to have that looked at," they said. "But it doesn't hurt," he replied.



Escobar (left) knows how frustrating it can be to access the healthcare system when you're new to a country.

"I realized [knowing only one] language was definitely going to limit my ability to be a kind, caring physician who's open to all people and who doesn't turn her back on anyone," says Krejci.

By the time she started med school, Krejci had decided to spend the summer after her first year taking Spanish-language courses in Spain. Learning a new language would be a first step, she thought, toward expanding the population of patients she could serve.



it doesn't hurt," he replied, not realizing that because of nerve damage, diabetic wounds often don't hurt, yet they still need medical attention.

The young women spent one or two days each week at clinics for the homeless, where many patients would get prescriptions for their conditions. The patients could get prescriptions filled at a discount but still had to pay part of the cost. Worries about money led many to devise ways to make medications last longer or to get by on less. *If I take a pill once a day instead of twice a day as prescribed, it might be just as good. Or maybe I'll take it every other day,* they reasoned. They didn't realize how essential it is to complete a full drug regimen.

Why do so many homeless people live on the streets when there are shelters available? the students wondered. Then they visited a shelter and found out. No privacy, no security for personal belongings, little comfort, and lots of rules, requiring, for example, that those who stay must shower and may not use drugs or alcohol.

On a snowy February day, in a deserted Scaife Hall classroom, Smith and Sutherland talk animatedly about

their project. Both are in their 20s; both are earnest and confident; they sometimes finish each other's sentences. Before med school, Sutherland volunteered at a San Francisco emergency room that treated many homeless patients. *How are these people getting help?* she asked herself. *Someone should do something.* Once she enrolled at Pitt, she met Smith, who's from Apollo, Pa. The two spent a night on the streets with Operation Safety Net and eventually decided to get involved.

As they came to know individuals among the homeless, they became more and more motivated to help. "We saw people we connected with. We saw a shining light in them," says Smith. "One guy came close to our hearts." They met him last summer.

Let's call him Ron. Night after night, the two women would approach him, trying to engage him in a conversation. He was always quiet and would say very little. They continued trying to talk to him. By the end of the summer, Ron had changed—he laughed and chatted and walked up to them when he saw them coming. "It's *amazing* how much a

A program started by Jessie Smith (left) and Kerry Sutherland (right) offers street people a human connection.

person can change just by having a little bit of constancy and a relationship," says Smith.

Sutherland and Smith realized they'd achieved something significant. Yes, Ron is still homeless, but he has become a little more trusting, a little more engaged in the world. And he has taught them something important: "The homeless need more than a home, than medical care, than food," says Sutherland. "They need help on a more human level." To think that they boosted Ron's self-esteem and helped him break out of his shell, that was worthwhile.

Their buddy program, they hoped, would offer a human connection. After completing the fall training, program volunteers would be well versed in available community resources and in illnesses common among street people, like diabetes and mental disorders. They would be prepared to go with clients to doctor's appointments, helping patients understand illnesses or treatments. Each volunteer

would be paired with one homeless client, meeting once a week.

"The program provides an incentive to take interest in your own health and life by somebody else taking an interest in you," says Sutherland.

She notes that one of those summer nights on the streets was particularly memorable. The young women were with two other outreach workers when they got caught in a wind and dust storm. Ron invited them into his "home," a patch of concrete under a bridge. The wind blew the dust so hard that for 20 minutes, the group sat together with their eyes closed, crouching on sloping cement, faces buried in their shirts. Their new friend had freely offered what he had to give—a makeshift shelter open to the wind and a little companionship.



Smith and Sutherland spent night after night on the streets getting to know Pittsburgh's homeless.

At this story's deadline, Sutherland and Smith were about to pair med student volunteers with their clients—and they were holding their breath, waiting to see the results of their efforts.

It was Escobar's turn to talk. At this February meeting, the group already knew from previous Schweitzer fellow gatherings that the Spanish-language clinic had been up and running since September. The publicity for the clinic had paid off: On a typical Saturday, from three to five Spanish-speaking patients would visit the clinic during the few hours it was open.

"I'm very, very happy that the project's going so well," Escobar told the group. "But at the same time, it's overwhelming, because it's getting very large. How am I going to deal with this?" When he and Krejci had planned the project, they'd been naïve; they'd never considered the time follow-up care would require.

Phone calls were consuming a lot of his time, Escobar explained. Sometimes, the clinic might arrange for a patient to see a specialist. Escobar or Krejci would call volunteers, trying to find someone who could go with the patient—on a given date and time—to translate.

Other times, the Birmingham clinic would refer a patient to have lab work done. The clinic would get the test results back and hold them until Escobar could call the patient. He might have to call repeatedly, at night or on weekends,

until he reached the person. When he finally got through, he was often seen as an ally, an advocate, a friend. People would tell him personal stories about their families. They would invite him over for coffee or dinner. The phone conversations often took half an hour or more—and sometimes he had to be up at 5 a.m. the next morning for his clinical rotation.

And there was the situation with his cell phone. At a meeting of community leaders where he and Krejci had spoken about their project, he'd given one person his cell number. Now it was circulating throughout the Latino community. One day, Escobar had a call from a man who wasn't sure, but thought he might have had a heart attack that morning. The man had no health insurance and couldn't afford an emergency room visit. "What should I do?" he wanted to know. Escobar never knew what to expect when he answered the phone.

"It's draining," he told the other fellows. "How do you draw the line when you have so much personal investment in something?"

Talking about his frustrations with the other Schweitzer fellows helped him to assess the project and redefine his role in it. He and Krejci decided to recruit and train new

Spanish-speaking volunteers, most of whom will make follow-up calls.

"That takes a lot of weight off my shoulders," Escobar says. "I have better focus now."

Escobar pulls up outside the Birmingham Free Clinic one Saturday in February. The car in front of his sports a bumper sticker proclaiming, "Managed Care Is Neither." He walks inside, into a room where five patients, one with two children, wait to be seen. "Julian, we're so glad to see you," says a nurse. When a woman arrives who speaks Spanish, he takes her to a partitioned-off cubicle. He holds a clipboard, a yellow folder, and a long list of questions.

All morning, in the adjoining cubicle, other medical students interview the clinic's English-speaking patients. The students are businesslike as they read off the form and jot down answers.

The 42-year-old woman in Escobar's cubicle has long reddish hair. Her arms are crossed in front of her; one hand touches her face. Tall and lithe, Escobar leans toward her over his clipboard. The two speak in Spanish. The woman's eyes are often on the form; they seem to be reviewing it together. Escobar marks down information, but stops several times as he and the patient burst out in laughter. Once, he laughs and holds his yellow folder up in front of his face, in mock or real embarrassment.

He interviews other Spanish-speaking patients. Each time there is the same conversational atmosphere with outbreaks of laughter.

Soon SALUD's clinic hours are over. The red-haired woman has received a bottle of eye drops after being evaluated for dry eyes. A woman from Argentina has had her injured heel examined and wrapped. A woman from Mexico was referred for prenatal care. Escobar leaves the clinic with a message from another patient who called that morning: She doesn't know how she will get to her specialist appointment on Monday.

"I just know that I have something that I can give to these people," he says. "Once I know that someone has a need and no one else is providing it, how can I just not do it?" ■

Our August issue will feature alumnus Jim Withers and his work with the homeless.

FOR MORE INFORMATION ON SALUD:
www.pitt.edu/~mgks/salud/salud_main.htm



A HOSPITAL IS BORN

SHE DIDN'T WAIT

FOR PERMISSION

BY EDWIN KIESTER JR.

Amazing what a woman can do with \$5 and a lot of gumption. Visit UPMC Presbyterian and see the evidence. In 1893, Louise Wotring Lyle came to Pittsburgh as a newly minted MD when female physicians were about as common as female shot-putters. Appalled by the health problems of the city's burgeoning immigrant population, she decided that a new, charitable hospital was needed, and that she was the one to organize it.

PHOTOS COURTESY UPMC PRESBYTERIAN



PAGE 17: Presbyterian Hospital on Ridge Avenue, 1900. LEFT: Graduating class of hospital nurses in 1915. ABOVE: Surgery in progress, c. 1914.

The fact that she was a widow with only a year's professional experience, and a mere \$5 in her purse, didn't stop her. She persuaded a North Side landlord to lease her an old three-story house and forego a security deposit, then bought furnishings on an installment plan. She spent one of her precious dollars getting

hospital's trustees, at Lyle's strenuous urging, officially adopted the name Presbyterian Hospital.

Lyle's hospital moved three times on the North Side (then Allegheny City) before it came to Oakland. The founder herself never saw the 12-story structure that is now the jewel of UPMC. But, at 90 and in a wheelchair, she visited the site and gave it her blessing. According to the *Presbyterian Hospital Bulletin*, she turned to her companions and smiled, declaring that "her heart was filled to overflowing with gratitude and thanksgiving because of the result of her work in helping to found the hospital so many years ago." In 1938, six years after her death, Presbyterian began welcoming patients as a University of Pittsburgh teaching hospital.

Founding what grew into one of the nation's leading teaching hospitals was only one achievement of this remarkable woman. She was the youngest of 11 children of a prominent Washington County family. Her father, Abraham Wotring, was a judge so bent on education for his children that he set up a neighborhood academy in his home, where Louise was educated before attending the Washington Female Seminary. At 20, she went off with a clergyman brother-in-law to nurse Civil War wounded, roll bandages, and make hospital supplies. In her travels, she met a young ministerial student, Joseph Lyle, and after the war she married him.

The Rev. and Mrs. Lyle did missionary work in Indiana and Illinois, then served congregations in Homestead and Wheeling. (Lyle plunged into the role of the minister's wife with such energy that she rates her own mention in the history of the presbytery.) Then in 1884 Joseph Lyle died—some reports say he never recovered from war wounds. Louise Lyle was widowed at 41.



Louise Wotring Lyle

the place cleaned; soon after, she pronounced the six-bed hospital ready for patients.

She called it the Louise J. Lyle Hospital, but that name was only a placeholder. Lyle had grown up in a strong Presbyterian family, married a minister, and from childhood had been filled with missionary zeal. She was flabbergasted that Pittsburgh, then the stronghold of Presbyterianism, did not have a sectarian hospital when Presbyterian hospitals were being founded in Chicago, New York, Philadelphia, and elsewhere. She went to the local Presbyterian ministers and asked for support. But, she was to recall decades later, "I was told, 'No money in sight.'" She asked the presbytery, the local church governing body, for permission to name the place "Presbyterian Hospital." They waffled. Lyle acted, referring to her hospital as Presbyterian Hospital before they could reach a verdict.

Within a year, the hospital was in the black. The unstoppable Lyle had successfully proselytized local congregations and persuaded Pittsburgh's most prominent Presbyterian women to constitute the first Ladies Board of Managers, which would be responsible for the hospital's daily operations. In 1895, the

Their Wheeling church had been heavily damaged by a devastating flood. After the reverend's death, Louise stayed on and raised the money to rebuild it. Then she took up temperance work and prison reform. Next she moved to Cincinnati, where she established a free dispensary for women and children and helped found what eventually became the Presbyterian Hospital and Women's Medical College of Cincinnati. Along the way, she founded a hospital in Newark, Ohio, as well as the Cincinnati Visiting Nurse Association. That was not enough; the restless Lyle decided to become a physician. But after studies in Chicago and Cleveland medical colleges, she was called back to Cincinnati to raise funds for the medical college she'd helped to establish. (Reports conflict about why she left Cleveland; one claims grades were an issue.) While fund-raising, she enrolled as a student and earned her MD in April 1892. She returned home to Washington County, passed her state board examinations, and hung out her shingle. Within a year she was in Pittsburgh, setting up her shoestring hospital.

According to the late Ruth Maszkiewicz in her history, *The Presbyterian Hospital of Pittsburgh 1893-1927*, Lyle's favorite leisure pastime was hunting. "She was an expert with a rifle," Maszkiewicz wrote. You might think this sharpshooter would exude a steely determination and toughness. A photo of Lyle shows a woman in a dark, buttoned-to-the-throat Victorian dress. She wears her hair closely cropped, no jewelry, and a no-nonsense expression. Still, you can discern a faint smile and twinkle in the eye. Martha Swearingen, who was in Presby's first nursing class in 1897, saw her as anything but stiff. When she returned for a class reunion decades later, Swearingen described Lyle: "The doctor had a



FROM LEFT: Rounds in the men's ward, a private room, the nursery (all c. 1915).

wonderful personality. She had a quick tongue, a ready wit, and a great many friends.”

She was also a persuasive talker. Every hospital room required a gas stove, Swearingen remembered, but in the early hand-to-mouth days, money wasn't always available. “Dr. Lyle would go out and beg, and usually she came back with the stove, many times with the donor having supplied a boy to carry it to the hospital.” She asked for donations of food, too, and used them to build a culinary reputation. She planned all the menus, supervised the cooking, and even arranged the patients' trays.

