



**THE**  
**UNIVERSITY**  
*of* **IOWA**  
**DEPARTMENT**  
*of* **CHEMISTRY**  
**2016-2017**  
**NEWSLETTER**



**MESSAGE FROM THE CHAIR**

**3**

**ELECTRONS AND ENERGY:  
THE PUZZLES OF MAGNETS, ULTRASOUND,  
ALGAE, SENSORS, AND POLYMERS**

*A PROFILE OF JOHNA LEDDY*

**4**

**THE ANNUAL CHEMISTRY  
APPRECIATION NIGHT**

**6**

**AWARDS AND NEWS**

**8**

**LECTURE SERIES**

**10**

**NEW FACULTY**

*MEET DAVID MCCURDY*

**13**

**NEW FACULTY**

*MEET MONA MAALOUF*

**13**

**UI'S PROFESSIONAL GLASSBLOWER**

*A PROFILE OF BENJAMIN REVIS*

**14**

**NEW FACULTY**

*MEET REBECCA LAIRD*

**15**

**IN MEMORIAM**

**15**

# MESSAGE FROM THE CHAIR

Greetings to all of our alumni and other friends of the University of Iowa Department of Chemistry. It has been quite awhile since our last regular newsletter, and the Department has experienced quite a number of changes in recent times. In summer 2015, our then-Department Chair, Professor Sarah Larsen, assumed the position of Associate Dean of the Graduate College. We thank Sarah for her service as Chair, and wish her good fortune as she pursues this important new phase in her career at the UI. Dan Quinn was elected to take over as Interim Chair of the Department for the subsequent semester, taking advantage of his prior experience in holding the office back in 1999-2002. Dan's generous willingness to take on this role gave the Department time to select a new Chair in an orderly fashion, and his service in this capacity is much appreciated. At the end of the process, I was appointed as Chair in early 2016.

Our Department and its missions continue to grow. We now have a faculty of 34 (29 tenure-track faculty and 5 lecturers) and nearly 160 graduate students. We have hired 15 tenure-track faculty since 2002 who have brought to the Department exciting new research programs in areas that range from synthetic chemistry to radiochemistry, environmental chemistry, computational chemistry, and biosciences. An additional new faculty member (Dr. James Shepherd) will be joining us in the Fall, aided by support from the UI Informatics Initiative. Last fall, we welcomed an incoming class of 32 graduate students, and another new class of similar size will join us this fall. At the same time, our undergraduate enrollments have grown dramatically, with 10% increases in each of the past two years. Our B.S. major has been retooled to accommodate expanded requirements for certification by the American Chemical Society, while our B.A. major has undergone a major redesign that provides students the flexibility to tailor their curriculum around their particular interests, such as environmental chemistry or the biological sciences. These changes are promoting a considerable growth in the total number of Chemistry majors, which now stands at around 240.

In other faculty-related news, Professor Vicki Grassian accepted a position at the University of California at San Diego and the Scripps Ocean-

graphic Institute early last year. Naturally, we were sorry to see Vicki depart, but we recognize that this move will allow her to take her stellar research career in environmental chemistry to yet greater heights. Vicki continues as an Adjunct Professor of Chemistry at the UI for the time being as she continues to mentor graduate students in her group to the completion of their Ph.D. degrees at Iowa. Mark Arnold accepted a prominent position on campus as Director of the UI Center for Biocatalysis and Bioprocessing, but like Sarah Larsen, remains a faculty member in the Department. As highlighted in this issue, we have welcomed three new lecturers over the past two years—Drs. Rebecca Laird, David McCurdy, and Mouna Maalouf—all of whom bring valuable experience and talents that benefit our teaching and other Departmental missions. I am also pleased to be able to announce several well-deserved faculty promotions. Claudio Margulis was promoted to full Professor in 2015. Last summer, Russell Larsen was promoted to Senior Lecturer and Tori Forbes and Betsy Stone were both promoted to Associate Professors with tenure. And in very recent news, Amy Strathman has been promoted to Senior Lecturer and Sara Mason has been promoted to Associate Professor with tenure. Finally, two of our long-time staff members—Sharon Robertson and Gene Hauge—retired last year. Gene and Sharon were both with the UI for over 20 years. They are certainly missed, and we wish them well!

Our faculty, staff, and students continue to win accolades, only some of which are highlighted in this newsletter. The list is lengthy, and I cannot do justice to it here, but I encourage you to keep abreast of such highlights as they are announced by visiting our website at <https://chem.uiowa.edu/news> or following us on Facebook at [www.facebook.com/UIChemistry](http://www.facebook.com/UIChemistry). To all of you, the friends and alumni of the UI Department of Chemistry, we hope that you enjoy catching up with all of the good things that are happening here at Iowa. And if you are ever in Iowa City, please feel free to contact us—we would be delighted to give you a tour of our facilities and update you on the ongoing progress in our department.

***James B. Gloer***

# ELECTRONS AND ENERGY: THE PUZZLES OF MAGNETS, ULTRASOUND, ALGAE, SENSORS, AND POLYMERS

*A PROFILE OF JOHNA LEDDY*

As I walked quickly as I could through the labyrinth that is the third floor of the Pappajohn Business building, I grew increasingly nervous. Not only was I running short on time, searching to find the room, but I was also insecure about my knowledge of a key part of the interview I was about to have with Professor Johna Leddy. After a knock and a “Come in,” I decided to be frank. “I did some research before I came, unfortunately I’m not very good with magnets.”

Leddy laughs. “It’s ok, no one is, that’s the point!” To further put me at ease, she told a joke. “Many years ago one of my students came charging in and he says ‘Leddy, I figured out what magnetism is!’ I said ‘Great Jim, tell me!’ He says ‘It was what was left over after we had figured out electrostatics.’ Thank you, Jim. That pretty much describes it.” We laugh, and the interview begins.

Electronics have become an integral part of our everyday lives, a good deal of which run on batteries. Leddy is researching electrochemical means of catalysis to improve portable energy systems



like batteries. “Reactions have rates, and catalysis is the process by which we increase the rate of the reaction.” In electrochemistry, rate is measured as current. An increase in current indicates a more efficient system. “If I can do something to a system to increase the current in electrochemical systems, for example, then that’s a good thing because then you get more energy for the weight that you’re carrying or the volume that you’re carrying. You also would have to recharge less often.” Leddy goes on to explain that she is looking at physical, not chemical, means of catalysis. For example, altering temperature and pressure are ways to increase the rate of a reaction without a change in the chemical catalyst.

Leddy focuses on less-conventional methods of catalysis that rely on physical rather than chemical modifications. One example is placing micromagnets on electrodes. “We always see that the rates are faster. Significantly faster, on the order of about forty percent when we look at a whole electrochemical cell, like a fuel cell or a battery.” Another example of work by the Leddy group uses ultrasound in a thin layer system. This method allows sound energy to be captured at the electrodes. In a thin layer of electrolyte where the bottom of the fluid is irradiated with ultrasound, sound reflects at the meniscus, the air-liquid interface back into the fluid. Energy is captured at the electrodes in the fluid, which is mapped by changes in the current at the electrodes. Because the quartz crystal “oscillator in your watch is an equivalent ultrasonic device,” the energetic tax to apply ultrasound for catalysis is low.

