

Greetings from the Chair

Welcome to the 2014 issue of the Department Chemistry newsletter. In the following pages, you can read of the many successes and advances that we were able to celebrate during the past year. We continue, as always, to seek new ways to improve our ability to serve our students, to help the community, and to advance our scientific discipline. Some changes we celebrate bring us new personnel, new teaching and laboratory space, and new programs to support our mission. We also celebrate the successes of our students, the successes of those still here in our program, and the accomplishments of those who have left our departmental community and gone on to succeed in new professional endeavors.

This year marks the 40th anniversary of the opening of our flagship building, Chevron Science Center. The construction of this 15-story 192,400-square foot building in 1973 was an important milestone in our history. We include a feature celebrating this event and provide some pictures from that era.

Our University leaders recognize the central importance of our department and they have long respected the accomplishments of our students, faculty, and staff. With the support of these leaders, the department has continued progress on a multiyear plan for bringing the department facilities, research, and teaching space into top-quality condition. These construction projects are so extensive that the word “renovation” does not capture what is happening—these are complete rebuilds. Everything from 1973, except the concrete that defines the space and holds up the building, has been removed. This past summer, we completed the latest upgrades to our teaching laboratories. The old labs were demolished, and newly designed safe and modern teaching spaces were constructed. We have now completed rebuilds of 21,000 square feet of teaching labs, 25,000 square feet of research space, and 7,000 square feet of support service areas. As we head to publication, the 13th floor rebuild for Professor Alex Deters is nearing completion. Funds are soon to be available for complete rebuilds of the 11th and 12th floors. And in Spring 2015, to support Professor Alex Star’s new Sensor Testing Lab, we will begin an estimated 2 million dollar HVAC upgrade and renovation of research areas on the first floor of Eberly Hall.

Over the past 12 months, David Waldeck led the department through a full-scale strategic planning effort. The effort included an exhaustive self evaluation, and David was able to command wide participation during this process. He brought us successfully to the final stage just as he was ending his nine-year role as chair of the chemistry department. Our planning process included seeking advice from an external committee made up of leading chemists from top national universities. The external committee report and our self evaluation culminated in a clearly defined list of objectives and strategies to be pursued over the next five years. The external committee

was very impressed with the success of our building and renovation programs. They wrote: “All of the lab renovations that we saw were done beautifully—the university employed the best professionals to get this done, and the result is striking.”

While all the above was happening, we were, of course, also doing our favorite thing: teaching undergraduate and graduate students and preparing them to reach their professional goals. Last year, the department celebrated the graduation of 67 BSc, 13 MSc, and 30 PhD chemists. This fall we have 228 declared chemistry majors and 202 graduate students. We also benefit from the presence of 19 post-doctoral associates.

We are happy to feature two faculty members in this issue. Our newest faculty member, Peng Liu, joined our department this past summer. Peng’s background is described on page 10. Peng is off to a fast start, as we would expect from a new hire who already had 45 publications when he arrived! Professor Renā Robinson is the subject of our Faculty Spotlight feature. We want to wish Professor Michael Trakselis, who moved this summer to the Department of Chemistry at Baylor University, every success and happiness.

The faculty recently gathered to recognize David Waldeck’s service as chair. David stepped aside at the end of August. I was honored to be asked by the Dean to serve as interim chair until January 1, 2015, when Professor Kay Brummond will begin her term of service as chair of the Department of Chemistry. I am sure you will join me in thanking David for his contributions, congratulating him on his successful leadership, and wishing Kay all good things as she guides us forward!

On behalf of the Department, I send our best wishes for your continued success.



Craig J. Deters

P.S. We are moving to an electronic newsletter format. Please visit chem.pitt.edu and subscribe. We don’t want to lose you!

Issue 11
2014

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Faculty 1974

Jerome L. Rosenberg, Dean of the Faculty of Arts and Sciences

W. Edward Wallace, Chair

Edward McCollin Arnett, Professor

Richard A. Butera, Associate Professor

James Clyde Carter, Associate Professor

Toby M. Chapman, Assistant Professor

Johannes Francois Coetzee, Professor

Theodore Cohen, Professor

Raymond S. Craig, Professor

Samuel J. Danishefsky, Professor

Bodie E. Douglas, Professor

Paul Dowd, Associate Professor

T.H. Dunkelberger, Professor and Associate Dean, College of Arts and Sciences

Frank Oscar Ellison, Professor

Lawrence M. Epstein, Associate Professor

Dennis H. Finseth, Instructor

Henry S. Frank, Professor

Paul Anthony Grieco, Assistant Professor

Klaus H. Hofmann, Professor and Director of Protein Research Lab

Charles Alvin Hollingsworth, Professor

Kenneth Jeffrey Johnson, Associate Professor

William Martin Kadunce, Instructor

Frederick Kaufman, Professor

Robert Levine, Professor

Richard Hugh McCoy, Professor, Dean, and Director of graduate programs, Faculty of Arts and Sciences

Foia A. Miller, Professor and Director, Spectroscopy Laboratory

Alfred Leon Moyé, Associate Professor

Francis W. Plankey Jr., Assistant Professor

David Wixon Pratt, Assistant Professor

John Wayne Rabalais, Assistant Professor

V. Udaya Shankar Rao, Assistant Professor

Gordon Alan Ryan, Assistant Professor

Hurd Winter Safford, Professor

Peter Emil Siska, Assistant Professor

Darel K. Straub, Associate Professor

Joseph J. Taber, Professor and Administrative Officer, Adjunct Professor, Department of Chemical and Petroleum Engineering

Class of 1974: Where Are They Now?

