University of Illinois at Chicago

2012-2013 Academic Year

Department of Chemistry

THE CHEMICAL BOND

Contents

Advanced Chemical Technology Building

Transformative. Energizing. A renaissance for science and engineering at UIC.

That's how UIC researchers in chemistry, biology and physics describe the $104 million Advanced Chemical Technology Building announced Aug. 29 by state and campus dignitaries, including Gov. Pat Quinn.

"This facility is more than a building," said Chancellor Paula Allen-Meares at last week's press conference near the facility's future site, just south of the Science and Engineering South Building.

"It is the tangible commitment that UIC is serious about interdisciplinary innovative, cutting-edge research collaborations to expand our knowledge for and our contributions to the betterment of humankind."

The ACTB will foster interdisciplinary research in neuroscience, nanoscience, bioscience and other areas. Construction will begin in FY14 and take about 30 months to complete.

The building could be a "change event," said University President Bob Easter.

Continued on next page

UIC UNIVERSITY OF ILLINOIS AT CHICAGO Department of Chemistry
COLLEGE OF LIBERAL ARTS & SCIENCES

“I read once that interdisciplinary research is what makes science fiction, science reality,” he said. “We have the opportunity here for real innovation.”

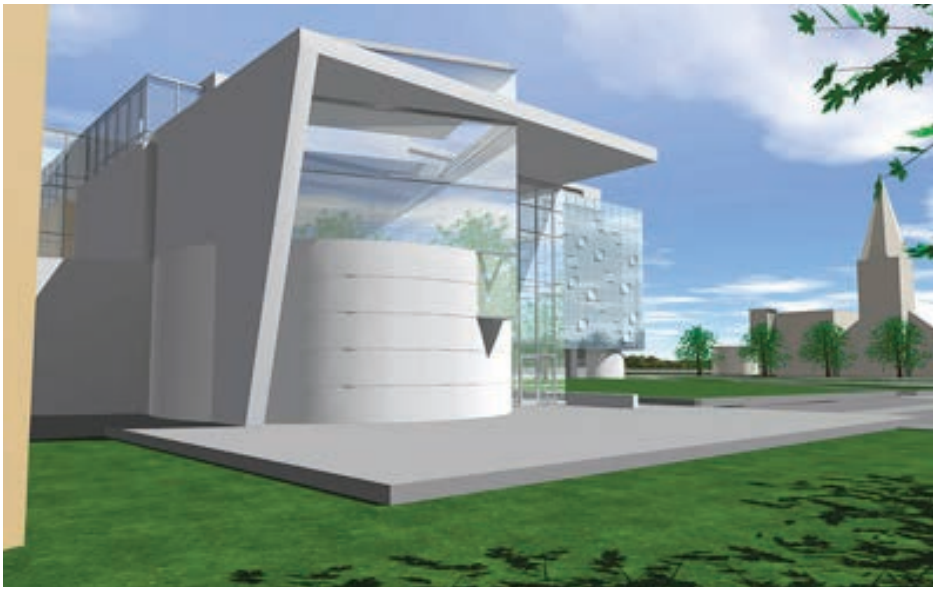
The ACTB has been in the planning for two decades. The legislature approved construction funding for FY03 and a design was approved by the University of Illinois Board of Trustees in November 2004. Last week, Quinn announced the release of $64 million in state funds for the project. The university will pay the remaining costs.

“The best investment a state can make is in education,” Quinn said. “We believe in our students and we want them to stay in Illinois after they graduate.”

With a design that encourages collaboration between scientists, the building will have space for researchers in chemistry, biology and physics, working on projects related to areas such as tumor growth, HIV/AIDS, immunology, dentistry, orthopedics and environmental science.

“The new building promotes interactions that may be transformative,” said Brian Kay, professor and head of biological sciences.

The ACTB will provide much-needed space for synthesis laboratories, lasers, spectrographic instruments, cell and tissue culture and other experiments sensitive to vibration and temperature, said Luke Hanley, professor and head of chemistry.



Its conference facilities can host seminars that bring researchers from all the sciences and engineering together, Hanley said.

“The new ACTB offers the possibility of a renaissance for science and engineering on the UIC campus,” he added.

The building will be designed for top ratings in sustainability, with a Leadership in Energy and Environmental Design (LEED) standard of silver or higher.

“This building and the researchers who will occupy it are a game changer for UIC,” said David Hofman, professor and head of physics.

“It will put UIC science on the cusp of research for the 21st century.”

Article by Jeanne Galatzer-Levy, borrowed graciously with included pictures from UIC News – the official newspaper of the University of Illinois at Chicago

Chemistry Administration

Luke Hanley
Department Head

Directors

Scott Shippy
Director of Graduate Studies

Donald Wink
Director of Undergraduate Studies

Duncan Wardrop
Associate Director of Graduate Studies

George Papadantonakis
Director of General Chemistry

Program Development

Leslie Fung developed and taught Chem 458, Biotechnology and Drug Discovery - an elective course for undergraduate majors in Biochemistry. Dr. Fung has written a report detailing the success of her course.

Mike Trenary developed and taught Chem 541, Introduction to Surface Chemistry and Catalysis

Ginevra Clark completely revised the curriculum of Chem 130, Survey of Organic and Biochemistry, which serves as our sophomore chemistry for pre-nursing course. Students who take Chem 112 and 130 at UIC are now given preferential placement in the UIC Nursing professional program.

Robert Gordon revised the curriculum for Chem 543, Physical Chemistry II (Spectroscopy) and may develop the revised material into a book.

LAS Distinguished Professor of Chemistry, **Martin Newcomb**, has started new sections of Chem 232 and 234, Organic Chemistry I & II with the intent of retaining undergraduate students who would otherwise transfer to a new major after their sophomore years.

Faculty Spotlight

Vladimir Gevorgyan

Vladimir Gevorgyan received his BSc from the Kuban State University in 1978, and PhD from the Latvian Institute of Organic Synthesis in 1984. After two years of Postdoctoral research (1992-1994, JSPS- and Ciba-Geigy International Postdoctoral Fellowships) at Tohoku University, Japan, and a visiting professorship (1995) at CNR, Bologna, Italy, he joined faculty at Tohoku University (Assistant Professor, 1996; Associate Professor, 1997-1999). Vladimir Gevorgyan joined UIC as an Associate Professor in 1999. He was promoted to the rank of Full Professor in 2003. In 2012, Vladimir Gevorgyan was named an LAS Distinguished Professor. He was elected UIC Researcher of the Year (2008), Honorary Professor of St. Petersburg State University (2012), UIC University Scholar (2012).