Leddy also seeks to improve access to fertilizer worldwide. “We’ve put algae on electrodes to make ammonia. Right now it’s produced commercially by the Haber-Bosch process, which on a good day is about 8% efficient. But it turns out algae makes ammonia. If you put algae on an electrode, algae makes about ten times more ammonia.” Currently, ammonia is going for about \$485 per ton, with a ton covering approximately 10 acres. “If you could get the algae to do its work on a pond on the farm where the algae is on an electrode, then you would be able to drive significant savings” and increase access to ammonia fertilizer on site.

If that’s not enough, Leddy has also had a hand in developing breath-based sensors for ethanol and acetone. Ethanol breathalyzers are used to determine alcohol consumption, and acetone breathalyzers can determine whether a person is diabetic, or had been exercising strenuously. These breathalyzers

also determine whether a person has been smoking, as they can pick up the extra hydrogen on a person’s breath after smoking a cigarette.

Leddy then lists a long list of projects she is working on, most of them dealing with energy. “We’ve built electrochemical systems, usually with magnets, for fuel cells and different kinds of batteries, different kinds of fuel cells, supercapacitors, solar cells, photovoltaic cells, generation of hydrogen, storage of hydrogen, which is a fuel for fuel cells.”

Leddy has at least twenty-five US patents, which is unusual for a chemist. I asked whether she took a different approach in her research when she was thinking about applying for a patent versus planning to publish a paper. “I don’t think it changes how you think about the science. I don’t think it changes the fundamental perspective. The document you write is different, but the basic idea is not different. A patent is a manifestation of a well thought-out fundamental process that is being converted into something useful.”

Leddy’s father is a chemist, and she recalls becoming interested in chemistry around the age of twelve. “He seemed like he was having fun. I think he was.” She started exploring electrochemistry as a graduate student because “as an undergraduate, it was the one thing [she] didn’t understand.” Leddy loves a good puzzle, and “electrochemistry is a pretty good puzzle.” As a faculty member, she enjoys “interacting with students and the science.”

Leddy received her B.A. in chemistry from Rice University in 1978, and her Ph.D. in chemistry from The University of Texas in 1984. She held a postdoctoral position at Los Alamos National Laboratory in the Fuel Cell Program, and then became an assistant professor at City University of New York and Queens College before coming to work for the University of Iowa in 1991. She is the vice president of the Electrochemical Society, a group of about 9000 members that meets twice a year. She will present her model on a polymer called Nafion in late May at their meeting. Leddy is also a reviewer for many different journals.

Leddy has a very clear goal in her research. “What can you do to make the world a better place?”

# THE ANNUAL CHEMISTRY APPRECIATION NIGHT

Our annual Chemistry Appreciation Night was held at the Iowa Memorial Union Ballroom on May 12th, where we once again took time to recognize both our undergraduate and graduate students. We once again thank the donors and supporters of the Department of Chemistry, without whom the scholarships and fellowships awarded would not be possible.

## Undergraduate Award Winners:

Donald J. Burton & Margaret A. Burton Scholarship	Luke Schiller
Russell K. Simms Scholarships	Kaitlyn Daugherty, Ashley Gilbert
E. David Cater Scholarship	Jacob Byers
Chemistry Alumni Award Recipients	Senior - Hepeng Ye Junior - Jiayi Li Sophomore - Jiajun Yao
CRC Freshman Chemistry Award	Tyler Brakke
Merck Index Award	Patrick Dey
American Institute of Chemists Award	Zehra Khan
ACS Division of Organic Chemistry Outstanding Senior Chemistry Student	Michael Vinyard
ACS Division of Inorganic Chemistry Outstanding Senior Chemistry Student	Andrew Kral
Analytical Chemistry Award	Zehra Khan
Viksnins, Harris & Padys Poster Awards	Zesen Lin, David Donovan, Charlie Rupp

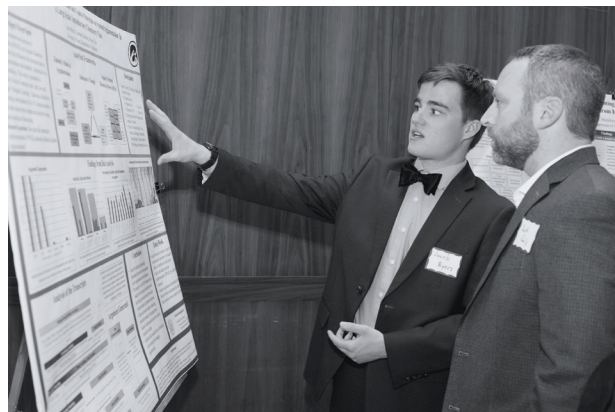
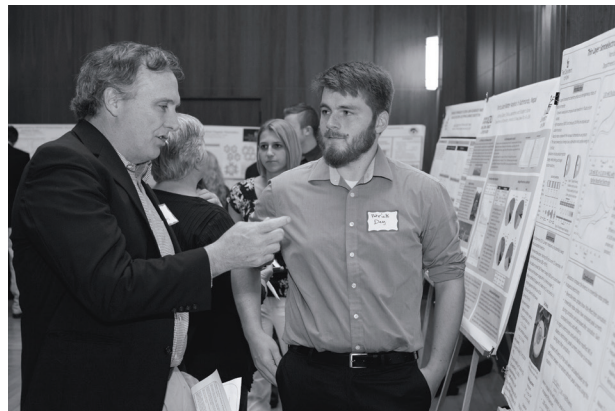
## Graduate Award Winners:

Chemistry Graduate Fellowship	Mortezaali Razzaghi
McCloskey Fellowships	Michael Welford, Cicily Ronhovde, Dinith Jayanetti, Eric Eitrheim, Anastasia Blake
Ralph Shriner Fellowships	Michael Sinnwell, Ryan Friedrich
Council on Teaching Outstanding Teaching Assistant Awards	Madhur Joshi, Cicily Ronhovde, Jennifer Schmidt, Chloe Schroeder
Departmental Teaching Assistant Award	Alisa Fairweather
A. Lynn Anderson Award for Research Excellence	Zahidul Islam, Qi Zhang

## NATIONAL SCIENCE FOUNDATION RESEARCH EXPERIENCE FOR UNDERGRADUATES (NSF-REU) IN NANOSCIENCE AND NANOTECHNOLOGY AT THE UNIVERSITY OF IOWA SUMMER 2015

The NSF-REU program in Nanoscience and Nanotechnology at The University of Iowa welcomed undergraduate students in the summers of 2015 and 2016 from the University of Dubuque, Harry S Truman College, Aquinas College, Iowa State University, Ohio Northern University, Washington and Lee University, University of Nebraska - Lincoln, Agnes Scott College, Gustavus Adolphus College and the University of Iowa. The students worked in labs across campus, participated in a Technical Writing Workshop, attended seminars on various aspects of nanoscience and nanotechnology, and each presented a poster at the Summer Undergraduate Research Conferences held in the Iowa Memorial Union in July. Thank you to the students and mentors for these successful summer programs!

