

53  
**I**  
126.908  
**O**  
16.0074  
**W**  
183.8579  
**Au**  
196.97

# THE UNIVERSITY OF IOWA

## COLLEGE OF LIBERAL ARTS & SCIENCES

### Department of Chemistry

Department web address: <http://www.chem.uiowa.edu/>

*We hope that many of you will have the opportunity to visit campus, tour our remodeled facility, and see this new interactive periodic table.*



### The View From the Front Office

The view from the front office has changed dramatically in the past year! In large part because of the progress of our renovation efforts, the department administration is now located in new offices that can be found approximately where the former offices were located. But as we get ready for the new school year, new surroundings and a fresh start are encouraging to all of us.

The early part of the year just past was dominated by the "500-year flood" of the Iowa River last June, and our efforts to address the extensive damage as well as we could. All chemistry groups that reside in IATL had to move into temporary quarters in CB from mid-June until early November, and then move back to their labs across the street. Even after they returned to IATL, great amounts of time and energy had to be spent to bring their labs up to speed again. Finally, conditions have generally stabilized so we can return all of our efforts to our central research and teaching missions.

Despite the impact of the flood, the renovation of CB has continued as planned. The new classrooms and computer labs designed into CB have come on line in time for fall classes. These new classrooms complement the instructional labs that we opened in January '08. Significant amounts of new research

space also have been opened, and almost all of the faculty members in CB have moved their research groups into new or renovated space over the past year. Renovation efforts continue, are now focused in the NW wing of the building, and should be completed in February, 2010. At that point, approximately 84% of the Department's research space within CB will be new along with 100% of our instructional space. This represents a massive shot in the arm for our programs.

But even with these dramatic and visible changes, the true story of this Department is always a tapestry of the stories of our people. **Ned Bowden** earned promotion and tenure this past year while **Norb Pienta** earned promotion to full professor. **Gary Small** was named a Collegiate Fellow by the College, **Vicki Grassian** was named Outstanding Mentor by the Graduate College, and several faculty members won other prestigious awards. Norb Pienta officially takes over as editor-in-chief of the *Journal of Chemical Education* in September. Our graduate enrollment holds stable between 130 and 140, a level possible only because the College of Liberal Arts & Sciences has continued to support competitive TA stipends, the Graduate College has appointed a number of our current students as Presidential Fellows, and our GAANN grant brings in

#### Inside this issue:

Faculty Honors, Accomplishments and Commitment	2
Renovation Update	4
Presidential Fellows	5
Undergraduate Awards	5
Faculty Promotions	6
Postdoctoral Associates	6
Staff News	7
Building a Graduate Program	7
Graduate Degrees Awarded	8
Student Achievements	9
Shriner Scholarships	9
Alumni Updates	11
Honor Roll	14

support from the Department of Education. The financial support of our alumni and friends continues to grow despite the stresses of the current economy, and the moral support they provide always is heartwarming. Thus it's an exciting time to be a part of the Department of Chemistry, and we hope to share some of that excitement with you through this newsletter.

David Wiemer  
Professor and Chair



#### By the Numbers — Fall 2009

##### Teaching and Research in the Department of Chemistry

25	tenure/tenure-track faculty
2	visiting assistant professors
3	lecturers
133	graduate students
141	undergraduate majors

## Department of Chemistry Faculty Honors, Recent Accomplishments and Commitment

### College of Liberal Arts and Sciences names Small as Collegiate Fellow



This year four University of Iowa professors have been named Collegiate Fellows of the UI College of Liberal Arts and Sciences (CLAS) in recognition of their distinguished teaching, research and service. We are proud to announce that Professor **Gary Small** is one of the four 2009 Collegiate Fellows.

"This award recognizes senior faculty whose distinction in teaching and scholarship is matched by exceptional leadership in service to the university, the college, and their departments," said CLAS Dean Linda Maxson. "I am pleased to be able to recognize their achievements and honor their dedication."

Collegiate Fellows receive a discretionary fund to support their teaching and research, and meet periodically with Dean Maxson to discuss opportunities for improving faculty life and undergraduate education. As noted by Dean Maxson, Small has pioneered work in developing new techniques in infrared spectroscopy that has both clinical and environmental applications. His investigation of noninvasive methods of measuring blood glucose levels in patients with diabetes has long received support from the NIH. His research on remote sensing through passive infrared spectroscopy has received support from the Environmental Protection Agency and the U.S. Army.



### UI Graduate College honors Grassian for mentoring

University of Iowa faculty member **Vicki Grassian** was honored at a reception by the Graduate College for her exemplary work as a mentor to graduate students. She received the 2008 Graduate College Outstanding Mentor Award. As noted by the Graduate College, Grassian strives to be available, expects and

demonstrates excellence, and sets high expectations for her students while providing as many professional development opportunities as possible. Although nominations for the Graduate College Outstanding Mentor Award can be made by anyone in the university, letters from current and former graduate students play an important role in the selection process.

"The Graduate College sees mentors as a crucial ingredient of education," said Graduate College Dean John Keller. "We recognize UI faculty's significant efforts to assist with all aspects of graduate scholars' research, dissertation, professional development and job placement. These efforts demonstrate a commitment to helping."

### Quinn receives teaching honors

Professor **Daniel Quinn** was selected by students to receive *two* awards this year! He was selected by students in the Honors Program for the Honors Teaching Award and he was nominated and selected as an Honoree for the University Housing Recognizes Academic Excellence Award. These awards recognize his efforts in teaching undergraduate students organic chemistry and are a tribute to his efforts to make the academic experience at The University of Iowa a truly rewarding one. His selection falls on the heels of his receipt of a Collegiate Teaching Award and demonstrates his strong commitment to our students and to excellence in pedagogy.

### Other faculty recognition

Recognition for faculty comes in many ways including grant support, appointments, and participation in important panels and workshops. Recent highlights include the newly funded equipment grants that have enhanced NMR instrumentation in the Department of Chemistry. Two separate grants, led by chemistry faculty **James Gloer** and **Sarah Larsen**, were funded by NSF and NIH, respectively. The NSF grant will be used to obtain a 500-MHz solid state NMR spectrometer equipped for running state-of-the-art high-resolution solid-state magic angle spinning (MAS) NMR experiments. The NIH grant will be used to acquire a 600-MHz NMR spectrometer. This instrument will replace a first-generation high-field 600-MHz spectrometer that has seen heavy shared usage for nearly 20 years, and will incorporate the latest magnet technology.