The Gevorgyan group is interested in development of regio- and chemoselective transition metal-catalyzed annulation reactions and their application in the synthesis of multifunctional, polysubstituted aromatic compounds; development of novel transition metal-catalyzed methodologies for the synthesis of heterocyclic compounds; development of novel direct and directed C-H functionalization methods; development of robust methodologies amendable for synthesis of small molecules libraries for wide biological screening. The focus of these projects is application to develop new methodologies that can be used to synthesize molecules that are valuable building blocks in synthetic organic chemistry and material science and are of pharmaceutical relevance.

Faculty Spotlight

Donald Wink

In undergraduate chemistry I continue to work on general education for pre-service elementary education majors through an interdisciplinary course that I will co-teach in Spring, 2013. I also continue to work with teachers in the Chicago Public Schools. We have concluded work on a five-year curriculum and professional development project with Loyola University Chicago for 11 high-need schools that impacted over a hundred faculty (about one-third chemistry) and about 20,000 students. This led to the current Chicago Transformation Teacher Institutes, an NSF Math Science Partnership where UIC is the lead institution among five universities (also DePaul, Loyola, IIT, and Northwestern) to provide content and leadership training to ca. 160 CPS teachers. These projects generally included work to engage in chemical education and learning sciences research projects. These include recent work on how writing reflective journals reflects student learning and metacognition, how college students understand quantities related to solution chemistry, and studies on how experienced teachers reflect during planning. Other research projects currently underway involve how creativity impacts student decisions in a project-based seminar setting, studies of TA-student interactions, and the ways school leadership teams use data to inform instruction. I am also very active in the American Chemical Society, currently serving as Chair of the Board of Publication for the Division of Chemical Education.

Faculty Spotlight

Mike Stieff

Mike Stieff joined the Chemistry Department in August 2010 as Assistant Professor of Chemical Education with a joint appointment in the Learning Sciences Research Institute. He received a Ph.D. in Learning Sciences and an M.S. in chemistry from Northwestern University where he was awarded a Spencer Dissertation Year Fellowship Award for his research on human problem solving in undergraduate organic chemistry. Prior to joining the Chemistry Department, he was Assistant Professor of Science Education at the University of Maryland-College Park, and he taught general chemistry at the secondary level and organic chemistry for the City Colleges of Chicago. Before specializing in chemical education, he conducted research with Dr. R. David Crouch to develop new methods for the selective deprotection of aryl silyl ethers and Dr. Terry Shepard to study the in vitro evolution of deoxyribozymes.

His current research examines sex differences in organic chemistry problem solving, the interaction of spatial ability and chemistry expertise, and the development of visualization software for teaching chemistry. With a grant from the National Science Foundation, Dr. Stieff and his colleagues are currently studying how physical models help (and hinder) students in organic chemistry. This work has led to the finding that molecular models only benefit learning when students are able to physical handle models and that teaching methods that only display models can negatively impact student achievement. To address these limitations of models, Dr. Stieff is currently developing gesture-recognition interfaces that permit students to “handle” molecular models in virtual simulations.

Lecturer Spotlight

Lee Marek

Lee Marek teaches Chem 101, Chem 472 and presents chemical demonstrations and teacher programs. He taught Chemistry at Naperville North High School for almost thirty years. His students have won numerous awards, including 3 National Chemistry Olympiad participants and several for Westinghouse (now Intel) Science Projects. Lee has a BS in Chemical Engineering from the UIUC, a MST in physics and a MST in chemistry from Roosevelt U. He has a strong interest in the History of Chemistry and has traveled extensively in Europe, studying the history of science. Lee has helped to run or co-lead well over 600 workshops/programs for teachers, students and the general public. He was the catalyst behind the Weird Science demonstration team, a small group of teachers that toured the country inspiring other teachers, and has presented to more then 300,000 teachers, students and general public. Lee worked on science programs with Fermilab for over 20 years and was on the Friends of Fermilab board for 20 years.

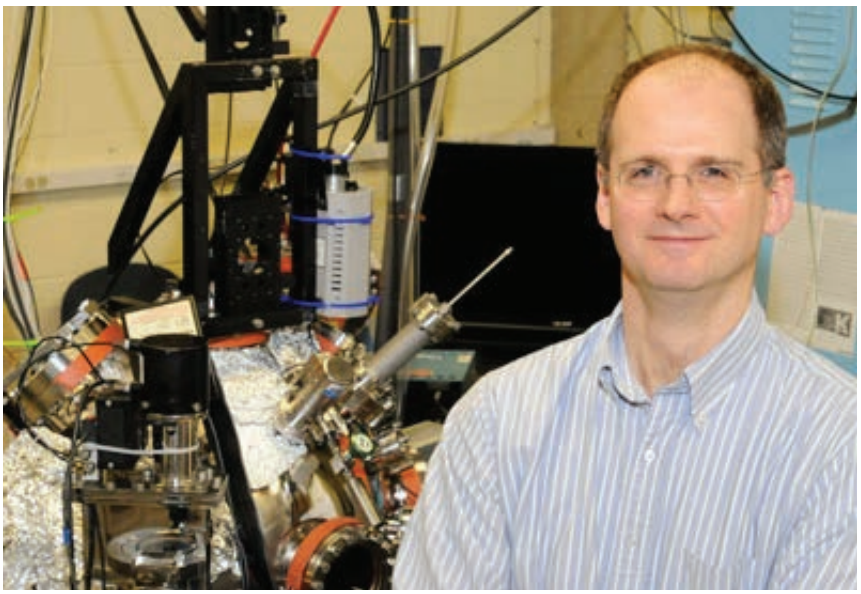
He was a Woodrow Wilson Chem Team leader for ten years and a Flinn Chem Team Leader for nine years. Lee is one of the authors on Flinn's 23 volume set of ChemTopic's and he helped develop the Flinn eLearning materials. He helped start and then ran CHEMWEST, a teachers alliance group of over 400 teachers, in the Chicago area for 14 years. He has presented via videos, laser disks, DVDs, some of the first streaming science videos on the web and consulted for a number of other science related projects. Lee has also become a regular (over 30 performances by either him or his students) on "The David Letterman Show", and one of his segments was a finalist for an Emmy. He was highlighted on CBS news special Education: Our Nation's Toughest Assignment, and numerous regional and national television programs. He authored several kid's science books and kits and worked on several projects for Nobel Laureate Leon Lederman. Lee himself has received various awards, including the Presidential Award for Excellence in Teaching Science, Christa McAuliffe Fellow, American Chemical Society's James Bryant Conant Award, ACS Helen Free Award for Public Outreach,

Research Spotlight

Cheaper, more efficient solar energy?