This coming summer we will once again be welcoming undergraduates. The program will provide approximately eight undergraduate students with research experience in cutting edge topics related to environmental and health aspects of nanoscience and nanotechnology. REU participants will have the opportunity to work with faculty mentors from the departments of Chemical and Biochemical Engineering, Civil and Environmental Engineering, Chemistry, and Pharmacy.



LEFT TOP: Alisa Fairweather receives her Departmental Teaching Assistant award. LEFT BOTTOM: Three of our recipients of the Council on Teaching awards: Madhur Joshi, Cicily Ronhovde, Jennifer Schmidt, Chloe Schroeder. RIGHT TOP: Zehra Kahn and Professor Mishtu Dey enjoying Zehra's poster presentation about particulate matter in Pakistan. RIGHT 2ND FROM TOP: Patrick Dey conversing with Bob Harris about his poster. Bob is a Chemistry alumni, and helps support the poster awards for undergraduate research. RIGHT 3RD FROM TOP: Jacob Beyers and Professor Scott Daly review his poster presentation. RIGHT BOTTOM: Luke Schiller presents his poster to Professor Jim Gloer, DEO of Chemistry.

# AWARDS AND NEWS

## **Faculty Awards**

**Claudio J. Margulis** was promoted to the rank of professor. Prior to joining the faculty at Iowa in 2003, Prof. Margulis received his Licenciado en Ciencias Químicas degree from the University of Buenos Aires in Argentina where he did research on the statistical mechanics of ions in steam. He later received a Ph.D. from Boston University under the guidance of Prof. David Coker where he focused on non-adiabatic quantum dynamics problems, electronically excited states of molecules and angular momentum theory. After his Ph.D. he carried out postdoctoral work at Columbia University with Prof. Bruce J. Berne. This work focused on a wide range of theoretical and computational problems with a condensed matter and biological emphasis including dewetting and collapse, hydrophobic response and folding. His current research at Iowa focuses on the theory and simulation of soft condensed matter systems with particular emphasis on all physicochemical aspects of novel room-temperature ionic-liquids.

**Professor Elizabeth Stone** was promoted to the rank of associate professor with tenure. Prof. Stone is an analytical and environmental chemist with research interests in atmospheric particulate matter and their impacts on climate and health. Her expertise includes attributing pollution to its sources, through receptor-based source apportionment modeling in diverse regions of the world, including agricultural, remote, and urban locations in South Asia, Mexico, and the United States. Her research is currently funded by the US Environmental Protection Agency and National Science Foundation. She serves on the board of directors of the Iowa Academy of Science and as the secretary to the local section of the American Chemical Society. She earned her doctoral degree in 2009 from the University of Wisconsin-Madison in Environmental Chemistry & Technology and her bachelor of art's degree from Grinnell College in 2005 with majors in Chemistry (with honors) and French (with honors).

**Professor Tori Forbes** was promoted to the rank of associate professor with tenure. Tori Forbes received her B.S. in chemistry from Beloit College (Beloit, WI) and Ph.D. in actinide chemistry and environmental mineralogy from the University of Notre Dame (Prof. Peter C. Burns). After postdoctoral research with Prof.

Slavi Sevov (University of Notre Dame) and Prof. Alexandra Navrotsky (UC Davis), she began her independent career in the Department of Chemistry at the University of Iowa in 2010. Her research interests include actinide chemistry and characterizing molecular clusters for use as environmental model compounds and novel materials precursors. She was the recipient of an NSF Career Award with the Division of Materials Research in 2013 and a DOE Early Career Award with the Heavy Elements Chemistry Division in 2015. She is also a member of the NSF CCI Center for Sustainable Materials Chemistry based at Oregon State.

**Professor Sara E. Mason** was promoted to the rank of Associate Professor with tenure. Prof. Mason is a theoretical physical chemist specializing in density functional theory and electronic structure methods. In Prof. Mason's lab, researchers use computational chemistry to study technologically important nanomaterials, as well as their transformations in and impacts on the environment. The National Science Foundation currently supports research in the Mason lab, including a CAREER grant and her membership in a Center for Chemical Innovation. Other highlights of Mason's work include development of advanced courses in Quantum Chemistry and Molecular Modeling, serving the University community as a Safe Zone Program Facilitator, and she is currently the Councilor of the local Iowa Section of the American Chemical Society. Prior to coming to Iowa in 2010, Prof. Mason was a National Research Council Postdoctoral Fellow in the Physics Laboratory at NIST. She received her Ph.D. in Chemistry, 2007, from the University of Pennsylvania, B.S. in Chemistry, 2001, from St. John Fisher College (summa cum laude), and A.A.S. in Chemical Technology, 1999 from Monroe Community College.

**Dr. Russell Larsen** was promoted to the rank of Senior Lecturer. Russell Larsen has taught at the University of Iowa since 1995. He earned a BA in chemistry from Grinnell College, a PhD in physical chemistry from Harvard University and completed research as a postdoctoral associate at The University of California-Berkeley. In recent years, he has specialized in teaching large first-year chemistry courses, with enrollments of 500 -1500 students per semester. Dr. Larsen has established a reputation for crafting engaging course materials and creatively applying technology, including learning analytics, to catalyze student success. Dr. Larsen has developed several hands-on activities drawn from nanoscience and food chemistry and has used adaptations of these activities in the freshman chemistry, in community outreach events, in short courses on Nanomedicine for middle school students, and in seminar courses on Molecular Gastronomy. Dr.



Larsen's teaching effectiveness and innovation has been recognized by the Lane Davis Award for Honors Team-Teaching (2014) and College of Liberal Arts and Sciences Collegiate Teaching Award (2012).

**Dr. Amy Strathman** was promoted to the rank of Senior Lecturer. Dr. Strathman received her B.S. in chemistry, with honors, from Ursinus College (Collegeville, PA) in 1996 and her Ph.D. in analytical chemistry from the University of Colorado Boulder in 2001. Following her graduate studies, she came to the University of Iowa to conduct postdoctoral research in heterogeneous atmospheric chemistry with Prof. Vicki Grassian. Upon completion of her postdoctoral work, Dr. Strathman taught for a year at the University of Puget Sound (Tacoma, WA) before returning to the University of Iowa to join the faculty as a lecturer in 2004. For the past thirteen years, Dr. Strathman has focused her time on undergraduate instruction and advancing teaching innovation. In her time at the University, she has taught more than 15,000 students in the Principles of Chemistry series of courses.

**Professor Lou Messerle** has been awarded a 2016 Collegiate Teaching Award from the College of Liberal Arts and Sciences. This award recognizes excellence in teaching within CLAS, and will be presented at the Faculty Honors Celebration on April 18, 2016.

**Professor Scott Shaw** has been named by the Research Corporation for Science Advancement (RCSA) as a 2016 Cottrell Scholar. The designation comes with a \$100,000 award for each recipient. "The Cottrell Scholar (CS) program champions the very best early career teacher-scholars in chemistry, physics and astronomy by providing these significant discretionary awards," said RCSA President and CEO Robert N. Shelton. The program is designed to foster synergy among faculty at major American research universities and primarily undergraduate institutions.