**Jan Rohde** received funding from the Mathematical and Physical Sciences Funding Program (MPSFP). The MPSFP is to provide seed funding to develop pilot data and to conduct preliminary work that will enable UI researchers to submit competitive applications for external research grants. MPSFP awards are directed to newer investigators trying to develop a research agenda. The title of his proposal was "Synthetic Pathways to High-valent Iridium Complexes for C-H Bond Activation."

Professor and DEO **David Wiemer** was invited to Shizuoka University, Hamamatsu, Japan, to present a series of seminars describing the current state of his efforts to develop new agents for treatment of cancers such as glioblastoma multiforme and multiple myeloma, as well as the mechanisms of activity that establish the observed biological effects. His host, Professor Mitsuji Yamashita in the Graduate School of Science and Technology, received funds to support this visit through the Ministry of Health, Labor and Welfare. Professor Wiemer gave four seminars including one at the Gene Research Center at Shizuoka University in Shizuoka, one at the Medical School of Hamamatsu University, and two at the Graduate School of Science and Technology in Hamamatsu.

Other accomplishments include **Vicki Grassian's** three-year appointment to the Editorial Advisory Board of the *Journal of Physical Chemistry* published by the American Chemical Society, her three-year appointment as Chair of the *Interfacial Chemistry and the Environment* Continuing Symposium for the Division of Colloid and Surface Chemistry of the American Chemical Society, and her invited participation in the National Science Foundation Workshop – Reversing Global Warming: Chemical Recycling and Utilization of CO<sub>2</sub>. Professor Vicki Grassian has also been an invited keynote speaker to several meetings this year including the Environmental Nanoparticles: Science, Ethics and Policy symposium at the University of Delaware, Sixth Congress of the International Society for Theoretical Chemical Physics in British Columbia, Canada, and at the Synchrotron Environmental Science IV Conference in San Francisco, CA.

## The 44th Midwest Regional ACS Meeting 2009

The 44th Midwest Regional ACS Meeting (MWRM 2009) will be hosted by the Iowa Section on October 21-24, 2009 at the Sheraton Iowa City Hotel in Iowa City, Iowa. The meeting website URL is <http://www.mwrm2009.org>. Have a look and then join us if you can!

The technical program begins Wednesday, October 21, at 1:00 pm. Symposia for the meeting are based on this year's theme for National Chemistry Week: "Chemistry: It's Elemental" and includes topics focused on Health, Energy, and the Environment. Oral and poster presentation sessions in the traditional areas of chemistry will be offered, as well as an exhibition, integrated high school and undergraduate activities, and an ACS career workshop. Special events include a Presidential Plenary Lecture by ACS President-Elect Joseph Francisco and the annual Midwest Award Symposium and banquet. There will be a workshop symposium for high school teachers on Saturday.

There are a variety of sponsorship opportunities with marketing value, and academic and commercial exhibitor tables are available. It's a great way to market your products and services to an audience of Midwest Region chemists. Please contact the meeting Exhibits Chair, Ed Gillan ([edward-gillan@uiowa.edu](mailto:edward-gillan@uiowa.edu)), for more information.

Aside from the meeting itself, this is a fine time to visit Iowa City and the Department of Chemistry; as new portions of our building renovation continue to reach completion you will enjoy seeing the progress. We hope you can join us for MWRM 2009, and for a visit to the Chemistry Building!

The State of Iowa mandates that a certain portion of every renovation project, however funded, be spent on art. We were recently successful in convincing the University that the installation of an interactive periodic table would satisfy a portion of our art obligation. This periodic table was purchased from England and installed right inside the main east entry to CB. Although we have not advertised its existence (until now), word is quickly spreading across campus about the uniqueness of this periodic table. We hope that many of you will have the opportunity to visit campus, tour our remodeled facility, and interact with the periodic table. (see picture on front cover)

## A memory of the old; a glimpse of the new!



*The old Lecture Hall, 300 CB, was demolished in 2006 to allow construction of new teaching labs in the center core of the building. Twenty-four of the original seats from this space were saved for installation on second floor SE, near highly trafficked instructional space. Twenty-two of these seats were refurbished and two were left in their original condition. A plaque explaining the origination of the seats will be installed over the two seats that were not refurbished.*

**See our new giving site ([www.givetoiowa.org/chemistry](http://www.givetoiowa.org/chemistry)) for ways that you can support the Department of Chemistry!**



## Chemistry Building Renovation Update

Construction for Phase 2 of the State Funded Renovation Project, which includes funds from the Carver Trust for renovation of the NW wing, started in June 2008 due to delays in completion of Phase 1b. Phase 2 affects all wings of the building and the second floor central core, and this work was divided into parts. The five "parts" of Phase 2 include: 1. Fit-out of labs and offices for four research groups in the NE wing; 2. Renovation of second, third, and fourth floors in the SE wing; 3. Renovation of parts of third and fourth floors in the SW wing; 4. Renovation of the entire second floor, central core; and 5. Renovation of the second, third, and fourth floors, NW wing (Carver Trust).

The research groups of Professors Greg Friestad, Chris Pigge, Jan Rohde, and Alexei Tivanski moved into the NE wing during the winter 2009 (Part 1). Much relocation, including the Main Administrative Office, took place in late 2008 to empty the SE wing in preparation for demolition. The Chemistry Center Suite, Graduate Student Commons, and some General Assignment Classrooms (GACs) were completed the beginning of June 2009. Third floor SE was turned over to new occupancy in July 2009. The Main Administrative Office relocated back to its original site this July. Professors Dan Quinn, Claudio Margulis, and Ed Gillan relocated all/part of their research groups into third floor SE in July also. There is one unassigned computational lab left on this floor for a future hire. Professor Lou Messerle is just starting his move from the NW wing to new research space on fourth floor SW wing (Part 2). A large high hood research lab appropriate for an advanced faculty search remains unassigned on fourth floor SW.

Professor Darrell Eyman also relocated from the NW wing to accommodate demolition. His new office, E230 (second

floor central core), is large enough to accommodate a fairly sizable group of students for office hours. There are GACs and other spaces near his new office to accommodate even larger groups if necessary. The remainder of second floor central core, turned over for occupancy the week of August 3 (Part 4), includes three additional GACs, the Teaching Assistant office hours space, several classrooms/computer room assigned to Chemistry, and a reading room which will include an office for the Chemistry Librarian. The second floor central core (Part 4) was prioritized over completion of Part 3 to accommodate the start of fall classes in August.