She certainly needed all those skills and attributes in the early days. Her first patient—referred by Jane Vincent, Pittsburgh's first woman

to get to the adjacent building. (This led to the wisecrack that “patients never knew whether they were coming or going.”) In 1899 the hospital moved again, to the 90-bed former “Doctor Sutton's Hospital” on Ridge Avenue. Those quarters eventually also proved too small. In 1911, Presbyterian built a new home: a six-story hospital (now part of Mercy Providence Hospital) on Arch Street.

By then Lyle was back in private practice in Washington County. From the first, she had been the hospital superintendent; after the incorporation, she was also named to the board of managers. Then a bizarre incident in 1899 ended her appointment.

One night, a critically ill woman was

the woman had been put to bed in the men's ward for the night. The board agreed that since it was a life-or-death situation, Lyle was right to admit her. However, they noted, she should have moved the male patients elsewhere to maintain segregation of the sexes. The board accepted Shields' explanation, and Lyle offered to resign. Ten of 13 trustees voted to accept the resignation, and sent her off with two months of salary and what the board minutes describe as a “kindly” letter in light of the scandal.

But she did not cut her ties to Presbyterian. As a private practitioner, she continued to send patients there, and, in 1911, at 69, took an active role in planning the new hospital. She helped it through a financial crisis in the early 1920s, when the state cut off funds to religiously affiliated hospitals, and according to a later superintendent, Mary Miller, maintained a continuing interest in the hospital throughout her last days.

Lyle died October 16, 1932, in Buffalo, Washington County, in the home where she was born. The record says she was “active” (probably meaning that she did not retire) until a few weeks before her death.

There is no memorial plaque to its founder in the current Presby, but clearly the indomitable woman with \$5 and a vision was the hospital's cornerstone. ■

Megan E. Sofilka contributed to this story.

Ten of 13 trustees voted to accept the resignation, and sent her off with two months of salary and what the board minutes describe as a “kindly” letter in light of the scandal.

physician—signed in at \$15 a week, but not many followed. It looked like Lyle's dream might die in infancy. Then—godsend!—three nurses from another hospital (seeking “more congenial quarters,” Lyle said in 1922) asked to be accepted as temporary lodgers. Their payments kept the hospital afloat until patients came.

And come they did; 385 were treated in the first year. “From that time,” Lyle said in 1922, “the hospital was full, and many were turned away.” Women came from West Virginia, Virginia, Ohio, Maryland, and elsewhere, surviving arduous horse-and-buggy journeys, to be treated for kidney sarcomas, pleurisy, typhoid, abdominal tuberculosis. By 1895, Lyle said in the 1922 interviews, all debts were paid, and the hospital had a nest egg in the bank.

Soon Presbyterian expanded to the building next door, becoming a 24-bed hospital. But the new hospital was less than convenient: There was no connection between the two structures. To transfer patients between the surgical suite and wards, staff had to wheel patients outdoors

brought to the hospital door. Lyle admitted her. There was no available space in the women's ward, so she placed the dying woman in the men's. According to a story Lyle later told the trustees, she went to the home of a comanager, Anna Shields, and asked for consent in this emergency to lodge the woman with the male patients. Shields, however, maintained that Lyle had not asked her consent, but merely informed her that

TO A DEGREE

Not much was easy about establishing Presbyterian Hospital, but Louise Lyle would have found it even less so without her groundbreaking foremothers. Elizabeth Blackwell was the first woman known to graduate from a medical college. In 1847, the faculty of Geneva Medical College, in Geneva, N.Y., not wanting to deny a qualified candidate, asked the students to decide on Blackwell's admission—whoops! The students thought it was a joke and unanimously approved it. But Blackwell wasn't the first woman doc. Five-foot, pale, high cheek-boned James Barry with small hands and feet passed for a man in the British Army until her death in 1865. Though it had been suggested to her, Blackwell shirked the idea of cross-dressing in order to pursue medicine. Barry, however, did so for more than 40 years, treating royalty and performing the first cesarean section in Africa. By the 1880s, when Lyle was widowed, these women had paved the way for about 470 female certified physicians in the United States. —SZ

“There are 500 different things that can kill the kidney. And they were approached, when I started, as 500 different things that kill the kidney. There was no unified field theory.”



BARRY BRENNER CHANGED THE WAY
KIDNEY DISEASE IS TREATED AND UNDERSTOOD
BY ERICA LLOYD

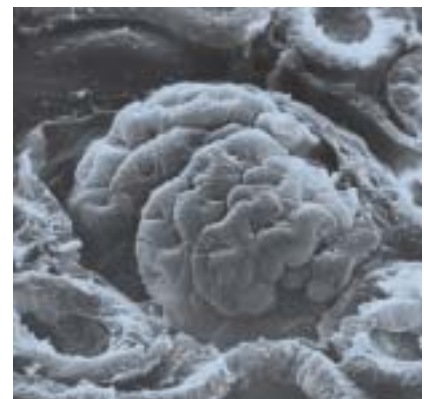
A BIG BANG

It was bound to happen. A renal fellow at Boston's Brigham and Women's Hospital—in all likelihood, someone new to the division—would give a presentation at the weekly research conference.

Let's say the analysis was not well thought through or the data were questionable. At the end of the presentation, Barry Brenner (MD '62), the Brigham's formidable renal division director, would rise and crumple the fellow's handout into a ball, saying, "You've just wasted 40 man-hours on this dreck."

Worse was when he didn't say anything—just stood, balled up the paper, and slam-dunked it into the wastebasket on his way out.

Brenner showed that glomerular failure lies at the root of nearly every renal disease.



COURTESY BRENNER

PHOTOGRAPH | JIM HARRISON

Tough audience. Brenner also required his fellows to rehearse their papers for upcoming conferences in front of the division. If you did okay at that high-voltage session, the “real” conference presentation was cake, recalls Mark Zeidel, who trained under Brenner and is now the chair of medicine at the University of Pittsburgh: “Barry was a much harsher critic than anyone you’d run into at the meeting, and some of them could be pretty harsh.”

Brenner, the Samuel A. Levine Professor of Medicine at Harvard Medical School, is known for his uncanny ability to synthesize information and determine what’s important. He gets impatient with mediocrity and sloth, whether he sees it in fellows, waiters, taxi drivers, or the Red Sox. Still, even trainees who’ve made his ears turn red with fury will tell you Brenner is a generous—and they always speak of him as generous—teacher and mentor. The word around Boston: *Once you’re Barry Brenner’s fellow, you’re always Barry Brenner’s fellow.* He’s interested in making opportunities for people, helping them in their careers, notes more than one trainee and colleague. He didn’t build what is considered to be *the* finishing school for nephrologists merely by being impatient or tough. And under Brenner, Brigham’s division grew to be the largest in the world.

He trained “some of the really great renal physiologists,” says Julian Seifter, associate professor of medicine at Harvard. Among the 200 or so former Brenner fellows: Tom

Hostetter of the National Institutes of Health, Bryan Myers at Stanford University, Iekuni Ichikawa at Vanderbilt University, Zeidel at Pitt, and dozens of other heads or former heads of medicine and of renal centers around the world. Now, Brenner notes, since he stepped down as division director two years ago, he has one fellow: “Me. And I don’t get any trouble,” he says with a wry smile.

At renal conferences, it’s not unusual to see people seeking out Brenner to ask him to autograph his textbook *The Kidney*, which he originally coedited with Floyd Rector. (Brenner is working on the seventh edition.) There are reports of fans having autographed pages laminated and of hanging framed photos of the renal celebrity in their offices. Besides *The Kidney*, Brenner has edited several other well-received books, journals, and

served on almost 30 editorial boards. He’s an author on 600 papers.

“Many of ... the commandments of renal physiology started with him,” says David Mount, assistant professor of medicine at Harvard and an investigator at Brigham.

“Barry Brenner is probably the world’s top nephrologist,” notes longtime friend John Dirks, president of the Gairdner Foundation, chair of the International Society of Nephrology’s commission for global advancement, and a professor emeritus at the University of Toronto.

“What he’s done won’t shut down dialysis centers but will slow them down.”

The Brennens of Brooklyn were taken aback when their son said he wanted to go into medicine. No one in the family had ever gone to a four-year college. Now their boy, who’d graduated early from a commuter college, Long Island University, was being invited around the country for med school interviews. Brenner remembers his first time on a plane, a puddle jumper that took him to an interview in South Carolina. It was the same day Sputnik was launched; he peered out the window, wondering if he might catch a glimpse.

Eventually he landed at Pitt’s School of Medicine. Shortly after his arrival, he spotted a “super genius” from his high school. Panic

“What he’s done won’t shut down dialysis centers but will slow them down.”

washed over him: *My God, how am I going to compete if everyone is at this level?* (The genius from home eventually dropped out of the program.) Brenner moved into a room in Salk Hall. Other medical students stayed there, as did the football team. Day and night the teammates called out plays to each other. More interesting was listening to Brenner’s next-door neighbor, classmate Albert Braverman (MD ’62)—“a really superior intellect. Whatever he said, you learned something. Albert would be in his room listening to all this great music and smoking French cigarettes and not being able to put down his Thomas Mann or Immanuel Kant. All I liked to do was memorize *Gray’s Anatomy*.”

That’s an odd thing to hear from a man known today as an aficionado of fine wine, gourmet cuisine, Schubert, and Klee, who

delights in sharing such pleasures with friends and family. But Brenner the freshman had promised his parents he would get a scholarship; and after all he was there to learn medicine. So despite the distractions of the Panther playbook and great philosophy, Brenner stayed the course. He ended up doing so well on his first two anatomy exams, Professor Rosenthal thought he might be cheating. *What is it, son, that you’re trying to do?*

Brenner realized he could ease up a bit. But letting-up Brenner style translated to volunteering in Harold Segal’s and Abraham Braude’s labs; starting a program for a group of sophomores to work in the pathology lab of Joseph Feldman (where they duplicated famous Frank Dixon experiments); moonlighting at small local hospitals; and signing up for the most rigorous rotations, which meant having Jack Myers and Thaddeus Danowski in medicine as attendings.

“Myers was scary. In those days, when you presented to the attending, everybody stood at the bedside. And you didn’t use notes; you stayed up all night until you were ready,” says Brenner, adding that Myers taught him “a standard”—“He was precise in a way that I’d never encountered before.”

Likewise, Brenner must have impressed his attendings. When he graduated, he was handed the George Heard Memorial Prize in Medicine.

As an intern at the Albert Einstein College of Medicine, he became engrossed with Strauss and Welt’s *Diseases of the Kidney*. Anyone hop-

ing to really understand this organ needed to tackle ion transport, biophysics, biochemistry, thermodynamics, and then some. During Einstein’s famous daily conferences (known as “morning prayers”), where residents were expected to give presentations on scholarly subjects rather than on cases they saw the night before, Brenner talked about the kidney. One morning when Brenner was presenting, someone had invited Robert Berliner, of the National Institutes of Health’s famed renal and electrolyte lab, to sit in. Afterward, the distinguished guest asked Brenner: “What are you doing with the rest of your career?”

After his ascension at morning prayers, Brenner ended up spending a few fruitful years with Berliner at NIH. In 1969, he was recruited by the University of

California, San Francisco, where he started a renal program for the VA hospital. That's where he heard about a curious strain of rats in the Munich lab of Klaus Thurau. For some reason, these animals had cherry red spots on their kidneys. Thurau was stumped. He couldn't figure out what the spots meant. Brenner asked if he could have a look.

Thurau sent a dozen rats to San Francisco. (Only 11 arrived, leading Brenner to wonder what essential 747 cables the escapee might have gnawed away.) It didn't take long for Brenner to realize that the mysterious spots were glomeruli, popping up on the cortical surface of the kidney. Here was a terrific opportunity: Each kidney is filled with a million microscopic nephrons that filter blood. Each nephron is made up of a narrow tubule, on one end of which is a roughly cauliflower-shaped pack of capillaries, the glomerulus. "The wisdom of the kidney," as Brenner puts it, is in how it interprets signals from your body to figure out, no matter what you have for lunch, which ions, toxins, and the like should end up in your urine and which your body needs to reclaim. In the nephron, this process begins in the glomerulus. And until Brenner came across these peculiar rats, most investigators focused on the role of the tubule, paying little attention to the nephron's other end. Scientists didn't know much about the glomerulus because they couldn't get at it; in mammals, glomeruli are usually buried in the kidney. They don't appear on the surface.

Usually around 3 a.m., her husband would wake up with a revelation.

So now Brenner had these bizarre animal models plus a novel micropuncture instrument he'd brought with him from NIH that he planned to use to measure pressures in tubules. He changed his plans. Time to concentrate on the glomerulus. No one knew, for instance, at what pressures the arterial tree pumped fluid across the walls of the glomerulus. Brenner's team (including physician Terrance Daugharty and chief technician Julia Troy, who retired from his lab only recently) found the pressures were much lower than everyone thought.

There was one thing Jane Brenner had to resign herself to: Usually around 3 a.m., her husband would wake up with a revelation, maybe a better title to his latest paper, maybe a new way of looking at physiology. Trusting nothing to memory, he would write it all down on a stack of index cards he kept on his night-

stand. Those index cards brought forth a storm of breakthroughs—from mathematical models of glomerular pressure to defining the exact process of urine formation. They also helped crystallize for Brenner an understanding that would change the way kidney disease was approached, promising to better the lives of millions.