**Professors Renee Cole** and **Len MacGillivray** are among those named as 2015 Fellows by the American Chemical Society. The fellows program began in 2009 as a way to recognize and honor ACS members for outstanding achievements in and contributions to science, the profession, and ACS.

**Professor Elizabeth Stone** received the Early Career Scholar of the Year award from the Office of the Vice President for Research. This award recognizes faculty members within their first seven years post Ph.D. and within five years of service at the University of Iowa and who are currently involved in research, scholarship and/or creative activity and show promise of making a significant contribution to their field.

**Professor Tori Forbes** is one of 44 scientists—just 27 of them from U.S. universities—selected for a U.S. Department of Energy Office of Science 2015 Early Career Research Program award. With the award, Dr. Forbes will receive at least \$150,000 per year to cover summer salary and research expenses. The research selected by DOE's Office of Basic Energy Sciences was Forbes' "Assessing Subtle Variations in the Actinyl Oxo Reactivity through Characterization of Neptunyl Complexes." Forbes specializes in inorganic chemistry, particularly uranium and its impact on the environment and human health.

**Professor Scott Daly** received the University of Iowa Veterans Association's (UIVA) Outstanding Faculty/Staff Advocate award. The award was presented to Professor Daly at the Spring 2016 Hawkeye Military and Veteran Graduation Reception in recognition of his work with the UIVA and for the creation of the Chemistry Platoon – an outreach program aimed at improving the performance of student Veterans taking introductory chemistry courses at the University of Iowa.

**Professor Chris Cheatam** has become the newest Administrative Faculty Fellow in the UI Office of the Vice President for Research and Economic Development (OVPR&ED). Faculty Fellows work closely with the OVPR&ED senior staff to foster deeper intellectual partnerships between the office and the faculty and assist with special projects across the research enterprise while acquiring skills and knowledge that can prepare them to serve in academic administration in the future.

**Professor Tori Forbes** was named by the College of Liberal Arts and Sciences as a member of the 2016-2018 class of Dean's Scholars. This award recognized excellence in both teaching and research.

**Professor Betsy Stone** has been awarded the CLAS Outstanding Outreach and Public Engagement Award. Professor Stone took the lead in founding the Iowa Climate Festival, the annual event that educates the local community on climate change and engages them in hands-on experiments and discussions. She led the dissemination of the Chemistry & Climate outreach kits, participates in multiple STEM initiatives in the area, and collaborates with high school teachers and students to bring atmospheric chemistry to high school students through the Collaborative Learning in Environmental and Atmospheric Research (CLEAR) program. She works with the Iowa Environmental Focus podcast and radio segments that are shared with radio stations across the state and is the Chair of the Department of Chemistry Outreach and Engagement Committee.

**Dr. Russ Larsen** was awarded the 2017 President and Provost Award for Teaching Excellence. Professor Larsen has a career-long record of extensive and outstanding contributions to the teaching mission of the Department of Chemistry. He has played a defining role in developing and modernizing the first-year general chemistry curriculum and is actively engaged in many educational development efforts at the university level. His teaching and the improvements he has spearheaded have had a lasting positive impact on tens of thousands of UI students. He has been recognized for teaching excellence many times, including with the 2012 Collegiate Teaching Award.

### **Staff Awards**

**Earlene Erbe**, the Administrator of Undergraduate Laboratories for the Department of Chemistry, was awarded the 2015 Board of Regents Staff Excellence Award. Established in 1993, the award was created to provide a statewide forum to recognize staff members in conjunction with colleagues from the other Board of Regents institutions. Their accomplishments have significantly benefited the University, brought honor or recognition to the University, and had a significant positive impact on the State of Iowa. Each winner receives a commemorative gift, and the University grants a \$1,000 prize to each award recipient.

The Midwest Section of the American Scientific Glassblowers Society awarded Mr. **Benjamin S. Revis** the Midwest Achievement Award for his dedication and outstanding contributions to The American Scientific Glassblowers Society; presented at the 60th Annual Symposium, Milwaukee, Wisconsin July 16, 2015.

**Sharon Robertson**, a Clerk IV in the administrative office at the Department of Chemistry, was awarded the 2015 Mary Louise Kelley Staff Excellence award by the College of Liberal Arts and Sciences. Sharon was recognized for the outstanding work she has done supporting the Department of Chemistry as a whole, and the graduate program in particular, over her many years of service. In June of 2015, Sharon retired from the Department after many years of service to the University of Iowa.

**Gene Hague**, the manager of Chemistry Stores, also retired in June 2015 after many years of service to the University.

# LECTURE SERIES

## **RICHARD P. VAN DUYNÉ, FRONTIERS LECTURE SERIES 2016**

Professor Richard P. Van Duyené visited the department in November 2016 to present the Leo and June Davis Frontiers Lectureship. Professor Van Duyené presented two lectures: “Molecular Plasmonics: Nanoscale Sensing and Spectroscopy” and “New Tools for the Study of Single Molecule Chemistry at the Nanometer Length Scale and the Pico-second Time Scale”.

Professor Van Duyené is the discoverer of surface-enhanced Raman spectroscopy (or SERS), inventor of nanosphere lithography, and developed ultrasensitive nanosensors based on localized surface plasmon resonance spectroscopy. He was most recently awarded the ACS’s E. Bright Wilson Award in Spectroscopy, the Society of Applied Spectroscopy’s Charles Mann Award in Applied Raman Spectroscopy, and the Sir George Stokes Award, Royal Society of Chemists. Professor Van Duyené was also listed in the top 100 of Thomson Reuters list of 2000-2010 chemists, ranked by the impact of their published research.

## **CRAIG MERLIC, FRONTIERS LECTURE SERIES 2017**

Professor Merlic presented the Leo and June Davis Frontiers Lectureship on March 30-31, 2017: “Copper and Palladium Based Cross Couplings and Transannular Reactions of Macrocycles” and “Improving Laboratory Safety and the Culture of Safety in Academic Laboratories”. Professor Merlic is a professor of chemistry at UCLA, where he chairs the campus-wide Chemical and Physical Safety Committee and the UCLA Safety Oversight Committee. He is the Executive Director of the UC Center for Laboratory Safety and serves as a Board Member for University of California Risk & Safety Solutions.

Professor Merlic received his B.S. degree in chemistry from the University of California, Davis and his Ph.D. in organic chemistry from the University of Wisconsin, Madison. Professor Merlic’s research focuses on applications of transition metal

organometallic chemistry to organic synthesis and extends from catalysis to synthesis of new chemotherapeutic agents. He has ongoing projects to improve laboratory safety policies, procedures, and training based on scientific studies and works with an information technology group located at UC Davis creating safety software tools for use at all ten University of California campuses. He has received awards for his teaching, educational projects, and scientific research. His research has been supported by the National Science Foundation, the National Institutes of Health, the Petroleum Research Fund and various corporate sponsors.