Professor Ned Bowden's research group will relocate in September across the hall on fourth floor SW from his current location. The main conference room (largest one) will be completed in September also (Part 3). Demolition on the NW wing started in parts of the space in June but is now in full swing with a completion date slated for February 2010. The NW wing renovation is funded by the Carver Trust and provides new space for five research groups plus shared instrumentation lab facilities for the entire department.

The Department of Chemistry is honored to receive this second Carver Trust Award for renovation. This award, coupled with the UI matching funds, enables us to renovate another large portion of the building that the state project did not cover. The positive impact to our building afforded by the Carver Trust simply cannot be overstated. These funds greatly influence our ability to provide the highest quality space to more of our researchers and help us attract top candidates in current and future faculty searches.

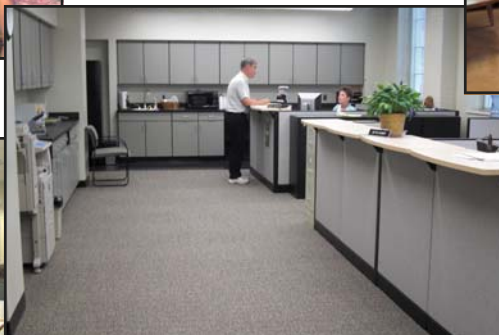
We will be planning another Open House in spring 2010 to celebrate the completion of Phase 2. This will be advertised on our website in addition to a postcard mailing which will include the specifics of the event. We would love to see you there.



Chemistry Center Suite



General Assignment Classroom



Administrative Office



Faculty and Staff Commons



Graduate Student Commons





## Two Faculty Earn Promotions

Professors Ned **Bowden** and Norb **Pienta** have passed significant milestones in the university system this year.

After joining the Department faculty in the fall of 2002, **Prof. Bowden** earned promotion and tenure to the Associate Professor level effective July 2009. Bowden's research is focused on preparation and application of well-defined organic materials. For example, macroscopic thimbles composed of polydimethylsiloxane (PDMS) can be used to site-isolate  $\text{PdCl}_2$  from the products of Wacker-Tsuji oxidations or Pd-mediated homocouplings. This approach offers new possibilities for organic synthesis in general, including such novel concepts as conducting Grignard reactions in the presence of water.



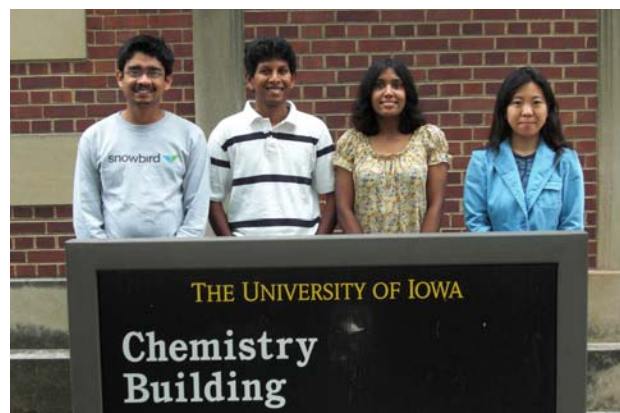
**Prof. Pienta's** chemical education research program also has received national distinction, and he earned promotion to Professor in January 2009. Pienta's research has focused on use of technology to study student problem solving – studies that may help all faculty become more effective chemistry teachers. Norb was recently named as the editor-in-chief of the Journal of Chemical Education and assumed this post September 1. JCE recently announced a partnership with ACS Journals and starting in mid-October manuscripts can be submitted through the Journal's new ParagonPlus electronic submission portal. But they all will come to the UI!



The Department congratulates both of our colleagues on their success. We wish them the best for a long and productive career at The University of Iowa.

## New Postdoctoral Associates Join Research Groups

In addition to undergraduate and graduate students, postdoctoral scientists play a key role in the research programs within the Department. These scholars provide both expertise and perspective to our research groups that continue our ongoing research efforts and help stimulate our existing efforts down new and exciting pathways. We attract scientists from the United States and around the world to further their scientific training in our department. The new postdoctoral associates who have joined us in the past year are (research director, Ph.D. institution, and degree year in parentheses): Chandana **Karunatilaka** (Tivanski, The University of Arizona, 2007), Sudip **Nath** (Haes, Indian Institute of Technology Kharagpur in the Republic of India, 2007), Heaweon (Julie) **Park** (Grassian, The University of Iowa, 2008), and Varuni **Subramaniam** (Haes, The University of Arizona, 2007).



From left: Sudip Nath, Chandana Karunatilaka, Varuni Subramaniam, and Heaweon Park

## Got goals? Around the world....



We have spotted two "got goals?" t-shirts outside of Iowa City over the past two years. We need a much larger show of support! Last year, Mike Estenson, Electronics Shop Manager, was photographed wearing his Chemistry t-shirt on RAGBRAI XXXVI. This year, Holly Kavalier (Hazel Kerr's daughter) and Holly's brother, Sam, were photographed at a tourist spot in Seattle, WA. The shirts can be purchased directly from the Department of Chemistry. A variety of children's sizes are also available. Department of Chemistry alumni, faculty, staff, and students are encouraged to sport your shirt wherever your travels take you and send us a photo. We would very much like to make you a part of "got goals" Around the World.

## Growth and Development among Department Staff

Amber Seaton, Administrative Assistant II, left the Department of Chemistry in January 2009, and now is employed by the College of Pharmacy. John Hawkins was hired in April 2009 to fill this position. John comes to us from the Department of Pediatrics. He has over 12 years of experience at UIHC and prior to that he worked for the University of Missouri for 15 years in administrative assistant roles. John has a BA in Business Administration and many years of experience in the higher education setting. He moved to Iowa in 1996 to be closer to family, and he looks forward to working with everyone in the Department of Chemistry.

Professor Norb Pienta, Editor-in-Chief of the *Journal of Chemical Education*, has hired two staff members to assist him in his new role. Lindsay Elliott and Rob Hill have a new office in the renovated northeast wing of the Chemistry Building. We enjoy having Lindsay and Rob as part of the Chemistry team, and anticipate additional growth of the *JCE* staff at the UI over the coming year.