Luke Hanley is a big believer in harnessing solar energy to produce electricity.

"If you could make solar cells cheaper and more efficient, then you could think about putting them on a much wider variety of surfaces," said Hanley, professor and head of chemistry at UIC.



"Luke Hanley is a big believer in harnessing solar energy to produce electricity."

"There's only a certain amount of energy that falls from the sun per square meter. You can't increase that amount of energy, but you can make it less expensive to capture."

Hanley received a $390,000 grant from the National Science Foundation to test methods of coating solar panel films using nanoparticles from a chemical group called metal chalcogenides. The inexpensive films could be wrapped over everything from vehicles to buildings to gain maximum sunshine exposure and produce electricity.

Chalcogenides are fairly abundant, relatively cheap, and don't contain toxic elements like cadmium or tellurium, which are often used in solar cells.

"Using less expensive, less toxic materials — and using processes where you could coat inexpensively and not use much of the material — could make these solar cells more viable," Hanley said.

Working with Igor Bolotin, research assistant professor of chemistry, and graduate students Mike Majeski and Doug Pleticha, Hanley developed what could be a less costly method to produce new kinds of solar panel film.

"If you can do everything from the gaseous deposition stage, you might make the process less expensive," Hanley said. "You also may make a novel material that has a better efficiency."

Hanley and his coworkers will evaluate the electrical properties of these new films and study how they respond to light. He thinks that using different chemicals for nanoparticle-embedded solar films could create new products some two to three times more efficient than products now on the market, making solar energy more competitive.

But Hanley noted there are other factors to consider besides price.

"Fossil fuels will always have an associated environmental cost," he said, while the sun does not. "So there's a great long-term interest in solar energy."

Article by Paul Francuch, borrowed graciously with included picture from UIC News – the official newspaper of the University of Illinois at Chicago

Our department would like to thank Professor Richard P. Burns, who retired on August 15, 2012, for his 47 years of dedicated service to the University of Illinois at Chicago.

Professor Burns received his B.A. in Chemistry at Oklahoma Baptist University in 1954 and his Ph.D. at the University of Chicago in 1965. Upon his graduation he accepted a faculty position at the University of Illinois at Chicago. This was when UIC was located at Navy Pier. He has served as Associate Head of the Department for the last several years.

He taught courses in Physical Chemistry, Analytical Chemistry and the Honors General Chemistry for a number of years. He also edited the laboratory manual for the General Chemistry courses.

His research was focused on chemical reactions between atoms and molecules adsorbed on a surface (e.g. ceramic or metal), as well as chemical reactions which take place between a surface and adsorbed species. He employed mass spectrometric techniques to determine Thermal Desorption Spectra (TDS) in which the desorption rate of a surface species is measured as a function of surface and Auger electron spectroscopy to further characterize the surfaces.

Professor Burns will be greatly missed.

We wish him a wonderful retirement!

Faculty Honors

Vladimir Gevorgyan received the University Scholar Award for 2012-2013. He was named LAS Distinguished Professor and Honorary Professor of Saint Petersburg State University, Russia (February 2012).

Michael Trenary was elected Fellow of the American Chemical Society (he is one of only two such fellows at UIC).

Timothy Keiderling took a sabbatical leave in AY12 and won the Alexander von Humboldt Forschungspreis Research Award. He also won the Mentor of the Year Award for 2011 from the Graduate College.

Student & Alumnus Honors Awards and Fellowships

The UIC Chemistry Department now boasts an enrollment of five thousand students per semester. This demonstrates a marked twenty-five percent increase since 2010.

Graduate Students

Crystalann Jones – UIC Provost's Award, 2011
Abraham Lincoln Fellowship (Retention round), AY 2012-13
Chunhui Huang – Moriarty Graduate Fellowship, Academic Year 2011-2012
Dr. Alexander S. Dudnik – UIC Outstanding Thesis Award, 2011
Lela Vukovic – DAAD Research Grant, Academic Year 2011-2012
CPCL Postdoctoral Fellowship (UIUC)
Niladri Patra – Herbert E. Paaren Graduate Fellowship, Academic Year 2011-2012
Artem Baskin – Bodmer International Travel Award
Paaren Graduate Fellowship, AY 2012-13
Christina Tyrakowski – W.C. and May Preble Deiss Award, 2011
Zhu Liang – Chancellor's Graduate Research Fellowship, 2011
Best Student Poster Award of Materials for Energy in the 2012 AVS Prairie Chapter Symposium
Ivan Volchkov – Dean's Scholar Award, AY 2012-13
Aditi Patil – Moriarty Graduate Fellowship, AY 2012-13

Undergraduate Students

Alan Tang – Barry M. Goldwater Scholarship (see story in UIC News)
Nichelle Simpkins and Adela Isovic – LAS Undergraduate Research Award
Vicky Phan, Kayleigh Tovar, and Lucy Zhong – Chancellor's Undergraduate Research Award
Erika Pino – Undergraduate Research Award from the Kabbes Fund

Student Support Programs

The *Science Learning Center* provides tutoring support for chemistry undergraduate students.
The *Chemistry Seminar Series* brings in invited scholars on most Tuesdays and Thursdays during the academic year.
The *Alchemy Society* is our undergraduate chemistry club which is mentored by Ginevra Clark. They have periodic events for undergraduates including bringing in outside speakers and tours of regional laboratories.

New Faculty

Justin Lorieau
Assistant Professor of Physical Chemistry

Research in the Lorieau group integrates Biophysics, Physical Chemistry, Structural Biology and Biochemistry in elucidating the interplay between biomolecular structure, dynamics, chemistry and function. With a combination of solution- and solid-state Nuclear Magnetic Resonance spectroscopies, computational tools and other biophysical methods, our research focuses on membrane protein structure and dynamics, the development of theory and techniques to enhance the precision and resolution of structural and dynamic information by NMR, and the investigation of molecular dynamics as it relates to enzymatic catalysis and kinetics.

Neal Mankad
Assistant Professor of Inorganic Chemistry

The Mankad group focuses on inorganic and organometallic chemistry in the context of important and challenging scientific problems. We are particularly motivated by issues relevant to alternative energy conversion, environmentalism, and chemical synthesis. Main topics include homogeneous bimetallic catalysts for CO_2 hydrogenation, bio-inspired copper complexes for N_2O activation and photocatalytic organic transformations with high atom efficiency.

Justin Mohr
Assistant Professor of Organic Chemistry

Research in the Mohr group involves several areas of synthetic organic chemistry, including transition metal catalysis and natural product synthesis. We are particularly interested in developing new bond-forming reactions that solve specific problems en route to biologically active target molecules and ultimately improve synthetic efficiency. Furthermore, novel transformations discovered during synthetic efforts are uniquely poised for systematic explorations of chemical space around privileged core structures in collaboration with chemical biology laboratories.