"There are 500 different things that can kill the kidney. And they were approached, when I started, as 500 different things that kill the kidney. There was no unified field theory," says Brenner.

As it turned out, problems with tubules were not the primary cause of kidney disease, glomerular failure was. Brenner's team found that when the kidney is injured, some glomeruli are damaged, and the others take up the slack. Their pressure level goes up, so they form more filtrate. That higher pressure damages the glomeruli that are helping out. "It leads to a vicious circle of progressive injury," notes Brenner. "This second wave of injury is not caused by the original disease; it's caused by the adaptation—which is common to every kidney disease." It became clear: To allow the kidney to survive longer, one needed to lower glomerular pressures. The best way to do that, Brenner found, was with antihypertensive

drugs like angiotensin-converting enzyme inhibitors (ACE inhibitors). Low protein diets also helped slow renal deterioration. (Several scientists, including Brenner, suspected protein injured tubules.)

He recently completed definitive clinical trials on antihypertensive therapies: "Now I can close my lab," he says, satisfied.

Today this eye-opening explanation of the vicious cycle inherent to chronic renal diseases is widely known as the glomerular hypertension theory, or Brenner's theory. Brenner refers to it as his "big bang."

"What he has done eventually will help millions," says Dirks. "If you just take diabetes, 200 million people have it worldwide. Probably one-third of them will get kidney disease."

"There certainly are people who did a lot



ABOVE: China, 1998. Brenner traveled extensively on behalf of the International Society of Nephrology.

of work in the glomeruli," says Zeidel. "But Barry basically defined how the glomerulus works, how it is destroyed, how it is damaged in various kinds of disease, and developed the only effective means we have to slow the damage that happens in the glomeruli. The scope of his contribution is almost unheard of in physiology."

One Brenner family joke (there seem to be a lot of them) goes like this: An old man falls from the curb onto the street, hitting his head. Onlookers rush over to help; one asks, "Mister, are you comfortable?" The man says, shrugging and raising his hands, "I make a living."

Robert Brenner and his sister, Jennifer Ash, have heard their dad tell that one umpteen times. There was a time, about a decade ago, when they didn't feel so much like joking: Barry Brenner was in post-op from bypass surgery. The family was concerned. Dad had made it through the operation, but bypass patients sometimes experienced decreased mental acuity. Robert Brenner, who's also a nephrologist, wondered, would his dad have the same razor-sharp wit? Would he be the man he'd always known?

When the family went to visit him after the procedure, they saw their patriarch on a ventilator with tubes pumping fluid into him and draining it out. A nurse was in his room, attending to him. As she wiped his brow with a cloth, she asked, "Dr. Brenner, are you comfortable?"

The perfect setup line.

The patient slowly shrugged his shoulders, then raised his hands.

He was fine. ■

ON THE MEND NOW,
SHE PEERS AT
BOUJOUKOS BLEARILY.

“HOW’S YOUR BREATH-
ING TODAY?” HE ASKS.

“DO YOU FEEL SHORT
OF BREATH?” LEANING CLOSE

TO HEAR HER ANSWER,

BOUJOUKOS NODS. “SQUEEZE

THIS HAND TIGHT,” HE SAYS.

“TIGHT! TIGHT! TIGHTER!
THERE YOU GO!”

NEW LIFE FOR CRITICAL CARE

BY JASON TOGYER

ICU: THE EPISODE YOU WON'T WANT TO MISS

The beeping of a cardiac monitor and whoosh of a ventilator greet Arthur Boujoukos as he approaches the woman in Bed 15 of the cardiothoracic intensive care unit at UPMC Presbyterian. Resting one palm gently on her forehead, Boujoukos' other hand grasps one of hers. She stirs, almost imperceptibly. "Good morning, dear," he says. "How are you? It's Dr. Boujoukos. Open your eyes."

The woman, who had a coronary bypass a few days earlier, developed colitis in the hospital and was transferred to the cardiothoracic (CT) ICU. On the mend now, she peers at Boujoukos blearily. "How's your breathing today?" he asks. "Do you feel short of breath?"

Leaning close to hear her answer, Boujoukos nods. “Squeeze this hand tight,” he says.

“Tight! Tight! Tighter! There you go!”

Making some notes, Boujoukos, who oversees the CT ICU, steps away from the bed and consults with fellows Paula Gordon and Indra Singh. They move to the computer terminal near the bedside and check the woman’s charts. “No matter what, we should get her out of bed today,” Boujoukos tells Singh and Gordon.

This is one of the most hectic places in Presbyterian; patients come and go quickly, and the 22 beds are rarely empty for long. This morning, Boujoukos, an associate professor of critical care medicine at Pitt, has a full house.

Compared to ICUs nationwide, the CT ICU at Presbyterian is something of an anomaly. It’s overseen by an intensivist—a physician specializing in critical care medicine. Only intensivists or attending surgeons can write orders here; Boujoukas often does so in consultation with other specialists.

More than 4 million Americans are admitted to ICUs each year. But according to the Leapfrog Group, a national consortium of organizations that purchase health insurance, only 10 percent of those ICUs are “closed”—that is, directed and staffed by intensivists. In the bulk of the rest, patients are treated by the doctors who admitted them. This model, called the “open ICU,” is common in the United States, but it severely tests the ability of physicians to manage patient

care, says Derek Angus, an associate professor and vice chair of research at Pitt’s Department of Critical Care Medicine, the first such department in a U.S. medical school.

Physicians whose patients are in an open ICU usually have other responsibilities in the hospital or at their practice, he says. “If you round on the patient in the morning, write a bunch of orders, and go to your office or clinic, you’re relying on juggling things by telephone, or relying on the quality of the nurses or the resident in the ICU,” Angus says.

Leapfrog, the Society for Critical Care Medicine, and other groups now recommend that intensivists be put in charge of ICUs. “They are at the bedside, continuously changing the care plan, evaluating the results,” says Mitchell Fink, who chairs Pitt’s new Department of Critical Care Medicine.

Until recently, policy makers and health-care administrators paid less attention to the ICU than to other areas of hospitals. But recent studies indicate that intensivist-run ICUs would save a lot of money—and a lot of lives.

The concept of dedicated units for the critically ill grew out of the poliomyelitis epidemics of the 1950s. Before development of the whole body ventilator—the “iron lung”—polio was frequently fatal, because patients were unable to breathe. Though the early ventilators saved lives, they were also expensive to operate, and cumbersome. The first “acute care” units opened in Scandinavia in the 1950s to provide an efficient central location for iron lungs.

Other lifesaving medical techniques—some developed during World War II and the Korean War—were also advancing rapidly. So were complications. “The need became apparent to provide life support for long periods for comatose or otherwise unstable patients from any service—medicine, surgery, gynecology, obstetrics, or pediatrics,” Peter Safar wrote years later of his work as an anesthesiologist at Baltimore City Hospital. “I thought, why not have such a unit next to the BCH polio ward, using the same nurses.”

Already, according to Angus, \$180 billion is spent annually on critical care—almost 2 percent of the gross domestic product. ICUs now consume, on average, 25 percent of hospital budgets.

The first physician-staffed intensive care unit in the United States was opened at BCH in 1958. ICUs soon sprung up at hospitals across the country. Safar opened the first ICU at Presbyterian shortly after coming to Pitt in 1961 to chair the new Department of Anesthesiology.

American ICUs developed along a different path than European units, because care in the United States is less centralized, says Angus, a Scot who trained in Glasgow. In Europe, where closed ICUs are universal, anesthesiology residents do much of their training in critical care, and most intensivists are anesthesiologists. In the United States, according to Peter Pronovost, an associate professor of anesthesiology and critical care medicine at Johns Hopkins University, finances drove anesthesia departments to be

oriented toward ORs, where insurance reimbursements were greater.

“There was no ‘owner’ of the ICU system here,” Pronovost says. Instead, most American hospitals adopted open ICUs, where any physician with rights to practice could write orders. Open ICUs—which represent nearly 70 percent of the United States’ 6,000 critical care units—provide continuity of care but don’t have the patients’ attending physicians available to manage emergencies. (Some U.S. ICUs are semi-closed, meaning intensivists manage problems as they arise and primary care physicians and specialists also write orders.) But ICU patients are prone to ailments, like sepsis and respiratory distress, that few office-based physicians treat regularly, Angus says.

Pronovost, of Hopkins, collaborated with peers at Pitt on a study of ICU staffing. Using 35 years of data, the researchers found that where intensivists manned the units—the “closed ICU” model—patient mortality dropped 29 percent. Hospital stays were reduced in about 75 percent of the cases. The resulting article, by Angus and Pronovost, was published in the November 6, 2002 *Journal of the American Medical Association*.

A 2000 review funded by the Department of Veterans Affairs also found that intensivist-

staffed ICUs reduced mortality at significant, and perhaps astonishing, rates. The authors reviewed nine studies that reported drops ranging from 15 to 60 percent. Full implementation of intensivists in American ICUs would save at least 53,850 lives per year, the study concluded.

Experts believe that as the median age in the United States rises, the nation will near a crisis in critical care. Already, according to Angus, \$180 billion is spent annually on critical care—almost 2 percent of the gross domestic product. As early as 1987, a study in the *Journal of Critical Care Medicine* indicated that ICU patients consumed 20 percent of hospital budgets—a cost, per bed, three to four times higher than in regular wards. Michael Breslow, former director of the surgical ICU at Johns Hopkins Hospital, estimates

that, on average, ICUs now consume 25 percent of hospital budgets.

“This is really an area that hospitals should be paying more attention to, because this is where patients are dying, and [hospitals are] spending a huge amount of money,” Breslow told *Modern Healthcare*.

Suzanne Delbanco, executive director of Leapfrog, cites a Dartmouth study that found staffing large ICUs solely with intensivists would cut annual costs by \$5.3 billion. The savings would come from reduced ICU admissions, fewer unnecessary tests, and more efficient use of physician time, she says.

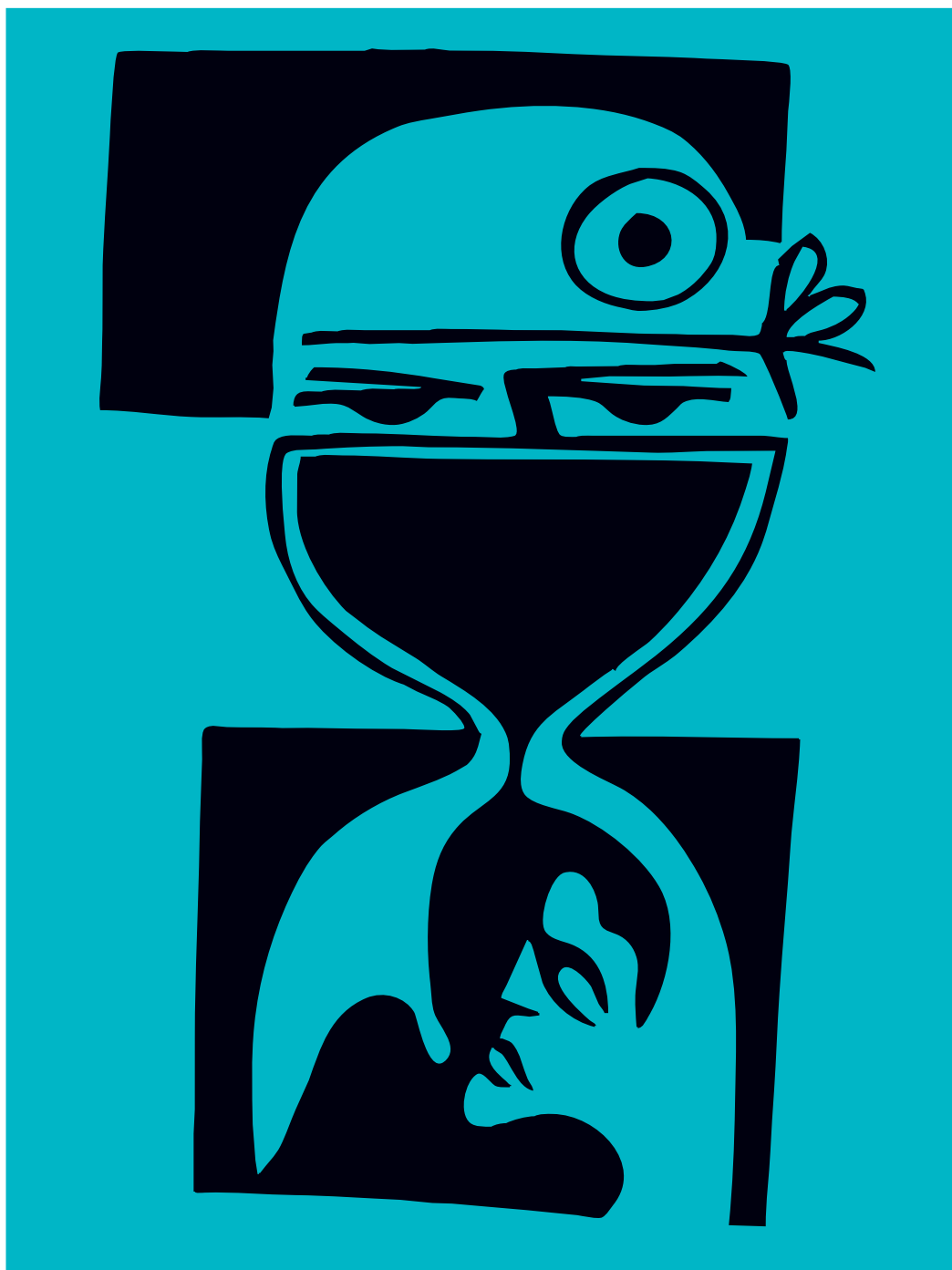
The premise—that doctors trained in ICU practices should be in charge of ICUs—sounds simple. In fact, patients usually assume that’s the case and are “startled” to learn otherwise, says Delbanco. “Most people don’t think about it until they’re there.”