Frank Turner, machinist in the Department of Chemistry, was honored for 10 years of service in CLAS. During this time, Frank repeatedly has convinced us that he can fix anything with moving parts, and he has become an invaluable part of the Department of Chemistry.



From left: Rob Hill, Lindsay Elliott, John Hawkins, Frank Turner and Jay Parsons

## Graduate Students Again Receive Support from the UI Graduate College SIF Program

This year, the UI Graduate College again generously provided supplemental support for our graduate program via their Strategic Investment Fund (SIF). The SIF provides support for meritorious funding requests from UI graduate programs on a competitive basis. For the second year in a row, the Graduate College supported a Chemistry departmental request from this fund. The support that was approved helped the Department to maintain the competitiveness of our Presidential Fellowship offers for prospective new graduate students, and also provided supplemental funding specifically targeted for senior Research Assistants in externally-funded research groups who are making good progress toward the Ph.D. In late fall, 2008, an *ad hoc* faculty committee selected candidates from among our post-comprehensive exam RAs representing eight different research groups. A variety of criteria were considered, and input from candidates' research advisors was also employed. As a result, 10 more of our senior RAs were rewarded for their efforts this spring with \$2000 fellowships, in addition to the 10 individuals similarly recognized the previous year. This is an important opportunity for the Department to provide tangible rewards to a significant number of our advanced graduate students in recognition of their hard work and successes. This Spring, the Graduate College SIF Committee considered applications for multi-year awards, and we have recently learned that the Department has been awarded funds to continue this tradition for the next three years.

## Imagine the Opportunities Waiting Ahead: Building a Graduate Program

The Fall 2008 semester brought another terrific class of twenty-three graduate students to the Department of Chemistry, bringing our number of graduate students to 133. Approximately 170 applications were received and reviewed for fall 2008 enrollment consideration.

**Iowa Lectureship Series:** Professor Darrell Eyman coordinated faculty visits to undergraduate chemistry programs throughout the Midwest for the purpose of recruiting prospective students to the graduate program. The lectureship series provides Iowa faculty with the opportunity to interact with faculty and students at these schools, present their research, and answer any questions about the graduate program. A few of the schools visited include Gustavus Adolphus College, Carleton College, Augustana College, Eastern Illinois University, Hope College, Creighton University, and Knox College. Professor Chris Cheatum will be taking over this responsibility. If you'd like to arrange a visit to your school, contact him at [chris-cheatum@uiowa.edu](mailto:chris-cheatum@uiowa.edu).

## Graduate Degrees in Chemistry Awarded 2008—2009

This successful cadre of recent graduates will miss out on the fruits of our new renovations, but they successfully utilized our existing facilities to charge forward and earn well deserved degrees!

We awarded 15 Ph.D. Chemistry degrees in the Summer 2008, Fall 2008 and Spring 2009 semesters. Their names (degree year, advisor's name) and dissertation titles are:

Jigar **Bandaria** (2009, Kohen); *A Novel Approach Towards Studying Enzyme Functional Dynamics Using Kinetic Isotope Effects and Ultrafast Vibrational Spectroscopy*;

Michael **Callahan** (2009, Wiemer); *Stereocontrolled Synthesis of Functionalized Hexahydroxanthenes*;

Luke **Haverhals** (2008, Leddy); *Fuel Cells as Power Sources and Sensors*;

Sarah **Hill** (2009, Cheatum); *Examining Molecular Interactions in the Active Site of Carbonic Anhydrases Using Vibrational Echo Spectroscopy*;

James **Holst** (2009, Gillan); *Synthesis of Inorganic Heptazine-Based Materials*;

Poonam **Kaushik** (2009, MacGillivray); *Molecular Co-Crystals: Sacrificial Handles, New Functionalities and Photoactive Dienes*;

Nolan **Mente** (2008, Wiemer); *Cascade Cyclizations in Synthesis of Isoprenoid Natural Products*;

Alan **Miller** (2009, Bowden); *Utilization of Polymer Membranes for Purification, Site-Isolation, and Cascade/Sequential Reactions*;

Arindom **Saha** (2008, Eyman); *Synthesis and Characterization of Grafted Vanadium and Co-Grafted Vanadium/Zirconium Mixed Oxides on Gamma-Alumina Surface*;

Nicholas **Schoenfeldt** (2008, Eyman); *Synthesis and Characterization of Gamma-Alumina Supported Manganese Oxides Prepared by Grafting and Impregnation for Applications in Heterogeneous Catalysis*;

Jennifer **Schuttlefield** (2008, Grassian); *Laboratory Studies of Reactions of Atmospheric Gases with Components of Mineral Dust Aerosol and Research in Chemical Education*;

Larry **Shull** (2008, Wiemer); *Phosphate and Bisphosphonate Inhibitors of Isoprenoid Biosynthesis*;

Martin **Thuo** (2008, Bowden); *Pot-In-Pot Reactions: Heterogenization of Homogeneous Reaction Processes for Otherwise Impossible Reaction Cascades*;

Jose **Tormos** (2008, Quinn); *Catalytic Power and Tetrahedral Intermediate Stabilization in Cholinesterase Catalysis*;

Yuping **Wu** (2008, Small); *Optimization Methods for Quantitative Measurement of Glucose Based on Near-Infrared Spectroscopy*;

We awarded 12 M.S. Chemistry degrees over the same time period. Their names (degree year; advisor) are:

Timothy **Andrews** (2009, Pigge); Tyson **Friday** (2008, Haes); Jacob **Frueh** (2008, Quinn); Gordon **Hunter** (2009, Grassian); Hye Jin **Lee** (2008, Friestad); Jessica **Magwood** (2008, Arnold); Jeffrey **Miller** (2008, Small); Yang **Gao** (2008, Gloer); Rui **Zhang** (2008, Geng); Vishal **Sharma** (2009, Geng); Whitney **Wettlaufer** (2009, Tivanski); Kevin **Watson** (2009, Larsen)

These students' diligent efforts and struggles have prepared them for an ever changing professional scientific community. The Department is proud of this group of talented Chemistry practitioners and we wish them much success in their future scientific career endeavors! Please keep in touch!

We want to hear from you!

Be part of the next newsletter by e-mailing your latest accomplishments. See page 16 or e-mail your update to [chem-alumni@uiowa.edu](mailto:chem-alumni@uiowa.edu).