#### **JOANNE STUBBE, IDA BEAM 2017**

Professor JoAnne Stubbe presented two Ida Beam lectures in April 2017: “Radicals: Your Life is in their Hands” and “Class 1 RNRs: Successful Drug Targets”. Emeritus Professor Stubbe, most recently the Novartis Professor of Chemistry and Biology at Massachusetts Institute of Technology, researches the reactivity of free radicals and the free radical chemistry of ribonucleotide reductases, which is essential in transforming RNA to DNA building blocks.

Professor Stubbe earned her B.A. in Chemistry at the University of Pennsylvania in 1968 and her Ph.D. in organic chemistry in 1971 at the University of California, Berkeley, before retiring in September 2016. Professor Stubbe was recently awarded the 2017 Pearl Meister Greengard International Award to recognize Outstanding Women in Biomedical Science, the I.A. Scott Award of 2015, an Honorary Doctor of Science at Harvard University in 2013, and the 2013 Yale First Distinguished Woman Science Award.

#### **RICHARD B. SILVERMAN, WAWZONEK LECTURE 2016**

Professor Richard B. Silverman presented the 14th Stanley Wawzonek Lecture, “CPP-115: A Novel GABA Aminotransferase Inactivator and Potential New Treatment for Epilepsy, Addiction, and Hepatocellular Carcinoma” on April 29, 2016. Professor Silverman was the Patrick G Ryan/Aon Professor of Chemistry at Northwestern University.

Professor Silverman earned his B.S. in chemistry from The Pennsylvania State University in

1968, fulfilled his military obligation 1969-1971, and earned his Ph.D. in organic chemistry in 1974 at Harvard University. He has published over 350 research articles, holds 70 domestic and foreign patents, and has written five books. He is the inventor of Lyrica™, and has completed a Phase I clinical trial of another drug for infantile spasms. In 2014, Professor Silverman was awarded the Northwestern University Trustee Medal for Faculty Innovation and Entrepreneurship, was named Fellow of the American Academy of Arts & Sciences and Fellow of the National Academy of Inventors.

#### **VERONIQUE GOUVERNEUR, WAWZONEK LECTURE 2017**

Professor Veronique Gouverneur presented the 15th Stanley Wawzonek Lecture, “Recent Advances in Fluorine (Radio)Chemistry” on Friday, May 5th, 2017. Professor Gouverneur is a professor of Chemistry at Oxford University. She earned her Ph.D. in Chemistry at the Université Catholique de Louvain (LLN, Belgium), holds a Royal Society Wolfson Research Merit Award (2013-2018), and is President of EUCHEM Organic Division (EU, 2015-2018).

Professor Gouverneur’s research aims at developing new approaches to address long-standing problems in the synthesis of fluorinated analogues of natural products, pharmaceutical drugs and molecular [<sup>18</sup>F]labelled probes for PET imaging. She published more than 160 peer-reviewed publications and has been recognized for numerous awards and honors, including the RCS Tilden Prize (UK, 2016), ACS Award for Creative Work in Fluorine Chemistry (USA, 2015), EurJOC Lecture Award (Germany, 2012), and the ACS Award as a Distinguished Woman in Chemistry or Chemical Engineering (USA, 2011).

The Wawzonek Lectureship is presented in honor of Professor Stanley Wawzonek (1914-1988). An alum of the University of Minnesota, Dr. Wawzonek joined the University of Iowa in 1944 as a professor of organic chemistry, and served as the department chair from 1962 to 1968. During his career, he received the ACS Iowa Award and Midwest Award, and the Outstanding Achievement Award of the University of Minnesota. He became a Distinguished Fellow of the Iowa Academy of Science in 1979, and was also active as an editor and consultant.

## **Graduate Student Awards**

**Zahidul Islam** (Margulis Group) gave an invited oral presentation of his work entitled “Mechanistic Investigation of the Proton Abstraction in the Thymidylate Synthase-Catalyzed Reaction” at the 2015 Gordon Research Seminar on Enzymes, Coenzymes, & Metabolic Pathways on July 11-12, 2015 in Waterville Valley, NH.

**Anthony Lucio** and **Courtney Stanford** were recently awarded NSF-EAPSI Fellowships to conduct research during the summer of 2015.

**Jason Mixdorf** (Nguyen Group) was awarded an Honorable Mention for the NSF Pre-doctoral Fellowship.

**Maurice Payne** (Forbes Group) was awarded an Honorable Mention for the NSF Graduate Research Fellowship Program and the Ford Foundation Fellowship.

Ballard Seashore Fellowship: 2016- **Andrew Knight** (Forbes Group)

Spring 2017- **Andrea Grafton** (Cheatum Group), **CJ Ronhovde** (Larsen Group)

Fall 2017- **Ibrahim Al Naiema** (Stone Group), **Radhika Anareddy** (Shaw Group)

Graduate College Post-Comprehensive Research Award:  
Spring 2017- **Anh Lu** (Nguyen Group), **Chloe Schroeder** (Wiemer Group)  
Fall 2017- **Hoa Phan** (Haes Group)

Three graduate students were recently recognized for their accomplishments at the American Society Biochemistry and Molecular Biology (ASBMB) Annual Meeting, held in Boston, MA, March 28- April 1, 2015.

**Qi Guo**, a graduate student in the Kohan and Cheatum research groups, received the ASBMB Thematic Best Poster Award for “New Directions in Enzymology” for her poster “Characterization of Catalytically Relevant Fast Dynamics at the Active Site of Formate Dehydrogenase”. Qi Guo is the first author and the coauthors are the Chemistry Department’s graduate students **Phil Pagano** and **Hepeng Ye** (both in the Kohan research group) and Drs. Chris Cheatum and Amnon Kohan.

The following students were awarded Departmental Fellowships for the **Summer 2016 session**.

Shriner Fellows: 2016 – **Michael Sinnwell** (MacGillivray Group), **Ryan Friedrich** (Friestad Group).  
2017 – **Ryan Daly** (Margulis Group), **Samantha Nania** (Daly Group).

Department of Chemistry Graduate Fellows: 2016-  
**Mortezaali Razzahi** (Dey Group).  
2017 – **Andrea Grafton** (Cheatum Group).

McCloskey Fellows: 2016 – **Michael Welford** (Mason Group), **Cicily Ronhovde** (Larsen Group), **Dinith Jayanetti** (Gloer Group), **Eric Eitrheim** (Forbes Group), **Anastasia Blake** (Daly Group).  
2017 – **Kyoungsoon Lee** (Daly Group), **Chethya Ranasinghe** (Kohen Group), **Madhur Joshi** (Pigge Group), **Michael Sinnwell** (MacGillivray Group), **Wenjing Xi** (Haes Group).