In 1974, inflation continued to increase around the world, reaching 11.3 percent in the United States. To conserve gasoline, a maximum speed limit of 55 mph was imposed by President Richard Nixon for the entire country; daylight savings time was initiated on January 6, nearly four months earlier than usual. The price of gold reached \$154 per troy ounce, the price of gasoline was 55 cents per gallon, the cost of a first class postage stamp was raised to 10 cents, and the mean annual household income was \$12,893. The Dow Jones Industrial Average closed the year at 616. John Murtha became the first Vietnam War veteran elected to the Congress of the United States. The Watergate scandal forced Nixon to resign the presidency; Gerald Ford became 38th U.S. president. The Nobel Prize in chemistry was awarded to Paul J. Flory "for his fundamental achievements, both theoretical and experimental, in the physical chemistry of the macromolecules." At a supermarket in Troy, Ohio, the first time a Universal Product Code was scanned for a purchase was to buy a package of Wrigley's chewing gum. In April, the 110-story World Trade Center in New York, N.Y., opened as the tallest building in the world. Fifteen students earned PhDs and 60 students received BS degrees in chemistry from the University of Pittsburgh.

Edwin L. Jones Jr. (MS '74; Advisor: Stover): Mr. Jones retired from the Ventura County Sheriff's Crime Lab after 29 years. He was a Forensic Scientist I in the Sciences Laboratory. (penguinsonsand@att.net).

John D. Kulluk (PhD '74; Advisor: Arnett): Dr. Kulluk recently retired from the City of Torrance Fire Department after 22 years as the hazardous materials analyst. He is living presently in Los Angeles, Calif. (jdkulluk@hotmail.com).

Mary C. Mancini (BS '74; Advisor: Chapman, MD '78): Dr. Mancini earned her PhD in 2000 from LSUHSC-Shreveport, La. She is an Academic Cardiothoracic Surgeon, section head, and Professor of Surgery and Chief Cardiothoracic Surgery at LSU Health-Shreveport, La. She is also a national orchid judge and president of South-west Regional Orchid Growers Association. (mcmmd@hotmail.com). We note that Dr. Mancini is a Department of Chemistry 2002 Distinguished Alumni Award recipient.

Jim McKibben (BS '74; Advisor: Hollingsworth): Mr. McKibben is employed by Ultratech/Cambridge Nanotech where he is regional manager for ALD products. He has five years' experience in nanotechnology and atomic layer deposition (ALD). ALD is a rapidly growing method used in the nanotechnology field. His daughter Erin is also a chemist, and he has two young grandsons. Mr. McKibben lives in Sausalito, Calif.

Robert J. Radnoti (BS '72, MS '74): Mr. Radnoti worked in the Maryland State Police Crime Lab as a forensic chemist supervisor. He retired in 2004 as a trace evidence supervisor. He enjoys tying flies and trying them out on catch-and-release trout streams. He likes gardening and watching over two collies as they run around the yard—catch-and-release tactics are deployed when they head for garden areas!

Donald Snyder (BS '74): Dr. Snyder earned a PhD in organic chemistry from Purdue University in 1980 before entering a career in industrial R&D first at Virginia Chemicals, Portsmouth, Va., and later at Armstrong World Industries, Lancaster, Pa. In 1993, he accepted a faculty position in the Department of Chemistry at Eastern Michigan University. He has been a professor there since 2002. His wife Cheryl, also an academic chemist, is a leader among chemistry faculty at Schoolcraft College, Livonia, Mich. He writes, "my daughter Jennifer and her husband Jeff have graced us with two wonderful grandchildren, Sven (5) and Leia (1)." His most recent publication is titled *Optical phase-shift dynamics in surface-modified transparent polymers: Application of wavefront distortion analysis to refractive index (RI)-based sensor development* and came out this year in the journal *Sensors and Actuators B: Chemical*.

William M. Sawko (BS '74, MD '78): Dr. Sawko is president of Emergency Medicine Professionals and vice president and CIO of DuvaSawko (www.duvasawko.com). He is married and has three children and six grandchildren.

In August 2013, Dr. Sawko climbed Mt. Kilimanjaro, Tanzania. He was accompanied by his two sons, and daughter, and son-in-law. (william.sawko@duvasawko.com).



2014 Alumni Award Celebration

When the Department of Chemistry celebrated its 125th Anniversary in 2000, a history of the department and its many great scientific achievements was prepared. It was also decided that it was time to begin to recognize those alumni whose contributions to the field of chemistry has placed great honor on the department and the University. Thus the biennial Distinguished Alumni Award was begun.



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Many thanks to the Cully family and United Plate Glass for their longstanding support of our distinguished alumni program through the beautiful glass awards that they provide.

The purpose of the biennial alumni awards is to recognize merit. Our graduates have had a positive impact in many spheres of life. We recognize those whom we view as having accomplished something special. This can be a singular occasion or accomplishment or a lifetime achievement. Though our graduates have degrees in chemistry, they may have impact in other spheres, including medicine, teaching, business, and administration.