We'd love to hear from you!

Making A Difference

Your generous contributions support people and scientific research such as you read about in this newsletter. For ways to support UI Chemistry visit our direct Web-based giving page [www.givetouiowa.org/chemistry](http://www.givetouiowa.org/chemistry)

**Notes from the Editor:** I hope you have enjoyed this year's edition of the Chemistry Newsletter. Thank you to Dave Wiemer, Ned Bowden, Greg Friestad, Vicki Grassian, Ed Gillan, Jim Gloer, Amnon Kohen, Hazel Kerr, Earlene Erbe, Sharon Robertson, Janet Kugley, Kristina Rogers, Lin Pierce, Timothy Koon, and Lindsay Elliott for their contributions to the newsletter articles. Thanks to all the wonderful alumni and friends that sent in their updates.  
—Bettie Baumert, Editor



## Student Achievements Recognized in 2009

### Outstanding Teaching Assistant Awards

The University of Iowa Council on Teaching annual Outstanding Teaching Assistant Awards are awarded to teaching assistants who have demonstrated outstanding ability as teachers at The University of Iowa. For 2007-08, **Joseph Cannistra** and **William Rock** received \$1,000 each.

In spring 2009, Darrell Eyman and Vicki Grassian presented four Outstanding Teaching Assistant awards funded through the Laboratory Manual Fund. The recipients were **Antonio Manuel**, **Zhen Wang**, **Joe Topczewski**, and **Jason Vanlerberghe**.

---

### UI Graduate College awards dissertation prizes

**Jonas Baltrusaitis**, having earned his doctorate in chemistry in 2007, won the Graduate Dean's Distinguished Dissertation Award in Mathematics, Physical Sciences and Engineering for his dissertation, "Experimental and Theoretical Studies of the Adsorption of Atmospherically Relevant Gases on Metal Oxide and Carbonate Surfaces," supervised by Vicki H. Grassian, Professor of Chemistry. Jonas is currently a postdoctoral research fellow at the UI's Department of Chemistry and Central Microscopy Research Facility.

---

### Sandra H. Barkan Graduate Student Mentor Award

**David A. Rotsch** won the Sandra H. Barkan Graduate Student Mentor Award. This award, named for the former Associate Dean of the Graduate College, recognizes graduate students who show exceptional mentorship of undergraduates and junior graduate students in their assistantships.

---

### NSF Predoctoral Fellowship

**Eric Koehn** won a predoctoral NSF fellowship this year. His project title is: "Unraveling the Catalytic Mechanism of *thyX* Encoded Thymidylate Synthase" and the duration of the award is three years (June 1, 2009 – May 31, 2012). This fellowship results from a national competition and the award includes full stipend and some allocation for research expenses and traveling. Eric's studies focus on a newly discovered enzyme (FDTS - coded by the *thyX* gene) that allows certain microorganisms, including several human pathogens, to bypass the well-studied biosynthetic path toward one of the DNA bases (thymine). Preliminary studies indicated a very different chemistry toward thymine from that present in humans and most other complex organisms. Consequently, FDTS is an attractive target for antibiotics design, and current studies will attempt to further expose the unusual mechanism and identify intermediates that may serve as leads toward mechanism-based inhibitors.

---

## Shriner Tuition Scholarships Awarded to Graduate Students



Eric Nelson and Tatiana Mishanina

Tatiana **Mishanina** and Eric **Nelson** were recipients of Shriner Tuition Scholarships for the Fall 2008 semester. These students were selected by the Admissions Committee to receive the scholarship based on their strong undergraduate record, academic honors or awards, and involvement in extracurricular activities, organizations, and/or community activities. Mishanina received a Bachelor of Science degree in Chemistry (ACS) with a minor in Mathematics from Wichita State University. Nelson earned a Bachelor of Arts degree in Chemistry (ACS) from Gustavus Adolphus College. Shriner Tuition Scholarships are awarded to first-year graduate students in chemistry. The Shriner Fellowship was established in 2000 by Dr. Fred Raths and the late Mrs. Bonnie Raths in honor of Dr. Ralph Shriner, long-time professor and DEO in the Department of Chemistry.

## Chemistry Graduate Students Get Involved!

The Graduate Student Senate (GSS) serves as the voice of the approximately 5,500 graduate students on campus. Three students from Chemistry have contributed over 1000 hours of service to GSS last year, in addition to their commitment to their own teaching and lab/research responsibilities. All three played a vital role in the James F. Jakobsen Graduate Conference, which provides a forum for oral, poster, and performance presentations featuring students across the entire UI campus. This event is sponsored by GSS and the Graduate College each spring. The three students were **Tim Paschkewitz** in the Leddy Group ( B.S. in Chemistry from the University of Wisconsin – Whitewater), **Perry Motsegood** also in the Leddy Group (B.S. and M.S. in chemistry from Illinois State University) and **Kristina Rogers** in the Gloer Group (B.S. in Chemistry from Bradley University). Tim and Kristina built the new Jakobsen Conference website and designed the 56 page conference program. They were also responsible for the acquisition of monetary sponsorship and food donations from local sponsors.



Tim Paschkewitz



Kristina Rogers



Perry Motsegood

Two graduate students from the Department of Chemistry were honored for the strength of their presentations at the Jakobsen Conference. **Pragati Galhotra** (Grassian group) won 1<sup>st</sup> place and **Reygan Freeney** (Geng group) won third place in the Math, Physical Science, and Engineering Division.



Pragati Galhotra



Reygan Freeney

Facilities Management was able to secure funding to create an “Exterior Masonry” project in addition to our renovation project. The work on this project will begin in the fall of 2009 and be completed by August 2010. The entire building exterior will be tuck-pointed, broken bricks replaced, and limestone will be cleaned. This work, combined with the installation of new windows, will create a truly beautiful building.

## Alumni Memories and Updates

### In Memoriam:

**Dr. Robert J. Alberhasky, 96**, passed away on February 18, 2008. He received his B.A. in Chemistry in 1937, and his M.D. from the College of Medicine in 1941.

**Robert M. Heldridge, 71**, passed away on February 23, 2008. He received his B.S. in Chemistry in 1959.

**Fred M. Dearborn, 88**, passed away on August 17, 2008. He received his B.S.P. in Pharmacy in 1949 and his B.A. in Chemistry in 1949.