Though the School of Medicine’s CCM department may be the first in the United States, the interest in reforming ICUs suggests it won’t be the last. The academic department, which celebrated its first anniversary in January, could be a model for other schools of medicine to follow.

Pronovost sees Pitt, Hopkins, Harvard, and the University of California, San Francisco as the U.S. leaders in critical care training. Pitt’s new academic department “is quite visionary,” he says. Granting critical care its own academic home, on an equal footing with primary specialties such as surgery and medicine, can help direct needed ICU reforms, notes Pronovost.

Despite the increased interest, proponents of closed ICUs—standard in Canada and Australia as well as Europe—say this country has a long way to go. Medical centers are large organizations, and large organizations are, by their nature, reluctant to change, Fink says. Even with Pitt’s proud history of critical care research, featuring the likes of Safar and Ake Grenvik, the creation of a stand-alone academic CCM department met with some resistance. A lot of specialties have a “vested interest” in critical care, says Fink. He notes that critical care and emergency medicine are the only two specialties defined by areas of the hospital.

A survey last year of 831 practicing physicians, conducted by the Harvard School of Public Health and the Kaiser Family Foundation, found only 34 percent thought that having ICUs staffed by intensivists would “very effectively” cut down on medical errors.



HIEN NGUYEN

Pitt’s CCM department may be the first in the United States, but it’s not likely to be the last.

Angus calls this “the natural history of an evolving specialty.” Reluctance by physicians to adopt closed ICUs will wane as better studies become available, he says. Public pressure may help break down that reluctance; the same 2002 Harvard survey found that 73 percent of the public was in favor of staffing ICUs with intensivists.

Financial pressures will mount as well. Leapfrog is encouraging the employers it represents to ask insurance companies if their hospital coverage complies with its “ICU Physician Staffing” standard. The standard discourages the use of open ICUs.

“It’s about making sure the right care is delivered at the right time to the right person,” Delbanco says.

At 10:30 a.m., Boujoukos, the intensivist in the Presbyterian CT ICU, stops to consult with Ken McCurry, assistant professor of surgery at Pitt and director of lung and heart-lung transplantation for the Thomas E. Starzl Transplantation Institute. One of McCurry’s patients, who awaits a heart-lung transplant, was admitted to the ICU in respiratory distress a few days ago. Now her condition is stable, and she’s

ready to be transferred.

The transplant patient's progress satisfies Boujoukos. More vexing is the patient in Bed 7 with pneumonia, endocarditis, and renal failure. Two weeks ago, he underwent open-heart surgery to repair a damaged valve. Since then, Boujoukos has been at his bedside daily. (He spends about 2,500 hours in the CT ICU each year.)

Patients like the man in Bed 7, who suffers from multiple-organ failure, benefit from the "cross-training" that critical care docs can provide. "In a predominantly closed unit, the intensivist has to know about the management of problems that occur in the ICU setting—regardless of the organ system—and needs to be able to manage those problems on a subspecialty level," Boujoukos says.

Good intensivists don't monopolize care. Because ICU cases involve multiple specialties—accident victims might require an orthopaedist, a neurologist, and a general surgeon—one of the jobs of intensivists is to

ology department, 550 physicians have been trained in critical care at Pitt.

Most trainees take a more direct route than pediatric critical care fellow Mary Hartman. "I was going to work for the EPA," she says.

Hartman was a junior geology major at Mount Holyoke College in Massachusetts when she attended a seminar on environmental issues and healthcare policy.

"It dawned on me that the reason I was interested was because I'm interested in how the environment impacts people," she says. "But I was headed for a career that would have me working alone, riding around in a pickup truck, checking soil samples. I said, 'Oh, my God, I don't want this.'"

Hartman will get her wish. Her chosen field is filled with human interaction and then some. In her routine workday, the immediacy of life and death and disability will be laid bare from moment to moment.

"Critical care is unique," she says. "You have a very intense connection with a patient and their family, and then they're

Rochester Medical Center, is beginning a pediatric critical care fellowship at Pitt. Many pediatric CCM fellows complete their clinical fellowship then spend a fourth year working on research. Hartman is first earning a master's degree from Pitt's Graduate School of Public Health—to learn the statistical methods she'll need for her future research. She begins her clinical work this July.

At Pitt, investigation of new therapies is moving at a rapid pace, notes Fink. (See "Follow-ups" on pp. 29 and 30.) The department was launched with \$5 million in federal research funding; the amount has since risen 80 percent.

"We're starting to get to the point where we can treat the reasons for organ failures, rather than just the organ failures," he says. "This is the best time to be doing critical care medicine. The level of understanding of the biology of critical illness is good enough that we can really make a difference for these patients."

Another priority for training programs like Pitt's is to address the shortage of intensive care specialists.

In 2000, Angus wrote that if current trends continued, the United States in 20 years would need four times as many intensivists.

"I'm not necessarily proposing that we go out and hire another 20,000 intensivists," he says. "For one thing, there aren't 20,000 intensivists to hire; the existing programs are full. But U.S. hospitals, especially in smaller areas, have to consider combining their ICUs to conserve resources."

There may also be room to simplify the training. In Spain, physicians serve a six-year residency in intensive care, which has been a primary specialty for 20 years, Angus says. As the importance of intensive care becomes more evident to insurers, hospitals, and policy makers, Fink predicts, that day will come in the United States.

For now, he jokes, what the field really needs to raise its profile is a TV show: "Instead of *ER*, it would be called *ICU*." ■

Some details in this story were changed to obscure patient identities.

FOR MORE INFORMATION:

<http://jama.ama-assn.org/>
Search Vol. 288, No. 17.

Leapfrog is encouraging the employers it represents to ask insurance companies if their hospital coverage complies with its "ICU Physician Staffing" standard. The standard discourages the use of open ICUs.

keep all of the doctors well-informed and to seek out their expertise. They also ensure that one specialist's recommendations aren't jeopardizing another's treatment.

When Boujoukos started his career in internal medicine, he found he didn't want to narrow his scope to any particular organ system or patient population. Nor did he want an office practice. Becoming an intensivist gave him "an opportunity to stay in multiple fields," he says.

Yet intensive care is still considered a subspecialty in this country. Intensivists start out in a residency in anesthesia, emergency medicine, internal medicine, pediatrics, or surgery. When their residency ends, their critical care training begins. Those who complete surgical or internal medicine residencies do two more years in critical care, for instance. Pediatric intensivists complete a three-year fellowship.

At any given time, Pitt has 25 trainees in adult critical care medicine and 10 in pediatrics. Since 1963, when Safar created a critical care fellowship program within the anesthesi-

gone. The best intensivists really connect with the family very quickly, and learn about them very quickly."

Fink says the relationship between an intensivist and a patient can become as deep as that of a family practice physician—the difference, besides the severity of illness, is that relationships are measured in days or weeks, not lifetimes. Intensivists are "short feedback loop kind of people," Fink says. "And they like dealing with an excess of data rather than a paucity of data. To them, it's not daunting—it's stimulating."

The variety and severity of ICU cases appeal to intensivists, he says.

"It's an enormous palette of problems, ranging from routine post-operative monitoring to multiple organ system failure and multiple trauma," says Fink, who came to Pitt in 1999 from Harvard Medical School, where he was the Johnson & Johnson Professor of Surgery and chief surgeon at Beth Israel Deaconess Medical Center.

Now, Hartman, who recently completed her pediatrics residency at the University of

CLEANING UP BLOOD

A NEW DEVICE GETS NASTY STUFF OUT

BY TRINA WOOD

Medics struggle to lift the inert body of the young soldier onto a stretcher, then pause to take a pulse and measure other vital signs—he is still alive, yet unconscious, with no external sign of injury. Quickly, they set up a blood pump and begin running his blood through a baton-sized filter. Until the medics can reach a hospital and figure out what chemical or biological agent was used in the attack, this small device may keep enough toxins out of the soldier's bloodstream to keep him alive.

While this scenario may seem straight out of a science-fiction novel, John Kellum, associate professor of critical care medicine in the School of Medicine, says the reality of being able to use such technology may only be a few years distant.

His team of basic scientists and clinical researchers, including Mingchen Song and Ramesh Venkataraman, is developing a device that shows promise in clearing noxious substances from blood, including those brought on by biological weapons. Specifically, this device reduces the concentration of inflammatory mediators known as cytokines, produced primarily by white blood cells as a response to illness or trauma. Normally present in small quantities, these proteins cause damage to cells and tissue when present in high levels.

John Kellum and colleagues' CytoSorb is designed to remove harmful levels of cytokines from blood. It will soon be tested in clinical trials. What looks like a Wiffle ball (right) is actually a 500-micron-size bead. CytoSorb is filled with such beads, which absorb only small and mid-size molecules, notably cytokines.

Throughout the past decade, researchers have tried to find ways to either stop the overproduction of these mediators or remove them from the blood. None of their efforts worked very well—until now.

Nearly two years ago, Kellum was working late in his office when an e-mail came through at 2 a.m. Thinking it might be a colleague from the other side of the planet, Kellum read it immediately. To his surprise, the e-mail came from a company called RenalTech in New York. Scientists at RenalTech had read a paper of his describing how inflammatory mediators may be best removed from the blood by absorption. Their chemists had recently developed BetaSorb, a cartridge-shaped device undergoing testing in clinical trials for hemodialysis patients. BetaSorb was designed to remove a class of toxic molecules from the blood (molecules similar in size to cytokines) not efficiently removed by standard dialysis. (These molecules jeopardize the health and quality of life for chronic renal-failure patients.) With a few bioengineering modifications, they felt Kellum could use this existing technology to remove large volumes of cytokines from acutely ill patients.

Joined by collaborators at RenalTech, Kellum's team set to work on a new evolu-

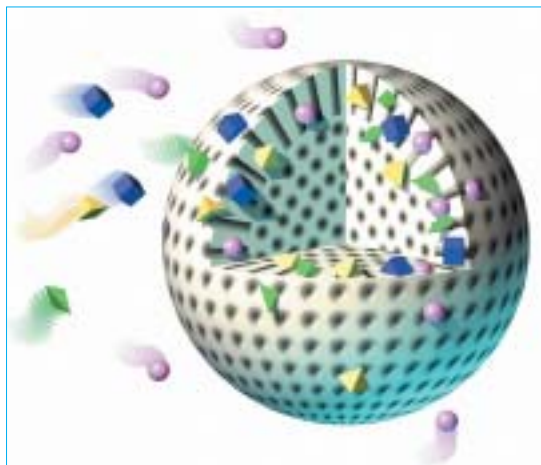


tion of BetaSorb specially designed to absorb cytokines. The end result is CytoSorb, a cartridge about 12-inches long by 3-inches wide, packed with a column of tiny beads (each about 500 microns) covered with pores like a Wiffle ball. Kellum notes this device is novel because each bead is made from a highly absorbent polymer and coated with a biocompatible surface, so that white blood cells don't react to the beads. As blood flows through the device, small to mid-size molecules can get inside the beads where all the absorption occurs, but larger molecules and cells can't.

Within the next several months, CytoSorb will be used in clinical trials for patients undergoing cardiopulmonary bypass. These patients typically experience an inflammatory response owing to stresses of surgery and the bypass machine. Though inflammation is often a normal response to infection, the response in these cases only causes harm because it triggers a massive release of cytokines. Reducing these harmful levels of cytokines may result in better patient outcomes, says Kellum.

CytoSorb could also be used in treating severe sepsis. Transplant recipients whose new organs are suffering from reperfusion injury could also benefit. And victims of bioterrorism or biological weapons are potential target patients, because the low-tech, portable device can be used to purify the blood during evacuation, even before doctors identify the harmful agent.

"This device is potentially cheaper and more effective than drug therapy with a much broader applicability," Kellum says. ■



GREATER THAN THE SUM OF ITS PARTS

PATIENTS WITH THE SAME CONDITION MAY REQUIRE
DIFFERENT TREATMENTS | BY KRISTIN OHLSON



HEN NEUEN

Imagine that two people have survived a car crash and are rushed to the same emergency room. They present the same mix of physiological red flags: Both have suffered trauma to the body and blood loss. Both have similarly abnormal readings for blood pressure, respiration, heart rate, and other factors. The ER team rushes to set their bones, close their wounds, give them blood, and offer other standard treatments. Both patients seem to be stable after 24 hours. Yet days later, one dies in the ICU of multiple organ failure and the other survives.