On Friday, September 19, and Saturday, September 20, 2014, we honored five chemistry alumni by presenting them with the 2014 Department of Chemistry Distinguished Alumni Award. Their accomplishments and contributions are a testament to their talents and to the education and training that they have received at the University of Pittsburgh. We are happy to have celebrated this occasion with George W. Luther III (PhD '72), Jayendran Rasaiah (PhD '66), Nancy M. Targett (BS '72), Jane N. Valenta (PhD '94), and James J. Valentini (BS 1972).

The celebration began on Friday afternoon with a roundtable Pathways to Success discussion. This was an opportunity for the awardees to motivate, inspire, and inform graduate and postdoctoral students. A tour of the chemistry buildings followed and we were able to showcase our new renovations and infrastructure improvements. The awards dinner took place on Friday evening at 6 p.m., followed by the awards presentation. Our senior undergraduates enjoyed an opportunity to meet the awardees at the Celebrate Success! Breakfast on Saturday morning at 9 a.m.



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Left to right: Jane N. Valenta, James J. Valentini, Nancy M. Targett, George W. Luther III, and Jayendran Rasaiah

Call For Nominations

The Department is soliciting nominations for the 2016 Department of Chemistry Distinguished Alumni Awards. Nominees should have a bachelor's, master's, or doctoral degree from the department. The basis for the nomination can be excellence in research, teaching, industry, volunteer efforts, or other significant contributions to society.

Nominations should include:

1. Your nominating letter
2. One to three seconding letters
3. A CV for the nominee
4. Contact information for the nominee

Please see the alumni section of our Web page at chem.pitt.edu for more information.

For full consideration, nominations should be mailed by
January 8, 2016,
to:
University of Pittsburgh
Department of Chemistry
Assistant Chair
234 Chevron Science Center
219 Parkman Avenue
Pittsburgh, PA 15260

2014 Chemistry Distinguished Alumni Awardees



George W. Luther III received his PhD in physical-inorganic chemistry in 1972, working in James C. Carter's group. At Kean College of New Jersey, as chair, he led the department in achieving ACS accreditation. His research focus is marine chemistry. He developed real-time sensors to measure chemical species in ocean waters and sediments and he has promoted the importance of natural nanoparticles, including those released from hydrothermal vents in the ocean interior. George is the Maxwell P. and Mildred H. Harrington Professor of Marine Chemistry in the School of Marine Science and Policy at the University of Delaware.



Jayendran C. Rasaiah earned his PhD in 1966 under the direction of Henry S. Frank. He was elected Fellow of the American Physical Society in 2006 and has been recognized for his pioneering contributions to fundamental electrolyte theory, the thermodynamics of polar fluids, and the transport of ions as polar solvents. Most noteworthy is his work with Gerhard Hummer on water conduction through carbon nanotubes. Jay has held visiting appointments at the Australian National University and the Royal Military College in Australia and with NIST and NIH. He is a professor of chemistry and a cooperating professor of physics at the University of Maine.



Nancy McKeever Targett received her BS in Chemistry and Biology from Pitt in 1972, with David Pratt as her advisor. She completed her MS in Marine Science from the University of Miami and she earned her PhD in Oceanography in 1980 from the University of Maine. Her research interests are in marine chemical ecology, and she is committed to innovation in higher education, with an emphasis on ocean science studies. She is a Professor and the Dean of the University of Delaware College of Earth, Ocean, and Environment, and she is the Director of the Delaware Sea Grant College Program.



Jane N. Valenta completed her graduate studies in chemistry under the direction of Stephen G. Weber, receiving an MS in 1986 and a PhD in 1994. She has been awarded 11 patents during her academic and professional career, including "Method of Conducting a Non-Instrumental Test to Determine Catalyst Presence," as coinventor with Professor Weber. Jane has served as Associate Director of Performance Coatings at PPG's Coatings Innovation Center. She is Vice President, Environment, Health, and Safety for PPG Industries and is responsible for all EHS functions including environmental affairs, product stewardship, health, safety, compliance assurance, corporate medical, and PPG's corporate sustainability efforts.



James J. Valentini earned his BS in chemistry at Pitt in 1972. He completed his MS in chemistry at the University of Chicago, and his PhD in Chemistry from the University of California, Berkeley; his research interests are chemical reaction dynamics. Before moving to Columbia College, New York, he held a postdoctoral appointment at Los Alamos National Laboratory and was a Professor of Chemistry at UC-Irvine. Valentini is a Professor of Chemistry, Dean of the college, and Vice President of Undergraduate Education at Columbia College. As chief academic and executive officer, his central focus is to promote the best college experience for students and faculty.