**Donald W. Schmadeke, 76**, passed away on September 1, 2008. He received his B.S. in Chemistry in 1956.

**John D. Dougherty, 80**, passed away on October 4, 2008. He received his B.A. in Chemistry in 1950 and his M.S. in Prev Med & Env Hlth in 1959.

**Donald O. Mack, 65**, passed away on November 7, 2008. He received his B.A. in Chemistry in 1965.

**Gregory D. Huseboe, 33**, passed away on November 10, 2008. He received his B.S. in Chemistry in 1998 and his M.S. in Chemical & Biochemical Engineering in 2000.

**Dr. Kenneth L. Hamm, 85**, passed away on November 13, 2008. He received his Ph.D. in Chemistry in 1957.

**Joseph P. Szmyd, 83**, passed away on December 28, 2008. He received his B.S. in Chemistry in 1950.

**John N. Jessup, 82**, passed away on January 1, 2009. He received his B.A. in Chemistry in 1950, and his M.S. in Chemistry in 1952.

**Dr. Edward Buchanan Jr., 81**, (UI Chemistry emeritus faculty member) passed away peacefully in Iowa City, Iowa on January 7, 2009. Buchanan was a long-serving analytical chemistry faculty member in our department from 1960 to 1995. He was born in Detroit, Michigan in 1927. Buchanan started his college education at The University of Detroit where he earned his B.S. and M.S. degrees. In 1959, Buchanan graduated from The Iowa State College with his Ph.D. Following graduation, Buchanan was an instructor for one year at The Iowa State University, Department of Chemistry. In 1960, he became an Assistant Professor at The University of Iowa Chemistry Department and was promoted through the ranks to full professor. He retired as an emeritus professor in 1995. During his time at The University of Iowa, he married his wife, Mary Louise Strohmeier, on June 19, 1965. Buchanan was a 50 year member of The American Chemical Society and a longtime member of VFW Post #17. He also served on numerous committees including The Johnson County Computer Committee, The Land Use and Water Quality Committee, and as a trustee for Penn Township.

**Dr. Herbert J. Leary, Jr., 71**, passed away on January 8, 2009. He received his Ph.D. in Chemistry in 1971.

**Douglas G. Jones, 58**, passed away on January 13, 2009. He received his B.S. in Chemistry in 1972, and his M.B.A. in 1974, respectively.

**Dr. Chester M. McCloskey, 90**, passed away peacefully in Altadena, CA on January 15, 2009. He received his M.S. in Chemistry in 1942, and his Ph.D. in Chemistry in 1944. After his graduation from The University of Iowa, he taught at the California Institute of Technology and published significant papers on organic peroxides and related chemicals. In 1953, he established Norac, Inc., a leading manufacturer of organic peroxides, metallic stearates and pharmaceutical materials, with branches in California, Arkansas, and Sweden. Throughout his career, Dr. McCloskey was also involved in civic activities and in supporting academic institutions. On September 11, 2008, Dr. McCloskey traveled to Iowa City with his wife, Olive, to accept the honor of the College of Liberal Arts & Sciences, 2008 Alumni Fellow Award presented by Dean Linda Maxson.

**Dr. Robert E. Keller, 86**, passed away on January 15, 2009. He received his B.A. in Chemistry in 1947, his M.S. in Chemistry in 1949, and his Ph.D. in Chemistry in 1951.

**Dr. Jerry Sudarsky, 91**, passed away on March 4, 2009. A native of Brooklyn, New York, he attended the University of Iowa in the late 1930's. He was founder and chairman of Alexandria Real Estate Equities and several biotechnology industries. Early in his long career (1946), he founded the Bioferm Corporation, which used fermentation processes to produce vitamins. He sold the company in 1960 and went on to work in policy development for the United Nations and Israel and as an executive for such companies as Daylin, Inc. and JEG. He held numerous patents in industrial microbiology. He reconnected with The University of Iowa in the 1990's and generously supported the Department of Chemistry. Dr. Sudarsky was a CLAS Alumni Fellow in 2004.

**Dr. Clarence L. Carpenter, 82**, passed away on May 2, 2009. He received his Ph.D. in Chemistry in 1960.

**James J. Miller, 76**, passed away on May 27, 2009. He received his B.S. in Chemistry in 1960.

**Leonard M. Levin, 81**, passed away on June 15, 2009. He received his M.S. in Chemistry in 1941.

**Mrs. E. Lucille (Livengood) Thompson, 81**, passed away on July 13, 2009. She received her B.A. in Chemistry in 1949.

\*\*\*\*\*

### Alumni Notes (degrees and research advisor's name, if known, are in parentheses)

**Wallace D. Techau** (B.S. 1952) notes that after graduating, he embarked on a long career at BF Goodrich from 1952 to 1985. He worked as a compound chemist to develop polymer products for industrial products such as all types of belts.

**William S. Shore** (Ph.D. 1953, Tanford) retired in 1991 from the Rock Island Arsenal, just down the interstate from UI, and moved to Ridgecrest Village in Davenport, IA. His wife, Elizabeth, passed away on April 14, 2004.



**John Valassiades** (B.A. 1956, M.D. 1960) practiced medicine in Dayton, Ohio, until his retirement in 1999. He is now serving on the Board of Public Health, Dayton Montgomery County.

**Keith H. Byington** (B.S. 1958) spent two years in the private sector after graduating from UI and then enrolled in graduate school at the University of South Dakota, earning a Ph.D. in Pharmacology in 1964. He followed this up with postgraduate work at the Universities of Florida and Wisconsin. Keith then joined the faculty of the Medical School at the University of Missouri where he is still active.

**Darryl E. Brown** (B.S. 1964) was employed by the Food and Drug Administration from February 1964 until retirement on January 5, 2005 (41 years). During his FDA career, which included time in Kansas City, New York City, Minneapolis, and Dallas, he held many positions including Supervisory Chemist, Laboratory Director, and Senior Advisor to the Southwest Regional Director. Darryl also found time to obtain an M.S. degree in Business & Human Relations from Amber University in Dallas in 1986. His retirement plans are to keep physically and mentally active. His activities include doing Meals On Wheels and homebound ministries, serving on a homeowners board and as safety chairman, crime watch patrol, elementary school mentoring, children's bible study, Bible Study Fellowship, and raising a 13 year old grandson—a really active retirement!