New Lecturers & Staff

Ms. Loredana Huma has been hired as our new Coordinator of Undergraduate Laboratories. Loredana has a M.S. in Chemistry from UIC and considerable experience managing teaching and research laboratories. More staff have also been hired for the general chemistry stockroom so that at least some support can be provided to all undergraduate chemistry laboratory courses held in SEL. **Email: lhuma2@uic.edu, 3035 SEL & phone: 312-996-2987 or 312-996-2416**

Dr. Evilene Bowley has been hired part time to oversee chemical safety in all teaching and research laboratories. She will help develop changes to department chemical safety protocols in upcoming consultations with faculty, lecturers, and staff. Evilene has a Ph.D. in Natural Resources and Environmental Sciences from the University of New Hampshire, ran a chemical laboratory, worked in environmental research in the Amazon, and was enrolled in the UIC WISEST postdoctoral program. She normally works Tuesday through Thursday. **Email: ebowley@uic.edu, 4240 SES, phone: 312-996-9406.**

Dr. Igor Bolotin, Research Assistant Professor, is now an instrument specialist for all laboratory courses and research groups. Igor has experience building, servicing, and operating a wide range of mass, electron, optical, laser, and vacuum-based instrumentation. He also taught both Chem 343 and 421. Igor has a Ph.D. in Solid State Physics from the Moscow Institute of Physics and Technology and an extensive list of publications from his work in several international research laboratories over the last two decades. Igor will help specify new instruments for purchase and train graduate students in their proper use. He will also service instruments and bring in Don Rippon and/or external service technicians when needed. Finally, Igor is available to help faculty develop new experiments and capabilities, including simple customized data acquisition based upon National Instruments Lab View software. **Email: bolotin@uic.edu, office: 5115 SES, phone: 312-413-0046.**

Dr. Lindsey McQuade, has been hired to teach Organic Chemistry classes. Lindsey has a Ph.D. in Organic Chemistry from the Massachusetts Institute of Technology and was a Postdoctoral Fellow at Stanford University. **Email: lmcquade@uic.edu, office 2206A SEL, phone: 312-996-3178.**

Publications

(Selected)

Wonhwa Cho

K.A. Morales, M. Lasagna, A.V. Gribenko, Y. Yoon, G.D. Reinhart, J.C. Lee, W. Cho, P. Li, T.I. Igumenova. Pb^{2+} as modulator of protein-membrane interactions *J Am Chem Soc*. 2011, 133, 10599.

Y. Yoon, P.J. Lee, S. Kurilova, and W. Cho, In Situ Quantitative Imaging of Cellular Lipids Using Molecular Sensors, Nature Chemistry 2011, 3, 868.

Tom G. Driver

K.Sun, S. Liu, P.M. Bec, T.G. Driver, Rhodium-Catalyzed Synthesis of 2,3-Disubstituted Indoles from β,β-Disubstituted Stryryl Azides. *Angew. Chem*., *Int. Ed*. 2011, *50*, 1702.

B.J. Stokes, S. Liu, T.G. Driver, Rh_2(II)-Catalyzed Nitro-Group MIgration Reactions: Selective Synthesis of 3-Nitoindoles from β-NitroStyryl Azides. *J. Am. Chem. Soc*. 2011, *133*, 4702.

Vladimir Gevorgyan

Z. Li, V. Gevorgyan, One-Pot Arylative Epoxidation of Ketones Employing Amphoteric Bromoperfluoroarnes, *Angew. Chem., Int. Ed.* 2012, *51*, 862.

C. Huang, N. Ghavtadze, B. Chattopadhyay, V. Gevorgyan, Synthesis of Catechols from Phenols via Pd-Catalyzed Silanol-Directed C-H Oxygenation, *J. Am. Chem. Soc.* 2011, *133*, 17630

Audrey D. Hammerich

A.D. Hammerich and V. Buch, "Ab Initio Molecular Dynamics Simulations of the Liquid/Vapor Interface of Sulfuric Acid Solutions", J. Phys. Chem. A (2012), in press.

Luke Hanley

S. Milasinovic, Y. Liu, C. Bhardwaj, M. Blaze M.T., R.J. Gordon and L. Hanley, Feasibility of depth profiling of animal tissue by ultrashort pulse laser ablation, Anal. Chem. 2012, 84, 3945.

Yoshitaka Ishii

S. Park, Y. Hu, J.O. Hwang, E. Lee, L.B. Casabianca, W. Cai, J.R. Potts, H. Ha, S. Chen, S.O. Kim, Y.H. Kim, Y. Ishii, and R.S. Ruoff, Chemical structures of hydrazine-treated graphite oxides: aromatic N2-doping at the edges. Nature Comm. 2012, 3, 638.

S. Parthasarathy, F. Long, Y. Miller, Y. Xiao, K. Thurber, D. McElheny, M. B., R. Nussinov, and Y. Ishii, Molecular-level examination of Cu2+ binding structure for amyloid fibrils of 40-residue Alzheimer's beta by solid-state NMR spectroscopy. J. Am. Chem. Soc., 2011, 133, 3390.

Timothy A. Keiderling

S. Whaley Bishnoi, Y.-J. Lin, M. Tibudan, Y. Huang, M. Nakaema, V. Swarup, and T.A. Keiderling, SERS Biodetection Using Gold-Silica Nanoshells and Nitrocellulose Membranes Anal. Chem. 2011, 83, 4053.

Publications

(Selected)

Petr Král

L. Vuković, S. D. Drake, F. A. Khatib, A. Madriaga, K. S. Brandenburg, P. Král, and H. Onyuksel, Structure and Dynamics of Highly PEG-ylated Sterically Stabilized Micelles in Aqueous Media, J. Amer. Chem. Soc. 2011, 133, 13481.

N. Patra and P. Král, Controlled Self-assembly of filled Micelles on Nanotubes, J. Amer. Chem. Soc. (Communication) 2011, 133, 6146.

N. Patra, Y. Song, and P. Král, Self-assembly of Graphene Nanostructures on Nanotubes, ACS Nano 2011, 5, 1798.

Daesung Lee

J. Li, C. Sun S. Demerzhan, and D. Lee “Metal-Catalyzed Rearrangement of Cyclopropenes to Allenes” J. Am. Chem. Soc. 2011, 133, 12964.