Distinguished Alumni Awardees

2000

Margaret Cavanaugh (BS '68; MS '69)
Paul Lauterbur (PhD '62)
Alfred Moyé (PhD '69)
Allen Roses (BS '63)
David Rossi (BS '79)
Michael Strem (PhD '64)
W. Edward Wallace (PhD '42)

2002

Mary Catherine Mancini (BS '74)
Muttaiya Sundaralingam (PhD '61)
Irving Wender (PhD '50)

2004

Dennis Kleid (PhD '72)
Geraldine Sowinski Pinkus (BS '61)
L. Dennis McKeever (BS '62)
J. Matthew Simon (PhD '69)

2006

G. Michael Deeb, MD (BS '71)
Sharon Marion D'Orsie (BS '69)
Joseph A. Gardella Jr. (PhD '81)
Frederick S. Humphries (PhD '64)
Costas G. Karakatsanis (BS '74; PhD '78)

2008

Susan Wilson Graham (PhD '81)
Abul Hussam (PhD '82)
Michael Grever (BS '67)
Sung-Hou Kim (PhD '66)

2010

Edward R. Biehl (BS '58, PhD '61)
Helen M. Berman (PhD '67)
Bruce W. Dixon MD (BS '61)
H. Lee Noble (BS '62)

2012

Ben Askew (PhD '88)
Richard J. Colton (BS '72; PhD '76)
Nadrian C. Seeman (PhD '70)



Chemistry Department History 6: Chevron Science Center

Achieving milestones is an ongoing process in chemistry, whether earning a degree or maintaining modern up-to-date facilities. Established in 1875, the Department of Chemistry awarded its first PhD in 1913. In 1998, the 1000th PhD was granted, and, to date, a total of 1,363 PhDs in chemistry have been conferred.

With the start of the fall 2014 term and the completion of renovations to the first floor undergraduate chemistry laboratories in the Chevron Science Center, the department has achieved another major milestone. All undergraduate general and organic chemistry laboratories in Chevron have now been upgraded to 21st-century standards, providing students with bright, safe, and inviting space to complete their lab experiments, as well as separate areas within each lab for recording data and preparing reports. These updates coincide with the 40th anniversary of the opening of the University of Pittsburgh Chemistry Building and are evidence of the ongoing commitment from the University to provide space for education and research in the chemical sciences that reflects the highest standards of contemporary design.

Today, chemistry's complex includes the 15-story Chevron tower, Chevron Annex, Ashe Auditoriums, and Eberly Hall (formerly Alumni Hall). In the years preceding the opening of the Chemistry Building, faculty, researchers, and instruction in chemistry were located in up to eight buildings on the Oakland campus. In May 1971, on the former site of State Hall at the corner of Parkman Avenue and University Drive, construction began on the "Chemistry Building." This project would allow Chemistry, the largest department in the University at that time, to consolidate its operations into two interconnected structures, the Chemistry Building tower and Eberly Hall. It would also support late Chancellor Edward Litchfield's objective to transform the University into a national center for the sciences. Chemistry Department Chair W. Edward Wallace actively supported the endeavor, notably through meetings with several granting agencies for the purpose of raising funds for the building project.

With Jerome L. Rosenberg, Dean of the Faculty of Arts and Sciences, presiding, dedication of the Ashe Auditorium and Chemistry Building took place in November 1974. Lauren H. Ashe, for whom the Ashe auditorium was named, reflected on his education and his career. A Pitt alumnus and pioneer in the pharmaceutical industry, Mr. Ashe expressed "a sincere wish that all Pitt students will remember, every time they enter this great chemistry tower and auditorium, that here is where they are preparing themselves for their life's work." Representing the University, opening speeches were given by William Rea, chair of the Board of Trustees, and Chancellor Wesley W. Posvar. Highlighting the significance of chemistry education and research were presentations by Irving Wender, Research Director, Pittsburgh Energy Research Center, U.S. Bureau of Mines, "Chemistry and the Energy Problem"; Klaus H. Hofmann, University Professor and Director of the Protein Research Laboratory, School of Medicine, "The Significance of Chemistry to Medicine"; Gilbert Stork, Professor of Chemistry, Columbia University, "New Strategies for the Syntheses of Prostaglandins"; Leo Brewer, Professor of Chemistry, University of California at Berkeley, "The Chemical Bond in Intermetallic Compounds"; and Gerhard Herzberg, Nobel Laureate, National Research Council, Ottawa, Canada, "Spectra and the Structure of Molecular Ions."

Selected as a runner-up for the 1975 *Industrial Research Magazine* Lab of the Year, the Chemistry Building shared its runner-up distinction with another local research lab, Alcoa's Chemical and Metallurgical Laboratory, Building C, at the Alcoa Technical Center in Upper Burrell Township, Westmoreland County. The winner of the 1975 Lab of the Year designation was the Lawrence Livermore Laser Fusion Laboratory, Livermore, Calif.

Although the building never bore its name, Gulf Oil Corporation and the support it provided to the University of Pittsburgh were acknowledged in a plaque that has recently been rehung at the Parkman Avenue entrance to the Chemistry Building, now known as the Chevron Science Center, in recognition of Chevron Corporation's donation of the former Gulf Oil Applied Research Center in Harmarville to the University.



State Hall at the corner of Parkman Avenue and University Drive



Excavation for Chemistry Building



Ashe Auditorium and Chemistry Building construction at corner of Parkman Avenue and University Drive. Alumni Hall (now Eberly), in rear.



Aerial view of University of Pittsburgh Oakland campus. Chemistry Building (now Chevron Science Center), upper left; Cathedral of Learning, lower right.