When faced with trauma or severe infection, the body unleashes a fusillade of cellular and molecular events to reduce blood loss, fight pathogens, and eliminate damaged tissue. Sometimes, though, the response is so overwhelming that it destroys the body it is trying to protect. Why does one patient's inflammatory response save him, while that of another leads to systemic shock or multi-organ failure?

"The inflammatory response is like a game of chess," says Gilles Clermont, assistant professor of critical care medicine at the University of Pittsburgh and an attending physician at UPMC Presbyterian. "We're very good at knowing exactly how the pawn moves and how the queen moves, but we are still not good at knowing how the whole game works." In other words, critical care specialists may know what a certain enzyme is doing but don't understand overall how individual patients will fare in this high-stakes game. "It all has to do with one genetic makeup compared to another," Clermont adds.

Before Clermont joined what's now Pitt's Department of Critical Care Medicine in 1994, he had done graduate work in physics and never lost his interest in that subject, especially in the study of complex systems. This field of study examines how dozens of processes create a global system that is dauntingly more complex and mysterious than the sum of its parts; in particular, researchers in this field look at the indirect effects resulting from the interdependence of many seemingly unrelated or distantly related processes. The study of complex systems has been applied to diverse areas—from environmental woes to economic cycles. Clermont's own graduate thesis discussed complex systems in language formation. At some point in the ICU, he looked at a patient in the throes of inflammation and realized that here, too, was a complex system. He began to imagine a diagnostic tool that could assess the integrated effect of all the inflammatory processes at work in an individual patient and offer custom therapies.

With the help of a National Institutes of Health grant, Clermont and Pitt specialists in mathematics, immunology, surgery, and statistics began developing software that uses mathematical modeling to simulate the interaction of more than 20 key processes involved in the inflammatory response. When this tool receives its final tweaks, emergency and ICU physicians will prepare data for it by taking blood samples from a patient at several timed intervals, even as they begin treatment, and measuring the patient's changing levels of immune cells and cytokines. As they feed this data into the computer model, it will gauge the action and energy of patients' inflammatory responses over time and reactions to treatments.

"The model 'learns' you as it gathers information," explains Clermont. "When we take your last blood sample, it will have zeroed in on who you are as an individual and what will drive your outcome many days down the road." He believes the model will not only be able to determine what kind of drug or combination of drugs a particular patient needs, but it also will be able to determine the best time to administer the dose.

Clermont and his team are still developing the model with animal and human data; a working clinical version probably won't be ready for another three years. However, a partnership between the Pitt team and LaunchCyte, a company that commercializes biotechnology breakthroughs, may deliver another promising application sooner. The partners have founded Immunetrics, a company that markets a version of the software designed to reduce the cost of drug development as well as speed the development of drugs for inflammation-related diseases like sepsis, a frequently fatal response to infection that afflicts 750,000 Americans every year. Using this tool, pharmaceutical and biotech companies could test the action of promising compounds before they ever reach the stage of costly animal trials. In addition, they may be able to run virtual clinical studies that account for the millions of combinations of criteria—the type of patient enrolled, the timing of the drug administration, the dose, etc.—to design more productive human trials.

"This method will replace a lot of trial and error," says Tom Petzinger Jr., CEO and chair of LaunchCyte. "And with the computer, you can do a lot of marginal experiments, too—the ones no one wants to try because they're such long shots." ■

*People and programs
that keep the school
healthy and vibrant*



A MALL OF SCIENCE

TOWERING IDEAS

BY JASON TOGYER AND
MIKE RANSDALL

When the Greek-colonnaded Mellon Institute opened in 1937, prominent Pittsburghers lauded it as “a temple of science.” The impressive building on Fifth Avenue in Oakland was designed as a place for research into the emerging technologies of the day—man-made chemical compounds and atomic energy, for instance.

From the Mellon Institute portico, visitors will soon see another “temple of science” rising a few blocks to the west. Rather than a place for solving the problems of the chemical, steel, and energy industries, this addition to the Oakland skyline will provide a home for research into tissue engineering, the rational design of drugs, nanoscience, and neurological diseases—pursuits that would have seemed far-fetched to the people at the Mellon Institute in the 1930s.

The Biomedical Science Tower 3 may be the most complex structure Pitt has ever built, according to University officials. Construction of BST3—so named to distinguish it from the two current Biomedical Science Towers—should be

complete in 2005. Rising 10 stories above Fifth Avenue, the tower will eventually house 500 people in 50 groups, ranging from basic research to applied technology.

Maybe instead of a “temple of science,” we’ll call this granite and limestone tower a “mall of science.” It’s designed for an easy flow of people (and ideas) from place to place. And the University hopes its laboratories will spur commerce—not shopping, but Pittsburgh’s fecund biotech community.

Pitt will be the primary user of the labs, yet the facilities also will be available for use by other universities and local biotechnology firms.

Beginning at the top and working down, BST3 will provide floors for research into new drug therapies and pharmaceuticals; neuroscience; stem cell and tissue engineering; nanotechnology; proteomics; and computational biology. (That’s the high-performance number-crunching that helps map genomes, among lots of other dazzling applications.)

A major tenant of BST3 will be the Pittsburgh Institute for Neurodegenerative Diseases, a cross-disciplinary group established by neurology professors Michael Zigmond and Robert Moore and now headed by Steven DeKosky. The institute is a magnet for scientists intent on curing degenerative diseases like Alzheimer’s, Parkinson’s, and amyotrophic lateral sclerosis. PIND has been praised by the National Institutes of Health for creating a new model for the study of the diseases that kill nerve and brain cells: Rather than having separate groups tackle individual disorders, PIND brings researchers together to work on a variety of diseases. The institute’s work has already attracted two of the largest gifts in the University’s history—\$10.8 million from the Scaife Family Foundation and the DSF Charitable Foundation; that gift was matched by UPMC.

In addition to these grants, the \$188 million cost of BST3 will be paid with University and state funds, debt financing, and philanthropic gifts. Pitt still must raise substantial funds in gifts for construction.

Besides providing a home for PIND, BST3 fills a strong need for additional space

for all of the health sciences, says Michelle Broido, associate vice chancellor for basic biomedical research. Since 1997, NIH-funded research at the University has nearly doubled, but space for such research has increased more slowly. (BST1 was completed in 1990; BST2 opened in 1996.)

“Any time a new investigator moves in, or an existing investigator develops a new technique, you have to move walls, move benches, move fume hoods—very expensive and time-consuming processes,” Broido says. BST3’s innovative design will permit more flexibility and economy when such moves are required.

The tower will house unique technologies, like very large, very strong superconducting magnets necessary for research into areas such as structural biology. Such technologies will help Pitt recruit top-notch scientists; they’ll also pose tricky design challenges for the tower’s architects (e.g., those big magnets can’t be placed next to elevators)—challenges that are slightly more heady than, say, designing a food court. ■

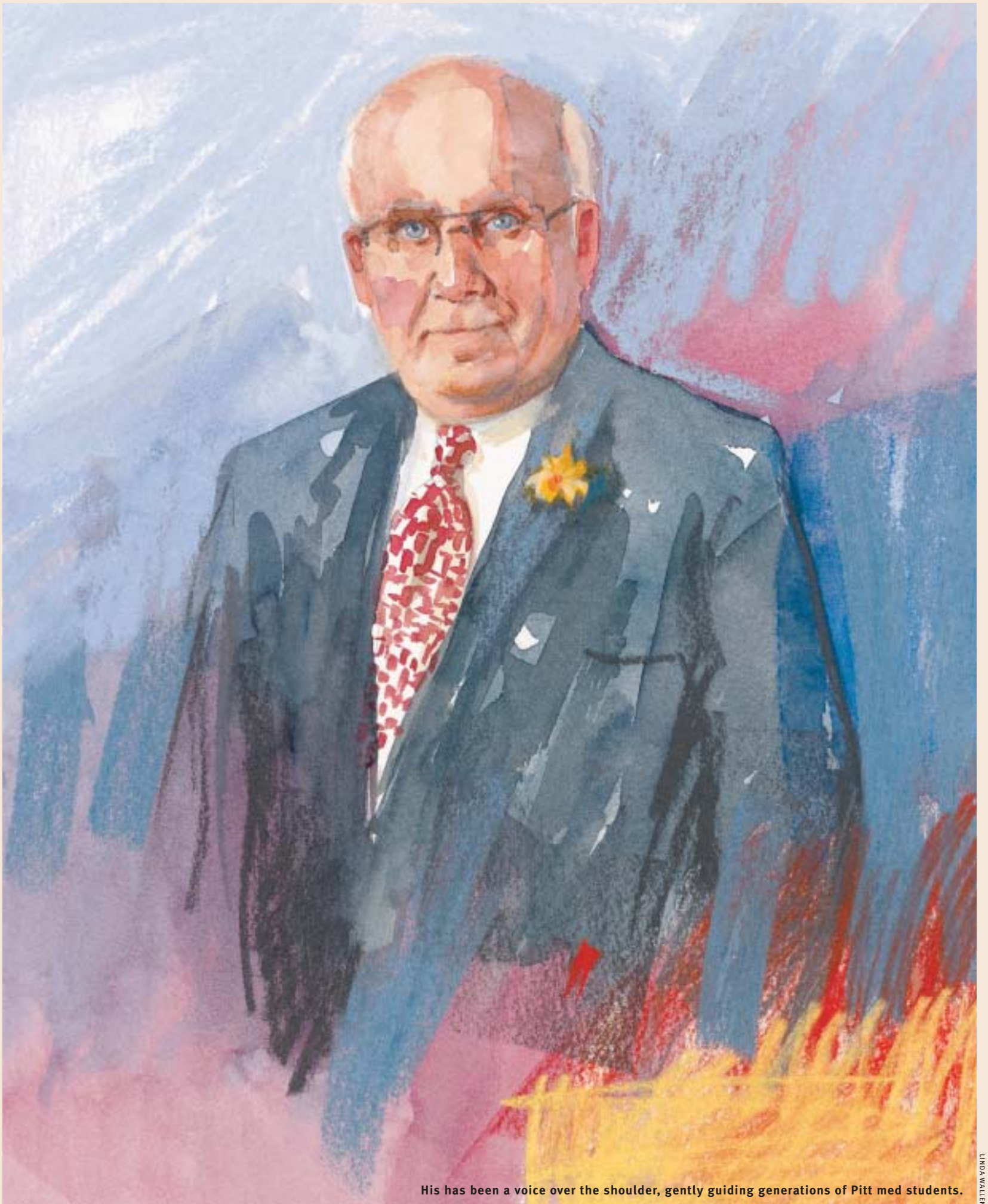
BOOSTER SHOTS

Gilbert Meyers Jr. (MD ’47) carries the “physician gene.” His late father, **Gilbert Meyers Sr.** (MD ’17) attended Pitt, and four of his nine children are MDs. Meyers’ own years in medical school were shaped by World War II. He says his classmates in the army were confined to barracks in the Cathedral of Learning while he and other naval officer trainees got the royal treatment, relatively speaking: As long as they attended classes, the midshipmen could do as they pleased. Recipients of the Class of ’47 scholarship are under no obligation to join the navy, but they might think of Meyers. His recent class reunion rekindled his interest in his alma mater—and inspired him to donate thousands to the scholarship fund.

Last August, New York City lost a dedicated member of its medical community: **Benjamin F. Bryer** (MD ’37). Steven Zaretsky, chair of the New York County Medical Society Special Committee on Workers’ Compensation, says Bryer, who was the vice chair, attended every meeting—even after 20 years on the committee. Bryer, Zaretsky remembers, sympathized with the injured workers as he strived to improve the state’s compensation laws. In the fall, a scholarship funded by Bryer’s \$100,000 endowment will be awarded to a needy medical student of high ethical standards who plans to conduct research. —SZ



Perhaps the most complex building Pitt has ever built



His has been a voice over the shoulder, gently guiding generations of Pitt med students.

LINDA WALLIN

A PHYSICIAN SECOND, A PERSON FIRST

ROSS MUSGRAVE'S EXAMPLE | BY SALLY ANN FLECKER

Years after he trained with Ross Musgrave (MD '43), plastic surgeon Robert Chase (Fel '59) could still hear Musgrave's voice over his shoulder as he taught his own residents the very procedures Musgrave had so meticulously impressed upon him: the care with which tissue is handled, the way wounds are closed, the precise time at which stitches are removed. By the time he trained with Musgrave, Chase already had logged countless hours in the operating room, first training as a thoracic surgeon and later, during the Korean War, as a reconstructive hand surgeon. He recognized skill and finesse when he saw it. Musgrave was precise and exacting. He took pains to pass that discipline along to Chase and the other 124 surgeons he trained throughout his long career.

"I considered him a wound-geometry wizard," Chase, a Stanford University School of Medicine professor emeritus of surgery, says. "Turning flaps of tissue from one place to another required some mathematical study. And Ross was very, very good at that—and very good at teaching that. He seemed like he was interested in anatomical mathematics, like Leonardo da Vinci was."