Heltibrude Summer Fellows: 2017 – **Robert Matthiesen** (Wiemer Group)

Wilson Summer Fellows: 2017 – **Eric Sletten** (Nguyen Group)

Council on Teaching Outstanding Teaching Assistant Awards: 2017 – **Gonzalo Campillo-Alvarado** (MacGillivray Group), **Nyema Harmon** (Wiemer Group)

Departmental Teaching Awards: 2017 – **Nathan Black** (Gillan Group), **Jaclyn Wrona** (Shaw Group), **Kyle Spielvogel** (Daly Group), **Moustafa Gabr** (Pigge Group)

A. Lynn Anderson Awards for Research Excellence: 2017 – **Michael Sinnwell** (MacGillivray Group), **Thilina Jayarathne** (Stone Group)

## **Undergraduate Student Awards**

**Nicholas McCarty**, a Biochemistry major and Chemistry minor, received a Phi Beta Kappa writing internship.

**Michael Vinyard** (Nguyen Group) was named a finalist in the ACS Division of Organic Chemistry 2015 Video Contest. He received up to \$1,500 to attend the ACS meeting in San Diego, CA on March 13-17, 2016. He was also elected to the Phi Beta Kappa Society.

# NEW FACULTY

## MEET DAVID L. MCCURDY

An Iowa native, David earned an Associate of Science degree from Iowa Western Community College in 1977 and a Bachelor of Science degree in chemistry from Northwest Missouri State University in Maryville, Missouri in 1979. After graduation, he spent 4 years employed at Streck Laboratories, Inc. in Omaha, NE working in product development and quality assurance.

He left that position to attend graduate school in chemistry at Kansas State University in 1983. David earned his doctorate degree in analytical chemistry in 1987, beginning a position as an Assistant Professor appointment at Northeast Missouri State University (now Truman State University) that same year.

While at Truman, David spent a summer in 1999 as a visiting research faculty member at Texas A&M University in the lab of Professor David Russell. He was appointed Professor in 2000 at Truman State and recently served for 3 1/2 years as the Chemistry Department Chair until July 2016. He chose to retire from Truman State University after 29 years in order



to pursue a position with greater focus on teaching.

David has worked with more than 150 students in a variety of undergraduate research projects. These efforts have resulted in a number of publications and presentations coauthored with undergraduate students.

He is a long-time member of the American Chemical Society, having served on 3 different ACS examination committees. He is also an active member of the Society for Applied Spectroscopy, having been a local section office for more than 25 years. He also was a recent chair of the National Awards Committee for the SAS and is currently Chair-Elect of the Publications Committee, which oversees the journal Applied Spectroscopy. He is also a member of Alpha Chi Sigma professional chemistry fraternity and enjoys gardening and home brewing in his spare time.

# NEW FACULTY

## MEET MONA MAALOUF

Mona Maalouf received her Maitrise degree in Chemistry from the Lebanese University in Beirut, Lebanon, in 1990. She came to the University of Iowa as a Fulbright scholar in 2000. She subsequently joined the Ph.D. program in the Chemistry Department at Iowa and earned her Ph.D. degree while working in Dr. David Wiemer's laboratory on the synthesis of organophosphorus compounds as potential substrates or inhibitors for different enzymes in the mevalonate pathway.

Mona joined the teaching faculty at the University of Iowa from 2007-2012 during which she taught freshman chemistry and organic chemistry courses. From 2012 -2014, she was a visiting professor at the Lebanese American University, and American



University of Science and Technology. In the fall of 2016, Mona returned to the University of Iowa as a Lecturer in the Department of chemistry and is currently teaching the laboratory component of the freshman chemistry course. Prior to that she was a visiting Assistant Professor at Denison University, in Granville, Ohio.

# UI'S PROFESSIONAL GLASSBLOWER

A PROFILE OF BENJAMIN REVIS  
BY BRITTANY TODD

In a room stocked with glass of all shapes and sizes, Benjamin Revis creates objects of beauty and purpose.

Revis is an artist, but not in the traditional sense. As the University of Iowa's professional scientific glassblower, he custom designs and repairs glass equipment for students and faculty across campus.

In five years at the UI, Revis has worked on more than 2,000 pieces of glassware. Although some items can be machine molded, most pieces must be assembled manually.

"Often, people take for granted how technical and challenging scientific glassblowing is. The craft is a lot more than just making beakers and test tubes," says Revis, one of just two professional scientific glassblowers in the state of Iowa.

Revis' shop is located in the Chemistry Building, but he performs work across the university. His clients have included the ophthalmology, biomedical engineering, geological sciences, physics and astronomy, and visual arts departments. He gets especially excited about novel jobs, like the time UI 3-D designer Monica Correia asked him to produce a custom glass insert to fit into a series of wooden vases that she's creating for the 100% Design show taking place in London this September. The insert will allow her to place live flowers in the vases without damaging the wood.

"Having a scientific glassblower on campus is very convenient. I can visit the shop anytime and talk with (Revis) about the piece and any modifications needed," says Correia, associate professor in the UI School of Art and Art History. "It is also more cost effective. He has the capability to make custom pieces, something that would be much more expensive if I contacted an outside glass manufacturer."

Revis stumbled across his trade by accident. He was a senior at Purdue University when he saw an artistic glassblowing demo while perusing a local church carnival.

"I remember being mesmerized," he says. "I couldn't pull myself away and ended up watching the glassblower for over two hours."

Later in his senior year, Revis enrolled in a scientific glassblowing class. Although he graduated with a degree in electrical engineering, he stayed at Purdue for two more years to receive on-the-job training in the glass shop.

And though he got a nuclear engineering job—senior reactor operator—at Purdue, Revis' passion for glassblowing never waned. When an opportunity to return to the profession arose, Revis moved to Iowa to succeed Pete Hatch, who had been the UI's scientific glassblower for 34 years.

A lot of Revis' work consists of repairs, but even those can be tricky. Even if he cannot repair the crack, Revis can control the way the glass breaks. This technique allows scientists to recover the product inside and continue with the experiments as Revis assesses and repairs the damage.

From repairs to custom pieces, Revis pushes himself to learn something new from each project.

"The truth is there is still so much to be learned," he says. "I continue to grow with each new job request and challenge myself to improve every day."

The glass shop, located in W152 CB, is open from 8 a.m. to 4:30 p.m. Monday through Thursday and 8 a.m. to noon on Fridays.

## SOME FUN FACTS ABOUT GLASSBLOWING

The UI has had nine scientific glassblowers in the past 94 years.

Revis teaches a class called Scientific Glassblowing Fundamentals in the winter session; it's open to all UI students.

Revis also teaches artistic glassblowing classes at Beadology.

The earliest recorded use of glass was by the Egyptians, who used it to glaze tiles, make figures, and create the earliest-known glass beads.

In the past, it was very common for chemists to perform their own glassblowing.

PYREX was developed to prevent railroad lantern lenses from breaking during rainstorms.

BELOW: Benjamin Revis (left), assorted glassware (right).