Faculty Highlight: Renā Robinson



Professor Renā A. S. Robinson

Assistant Professor Renā Robinson of the Department of Chemistry and her research group (Fig. 1) are focused on making research progress that will benefit aging populations including people suffering from neurodegenerative disorders such as Alzheimer's disease and infectious conditions such as sepsis. Her group uses analytical and bioanalytical approaches and merges them with clinical and biological applications to medicine and human health. The primary focus of research in the Robinson group is proteomics, involving simultaneous study of thousands of proteins.



Figure 1. Robinson Group, Summer 2014, left to right. Liqing Gu, Renā Robinson, Wentao Jiang, Adam Evans, Rudolfó Guerrero, Christina King, and Zhiyun (Judy) Cao.

Proteomics is useful for answering biological questions related to the identification of proteins in a given tissue, cell, organ, or organism; understanding how proteins change abundance in different conditions (such as normal and diseased); localizing proteins and studying protein structure, gaining insight to protein dynamics, posttranslational modifications, and binding partners; amongst other questions.

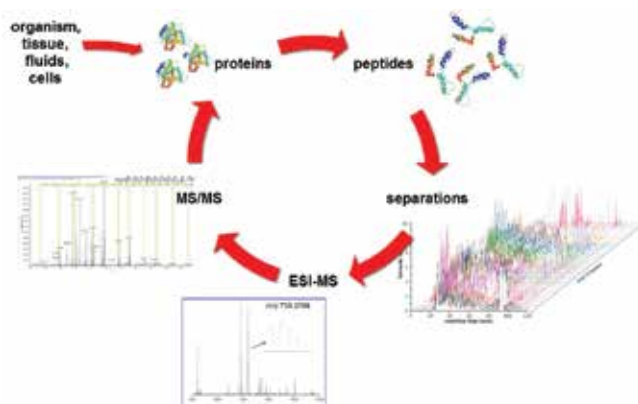


Figure 2. Bottom-up proteomics approach to characterizing thousands of proteins simultaneously in tissues.

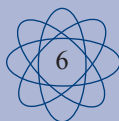
While there has been tremendous progress in the field of proteomics, a lot remains to be done with regards to development of high-throughput proteomics assays as well as application of proteomics to solve problems of human disease. Therefore, the research interests of the Robinson group are centered on: (i) development of high-throughput quantitative proteomics assays, (ii) application of proteomics to study Alzheimer's disease, aging, and other age-related conditions.

Development of high-throughput quantitative proteomics assays

The primary analytical tools used in the Robinson group are liquid chromatography (LC) separations and mass spectrometry (MS). A specific area of interest is multiplexing, whereby the Robinson group uniquely chemically barcodes as many samples as possible and mixes them into a single mixture for MS analysis. These innovative multiplexing approaches rely on the use of stable heavy isotope atoms and are necessary for the Robinson group to answer important questions about aging and disease.

Application of proteomics to study Alzheimer's disease, aging, and age-related conditions

Aging is complex and multifactorial in nature and thus challenging to investigate. The Robinson group is particularly interested in immunosenescence, which is associated with the pathogenesis of age-related diseases including Alzheimer's disease and leads to a greater susceptibility to infections, tumors, and possibly cancer. The Robinson group is using proteomics to delineate the molecular basis of peripheral immune system changes which occur during aging and Alzheimer's disease.



Faculty Nuggets

Sanford Asher has been chosen to receive the 2015 FACSS Charles Mann Award for Applied Raman Spectroscopy. Recently, his work creating UV Raman spectroscopy is being developed to go onto the 2020 Mars lander.

George Bandik continues to guide our ACS student chapter. The chapter has been selected to receive an Outstanding Award in addition to a Green Chemistry Award for its activities during the 2013-14 academic year. The Green Chemistry Award announcement letter states: "We extend our warmest congratulations to the students and Professor Bandik for setting such a fine example for other chapters and being exemplary chemistry ambassadors ... Professor Bandik's efforts certainly represent the best in undergraduate science education and mentoring around the country."

Alex Deiters was awarded a grant from the Kaufman Foundation that will support research using zebrafish embryos with an expanded genetic code to gain a deeper understanding of the TGF- β pathway. Alex also received a grant from the National Science Foundation for research aimed at synthesizing light-controlled analogs of the natural product rapamycin.

Sean Garrett-Roe was awarded an ACS PRF grant for his research proposal titled "Ultrafast Vibrational Spectroscopy (2D-IR) of Ionic Liquids." The nonlinear and multidimensional spectroscopies developed in the Garrett-Roe lab can reveal structural dynamics on time scales spanning femtosecond-microseconds.

Seth Horne has been selected as a *Thieme Chemistry Journal* Awardee for 2014. The award is intended to recognize promising young professors at the beginning of their career and is made by the editorial boards of the journals *Synlett*, *Synthesis*, and *Synfacts*.

Geoffrey Hutchison and **Daniel Lambrecht** received a 2014 Camille and Henry Dreyfus Special Grant in the Chemical Sciences awards for their effort on "Creating an Open Quantum Chemistry Repository." This effort aims to create an open mobile-ready, Web-based database of accurate quantum calculations of molecules. The Pitt Quantum Repository will consist at first of 50-100,000 molecules and quantum chemical data. The database will grow over time to more molecules and more computed properties.

Kabirul Islam will be a participant in the Cottrell Scholars Collaborative New Faculty Workshop in Washington, D.C., and the 2014 NIH Mentoring Workshop in Dallas, Texas. He has been awarded funding from the provost's area and the Samuel and Emma Winters Foundation to support his research, "Design and Development of Chemical Modulators for Oncogenic TET2 Mutants."