Chase calls Musgrave "the Leonardo of plastic surgery." It's a grand and generous remark—and one that's fitting. Ross Musgrave has lived his life as surgeon, actor, artist, and teacher—each facet informing the others. For 62 years (minus the few when he was in the army and graduate training), the University of Pittsburgh School of Medicine has been at the center of his professional universe—first as a student; later, after World War II dropped him back into his own life, as a resident; and finally as a Distinguished Clinical Professor of Surgery. He

last wielded a surgical knife in 1990. This past December, after 12 years, he retired as executive director of the Medical Alumni Association. Among friends and family, however, this much is clear: He may cut the ties but not the cord.

Musgrave's reputation extends well beyond the Pitt community. Says Chase, "I'm sure there's not a plastic surgeon alive who doesn't know who Ross Musgrave is." Over the course of his career, he has held every top national post in his field: president of the American Society of Plastic Surgeons, president of the American Cleft Palate–Craniofacial Association, governor of the American College of Surgeons. ("I felt that I had the ability to lead," Musgrave says, "and I took the time to do it.") Many's the award he has received from regional and national medical societies. Pitt honored him with the Bicentennial Medallion of Distinction and both the University's and the School of Medicine's distinguished alumni awards. Most recently, he was handed the first Donald Fraley Award for his work mentoring med students. And each year at the senior luncheon, one of the awards given to outstanding students is named for him—the Ross H. Musgrave Award in Plastic Surgery. He has served as a trustee for both UPMC and the University of Pittsburgh.

Not bad for a boy who started out in a one-room schoolhouse.

Musgrave was born in Economy, a rural town 18 miles west of Pittsburgh. His parents owned an evergreen nursery. The roots of his interest in acting and art harken back to his early days. He learned flower-arranging

working beside his mother and father and found opportunities to act in school.

Artistic inclinations were put on hold in 1940 when Musgrave began the wartime whirlwind of a condensed medical school schedule. By the time he was 22, he had his MD. The call to service came in July 1945: first Camp Polk, La., which, he says, was in "wild, wild, wild country." Musgrave arrived at camp to find there were two openings—one in general surgery, the other in orthopaedics. He had nine months of surgical training under his belt; the other inductee had 12. "I got

They take all afternoon, he'd complain of the plastic surgeons he watched. They put the stitches in. They don't like them. They take the stitches out.

orthopaedics," Musgrave says. He was sent to an army hospital in Sendai, Japan. The 11th Airborne, with its jump school, kept him busy. He treated 1,300 fractures in 13 months.

In July 1947, he mustered out of the army and was married the next month. This summer, he and Norma Jane (his "fabulous" wife) will celebrate their 56th anniversary.

Never did he think he would be so taken with plastic surgery. *They take all afternoon, he'd complain of the plastic surgeons he watched. They put the stitches in. They don't like them. They take the stitches out.* When he found, after a year of training at the University of Pennsylvania and six months of a general surgical residency at the University of Pittsburgh Medical Center, that he was



So easily identifiable by the confident flower in his lapel

being assigned to the specialty services, which included orthopaedic, thoracic, and plastic surgery, he went to see the head of his department. “I thought you

liked me,” he said, confessing that plastic surgery was too slow-moving for him to bear. Instead of getting the assignment that he’d hoped for, he was told, “Go on, kid. It’ll do you good.” And it did. It wasn’t love at first sight—truth is, it took a few weeks of scrubbing in before he appreciated the intricacies of the discipline. But it was true love. Plastics appealed to the perfectionist and the artist within him. God was in the details. Musgrave was hooked.

Through the years he became known for his technical brilliance, especially when it came to cleft lip and cleft palate repair. “He was a superb surgeon for the repair of that kind of congenital abnormality,” says Betty Jane McWilliams, emeritus director of the University of Pittsburgh’s Cleft Palate–Craniofacial Center and emeritus professor of communication disorders. Musgrave was particularly deft in creating the dynamic mechanism, called the velopharyngeal valving mechanism, that separates the oral and nasal cavities during speech and helps one speak normally.

McWilliams remembers giving a presentation at the University of Michigan. She had been monitoring a group of 29 young patients who’d had palate repairs at the center. All 29 spoke clearly, without the nasality or poor articulation of consonants often associated with cleft palate. A colleague stood up and said that he’d not come across that many normal cleft speakers in the course of his entire 40-year career. Musgrave had them all the time; and others on the center’s surgical staff achieved similar results.

No detail was too small for Musgrave’s attention. He applied dressings rather than handing off the task to a resident. (“I insisted my dressings were a work of art where possible—accurate and neat and sparkling,” he says. “That’s your badge of honor.”) The night before surgery, he would stop in to see his patients, meet family members, and answer any last questions. On the day of surgery, he would drop by again. He knew he could cushion anxiety by letting patients

know he was in the building in plenty of time to prepare for the procedure, by letting them see for themselves that he was in great physical and mental shape, all set.

A balanced life is not easy to achieve in a high-pressure profession. More than one medical student at Pitt will recall Musgrave’s thoughts on this matter—a point driven home by the very way that he has approached his own life. In his mid-30s with his career in full stride, Musgrave re-engaged himself in the world of theater. (Several years later he rediscovered his latent talent as an artist when he took his first oil painting class. In February, he mounted a one-man show of his fabric collage work in his winter home of Longboat Key, Fla.)

In regional summer stock and other venues, he found himself often cast in leading roles, co-starring in *The Odd Couple* and *On Golden Pond*. He even managed to get his colleagues in on the fun. Some of Pittsburgh’s most distinguished surgeons could be found dressed in drag, twirling and singing for colleagues. The Pittsburgh Academy of Medicine’s annual musical, of course, was Musgrave’s doing.

Crouching Patient, Hidden Finger. Saving Ryan’s Privates. Productions that gave recent Pitt meders and friends a chuckle might never have come to be without Musgrave. He hasn’t been active with *Scope and Scalpel* in decades, but he served as the student show’s first faculty adviser and is credited with keeping the idea of a senior production alive after the first show in 1955. The good doc has interviewed admission candidates for 43 years and set the tone for incoming students at the White Coat ceremony for the past eight. So well known a figure is he to med students—and so easily identifiable with his elegant suits, the confident flower in the lapel, and his unflinching courtesy—a Ross Musgrave character continues to be lampooned in *Scope and Scalpel* most every year.

Although his work as a surgeon, and even as an actor, gave him a high profile in his

profession, Musgrave would like to be remembered, he says, as a role model and mentor. It’s likely he’ll get his wish.

Gregory Jesteadt (MD ’00), now finishing his residency in family practice at the University of Virginia, remembers first meeting Musgrave when he came to Pitt for his admission interviews. His meeting with Musgrave was the last for the day. Afterward, he was free to go. Instead, Jesteadt found himself chatting with Musgrave into the late afternoon.

The ease of the conversation surprises him even now. Despite the world of difference in their personal interests—Jesteadt is an outdoorsman while Musgrave favors the arts—the two hit it off. The rapport was not an accident. As he did with so many others, Musgrave reached out during the next four years to get to know the student, to understand what makes him the person he is. Jesteadt now carries with him pieces of wisdom shared during those interactions. It’s wisdom he’ll continue to grow into—about thoughtfulness toward patients, about remembering to be a human being first, a physician second. It’s the voice over the shoulder that every young doctor needs. ■



AS TIME GOES BY

WHAT 50 YEARS HATH WROUGHT | BY LOIS M. BARON

In 1952, Martha Dixon Nelson sat across a desk from a member of the University of Pittsburgh School of Medicine faculty. If she were accepted, he said, she would be taking the place of a man. What did she plan to do with her education—get married and quit practicing to stay home and have children? Would their efforts to train her be wasted?

“It was disconcerting,” Nelson (MD ’56) admits. Once accepted though, she wasn’t treated any differently from her male counterparts. The pressure was indiscriminate.

“They put all kinds of stress on us as we went through,” Bernard Miklos, fellow ’56er, says, recalling two huge anatomy exams that made up most of the class grade. “They purposely didn’t give us our grades for a month.” Then, while the students were in the midst of a four-hour class, Davenport Hooker would walk

around handing out grades on two-by-two slips of paper, folded twice.

“He’d look you over and put it down. How could you concentrate with that?”

“A blank paper meant you passed,” continues Miklos. “If you didn’t, there was a U for ‘Unsatisfactory.’ They were very, very strict, and they put you through the wringer.”

The men wore white shirts and ties. Classes met every weekday and half a day on Saturday. Anatomy lasted all year. Students began seeing patients at the end of their second year. Electives? There were none. Robert E. Lee remembers sneaking away to attend pathology conferences: “The surgeon I was supposed to cover for could never find me.”

Half a century later, first-year students are asked to at least look respectable when wearing a white coat. They have six weeks of anatomy in their schedule, are exposed to patients early on, meet in small groups for problem-based learning, and will, eventually, choose electives.

Mapping genomes and dubious claims of cloning humans make headlines today. Nelson, Lee, et al. also gave witness to remarkable times. As they studied, or took breaks at Cantor’s (to get a Coke for a nickel and a sandwich for a quarter), F. John Lewis performed the first open-heart surgery (1952) and Watson and Crick described DNA’s structure (1953). Professor Benjamin Spock was starting a child-development program and, around the corner, Jonas Salk was getting lots of attention. Iron lungs lined hospital hallways; complete blood counts were done manually, taking 20 minutes each. Half the nation’s hospital beds were filled with mentally ill patients. “There were whole wards of

catatonic patients,” says Edwin J. Whitman (MD ’56).

He remembers watching someone die of renal failure in the days before dialysis, “a cruel death.” The first kidney transplant was performed the year he graduated.

Many of Whitman’s friends were from his end of the alphabet, because class was always seated alphabetically.

Row-mate Cyril Wecht doesn’t remember what problems medicine faced when he was in school, but he knows what his class *didn’t* have to deal with: managed care, third-party payers, decreasing fees from Medicare and Medicaid, access to care issues. Current first-year Joe Madia isn’t sure he’s ready for a world where docs stop seeing patients because they can’t afford malpractice insurance premiums: “I can’t imagine.”

Alicia Saunders (Class of ’06) is 30, one of many enrolled today who fit in a so-called “nontraditional” age group at Pitt. (The GI Bill meant the Class of ’56 had several students with more life experience as well.) Saunders is a single parent who cobbles together care for her 6-year-old son with the help of family. A study group makes life easier by meeting at her place. Now and then, she goes out for an evening with other classmates (no 25-cent sandwiches). She includes her son in most extracurricular activities, like serving dinner at a men’s shelter. (It’s not unusual for Pitt med students to spend some of their sparse free time volunteering.)

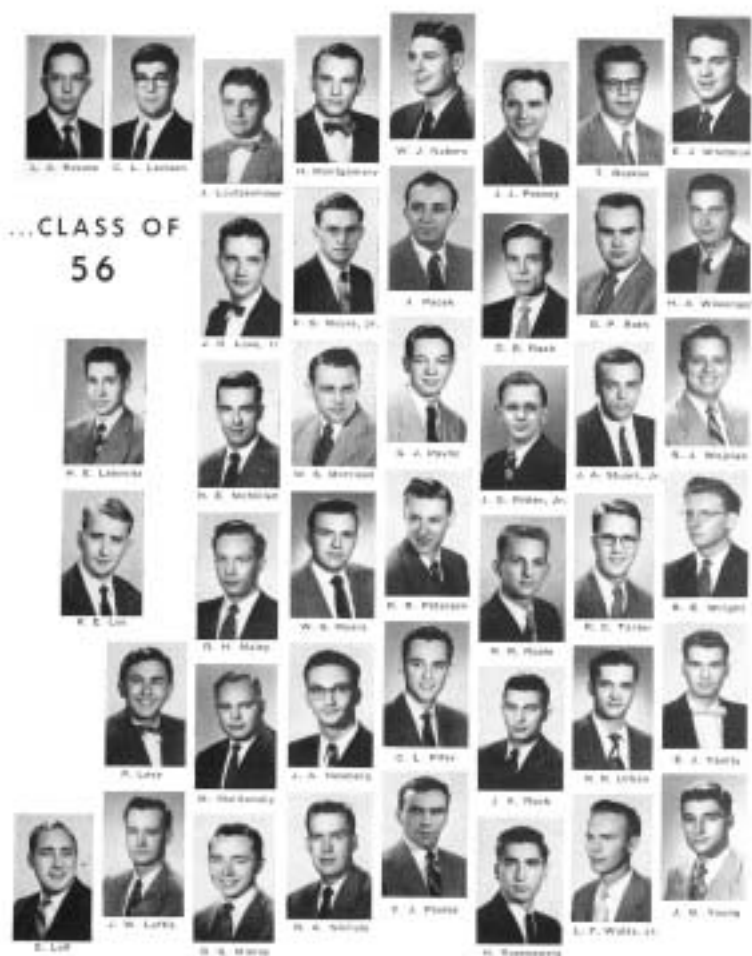
Fifty-sixers came mostly from Pennsylvania. Saunders’ classmates come from all over the country. Nearly half are women; 21 of the 148-member class are from minority groups. Many tried their hand at another career before being accepted. Undergraduate degrees range from the biologic basis of behavior to theater.