**Charles H. Henrickson** (Ph.D. 1968, Eyman) recently retired, after 34 years, from the Chemistry Department of Western Kentucky University. He also spent time at University of Cincinnati, University of Illinois at Urbana-Champaign, and University of California-Berkeley, resulting in a career that was exactly what he wanted it to be. He's done a lot of writing, publishing his 18<sup>th</sup> tome two years ago, and is still at it. With a lovely Kentucky-born wife, two daughters and four grandchildren, his retirement is joyful and busy. He is still very close to Tom Schroeder and Roger Bacon. Go Hawkeyes!

**Michael R. Sheets** (B.S. 1969, Frank) tells us that after serving in the U.S. Army running a group of computer analysts, he got a graduate degree in Computer Science and was hired by IBM more than 35 years ago. Most of his time at IBM involved development of new hardware and software products. More recently, Mike has been involved in technical sales support with some travel world-wide. He is married and has two grown children, none of whom had the good sense to go to Iowa.

**Robert D. Hughes** (Ph.D. 1970, Stille) informs us that after graduating from Iowa he was employed as a Research Scientist and Research Supervisor for Amoco Oil Company for 25 years, retiring in 1995. Since then he retired to the Branson, Missouri area and now does various volunteer work for some community organizations.

**Jim League** (M.S. 1971, Davis and Eyman) is currently living in Smyrna, TN. His scientific career focus involves bioremediation of hazardous wastes (organic of course, no rads).

**Paul Zimmer** (B.S. 1971, Buchanan) is now in the 13<sup>th</sup> year of transition from the Research Lab to the classroom, teaching Science and Mathematics at Sullivan High School in Chicago, and he is enjoying every minute of it.

**David H. Naffziger** (M.S. 1972, Buckles) works as a Senior Research Scientist for Whitmire Micro-Gen Research Laboratories in St. Louis, Missouri. His company supplies insect control products to the Professional Pest Control and Greenhouse markets and was recently purchased by BASF, the chemical company. His division will become BASF, Pest Control Solutions and will be the largest supplier of products to the Professional Pest Control Industry. The good news is that David reports that he will still have a job after the merger.

**Terry Rooney** (Ph.D. 1972, Friedrich) continues his PC & Mac computer consulting business while living in Lincoln, CA in the Sun City Adult Living Community. Sports cars, food and wine, photography and travel occupy the rest of his time.

**Steven M. Heilmann** (Ph.D. 1973, Wawzonek) retired from 3M after 34 years of conducting organic and polymer research on January 1, 2008. In February, 2008, he became a Research Associate in the Biotechnology Institute of the University of Minnesota and is conducting biofuels research, primarily with algae.

**Mitchell D. Erickson** (Ph.D. 1976, Frank) is currently Director, Northeast Operations, U.S. Department of Homeland Security, where he is responsible for interagency and first responder coordination for DHS' Science & Technology. His prior research in environmental science and analytical chemistry involved developing novel technologies, identified sources and fates of pollutants, investigated chemical reaction conditions, and produced improved analytical methods for PCBs, chlorinated dioxins and furans, and radionuclides. He has published two books – *Analytical Chemistry of PCBs*, (now in its 2<sup>nd</sup> Edition) and *Remediation of PCB Spills* and over 150 technical publications.

**Mark Rutenbeck** (B.A. 1976) is currently the Vice President of Custom-Pak, Inc. in Clinton, Iowa.

**Rick C. White** (Ph.D. 1977, Buckles) tells us that he was recently named as Deutscher Akademischer Austausch Dienst (DAAD) Research Ambassador for the 2009-2010 academic year. As a German Research Ambassador, he will talk to various schools about either carrying out research in Germany or engaging in collaborative research efforts with German research groups.

**Victor Hoffman** (Ph.D. 1981, Buckles) has been a Professor of Chemistry at Truman State University for forty years. He is retiring on May 31, 2009 and plans to take care of his farm full-time.

**Phil Stremple** (Ph.D. 1983, Coucouvanis) continues as the Environmental Industry Manager for Agilent Technologies life sciences and chemical analysis business based in Folsom, CA. His job takes him around the world all too regularly but he enjoys it very much. Phil notes that if he had only known that chromatography and mass spectrometry were going to play such a role in his life, he would have paid more attention to analytical chemistry while getting his degree in inorganic chemistry. He sends his regards to all those UI Chemistry classmates he met in the late 70's and early 80's.

**Tim C. Smith** (B.S. 1986, Wiemer) recently returned to Iowa City to work at Integrated DNA Technologies as a Senior Chemist. He enjoys spending time with his daughter and running marathons (just did the Boston Marathon) and doing triathlons.

**Scott Trapp** (B.S. 1987, D.D.S. 1991) currently serves with the Commissioned Corps of the U.S. Public Health Service where he is the Chief Dental Officer in White Earth, MN, with the Indian Health Service. He served on the Emergency Response Team for the Secretary of Health and Human Services during Hurricane Katrina where he provided liaison activities to the Disaster Mortuary Operations Response Team.

**M. Gary Sayed** (M.S. 1991, Quinn) tells us that after leaving the University of Iowa, he completed his graduate education at the University of Pennsylvania, earning an Ed.D. in Higher Education Management. He later earned a Ph.D. in Radiological Sciences from the Medical College of Ohio at Toledo. Presently, he serves as the president of the American Board of Science in Nuclear Medicine and the founding provost of Medina Medical University.

**Danae M. Schuster** (B.S. 1991, Eyman) went on to attain a Ph.D. in organic chemistry from the University of North Carolina at Chapel Hill in 1996 under Dr. Joseph L. Templeton, followed by a law degree J.D. in 2000 from UNC. Danae then worked as a patent attorney in litigation and opinion work in a New York City law firm until 2008 and is currently working in criminal law as a County Prosecutor in Iowa.

**Steve Treimer** (B.S. 1995, Buchanan) is currently funded by the CDC for chemical terrorism preparedness and first responder training for chemical threats at the University of Iowa Hygienic Lab. He is also a local fire fighter and scuba diver living on a century farm in Scott County with his 9 year old daughter.

**Malinda (Heskett) Combs** (B.S. 1999) attended The University of Alabama-Birmingham and obtained her M.S. degree in Forensic Science in 2002. She is currently employed as a Forensic Scientist with the Johnson County Crime Lab in Mission, Kansas (Kansas City metro area). She works in the drug chemistry section identifying controlled substances in samples submitted to the Crime Lab from law enforcement agencies.