Kenneth Jordan was named a Richard King Mellon Professor. Jordan was honored in a special issue of *J. Phys. Chem. A*, "From Quantum Mechanics to Molecular Mechanics: A Tribute to Kenneth D. Jordan" as a leader in the field of theoretical chemistry on the occasion of his 66th birthday. Ken Jordan, with his students Ozan Karalti and Xiaoge Su and collaborator Wissam Saidi, developed an improved method for correcting density functional theory for dispersion interactions. Their paper describing this method [*Chemical Physics Letters* (20 January 2014)] was selected as an Editor's Choice article and was the fourth-most downloaded *CPL* article over a 90-day period.

Kaz Koide and graduate student Matthew Tracey received a Technology Collaboration Award at the 18th Annual Merck Technology Symposium. The Koide group has been collaborating with Merck Research Laboratories to expedite trace palladium analysis in pharmaceutical production. The Koide group and the Merck team are the corecipients of this award to recognize their successful development and implementation of the method at Merck.

Daniel Lambrecht has been selected as a recipient of the 2014 ACIE Innovation in Education Awards and has been awarded funding from the provost's area to support his proposal, "Toward a bottom-up understanding of supported nanoparticles."

Xinyu Liu received the D. John Faulkner Award from American Society of Pharmacognosy. Xinyu's research on novel synthetic methodology development related to complex carbohydrate synthesis was highlighted in *Chemistry World* (22 January 2014). His work on complex alkaloid biosynthesis was highlighted as the inside cover of *ChemBioChem* (Issue 5, 2014) and *Chemistry Views Magazine*. Xinyu's most recent work in this area further received global highlights, including in *Chemical and Engineering News* (September 15, 2014 Issue) as "Newfound Enzyme Could Aid Synthesis" and in the University of Pittsburgh Web site and *University Times* (September 25, 2014) as "Pitt Chemical Biologist Finds New Halogenation Enzyme."

Tara Meyer received the Greater Pittsburgh Women Chemists Committee Award for Encouraging Women into the Chemical Sciences. This award recognizes significant accomplishments by individuals, male or female, who have stimulated or fostered the interest of women in chemistry, promoting their professional developments as chemists or chemical engineers.

Renā A.S. Robinson has been selected as the 2014 NOBCChE recipient of the Lloyd N. Ferguson Young Scientist Award. This award is granted based on demonstrated excellence in scientific research and documented contributions to her field. It also recognizes dedication to research and to the community. Renā was specifically commended for her "...scientific achievements including your high number of peer reviewed publications, teaching experience at Pittsburgh, and your professional service...".

Nat Rosi was awarded a Chancellor's Distinguished Research Award. Awardees must have achieved preeminence in their field and be so recognized in letters of support from national and international leaders in the field.

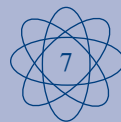
Alex Star's research, working with graphene and single-wall carbon nanotubes, was cited in the *Pittsburgh Tribune-Review*. The article titled "Graphene earning nickname of 'miracle material'" appeared on the front page of the Tribune on Sunday, October 27, 2013. In addition, Alex is the PI on a winning team in the Pitt Innovation Challenge. Team Nanoketo included Alexander Star, David Finegold (professor of pediatrics and human genetics), and Star's graduate students James Ellis, Sean Hwang, and Gregory Morgan. Only three teams were chosen from among the 60 competitors. Each team will receive a \$100,000 research award. The teams were to propose a solution to the challenge, "From cell to community: How can we individualize solutions for better health(care)?"

We're on Facebook!

Remember that you can visit the
Department of Chemistry
Facebook page.

[www.facebook.com/
pittchemdepartment](http://www.facebook.com/pittchemdepartment)

Stay connected with
department news and events.



2014 Graduate Awards*Dietrich School of Arts and Sciences
Fellowship*

Shelby Anderson
 Nicholas Ankenbruck
 Edward Beall
 Wei Chuen Chen
 Xinyu Chen
 Michael Chido
 Andrew Coukouma
 Scott Crawford
 Arthur Davis
 Sean Hwang
 Clinton Johnson
 Patrick Muldoon
 Jamie Nowalk
 Qi Qin
 Erin Shields
 Luis Vazques-Maldonado
 Rachael-Anh Wilson
 Anqin Xu

Goldblatt Fellowship
Zachary Reinert*Hurd Safford Graduate Teaching Award*

Ashley Bober
 Robert Bressin
 Ryan Jakubek
 Madu Mendis
 Michael Nardone
 Michael Washington

*Hurd Safford Graduate Fellowship
Award*

Sarah Wells

Mellon Predoctoral Fellowship

James Hemphill
 Lauren Marbella
 Zhiting Li

NSF Graduate Research Fellowship

Stephen Groskreutz
 Erika Varner

Pittsburgh Quantum Institute (PQI)

Odbadrakh Tuguldur
 Keith Werling

*RKM Graduate Fellowship -
Center for Energy*

Brian Bloom

Erratum: Issue 10, Fall 2013,
 page 2, paragraph 2. "Class of
 1973: Where are they now?"
 Dr. Abromovitz should be Ms.
 Abromovitz