Wecht recalls quotas that excluded many. He was one of 10 Jews allowed in his 100-member class. “It’s obscene that only four women were admitted in our year,” he says. Two of the women and 13 men disappeared after the first year.

“Nobody flunks out anymore,” grumbles Miklos in good humor. (He prefers the current system.)

Arturo Torres, of the Class of ’06, agrees, sans grumble, noting that the school will even pay for tutoring if a student happens to falter.

“It’s very competitive to get in,” he says, “but once you’re in, you’re in.” ■





quarterback for Virginia Polytechnic Institute and State University. The son of friend and fellow alum **Dan Kanell** (MD '65) was a quarterback for Florida State University at the same time; both young men later played in the National Football League.

CLASS NOTES '70s

'50s

Edward Berman (MD '56) has been in private practice in Los Angeles for 40 years and has no plans to retire. It's not surprising the cardiologist has so much energy; he has been running since the '40s. Berman has participated in 100 marathons, the last of which was the 2000 Boston Marathon. For years, he ran 12 miles a day to keep in shape for distance events; now he runs about seven miles a day. Many of his running buddies are from the Pittsburgh area.

Joseph Marasco Jr. (MD '57) was the recipient of the Beclere Medal from the International Society of Radiology. The emeritus chair of radiology at St. Francis Medical Center, Forbes Health System, and Ohio Valley General Hospital, all in Allegheny County, Marasco spent much of his career promoting the education and training of radiologists worldwide. He chaired a meeting at the World Health Organization to improve the training of radiologists and other physicians in underdeveloped nations.

'60s

William Furrer Jr. (MD '65) practiced as an orthopaedic surgeon for 17 years in Pullman, Wash., where he was also orthopaedic consultant and team physician for Washington State University. He now works as a medical consultant to insurance companies, evaluating injuries. The new pace is nothing compared to the four hectic years he spent crisscrossing the country when his son was a starting

Gary Quick (MD '72) is an emergency physician at Midwest Regional Medical Center in Midwest City, Okla., and Oklahoma Heart Hospital in Oklahoma City. He also recently became emergency ultrasound coordinator at both institutions. Quick has served as secretary and newsletter editor for the American College of Emergency Physicians Section of Emergency Ultrasound for the past three years.

Richard Hauger (MD '74) says evidence is mounting that anxiety and mood disorders are connected to stress. A professor and director of the neuroendocrine research program at the University of California, San

Diego, he is investigating the connection by studying the molecular structure of two corticotropin-releasing factor receptors that play critical roles in brain and pituitary response to stress. The CRF receptor system is overactive in patients suffering from depression, bipolar illness, and anxiety disorders. Hauger hopes to identify how stress interacts with these mood disorders on the molecular level so that he can create a treatment specifically tailored to each disorder.

Mary Ann Wolak Michelis (MD '75) is president of the medical board at the 683-bed Hackensack University Medical Center in New Jersey and the first woman to serve in that capacity in the center's 115-year history. Michelis also serves as chief of the hospital's clinical diagnostic immunology lab as well as the chief of allergy/immunology for the pediatrics and internal medicine departments. Pitt's Bruce Rabin first piqued her interest in immunology. Then, working with Pitt's Philip Fireman, she says, made her feel like her favorite childhood literary character, teen detective Nancy Drew.

Steven Shapiro (MD '75, Pediatric Neurology Fellow '78-'81, Auditory Neurophysiology Research Associate '81-'82) has been interested in brain damage in newborns since his days working in Aage Møller's lab at Pitt. Shapiro, an associate professor in the departments of neurology and pediatrics at Virginia Commonwealth University in Richmond, studies bilirubin toxicity, which can occur when an infant suffers from jaundice.

Although jaundice is common in newborns, excessively high levels of bilirubin in the bloodstream can cause kernicterus. Children with kernicterus have difficulty controlling their motor functions and often have hearing problems. Shapiro hopes to study the benefits of deep brain stimulation—among other therapies—for children with the disorder.

A. Robert Morelli (MD '76, Pediatric Resident '77-'79) retired after 20 years in private practice with the intent that he and his wife would travel. After only three months, Morelli was bored and started making calls to see if his hometown of Clearwater, Fla., had a pediatric hospice. When he discovered that, nationwide,

WE KNEW YOU WHEN | MARY WILLIAMS CLARK

BY MEGAN E. SOFILKA

It was December, and Mary Williams Clark, a resident at UPMC Presbyterian, was making rounds when her pager began to beep. She called the number, which was answered by a nervous secretary from a local orthopaedic office. "Um, Dr. Williams, we usually send the residents subscriptions to *Playboy* for the holidays ... would you prefer, um, *Ladies' Home Journal*?" Laughing, Clark replied, "Oh, c'mon, I'm not gonna be any different from the guys—send me *Playboy*!" She liked the articles.

Even as a Yale med student, Clark knew orthopaedics would be a field in which she met few other women. Her mentors during her



ABOVE: Mary Williams Clark in a 1975 faculty photo.
RIGHT: Williams Clark more recently, boating with her daughter.

very few of the approximately 53,000 children who need palliative care actually receive it, he helped expand the children's program of the Hospice of the Florida Suncoast. He and his wife are starting to take medical missions to Honduras. His wife hopes to organize a medical library; Morelli plans to help establish a burn unit.

Susan Sprau (MD '78) is determined to improve Medicaid funding in California, which has one of the lowest levels of reimbursements in the nation. Unless the reimbursements increase, she says, fewer hospitals, clinics, and physicians will be able to treat Medicaid patients. Sprau became a legislative advocate with the American College of Physicians– American Society of Internal Medicine after being frustrated by the “bureaucratization” of medicine. As the chief liaison between the ACP–ASIM and the California Medical Association, she has been a consultant on California legislation capping the amount for which patients can sue, in hopes that malpractice insurance costs will decrease. Last year, the ACP–ASIM recognized her service to patients and physicians with the Jeremiah Tilles Award.

'80s Janice Anderson (MD '84) is working part-time at Wilkinsburg's Metro Family Practice, a nonprofit service. (So that Wilkinsburg residents would continue to have access to their services, her colleagues were determined to keep a practice there when the local hospital moved out.) Anderson focuses on improving maternity care in underserved populations. She recently obtained a grant from the United Way of Allegheny County for prenatal care and education. After interviewing groups of women in low-income neighborhoods, Anderson and her colleagues at East Liberty Family Healthcare concluded that they needed to disseminate more information about issues like breastfeeding and the importance of folic acid. She became interested in obstetrics during a rural rotation in North Carolina, when she helped a physician deliver a baby at

the mother's home. Anderson was “amazed” that a doctor could have that kind of impact on a family.

Keith Kanel (MD '83, General Medicine Intern '83–'84, Resident '84–'86) just returned to UPMC to open a practice in general medicine. Kanel used to be a team physician for Pitt athletics. With his partners, he hopes to develop a new model of primary care that focuses on preventive medicine. He says Michael Karpf, a former Pitt professor, inspired him to pursue internal medicine.

RESIDENTS AND FELLOWS

Donald Marion (General Surgery Intern '83, Neurosurgery Resident '83–'89) was a professor of neurological surgery at the University of Pittsburgh until last year. He left to chair the neurological surgery department at Boston University. Marion spent about 15 years studying brain ischemia. When the brain suffers trauma, the blood flow to its tissues is restricted, causing damage. He and others found that cooling the body can prevent such damage.

'90s Shawn Fultz (MD '97, Internal Medicine Intern '97–'98, Internal Medicine Resident '99–'01, Internal Medicine Fellow '01–present) was appointed to the national board of directors of the

Gay and Lesbian Medical Association. Fultz, who will serve a three-year term, hopes to improve healthcare for the gay, lesbian, bisexual, and transgender communities by educating patients and the doctors who treat them. At the VA Pittsburgh Healthcare System, Fultz coordinates a study—based at the Cincinnati VA Medical Center—that examines how spirituality affects the quality of life of veterans suffering from HIV and AIDS.

William Davenport (MD '98) was recently appointed director of the University MedEvac program at Hahnemann University Hospital. He's also the faculty adviser to a student-run clinic associated with Prevention Point Philadelphia, which offers a needle-exchange program. Davenport is a clinical assistant professor at Drexel University and an attending physician in the Hahnemann emergency department. He “loves every minute” he works in the ER. At the same time, he has found a great stress reliever: motorcycle road racing. Davenport is former president of the National Motorcycle Patrol (a group providing first aid to motorcycle racers). He celebrated his graduation from medical school by riding his bike all the way to Honduras. — *MH, MES, & SZ*



The Hippocratean, 1995



THE WAY WE ARE: CLASS OF '92

BY STAR ZAGOFKY

Drew Feranchak (MD '92, Pediatric Resident '92-'95) made his singing debut in the Scope and Scalpel production *Operation Thyroid Storm*. He missed every note, confesses Feranchak, now a pediatric gastroenterologist at Children's Hospital of Denver and an assistant professor of pediatrics at the University of Colorado.

At least country-western singer Naomi Judd doesn't see Feranchak as a potential threat. On behalf of the American Liver Foundation, she presented him with a grant so that he could continue his research into the liver's release of adenosine triphosphate, or ATP, a small molecule that all cells use for energy. His work suggests that ATP can leave cells and attach to

residency at Pitt from 1967 to 1972 were all men, including Albert Ferguson, who arranged for her to spend three months of her residency at Rancho Los Amigos Hospital in California. There she learned about rehabilitation while treating patients in the stroke and amputee/complex-fracture units.

In 1976, Robert D'Ambrosia (MD '64), whose residency at Pitt overlapped with Clark's, was chairing the orthopaedics department at Louisiana State University. The new medical director of Children's Hospital of New Orleans was recruiting staff for the facility and approached D'Ambrosia, telling him, “I need a guy who is an orthopaedist who understands rehabilitation.” D'Ambrosia replied, “I know a guy like that, and I'll call her up.” Clark got the job.

These days, she teaches at Michigan State University and practices at Sparrow Regional Children's Center. Her most lasting legacy, however, may turn out to be *Who Is Amelia?*, which she cowrote. *Amelia* is about caring for children born with congenital limb defects. The American Academy of Orthopaedic Surgeons sends it, free of charge, to any orthopaedic resident who requests it. Clark's reputation has also taken her to *Mister Rogers' Neighborhood*, where she applied a cast to the host's arm to ease the fears of children who may one day have to visit the hospital.



Members of the Class of '92 at their reunion in October

receptors on neighboring cells, triggering various processes. Because most childhood liver disorders are associated with poor bile flow, Feranchak is studying ATP's role in stimulating bile secretion. (Judd suspended her singing career because of chronic liver disease.)

It wasn't singing that temporarily stymied **Evan Baker** (MD '92). Baker remembers when his class operated on pigs during surgical rotation. His group summoned Hank Bahnson when they noticed the pig having problems. The world-renowned cardiothoracic surgeon took one look at the team's work and said, "There's not much we can do here." Baker decided that he wasn't going to become a surgeon. These days, Baker, an assistant professor of pathology at Pitt, is helping to resuscitate Homestead, Pa., where residents elected him to borough council in 2000. When he entered office, the community was reeling from decades of neglect and unemployment. There hadn't been any new homes built for more than 20 years. Baker promised he would focus on community redevelopment, and last year five new houses were constructed.

Had she attended last year's class reunion, **Kathryn Gaydos Clark** (MD '92) could have told Baker about her own government connections—well, a little. She really can't discuss many of her assignments at the Armed Forces Medical Intelligence Center (AFMIC) in Frederick, Md., except with those with the proper security clearance. Clark's team studies infectious diseases around the world like Crimean-Congo hemorrhagic fever, Q fever, and Rift Valley fever.

She recently traveled to South Africa and the Democratic Republic of the Congo to visit hospitals, water treatment facilities, and other health organizations. The data she gathered helps AFMIC estimate the impact of disease on Defense Department personnel. Though she hasn't practiced clinical medicine in more than a year, Clark is content with a job that allows her to travel, frees her from pressure to publish, and even helps her balance career and family. After all, it's not her kids who ask her to leave work at the office; it's the federal government.

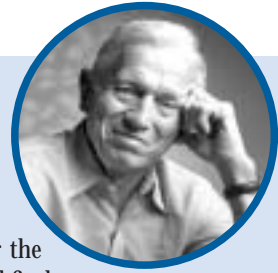
The Class of '92 gathered for an October reunion in Pittsburgh. They attended the Syracuse-Pitt game—the Panthers won with a last-minute field goal. Then 30 alumni and guests went to dinner at Asiago. Classmates Evan Baker, Carolyn Ellis, Christopher O'Hara, and Timothy Klatt planned the get-together.

HENRY T. BAHNSON NOV. 15, 1920–JAN. 10, 2003

Henry T. Bahnson set two goals when he moved to Pittsburgh to chair the Department of Surgery—take the program to national prominence and find a home with a ski hill. He was successful on both counts, though the ski hill came first. Bahnson rigged an automobile engine in the backyard to pull a rope, towing skiers to the top of the hill.