# NEW FACULTY

## MEET REBECCA LAIRD

Dr. Rebecca Laird joined the faculty this fall as a Lecturer. Dr. Laird completed her undergraduate studies at Eastern Illinois University where she majored in Chemistry and Biochemistry and minored in Biology. While at Eastern, she participated in organic crystallography and solid-state research and was recognized as a Goldwater Scholar. She came to the University of Iowa for graduate school as a Presidential Fellow. She received her Ph.D. while working in Dr. Leonard R. MacGillivray's research lab studying organic solid-state materials. Having become a true Hawkeye, Rebecca stayed in the



chemistry department as a postdoc, joining Dr. Tori Z. Forbes' research lab, synthesizing organic ligands for Actinide-based Metal-Organic frameworks. She served as both a postdoc and visiting assistant professor before joining the department as a lecturer.

# IN MEMORIAM

**Lon Daniel Anderson**, 42, of Poway, California passed away December 5, 2014. He was born on Oct. 28, 1972, in St. Cloud, Minn. to Kenneth and Carol Anderson. His passion for chemistry inspired him to earn a B.A. in chemistry from St. Olaf College in 1994 and an M.S. in chemistry from the University of Iowa in 1997. He was a member of Clandestine Laboratory Investigating Chemists Association (CLIC) during his years as a forensic chemist at Southwest Laboratory with the Drug Enforcement Administration. After college, Lon spent nearly four years as a Specialist in the US Army, training to be a Russian linguist.

**Fred Elmer Arnold**, 74, of Centerville, Ohio passed away January 4, 2015. Fred received a M.S. in chemistry in 1964 and a Ph.D. in chemistry in 1965 from the University of Iowa.

**Margaret Elizabeth Berhenke**, 104, of Longmont, Colorado passed away on May 3, 2015. Margaret was born in Iowa City, Iowa. She graduated from the University of Iowa with a B.S. in chemistry in 1933, elected in Phi Beta Kappa in her junior year.

She received her M.S. and Ph.D. in physical chemistry from the University of Iowa in 1935. Margaret married Luther Berhenke immediately after graduation. They were avid travelers, traveling to Israel, Egypt, Peru, China, Eastern and Western Europe, and even Siberia in the first year it was open to tourists. Margaret was involved in the Presbyterian Church in Michigan and Colorado at the local, state, and national levels. She served as the national president of the Presbyterian Church from 1964 to 1967, and in this role she marched with Dr. Martin Luther King on his march from Selma to Montgomery, Alabama. She is survived by her daughter Martha Sherad, her son Fred Berhenke, 5 grandchildren, and 6 great-grandchildren.

**Willis E. Byrd**, 92, of Swansea, Illinois passed away on September 9, 2015. Willis enjoyed a peaceful, purposeful life as a resident of Swansea, Illinois, where he lived for the past eight years with his devoted goddaughter, Mrs. Kim (Dave) Fort, godchildren William Brandon, David Bobby "Tip", and Jessica Marie, along with the family's two dogs, Cocoa (who Dr. Byrd declared had an I.Q. of a thousand) and Blue. Dr. Byrd attended elementary and secondary school during the Jim Crow era in Athens, Georgia. In spite of social, economic, and glaring inequities in the schools, he vigorously pursued his educational goals and earned an AB in chemistry,

with honors, from Talladega College. In 1949 he earned a Ph.D. in physical chemistry from the University of Iowa and completed post-graduate studies at MIT, Fisk, Washington University, Grinnell College, Pratt Institute, and the University of Illinois. Dr. Byrd served in the United States Army, 370th Infantry, during WWII in Italy before beginning 30 years of teaching and dedicated service to Lincoln University, Jefferson City, Missouri. His research on the structure and stability of amine charge transfer complexes has received global recognition and citations in previewed journals.

**Tso-Sheng Chou**, 59, of San Diego, California passed away January 26, 2012. Tso-Sheng received his Ph.D. in chemistry in 1987 from the University of Iowa.

**Charles J. (Jack) Darkins**, 93, from Grants Pass, Oregon passed away December 23, 2014. Charles received his B.S. in chemistry in 1949 from the University of Iowa.

**Donald D. Duven**, 91, from Waterloo, Iowa died December 2, 2014. Donald was born in Orange City, son of William and Tillie DeJong Duven. He married Helen E. Karlson on June 6, 1946; she died March 27, 2014. Donald earned a B.A. in 1945 at the U.S. Merchant Marine Academy, Kingspoint, New York, and a B.S. in chemistry from the University of Iowa in 1949. He served in the Merchant Marine Coast Guard during World War II in the Pacific, near Okinawa, Japan. Donald worked at Plan 2 manager for Maytag Corporation from 1949 to 1965. He owned and operated Erwin Weller Co. in Souix City, Iowa in 1967, Bair Co. of Lincoln, Nebraska in 1969, and Imperial Roofing Co., also of Lincoln. He is survived by two son, Doug and Bill, a daughter Diann Duvenez, 9 grandchildren, 4 great-grandchildren, and sister-in-law Marilyn Duven.

**Bernard E. Hoogenboom**, 83, from St. Peter, Minnesota died January 30, 2015. Bernard was born in East Goshen, IN to Dick and Jennie (Berkman) Hoogenboom. He received his B.S. in 1954 from DePauw University, and a M.S. in 1956 and Ph.D. in organic chemistry in 1958 from the University of Iowa. He also earned a M.S. in environmental health from the University of Minnesota in 1983. Bernard taught chemistry at Gustavus Adolphus College for 38 years. His research focused on teaching organic chemistry, organic chemical synthesis,

environmental health and safety, and the history of chemistry. Bernard is survived by his wife, Louis; three sons Dirk, Peter, and Jon; and one sister Nell Caton Hoogenboom.

**Annette J. Johnson-Zieske**, 55, of Union City, California passed away September 19, 2011. Dr. Lieutenant Colonel Annette Johnson-Zieske worked for the U.S. Air Force, Department of Pediatrics, Adolescent Medicine at Travis Air Force Base, California. She received her M.S. in chemistry from the University of Iowa in 1979 and a M.D. from the University of Iowa in 1983. She is survived by her son Lawrence, daughter Leigh, parents Lee and Louis Johnson, brothers Alvin and Anthony, and sister Rose.

**Wayne A. Kimball**, 98, formerly of Klamath Falls, Oregon passed away August 23, 2015 in Dubuque, Iowa. Wayne was born in Butler County, Iowa, son of William and Eliza (Ressler) Kimball. He served his country with the Army Air Corps in World War II. He married Virginia Johnson. Wayne earned his B.S. in science from Wartburg College and his M.S. in chemistry in 1947 from the University of Iowa. He taught chemistry at Oregon Institute of Technology. After retiring, Wayne enjoyed extensive travelling with his wife. He is survived by his daughter Sharon, 3 grandsons, 4 great-grandchildren, and 2 great-great grandchildren.

**John Kleis**, 87, from Iowa City, IA passed away August 8, 2015. John was born in Milwaukee, Wisconsin, son of Arthur Kleis and Effie Dorrell. Following high school, John served in the U.S. Navy in the South Pacific. He graduated from the University of Iowa in 1950 with B.S. in chemistry and married Virginia Ann Neuzil in Iowa City. John and Virginia lived in Philadelphia for 64 years. He worked in Philadelphia as a chemist for McNeil Laboratories, later a division of Johnson & Johnson. After working in the lab, he traveled extensively with Johnson & Johnson International, handling quality control and systems designs. John is survived by his wife, Virginia; son, James; daughter, Mary. John was preceded in death by his son, William.