Graduate Highlight: Brett Allen

Brett Allen, plant manager, Reaxis, Inc., McDonald, Pa. received his PhD in chemistry in 2010. Reaxis manufactures an extensive selection of inorganic, organometallic, metal, and acid catalyst products and innovative specialty chemicals. Before joining Reaxis, Brett's research endeavors included collaboration on the development of wireless sensor technology, design of carbon nanotube chemical resistors for detection of CO₂, study of enzyme-containing antibacterial and antifungal foams and coatings, and proof-of-concept luminescent disclosure of pH-sensitive fluorophore chemistries. He is a business and scientific consultant for research analytics in materials science, nanomaterials, open innovation, and sensor-based applications. As a member of Alex Star's group, Brett's graduate research focused on the synthesis and application of novel carbon nanomaterials. He received his BS in chemistry from Bethany College, W.Va. in 2006. In his current role at Reaxis, Brett leads a team of 30 operations staff, oversees the plant operating budget, and is responsible for production of more than five million pounds of product per year.

Corporate Partnerships and Support

Vital to the support of our educational mission at the undergraduate and graduate levels, there are a number of ways in which corporate and technical society partnerships with the Department of Chemistry provide benefit. They include:

- Bayer Lecture Series and Bayer Graduate Fellowship. This year's Bayer lecturer, Professor Joseph Desimone, University of North Carolina at Chapel Hill, gave talks on Translating Basic Science into Products and the Role of Diversity in Making that Happen, and Breakthroughs in Imprint Lithography and 3D Additive Fabrication to Advance Next Gen Drug Delivery Technologies.
- Recipients of Bayer MaterialScience fellowships include Hyo Jeong Kim, a current graduate student in Professor Haitao Liu's group. Other awardees and their current employers include: Doug Kauffman, National Energy Technology Laboratory; Yifan Tang, Atom Inc.; Hong Zhang, Depuy Synthes; Adam Gagorik, Massachusetts Institute of Technology; and Yong Zhao, Bayer MaterialScience.
- In collaboration with PPG Industries, a Symposium on Innovations in Materials Chemistry was held in spring 2014.
- The department facilitates the review of student resumes and has recently provided opportunities for Valspar, PPG, and BASF to interview students on campus.
- Awards to outstanding undergraduates are provided by Valspar, Society for Analytical Chemists of Pittsburgh (SACP), and the American Institute of Chemists. BASF and Braskem provide support for Graduate Excellence Awards for graduate students.
- The American Chemical Society (ACS) Pittsburgh Section, SACP, Spectroscopy Society of Pittsburgh (SSP), and American Institute of Chemical Engineers cosponsor an annual job search for chemical professionals seminar.
- Robert Langer, Massachusetts Institute of Technology, presented the 33rd annual Pittsburgh Conference lecture Biomaterials and Biotechnology: From the Discovery of the First Angiogenesis Inhibitors to the Development of Controlled Drug Delivery Systems and the Foundation of Tissue Engineering.
- Since their inception in 2010, Department of Chemistry Undergraduate Laboratory Poster Sessions have been held at the conclusion of each term. Instituted in lieu of traditional written final exams, these events have become popular as a wrap-up celebration. They provide an opportunity for approximately 250 students enrolled in upper-level analytical and physical chemistry laboratory courses to enhance their communication skills, gain valuable experience giving scientific presentations, and build their confidence as they explain complicated ideas to a broad audience. Corporate sponsors have included PPG Industries, Reaxis, SACP, SSP, Alcoa, Gateway Analytical, ChemImage, RJ Lee Group, Extrel CMS, Bayer, Valspar, and INDSPEC Chemical Corporation. To recognize student excellence, posters and presentation skills are judged by graduate students and faculty and awards are presented. As an outreach initiative patterned after these poster sessions, corporate sponsorship and the Women's Chemist Committee of the ACS Pittsburgh Section has allowed us to expand this opportunity to high school students through the STEM-ulate Science Showcase.

We acknowledge with gratitude the ongoing support provided by our sponsors that makes these opportunities possible.



Undergraduate Highlight: Nicole Bauer



On April 27, 2014, more than 200 people gathered in the Ashe lobby to celebrate the success of this year's graduating senior class. All of our graduates were recognized and given a small gift as a sign of the great respect that we have for each of them. Among the crowd was Nicole Bauer. She received her Bachelor of Science degree in chemistry with a material science option. She also graduated with both University and departmental honors. Nicole was a consistent Dean's List student during her time with us and also received our department's Mary Louise Theodore Prize, given to outstanding graduating seniors who had an impact on our undergraduate program. Nicole was actively involved in undergraduate research working under the direction of both Wipf and Meyer. She was also involved in our Undergraduate Teaching Program,

teaching in the Organic Laboratory Program to great student reviews. In addition

to this, she was very active in our nationally recognized American Chemical Society Student Chapter, where she volunteered for countless outreach efforts including our yearly celebration of National Chemistry Week at the Carnegie Science Center. She is currently pursuing graduate studies at the University of North Carolina at Chapel Hill. She will be working with Dr. Wei You and investigating organic solar cells. We wish all of our graduates fond memories of their time spent with us and great success in the future. Congratulations!

Rebuild of All Teaching Labs Has Been Completed!