D. Lee “Overcoming catalytic bias” Nature 2011, 471, 452 (News & Views).

Lawrence W. Miller

E.W. Yapici and L.W. Miller, An Adaptable Luminescence Resonance Energy Transfer Assay for Measuring and Screening Protein-Protein Interactions and their Inhibition.” Chembiochem DOI: 10.1002/cbic.201100710 Featured on front cover of vol. 13, issue 4, Mar.

Preston Snee

D. Liu and P.T. Snee, Water Soluble Semiconductor Nanocrystals Cap Exchanged with Metallated Ligands, ACS Nano 2011, 5, 546.

A.M. Jawaid, D.J. Asunskis, P.T. Snee, Shape-Controlled Colloidal Synthesis of Rock-Salt Lead Selenide Nanocrystals, ACS Nano 2011, 5, 6465.

Mike Stieff

M. Stieff, When is a molecule three-dimensional? A task-specific role for imagistic reasoning in advanced chemistry. Science Education 2011, 95, 310.

Michael Trenary

J. Yin, M. Trenary, and R.J. Meyer, “Alternate Pathway to Ammonia Formation in NOx Reduction: Direct Reaction of Acetylene and Nitrogen Atoms on Pt (111)”, ACS Catalysis 2011, 1, 1679.

Duncan J. Wardrop

E.G. Bowen, D.J. Wardrop, Nitrenium Ion-Mediated Alkene Bis-Cyclofunctionalization: Total Synthesis of (-)-Swainsonine, Org. Lett. 2011, 13, 2376.

Donald J. Wink

D. Wink, "Lorenzo’s Oil as a vehicle for teaching chemistry content, processes of science, and sociology of science in a general education chemistry classroom." J. Chem. Educ. 2011, 88, 1380.

Symposia

Wonhwa Cho, In Situ Quantitative Imaging of Phosphoinositides, Keystone Symposia on Inositide Signaling in Pharmacology and Disease, Keystone, Colorado, Feb 13 - 18, 2011

Tom Driver, Transition Metal-Catalyzed Synthesis of N-Heterocycles from Azides: Relationship between Mechanism and Metal. Presented at the Young Academic Investigator's Symposium at the 242nd National Meeting of the American Chemical Society, Denver, CO. August 2011; paper ORGN 16744

Vladimir Gevorgyan, 10th International Conference on Heteroatom Chemistry, Kyoto, Japan (Plenary Talk), May 2012; Conference Mendeleev 2012, Saint Petersburg, Russia, (Plenary Talk), Scheduled April 2012; International Congress on Organic Chemistry, Kazan, Russia (Plenary Talk), September 2011

Robert Gordon, Polarization Effects in LIBS, Cesme, Turkey, September 12-14, 2011

Luke Hanley, Laser Desorption VUV Postionization Mass Spectrometric Imaging from Vacuum to Atmospheric Pressure, Analytica Conference, Munich, Germany, 18 April 2012

Yoshitaka Ishii, Reactions and structures in self-assembled Alzheimer's beta-amyloid and graphene-related carbon nano-materials. in The International Symposium on Nuclear Magnetic Resonance. Nov. 15-18, 2011. Yokohama, Japan

Timothy Keiderling, (2011 August) Peptides – Local and Global Structure and Stability Studies with Vibrational Spectra. Helices, Hairpins and Aggregates, – ECSBM European conference on the Spectrosocpy of Biological Molecules, Coimbra, Portugal

Petr Kral, Highly PEG-ylated sterically stabilized micelles of linear and dendron-based monomers: structure, dynamics, and molecular storage, 18th International Conference on Encapsulation, Antalya, Turkey, September 12-14, 2011

Symposia

Lawrence Miller, Time-resolved imaging of lanthanide luminescence in living cells, Trends in Microscopy 2011: New Advances in Fluorescence Imaging and Fluorescent Probes, October 2011, Würzberg, Germany

Scott Shippy, Nanoliter Sampling and Analysis: Studying the Central Nervous System of Mice and Individual Drosophila, PittCon 2012, Orlando FL

Preston Snee, July 2011 Gordon Research Conference, Nanocrystals and Nanoclusters

Mike Stieff, (2011, June). Reasoning with molecular diagrams in the mind and in the world. Invited plenary lecture presented at the 2011 Gordon Research Conference on Chemistry Education Research & Practice. Davidson, NC.

Mike Stieff, (2011, August). Fostering representation competence with molecular-level simulations & animations. Invited paper presented at the Annual Meeting of the American Chemical Society. Denver, CO

Michael Trenary, International Symposium on Boron, Borides, and Related Materials, Istanbul, Turkey, September 13, 2011, Transmission IR Spectroscopy of Hydrogen Storage Materials

Donald Wink, 2011 Gordon Research Conference on Chemistry Education Research and Practice. An identity trajectory analysis of engagement with a large urban district

Grants and Funding

Name	Organization	Start/End Date	Amount
Laura Anderson	ACS PRF	9/1/10 to 8/31/12	$100,000
{3,3}-Rearrangements of O-Vinyl Oximes: Stereoselective Synthesis of 1 4-Dicarbonyl Compounds			
	NSF CHE-1212895	7/15/12 to 6/30/15	$375,000
Development and Synthetic Applications of 1,3 and 3,3 Rearrangements of O Vinyl Oximes			
Wonhwa Cho	Chicago Biomedical Consortium	8/1/10 to 7/31/11	$80,000
In Situ Imaging of Lipid Signaling Networks			
	NIH GM068849	9/1/12 to 8/31/16	$1,355,962
Membrane Targeting by Phosphoinositide Binding Proteins			
Tom Driver	ACS PRF 51853-ND7	1/1/12 to 8/31/14	$100,000
Synthesis and Design of New N-Heteroaromatic Materials			
Leslie Fung	Defense Threat Reduction Agency	2/11/11 to 10/12/12	$497,169
Broad-Spectrum Antibiotic against Category A Agents			
	NIH	7/26/10 to 7/25/12	$148,856
Development of Pllpro and 3CLpro Protease Inhibitors as Novel SARS Therapeutics			
Vladimir Gevorgyan	NSF	9/1/11 to 8/31/14	$448,000
Novel Catalytic Annulation Chemistry			
	NIH	8/15/10 to 6/30/14	$1,217,606
Novel Direct Approaches Toward Bioactive Heterocycles			
Yoshitaka Ishii	NIH	2/1/11 to 1/31/15	$1,153,445
Structures and Toxicity of Amyloid Protein Assemblies in Alzheimer's			
	NSF	7/1/10 to 6/30/13	$428,700
Sensitivity and Structure in Solid-State NMR of Biomolecules and Nano-Structured Materials			
Luke Hanley	NSF DMR - 1206175	7/1/12 to 6/30/15	$389,911
Cluster Beam Deposition and Analysis of Metal Chalcogenidfe Nanoparticles in Organic Films			
Daesung Lee	NSF	9/1/10 to 8/31/13	$405,000
New Chemistry of Lithium Trimethylsilyldiazomethane			
	Chicago Biomedical Consortium	8/1/10 to 7/31/11	$70,000
In Situ Imaging of Lipid Signaling Networks			