**Benjamin Armitage** (M.S. 2002, Arnold) has been working as a patent attorney with Schwegman, Lundberg & Woessner in Minneapolis since 2005.

**Cianán B. Russell** (B.S. 2004, Messerle) received a Ph.D. in Chemistry with an emphasis in Chemical Education from Purdue University in 2008. He now has a Postdoctoral Fellowship at the Georgia Institute of Technology working with the Center for Workshops in the Chemical Sciences.

**Nitish Agrawal** (Ph.D. 2005, Kohen) is currently working as Research Associate at the Scripps Research Institute, Department of Immunology and Microbial Science, La Jolla, California in an HIV-Vaccine Research Program.

**Zack Rhoades** (B.S. 2005, Gillan) is now working for a bioinformatics software start-up company based in Berkeley, CA.,

focusing on business development and scientific application training. He will also be completing a Master's degree in instructional design this year. He hopes some of his classmates come out for a visit soon!

**Joseph Tesene** (M.S. 2005, Leddy) tells us that since graduation, he has been enrolled at the University of Iowa College of Dentistry pursuing a D.D.S. degree. Throughout dental school, he has been involved in various research projects in the Dows Institute for Dental Research. After 4 years of hard work, Joe is finally graduating from dental school! He and his wife Nina are moving to Des Moines this summer where he has found a great career opportunity at a dental office in nearby Pleasantville, IA. Although this will be a significant life change for both of them, they will always remember the people who make the Department of Chemistry great!

**Michele A. Fox** (B.S. 2006, Cannon) is currently pursuing a Ph.D. in analytical chemistry at the University of Texas in Austin. She is working in Jason Shear's group and recently presented her second year research seminar entitled *Dynamic-Mask Multiphoton Lithography for Probing Topographical Influences on Biofilm Formation*.

**Alison M. Uhl** (B.S. 2006, Bowden) is in her third year of dental school at the University of Iowa, and even as she pursues a career in public health dentistry, her ties to chemistry remain strong. She has been active in Alpha Chi Sigma, the national chemistry fraternity, since 2005, and recently was elected as the Master Alchemist (President) of the Alpha Theta Chapter at Iowa.

**Chaminda Hettige** (Ph.D. 2007, Leddy) is currently in a post-doctoral position at the University of Wyoming. He is also a proud father of a two month old daughter.

**Luke Haverhals** (Ph.D. 2008, Leddy) is currently working as an Assistant Research Professor at the United States Naval Academy with Dr. Paul Trulove. His wife, Noelle, also recently gave birth to their first child, a daughter named Lilliana.

**Matthew Bartucci** (B.S. 2008, Bowden) is currently in graduate school at Loyola University in Chicago.

**Martin T. Mwangi** (Ph.D. 2008, Quinn and Bowden) is currently a Mary-Fieser Postdoctoral Fellow with Prof. George Whitesides at Harvard University.

**Larry W. Shull** (Ph.D. 2008, Wiemer) is currently in a postdoc position at Washington State University working with Professor Cliff Berkman making phosphoramidate peptidomimetic anti-cancer compounds for prostate cancer. He sends out a hello to everyone and says to keep up the hard work!

**Jose R. Tormos Melendez** (Ph.D. 2008, Quinn) is a post-doctoral research associate with Dr. Paul F. Fitzpatrick, in the Department of Biochemistry at the University of Texas Health Science Center at San Antonio, Texas. His research involves the study of nitroalkane oxidase. This enzyme is an unusual flavoprotein that oxidizes the carbon-nitrogen bond of nitroalkanes by forming a carbanion intermediate.

**Rui Zhang** (M.S. 2008, Geng) is currently a graduate student in the Interdisciplinary Graduate Program in Informatics (IGPI) at the University of Iowa.

---

## Your vital support works all year long.....

Your financial support is as **vital** as ever for us to remain a vibrant and growing Chemistry program in an era of uncertain state and federal funding. Your generous annual donations provide crucial funds to support a variety of research and teaching endeavors by the Chemistry Department including:

- **scholarships and awards** for outstanding graduate student researchers and teachers (recruiting and retention)
- **student travel grants** to encourage presentations of research at regional and national scientific meetings
  - **scientific instrumentation** purchases and upgrades for departmental research and teaching
- **building infrastructure upgrades** to facilitate student interactions in the building (*e.g.*, break areas and reading rooms)

Attendance at national scientific meetings exposes our students to state-of-the-art research and publicizes our continuing research successes at The University of Iowa. Your generous financial support increasingly provides important funds to supplement and *bridge the gap* between university funding and the real costs of our research and teaching missions. They help us retain current faculty members and continue to draw in the best and brightest new faculty and students. As our renovation project continues in earnest, our developmental funding needs will only increase. Join us in guiding our Department strongly forward into a successful second 150 years of Chemistry at The University of Iowa!

---

For more information about private support for the Department of Chemistry, contact Jeff Liebermann at The University of Iowa Foundation, Levitt Center for University Advancement, P.O. Box 4550, Iowa City, Iowa 52244-4550; (319) 335-3305 or (800) 648-6973; e-mail: [jeff-liebermann@uiowa.edu](mailto:jeff-liebermann@uiowa.edu).

For convenience, you may use our Chemistry Department's new direct web-based giving page (<http://www.givetoiowa.org/chemistry>) to donate to several of our more popular funds including the **Department of Chemistry Development Fund**, the **Chemistry Education Fund** and the **Burton Scholarship** for undergraduate instruction, and the **Ralph Shriner Graduate Student Fellowship Fund**.

## Alumni Updates for 2009 Chemistry Newsletter

An update is a great way to reconnect with your former classmates and professors!

Send your replies (**attach a separate sheet if needed**) by mail to : Department of Chemistry, c/o Chemistry Newsletter, University of Iowa, Iowa City, Iowa 52242-1294 or email us at: [chem-alumni@uiowa.edu](mailto:chem-alumni@uiowa.edu)

**Name:**

**Degree information (years at UI, type of degree and year earned, UI faculty advisor):**

**Address/phone number/e-mail:**

**Current and past career positions:**

Tell us about the significant events in your life and career since leaving the University of Iowa. Feel free to include any recollections (and photos?) from your years in our Chemistry Department.