His five children enjoyed it immensely, as did their friend, Bartley Griffith. "He was larger than life," recalls Griffith, now chief of the division of cardiac surgery at the University of Maryland. "He was a great skier and outdoorsman. People just wanted to be led by him." Griffith, who went on to scrub with Bahnson, never forgot the last advice he gave him—be brave and trust in your training.

Achieving a stellar surgical program took a few years longer, but Bahnson pulled that one off, too. Thomas Starzl says it's hard to conceive of the School of Medicine's current status without the man who trained "generation after generation of outstanding surgeons" and set an example of "fundamental, implacable integrity." "A lot of people are great surgeons," Starzl says of his friend, Bahnson, who died Jan. 10 at age 82 after suffering a stroke, "but not very many are great men." —*Chuck Staresinic*



Bahnson



Oliver

THOMAS K. OLIVER JR. DEC. 21, 1925–JAN. 6, 2003

Thomas K. "Tim" Oliver Jr. had his own version of the golden rule. While chairing the Department of Pediatrics at both Children's Hospital of Pittsburgh and the School of Medicine from 1970 to 1987, he didn't ask others to do anything he wouldn't have done. He deliberately chose a small office—8 by 10 feet—so faculty wouldn't complain about lacking space. And Oliver taught an extra clinic that no one else wanted, on Friday afternoons.

"Nobody on the faculty could say they wouldn't do it if the chairman was doing it," says his wife, Lois Pounds Oliver (MD '65).

Oliver loved teaching so much that, at his insistence, the School of Medicine's executive committee rearranged its meeting schedule so he could spend his mornings (including Saturdays) teaching. In 17 years at Pitt, Tim Oliver trained more than 250 residents. Since her husband's death on Jan. 6 at the couple's home in Chapel Hill, N.C., Lois Oliver has received hundreds of letters from his former students and patients who remember his dedication. —*SZ*

IN MEMORIAM

'30s
HUMBERT L. RIVA
(MD '39)
JAN. 21, 2003

'40s
CHARLES W. GABOS
(MD '44)
DEC. 2, 2002

WILLIAM C. HULLEY JR.
(MD '44)
NOV. 30, 2002

MATTHEW MARSHALL JR.
(MD '44)
DEC. 20, 2002

'50s
IRVING S. GOLDMAN
(MD '50)
FEB. 4, 2003

W. LINDSAY JACOB
(MD '51)
FEB. 10, 2003

CHARLES H. TYSON
(MD '54)
NOV. 19, 2002

'70s
LEE A. TRACHTENBERG
(MD '71)
JAN. 10, 2003

NANCY CAROLINE
(FEL '73-'76)
DEC. 12, 2002

FACULTY
A. JULIO MARTINEZ
DEC. 27, 2002

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, ONCE A PRIMARY SOURCE FOR DEATH NOTICES OF OUR ALUMNI, NO LONGER PRINTS AN OBITUARY LIST. WE ENCOURAGE YOU, MORE THAN EVER NOW, TO LET US KNOW ABOUT ALUMNI WHO DIED RECENTLY. (ON THE INSIDE FRONT COVER, YOU'LL FIND CONTACT INFORMATION FOR THE MAGAZINE.)

SCOTT HARRISON: A MISSION OF HOPE

BY MEGHAN HOLOHAN

The lesion slowly eating away at his vertebrae is immobilizing Louis Andanke (not his real name). From his hospital bed in Malawi, the 30-year-old man, suffering from tuberculosis of the spine, looks at orthopaedic surgeon Scott Harrison hopefully. “So you’re the American doctor who is going to cure me.”

Surgery could straighten and stabilize the spine, but Harrison (MD ’63) isn’t sure he should operate. At Hershey Medical Center in central Pennsylvania, Harrison operates on children, in rooms equipped with the latest technology. This southeast African hospital doesn’t even have chest tubes for intubation; Harrison brought his own. It can’t afford to replace surgical gloves, so old gloves are reused. Some of them are full of holes.

The chief of surgery at the hospital pulls Harrison aside. “I can’t forbid you from doing the surgery,” he says, “but we don’t have an ICU.” Harrison knows the chief is afraid the operation will be botched. But as he thinks about Andanke’s excitement at the possibility of a cure, Harrison knows he must operate. Without his help, Andanke will be paralyzed.

The operation goes smoothly. In the back of his mind, Harrison thinks he proved the chief of surgery wrong, and he’s happy that Andanke will walk again. But when the patient awakes, he can’t move his fingers or toes. Harrison is devastated. Between operating on other Malawians, he serves as Andanke’s nurse.



COURTESY HARRISON

Harrison’s organization is building a hospital in Afghanistan.

After a few weeks, Andanke starts moving.

That was 17 years ago. At another doctor’s suggestion, Harrison had agreed to go to Africa on a medical mission—but with some reluctance, because he didn’t know the other physician very well. After Andanke—Harrison’s first patient—made a full recovery, any trepidation the physician had about traveling to Africa quickly faded. In the next several years, Harrison made more than 50 trips to African hospitals, often performing operations all day and into the night.

For relaxation, Harrison, an avid hunter since high school, went on several safaris. But this combination of sport and surgery “didn’t sit right,” he says. “You have to get mentally prepared in different ways, and it was too much to do both.” And all around the impoverished countryside, Harrison could see that trained physicians and modern hospitals were desperately needed.

In 1996, he and his wife, Sally Harrison, made a decision: They would stay in Africa and open a hospital in Kenya. Within a year, a rehabilitated building in Kijabe, north of Nairobi, became the first hospital in Harrison’s new non-profit organization, CURE International.

CURE now has three operational hospitals in Africa, with two more about to open in Afghanistan

and the Dominican Republic. Each facility is tailored to the specific needs of an area: In a region with a high percentage of limb deformities, for instance, the hospital will focus on orthopaedic surgery. Besides much-needed healthcare, the hospitals offer among the few learning opportunities available to young doctors and nurses in developing nations.

“Scott’s a world-class physician, and he’s also a very good businessman, with a quick mind, confidence, and stability,” says Rex Lysinger, who grew up with Harrison in McKeesport, Pa., and later attended the University of Pittsburgh with him. Now a retired CEO of a diversified energy company, Lysinger sits on CURE’s board of directors. “I don’t have too many heroes—very few of them—but Scott is one.”

Lysinger tells a story of when CURE was trying to start a hospital in Uganda. Government red tape delayed the organization at every turn: No land, no visas for doctors, no health permits. Finally, CURE representatives met with the wife of President Yoweri Museveni. “If you need land, we’ll find it,” the first lady said. “If you need permits, we’ll get them.” The Americans were stunned. Why was she so eager to help them?

“We have been praying for years for someone to build a hospital and take care of our children,” she said.

Patients like Andanke inspire Harrison to persevere. Andanke still writes to Harrison; he told the doctor how scared he was back in 1986. He didn’t want to show it at the time, because he thought Harrison wouldn’t operate on someone who was so afraid. ■

MEDICAL ALUMNI ASSOCIATION OFFICERS

PAUL M. PARIS (MD ’76)
President

FREDDIE H. FU (MD ’77)
President-elect

STANLEY M. MARKS (MD ’73)
Vice President

GRAHAM JOHNSTONE (MD ’70)
Secretary

PETER FERSON (MD ’73)
Treasurer

ROBERT E. LEE (MD ’56)
Historian

JOHN F. DELANEY (MD ’64)

RICHARD RAIZMAN (MD ’71)

JOANN VIRGINIA NARDUZZI (MD ’62)

CHARLES M. HEFFLIN (MD ’74)

Members at Large

SUSAN DUNMIRE (MD ’85)

Interim Director

M-200k Scaife Hall
University of Pittsburgh
Pittsburgh, PA 15261

tel 412-648-9090; fax 412-648-9500
medalum@medschool.pitt.edu



All of 5 feet tall, Davenport Hooker was an imposing figure in the School of Medicine. As the chair of the Department of Anatomy from 1919 to 1956, Hooker was often the barrier between the first and second year for Pitt med students. Macy Levine (MD '43) won't soon forget him: "He had a loud booming voice, and he commanded attention. When he said something, you listened." On the off chance students weren't listening, they'd be dealt a piercing blow from a whistle (shown here), which the professor carried primarily to herd students into lecture. (Please send your Hooker memories to medmag@pitt.edu or the editorial office address on the inside front cover.)

WHISTLE, TOM ALTANY. PORTRAITS OF HOOKER, *THE HIPPOCRATEAN*

C A L E N D A R
OF SPECIAL INTEREST TO ALUMNI AND FRIENDS

INAUGURAL ALUMNI WEEKEND

MAY 15–18

CLASSES CELEBRATING:

1938	1973
1943A	1978
1943B	1983
1953	1988
1958	1993
1963	1998
1968	

For information
Medical Alumni Association
412-648-9090 or 1-877-MED-ALUM
medalum@medschool.pitt.edu

SENIOR CLASS LUNCHEON

MAY 16

The Twentieth Century Club
11:30 a.m.

For information
Medical Alumni Association
412-648-9090 or 1-877-MED-ALUM
medalum@medschool.pitt.edu

SCHOOL OF MEDICINE SCHOLARSHIP TEA

MAY 16

University Club
3:30 p.m.
For information
Medical Alumni Association
412-648-9090 or 1-877-MED-ALUM
medalum@medschool.pitt.edu

RECEPTION HONORING RALPH KNISELEY (MD '43)

MAY 16

Falk Library for the Health Sciences
3:30 p.m.
For information
Medical Alumni Association
412-648-9090 or 1-877-MED-ALUM
medalum@medschool.pitt.edu

ANNUAL ALUMNI DINNER DANCE

MAY 16

Pittsburgh Athletic Association
6 p.m.
For information
Medical Alumni Association
412-648-9090 or 1-877-MED-ALUM
medalum@medschool.pitt.edu

SCOPE AND SCALPEL

MAY 16 AND 17

The Sopranolols
Carlow College Auditorium
7 p.m.
For information
Sing Tsai (Class of '03)
info@scopeandscalpel.org

ALUMNI BREAKFAST

MAY 17

“Celebrating Excellence”
University Club
8:30 a.m.
For information
Medical Alumni Association
412-648-9090 or 1-877-MED-ALUM
medalum@medschool.pitt.edu

ESTATE PLANNING BREAKFAST

MAY 18

“Take a Bite Out of Estate Taxes”
Holiday Inn Select—University Center
9 a.m.
For information
Medical Alumni Association
412-648-9090 or 1-877-MED-ALUM
medalum@medschool.pitt.edu

GRADUATION CEREMONY

MAY 19

Carnegie Music Hall
10 a.m.
For information
Student Affairs Office
412-648-9040
student_affairs@medschool.pitt.edu

CLASS OF 2007 WHITE COAT CEREMONY
AUG. 10

Lecture Rooms 5 and 6, Scaife Hall
For information
Student Affairs Office
412-648-9040
student_affairs@medschool.pitt.edu

CLASS OF '48 REUNION

SEPT. 19–21

Hidden Valley Resort
Somerset, Pa.
For information
Medical Alumni Association
412-648-9090 or 1-877-MED-ALUM
medalum@medschool.pitt.edu

THE FUTURE'S SO BRIGHT

Pitt med graduates have a bright future ahead of them. But many also carry hundreds of thousands of dollars in student loan debt. In some cases, financial concerns eclipse their desire to teach, conduct research, or pursue less lucrative specialties, like primary care. Gifts to the School of Medicine's scholarship funds are like rays of sunshine to new physicians. To find out how you can light up a career (it will warm your heart as well) call the Office of Alumni and Development at 1-877-MED-ALUM.

UNIVERSITY OF PITTSBURGH
SCHOOL OF MEDICINE
SUITE 401 SCAIFE HALL
PITTSBURGH, PA 15261

CHANGE SERVICE REQUESTED

LET'S CATCH UP

TELL US YOUR NEWS: CAREER ADVANCEMENTS, HONORS YOU'VE RECEIVED, APPOINTMENTS, VOLUNTEER WORK, PUBLICATIONS . . . AND WE LOVE TO HEAR OLD PITT MEMORIES.

NAME _____

DEGREE/PROGRAM/YEAR _____

ADDRESS _____

CITY, STATE, ZIP _____

HOME TELEPHONE _____

BUSINESS TELEPHONE _____

E-MAIL _____

PLEASE PUBLISH MY E-MAIL ADDRESS. YES

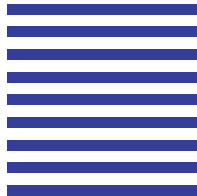
NO

NEWS _____

TO GET US YOUR NEWS, DROP THIS IN THE MAIL. YOU MAY ALSO
FAX: 412-648-1813 OR E-MAIL: medmag@pitt.edu



NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES



BUSINESS REPLY MAIL

FIRST-CLASS MAIL PERMIT NO 1752 PITTSBURGH, PA

POSTAGE WILL BE PAID BY ADDRESSEE

SCHOOL OF MEDICINE
MEDICAL ALUMNI ASSOCIATION
UNIVERSITY OF PITTSBURGH
4200 5TH AVE
PITTSBURGH PA 15213-9910



WAIT!