Grants and Funding

Name	Organization	Start/End Date	Amount
Lawrence Miller	Lumiphore Inc.	7/1/10 to 12/31/10	$50,000
Time Resolved Luminescent Probes for Cellular Microscopy			
	Lumiphore Inc.	4/1/12 to 3/31/14	$129,802
SBIR Phase II: Time-Resolved Fluorescence Microscopy of Live Cells With Cell-Penetration			
Jung-Hyun Min	Chicago Biomedical Consortium (CBC)	1/1/12 to 12/31/13	$100,000
Capturing Kinetically Labile Multiprotein Assemblies on DNA by Chemical Crosslinking			
Martin Newcomb	Addison Clear Wave Coatings	5/1/12 to 10/31/12	$26,809
Cytochrome P450 Research			
Preston Snee	ACS PRF	1/1/11 to 8/31/13	$100,000
Colloidal Synthesis of Zinc Phosphide and Tantalum Oxynitride Nanocrystals for Solar Energy			
	Colgate-Palmolive	7/30/12 to 8/31/13	$100,000
Fluorescent Detection of H2S Using a Non-Toxic Quantum Dot Sensor Strip			
Mike Stieff	NSF	10/1/10 to 7/31/13	$446,583
Representation Translation with Concrete and virtual Models in Chemistry			
	Univ Maryland	9/1/10 to 8/31/12	$26,333
Collaborative Research: Alternative Strategies for Problem Solving in Science			
Michael Trenary	Argonne National Lab	11/22/10 to 11/21/11	$90,007
Surface Infrared Spectroscopy of the Mechanism of GaN and InN Growth by Metal-Organic Chemical Vapor Deposition			
	NSF - Spectroscopis and Microscopic	9/1/10 to 8/31/13	$630,000
Spectroscopic and Microscopic Studies ofo Surface Reaction Mechanisms			
Donald Wink	Georgia State University	3/1/10 to 12/31/10	$18,158
Chemistry Colations Workshops and Communities of Scholars			
	Loyola University Chicago	7/19/10 to 8/31/10	$8,000
Summer Professional Development Program			
	Georgia State University	4/1/12 to 12/31/12	$22,327
eCWCS Supporting Student Laboratory Learning Workshop			

Congratulations Ph.D.s

Natalia Chernyak
Spring 2011
Advisor: Vladimir Gevorgyan
Defense: 11/10/2010
"Transition Metal-Catalyzed Synthesis and Functionalization of Carbo- and Heterocycles"

Alexandr Dudnik
Spring 2011
Advisor: Vladimir Gevorgyan
Defense: 11/19/2010
"Development of Metal-Catalyzed Migratory Cascade Transformations"

Jeanita Pritchett
Spring 2011
Advisor: Scott Shippy
Defense: 12/16/2010
"In Vivo Sampling from Normal and Diseased Rat Retinas Using Low-Flow Push-Pull Perfusion"

Benjamin Stokes
Spring 2011
Advisor: Tom Driver
Defense: 1/14/2011
"Transition Metal-Catalyzed Intramolecular Nitrogen-Atom Transfer Reactions of Aryl- and Vinyl Azides"

Huijun Dong
Summer 2011
Advisor: Tom Driver
Defense: 4/15/2011
"Transition Metal-Catalyzed Intramolecular C-H Amination from Dienyl- and Aryl Azides"

Dmitrijs Čerņaks
Summer 2011
Advisor: Vladimir Gevorgyan
Defense: 5/16/2011
"Novel Cascade Transition-Metal Catalyzed Methods for Synthesis of Heterocycles"

Harsha Rajapakse
Summer 2011
Advisor: Larry Miller
Defense: 6/9/2011
"Time-Resolved Luminescence Resonance Energy Transfer Imaging of Protein Interactions in Living Cells"

Akin Sevinc
Summer 2011
Advisor: Leslie Fung
Defense: 6/24/2011
"Non-Erythroid Beta Spectrin: Effects of Mutations and of Interacting Proteins on Tetramerization"

Ahmed Lakhani
Fall 2011
Advisor: Timothy Keiderling
Defense: 10/25/2011
"The New Dispersive Vibrational Circular Dichroism Inatrument: Development, Testing, and Applications"

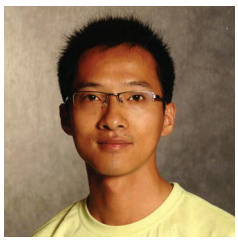
Congratulations Ph.D.s

Daniel Zavitz
Fall 2011
Advisor: Michael Trenary
Defense: 10/27/2011
"The Influence of Arsenic on Silicon Surfaces"

Laura Pedro-Rosa
Spring 2012
Advisor: Larry Miller
Defense: 11/30/2011
"Antifolates as Tools for Chemical Biology"

Nathan Lucas
Spring 2012
Advisor: Wonhwa Cho
Defense: 1/12/2012
"Mechanistic Studies on the Membrane Recruitment and Function of 3'-Phosphoinositide Dependent Kinase-1"

Nivriti Gahlaut
Spring 2012
Advisor: Larry Miller
Defense: 2/29/2012
"Improving Contrast in Biological Imaging: Time-Resolved Microscopy and Protein-Targeted Dendrimers"

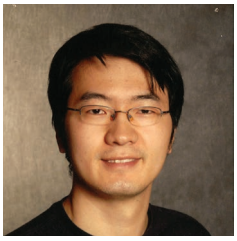


Chunhui Huang
Summer 2012
Advisor: Vladimir Gevorgyan
Defense: 6/13/2012
"Temporary Silicon Tether Strategy for Palladium-Catalyzed C–H Activation Reactions"

John Russell
Fall 2012
Advisor: Petr Kral
Defense: 7/19/2012
"Graphitic Nanocarbon Supports for Molecular Transport, Sensing, and Catalysis"

Maria Yermolina
Fall 2012
Advisor: Duncan Wardrop
Defense: 8/14/2012
"Si-Directed Nitrenium Ion Cyclization: Development & Application. Novel Inhibitors of Ebola-Cell Entry."