This summer saw the completion of the renovations to all the teaching spaces in Chevron. All

of the general and organic chemistry labs have been made much more student friendly with open spaces, new equipment, and instruments. The lecture halls and lobby area have been made much more welcoming and the Bunsen Brewer Coffee Shop has been a huge success. At the same time the undergraduate office in Chevron 107 has also been redesigned and updated. It is a great one-stop shop for all questions concerning our undergraduate program. The next time you are in the Oakland area, why not drop by and check out all the changes? The building looks great, but it is the undergraduates that make it special. We are happy to share our good news with you.



Before



After



2014 Undergraduate Awards

Chancellor's Scholar
David W. Palm

The Valspar Award
Joshua A. Casto
James J. McKay

The Lowy Scholarship
Joseph D. Dudenhoeffer
Samuel R. Friedlander

The Esther and Tobias Dunkelberger Memorial Scholarship
Joshua A. Casto

The Organic Division Undergraduate Research Fellowship
Brian D. Griffith

The McKeever Summer Undergraduate Research Fellowship
Zachary A. Eddinger

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Tingting Dai
Melody L. Kessler
Michael J. LeClaire
Bradley J. Lukasak

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Zachary A. Eddinger
Brian D. Griffith
James P. Kachmar

The Rita R. and David A. Rossi Sr. Scholarship
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Tingting Dai
Sarah Dubnik

The Richard F. Zarilla Award
Jeffrey R. Bevan
Aaron S. Linn
Michael S. Mizrahi

The Silverman Prize
Kelsey J. Wiggins

The American Institute of Chemists Award
Britany A. Austin

The SACP College Award
Steven C. Taylor

The Mary Louise Theodore Prize
Nicole E. Bauer
Bret M. Boyle
Rodger A. Dilla
Evan A. Doud
Robert B. Kang
Brian C. Michael
Cyrus R. Ramavarapu

The Phillips Medal
Adrianna D. Jensen
David W. Palm

Department Milestones

Peng Liu, Assistant Professor



Peng Liu—Peng joins the department from the University of California, Los Angeles, where he completed his PhD and postdoctoral work on computational studies of organic, organometallic, and biochemical reactions in the group of Kendall N. Houk. He received his BS degree from Peking University in 2003 and MSc degree from the University of Guelph in 2006. He has published 43 papers and a book chapter in the areas of transition metal-catalysis, organocatalysis, and organic polymer materials. Dr. Liu's current research focuses on the computational investigation of organocatalytic and transition metal-catalyzed reactions to explore the reaction mechanisms and the development of theoretical models to quantitatively describe the origins of reactivity and selectivity. This fall, Professor Liu will teach CHEM 2310, Advanced Organic Chemistry I, one of the core courses for the graduate students in the organic division.

Peter A. Bell, Lab Instructor



Peter Bell—Peter has joined the department and is teaching Chemistry for Health Professionals, Principles of Organic Chemistry, and Organic Chemistry Lab in the current academic year. He received his BS in chemistry from the University of Notre Dame and completed his PhD with Toby Chapman here at the University of Pittsburgh. His research focused on the synthesis of phenylene-vinylene dendrimers. The dendrimers were designed and modified for biomimetic light harvesting and tested in solar cells in collaboration with Jung-Kun Lee's group in the Swanson School of Engineering. Teaching chemistry has been Peter's goal since his first experience teaching an organic chemistry lab he developed during high school. His experience with the undergraduate program includes teaching and coordinating the organic lab program, the nursing chemistry lab, and the honors organic lab experience. While a teaching assistant at Pitt, he was among the inaugural winners of the Elizabeth Baranger Teaching Award in 2005. He also was recognized with a Safford Award for Excellence in Graduate Student Teaching (2005) and the first Safford Teaching Fellowship in 2008.

Hernan (Bud) Brizuela, Computer Support/IT Administrator



Hernan (Bud) Brizuela—Bud serves as the department's network administrator and IT support. He is available to assist with any computer, printer, or networking needs. Prior to working with chemistry, he did similar work for biological sciences for seven years. He started working for Pitt full time in the year 2000 with CSSD's computer help desk. He did his undergraduate work here at Pitt. In his free time, he performs with several local bands, where he plays the great highland bagpipes, tenor sax, and blues harmonica.

Peter G. Chambers, Director of Shared Research Support Services



Peter Chambers—Pete continues his service to the University in a newly created position under the Office of the Dean. He comes into the position from the lab of Peter Wipf, under whom he was the lab supervisor of the Center for Chemical Methodology and Library Development (CMLD). Pete is an alumnus of the department, having received BS degrees in Chemistry and Materials Science and Engineering in 2000, following which he studied magnetic thin film processing under Caroline Ross at MIT. After MIT, Pete worked under John Porco at the Boston University CMLD specializing in automation in diversity oriented synthesis. He is in the process of obtaining his MBA from the Katz Graduate School of Business and an MS in Civil and Environmental Engineering from the Swanson School. Pete is responsible for oversight of instrumentation centers including the X-ray Diffraction, NMR, Mass Spectroscopy, Materials Characterization, and Microscopy facilities; the Electronics, Glass, and Machine Shops; the Biological Sciences and Chemistry stockrooms; and the Dietrich School animal facilities.

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A warm thank you to those who made donations from July 1, 2013–June 30, 2014

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