Melvin Blaze Muttikal Thomas
Fall 2012
Advisor: Luke Hanley
Defense: 8/23/2012
"MS Imaging for Small Molecule, Peptide and Protein Detection in Multilayers and Bacterial Biofilms"



Jingwei Li
Fall 2012
Advisor: Daesung Lee
Defense: 9/7/2012
"Tandem Metathesis-Based Natural Product Synthesis & Synthesis of Cyclopropenes and Their Rearrangements"

Awarded Degrees

Undergraduate Degrees

Spring 2011

Sasha Andrious	Biochemistry, B.S.
David Battistoni	Biochemistry, B.S.
Jennifer Bonaccorso	Biochemistry, B.S.
Matthew Buck	Biochemistry, B.S.
Emmeline Capel	Biochemistry, B.S.
Dustin Cavida	Biochemistry, B.S.
Cecilia Chin	Biochemistry, B.S.
Samad Farooqi	Biochemistry, B.S.
Shaun Fernandes	Biochemistry, B.S.
Alex Gusler	Biochemistry, B.S.
Enas Horeish	Biochemistry, B.S.
Issia Judeh	Biochemistry, B.S.
Basmah Khalil	Biochemistry, B.S.
Julie Kim	Biochemistry, B.S.
Grzegorz Krupa	Biochemistry, B.S.
Philip Kuo	Biochemistry, B.S.
Andrew Lee	Biochemistry, B.S.
Todd Lilje	Biochemistry, B.S.
Laura Liu	Biochemistry, B.S.
Ramon Maningat	Biochemistry, B.S.
Natalia Marczewska	Biochemistry, B.S.
Kinchit Markan	Biochemistry, B.S.
Chun Chun Ng	Biochemistry, B.S.
Ashley Novak	Biochemistry, B.S.
Konrad Ogorzalek	Biochemistry, B.S.
Keith Patel	Biochemistry, B.S.
Melyssa Petkus	Biochemistry, B.S.
Vrushank Shah	Biochemistry, B.S.
Rushabh Shah	Biochemistry, B.S.
Omeet Shah	Biochemistry, B.S.
Sean Smrt	Biochemistry, B.S.
Vince Soriano	Biochemistry, B.S.
Duyen Tran	Biochemistry, B.S.
Swing Tsang	Biochemistry, B.S.
Heng Xie	Biochemistry, B.S.
Kimberly Alegado	Chemistry, B.A.
Timothy Geschrey	Chemistry, B.A.
Seul Hong	Chemistry, B.A.
Ruixuan Jiang	Chemistry, B.A.
Diane Kim	Chemistry, B.A.
Humphrey Liu	Chemistry, B.A.
Lauren Moose	Chemistry, B.A.
Lidija Relja	Chemistry, B.A.
Chen Shi	Chemistry, B.A.
Kinga Szarowicz-Aguilar	Chemistry, B.A.
Thomas Gabriel Valera	Chemistry, B.A.
Linda Volland	Chemistry, B.A.
Jennifer De Las Casas	Chemistry, B.S.
Silviya Demerzhan	Chemistry, B.S.
Amanda Fortman	Chemistry, B.S.
Lance Nguyen	Chemistry, B.S.
Miranel Obdin	Chemistry, B.S.
Muhammad Younus	Chemistry, B.S.

Summer 2011

Michelle Martin	Biochemistry, B.S.
David Smith	Biochemistry, B.S.
Jacky Sum	Biochemistry, B.S.
Bharat Surani	Biochemistry, B.S.
Mary Youkhana	Biochemistry, B.S.
Junyu Zhang	Chemistry, B.A.

Fall 2011

Shruti Menon	Teaching of Chemistry, B.S.
Jae Yoon Choi	Biochemistry, B.S.
Minjingarav Enkhbold	Biochemistry, B.S.
Zohib Fiaz	Biochemistry, B.S.
Bledar Isufi	Biochemistry, B.S.
Carlos Lopez	Biochemistry, B.S.
Varuna Manthena	Biochemistry, B.S.
Hoai Nguyen	Biochemistry, B.S.
Paola Olivo	Biochemistry, B.S.
Jay Patel	Biochemistry, B.S.
William Schjerven	Biochemistry, B.S.
Saba Shahid	Biochemistry, B.S.
Katelyn Shortall	Biochemistry, B.S.
Shannon Simmons	Biochemistry, B.S.
Kevin Toms	Biochemistry, B.S.
Nancy Belteton	Chemistry, B.A.
Colton Carlson	Chemistry, B.A.
Maria Chavez	Chemistry, B.A.
Jung Min Kim	Chemistry, B.A.
Yeseul Lim	Chemistry, B.A.
Wajihah Sajanlal	Chemistry, B.A.
Safa Salamah	Chemistry, B.A.
Eyad Elzaibak	Chemistry, B.S.
Adela Isovic	Chemistry, B.S.
Jigna Patel	Chemistry, B.S.
Bijal Shah	Chemistry, B.S.

Spring 2012

Theresa Lichon	Teaching of Chemistry, B.S.
Kevin Michie	Teaching of Chemistry, B.S.
Alissa Venezio	Teaching of Chemistry, B.S.
Faiza Ahmed	Biochemistry, B.S.
Moonis Ali	Biochemistry, B.S.
Sagedah Barakeh	Biochemistry, B.S.
Orlando Chapa	Biochemistry, B.S.
Catherine Chaton	Biochemistry, B.S.
Erielle Espina	Biochemistry, B.S.
Alvin Godina	Biochemistry, B.S.

Awarded Degrees

Matthew Hein	Biochemistry, B.S.
Duc Quynh Ho	Biochemistry, B.S.
Ashton Kinsey	Biochemistry, B.S.
Miyeon Kim	Biochemistry, B.S.
Mateusz Krol	Biochemistry, B.S.
Isamu Matsuda	Biochemistry, B.S.
Anjna Patel	Biochemistry, B.S.
Aalok Patel	Biochemistry, B.S.
Ruchi Patel	Biochemistry, B.S.
Janki Patel	Biochemistry, B.S.
Bunty Patel	Biochemistry, B.S.
Iwona Pierzak	Biochemistry, B.S.
Sindhura Pisipati	Biochemistry, B.S.
David Reisinger	Biochemistry, B.S.
Sara Rocus	Biochemistry, B.S.
Tomzak Saengyothinh	Biochemistry, B.S.
Chetna Saini	Biochemistry, B.S.
Michael Shimp	Biochemistry, B.S.
Alan Tang	Biochemistry, B.S.
Michael Thompson	Biochemistry, B.S.
Hanh Vuong	Biochemistry, B.S.
Zahra Walji	Biochemistry, B.S.
Madelyne Weismantel	Biochemistry, B.S.
Hyerim Whang Kong	Biochemistry, B.S.
Aisha Burton	Chemistry, B.A.
Vincent Chen	Chemistry, B.A.
Jalmine Desai	Chemistry, B.A.
George Hotousiotis	Chemistry, B.A.
Jamal Jebreal	Chemistry, B.A.
Carlo Lacap	Chemistry, B.A.
Nick Lee	Chemistry, B.A.
Luis Manon	Chemistry, B.A.
Dennis Miao	Chemistry, B.A.
Syed Munawer	Chemistry, B.A.
Olesya Priyma	Chemistry, B.A.
Jelena Saric	Chemistry, B.A.
Kayleigh Tovar	Chemistry, B.A.
Julie Tromp	Chemistry, B.A.
Boyoon Yum	Chemistry, B.A.
Mohammed Abdel-Rahman	Chemistry, B.S.
Patcharavi Akramunkongvanich	Chemistry, B.S.
Erin Baumstark	Chemistry, B.S.
Olga Bulakh	Chemistry, B.S.
Nicholas Gerros	Chemistry, B.S.
Rachel Kapadia	Chemistry, B.S.
Yan Mao	Chemistry, B.S.
Jenny Martinez	Chemistry, B.S.
Sagar Modi	Chemistry, B.S.
James Sawicki	Chemistry, B.S.
Bartlomiej Styrczula	Chemistry, B.S.
Elena Telebak	Chemistry, B.S.

Summer 2012

Belinda Agyei	Biochemistry, B.S.
Stefan Dang	Biochemistry, B.S.
Zane Deliu	Biochemistry, B.S.
Matthew Maggio	Biochemistry, B.S.
Jeshvi Manhar	Biochemistry, B.S.
Richard Marszalek	Biochemistry, B.S.
John Pantaleon	Biochemistry, B.S.
Kathryn Gibson	Chemistry, B.A.
Didi Gattey	Chemistry, B.S.

Masters Degrees

Spring 2011

Linda Urnezis	Chemistry, M.S.
Chao Xia	Chemistry, M.S.
Kimberly Ahlert	Chemistry, M.S.
Siliang Chang	Chemistry, M.S.
Anthony Hofer	Chemistry, M.S.
Hannah Londino	Chemistry, M.S.
Alla Papirnyak	Chemistry, M.S.

Summer 2011

Hy Dang	Chemistry, M.S.
Cathy Skontos	Chemistry, M.S.

Fall 2011

Hongyan Shen	Chemistry, M.S.
Kate Korzistka	Chemistry, M.S.
Stacy Snyder	Chemistry, M.S.
Qiushi Teng	Chemistry, M.S.
Daniel Murphy	Chemistry, M.S.

Spring 2012

Samuel De Jong	Chemistry, M.S.
Huda Husseini	Chemistry, M.S.
Binh Nguyen	Chemistry, M.S.

Summer 2012

Qiang Zhao	Chemistry, M.S.

Staff Changes

Promotions

Audrey Hammerich, was appointed Clinical Assistant Professor effective 8/16/11.

Petr Král was promoted to Associate Professor effective 8/16/11.

Rhonda Staudohar was promoted to Graduate Coordinator effective December 2011.

Jen Kazin was promoted to Undergraduate Coordinator effective December 2011.

George Papadantonakis was appointed Director of General Chemistry and Clinical Assistant Professor, effective 8/16/12.

Tom Driver was promoted to Associate Professor effective 8/16/12.

Lawrence Miller was promoted to Associate Professor effective 8/16/12.

New Hires

Lindsey McQuade has been hired as a lecturer to run Chem 233 starting 8/16/12.

William Modey was hired as a Lecturer in freshman chemistry.

Rita Hatfield was hired as a Lecturer for Chem 452.

Ahmed Lakhani was hired as a Lecturer.

Yonilo Lim was hired as an Accountant Technician III, working in our Accounting Department.

Ginevra Clark has been hired as lecturer and Acting Director of the Science Learning Center.

Loredana Huma was hired as the Coordinator of General Chemistry Labs, starting in May 2012.

Thomas Freuh was hired as a Physical Science Staff Assistant.

Shirley Simmons joined the Chemistry Department as an Administrative Clerk.

Goodbyes

Chad Landrie has resigned effective 8/15/12 from his position as a Lecturer.

Neil Miranda, a lecturer and two time Silver Circle award winner, resigned effective 8/15/12.

Melita Balch, lecturer and Director of the Science Learning Center, resigned from her position at UIC in December of 2011.

Jasmina Hranisavljevic, who developed and taught our Chem 314 course for over five years, departed for an industry position.

Chris Sehorn resigned in January 2012 as Coordinator of General Chemistry Labs.

Edelfonso Tan resigned from our accounting unit effective July 2010.

Retired

Frank Tobias retired from his position of Research Lab Shop Supervisor.

Clint Briscoe retired from his position of Electronics Engineering Assistant.

Stan Blaszczyk retired from his position of Research Programmer.

Boon K. Teo retired as Professor of Inorganic Chemistry.

Pat Ratajczyk, our Graduate Coordinator, retired 12/31/11.

C O N T A C T

Professors

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Wonhwa Cho	wcho@uic.edu
Tom Driver	tgd@uic.edu
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Vladimir Gevorgyan	vlad@uic.edu
Robert Gordon	rjgordon@uic.edu
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Yoshitaka Ishii	yishii@uic.edu
Timothy Keiderling	tak@uic.edu
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Duncan Wardrop	wardropd@uic.edu
Donald Wink	dwink@uic.edu

Lecturers

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Audrey Hammerich	audreydh@uic.edu
Rita Hatfield	ritahat@uic.edu
Gregory Jursich	jursich@uic.edu
Ahmed Lakhani	aalakhan@uic.edu
Lee Marek	lmarek2@uic.edu
Lindsey McQuade	lmcquade@uic.edu
William Modey	wkmodey@uic.edu
Derek Nelson	nelsondw@uic.edu
George Papadantonakis	gpapad3@uic.edu
Robert Widing	bwiding@uic.edu
Sang Young Yun	syyun@uic.edu

Professores Emeriti

Richard L. Carlin	magneto@uic.edu
Wade Freeman	wfreeman@uic.edu
Eric Gislason	gislason@uic.edu
Cynthia Jameson	cjjames@uic.edu
Jacques Kagan	jkagan@uic.edu
Richard Kassner	rkassner@uic.edu
Pierre Lebreton	lebreton@uic.edu
Thomas Lothian	none
Clifford N. Matthews	none
Robert Moriarty	moriarty@uic.edu
Eva Rocek	none
Jan Rocek	rocek@uic.edu
Paul Young	pyoung@uic.edu

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Newsletter Designed by Joshua Maravelias