**Scott W. Kline**, 42, of Virginia Beach, California died May 19, 2015. Scott was born in Gallup, New Mexico to William "Bill" and Margaret "Maggie" Kline. He graduated from Ohio State University with a B.S. in chemistry and a M.S. in chemistry at the University of Iowa in 1997. Scott taught at Bishop Sullivan Catholic



High School and TCC. When he was not with family, he was an avid video gamer and sports fan, and was highly passionate about books, vinyl records, and the Oklahoma State University Cowboys Football team. He is survived by his loving wife, Suzanne; daughter, Geneveva; siblings David Kline and Lynn Cole and their families; and his pugs, Sophia, Cujo, and Oscar.

**Jack F. Mills**, 87, from Midlands, Michigan passed away March 28, 2015. Jack was born in Galesburg, Illinois, to Charles and Madge Mills. He earned his B.S. at Knox College in 1950 and his Ph.D. in chemistry at the University of Iowa in 1953. Dr. Mills served as a 2nd Lieutenant in the U.S. Army Chemical Corps from 1954-1956. He spent his entire career with The Dow Chemical Corporation in Midland, Michigan, where he rose to senior research chemist and held multiple patents and authored numerous technical articles for professional publication in the field of halogens. After retiring in 1986, Jack worked as a consultant for OmniTech. Jack and his wife Darlene spent their retirement traveling abroad, antiquing and adding to their many unique collections. Jack's main hobby was his family, and he will always be remembered for his devotion to his wife and children. Jack is survived by his children, Jacki, Richard, Susan, Sharon, and Doug; 10 grandchildren; and 4 great-grandchildren.

**Sister M. Marguerite C. Neumann**, 98, from Dubuque, Iowa died October 10, 2012. Sister Marguerite received her M.S. in chemistry from the University of Iowa in 1943.

**Steven J. Peluso**, 66, of Wilmington, Delaware died September 22, 2015. Steven graduated from the University of Iowa with a B.S. in chemistry and a B.S. in chemical and biochemical engineering in 1971. He worked as a chemical engineer for over 30 years in Utah, Houston, Texas, and most recently at Chamber Works in New Jersey. Steven loved photography and was known for his photographs of horses. Steven was a devoted alum and frequently attended University of Iowa football games. He is survived by his sister Susan Peluso. The family is especially grateful to Steven's friend, Patty Davis, for her devotion during his illness.

**Vincent P. Reinstein**, 85, of Atlanta, Georgia died June 6, 2014. Vincent survived the Japanese prisoner of war camp, Santo Tomas, as a young boy. In a debt of gratitude for his liberation, he joined the U.S. Army, where he served with honor and merit as

an officer for 21 years. He was a decorated war veteran, having served one tour in Korea and two tours in Vietnam. He received his B.S. in Chemistry from the University of Iowa in 1951. After retiring to civilian life, Vincent opened his own tax accounting practice, where he worked for over 40 years. He especially enjoyed telling jokes and was an avid golfer. Vincent is survived by his wife of 61 years, Robin; children Susan, Paul, Gwendolen, Vincent, Mark, and James; and 16 grandchildren.

**Denis J. Sellen**, 80, from Des Moines, Iowa died May 20, 2015. Denis earned his B.S. in chemistry from the University of Iowa in 1960 and his M.S. from the University of Missouri. He served in the U.S. Army for 4 years. He enjoyed photography and gardening. Denis is survived by his wife Karen, daughter Meagan, son Jeremy, sister Verna, and 3 grandchildren.

**Leslie P. Seyb**, 99, of Corvallis, Oregon passed away February 20, 2015. Leslie attended Culver-Stockton College at the age of 16, and then Coe College where he received a B.S. in general chemistry in 1935. He received his Ph.D. in organic chemistry from the University of Iowa in 1939. He first worked in the patent department of Phillips Petroleum Co. in Bartlesville, Oklahoma, before moving in 1942 to work in the research department of Diamond Alkali (later Diamond Shamrock). He worked on nonflammable paint during WWII, which became a critical component in reducing fire damage on warships. After the war, he continued as group leader at Diamond, where his research branched out into projects involving fatty acids, wetting agents, textile bleaching, synthetic detergents, and pesticides. Leslie left Diamond in 1964 to join the Pacific Northwest Water Laboratory, which would become part of the Environmental Protection Agency, as chief of physical sciences working to clean up lakes and river throughout Oregon. Leslie enjoyed gardening, photography, steelhead fishing, and Alpine mountaineering. Leslie is preceded by his first wife, Helen (1998). Leslie is survived by his second wife Lucille, sons Stefan and Stanford, and granddaughter Ingrid.

**Jerome Conrad Shiloff**, 84, from Pleasantville, New York. Jerome received his B.S. in chemistry from the University of Iowa in 1951.

**David C. Temple**, 68, from Oskaloosa, Iowa died August 19, 2015. David attended Keota High School but was sent to the University of Iowa a year prior to graduation to continue his studies. He received a B.S. in chemistry from the University of Iowa in 1968. He was required to in the Naval Reserves in the Medical Service Corp, and in 1972 he returned to the University of Iowa to attend the College of Medicine. He received his M.D. in 1976 and completed his residency in Internal Medicine at Lutheran Hospital/Gunderson Clinic in Lacrosse, Wisconsin in 1979. He practiced medicine in the Des Moines, Iowa area and then later in Osage Beach, Missouri. He was an avid reader, especially military history books, and a loyal Hawkeye fan.

**John Franklin Van Pilsum**, 82, of Columbia Heights, Minnesota passed away November 21, 2014. John received his B.S. (1943) in chemistry and Ph.D. (1949) in biochemistry from the University of Iowa. He served in the Navy and was stationed in the South Pacific during WWII. John taught biochemistry to medical and dental students at the University of Minnesota for more than 30 years, where he also conducted research on kidney and pancreas enzymes. In the past seven years he painted prolifically, hosting a one-man art show at the University Campus Club. He loved his family, hard work, and good food. He was preceded in death by his wife, Shirley. He is survived by his sister Joyce, children John, Trish, Barbara, Mary, Elizabeth, and William, and 12 grandchildren.

**Jean Ellen Vasos**, 90, from Cedar Rapids, Iowa passed away February 28, 2015. Jean graduated from the University of Iowa in 1946 with a B.S. in chemistry. She worked as a chemist at Quaker Oats and then taught elementary school in Marion. Jean was a member of the D.A.R., Mayflower Society, and was a troop leader for the Bluebirds. She and her husband Thomas were active in the Merrimix Formal Dance Club. Jean was an avid collector of anything with turtles, spent time as a seamstress, made the best spaghetti sauce, and enjoyed her children and grandchildren.

**Sister Marie Elizabeth Ven Horst**, 99, of Johnston, Iowa passed away October 17, 2015. Marie entered the Congregation of the Humility of Mary in 1938 and professed vows in 1941. Sister Marie was in the first graduating class of the newly established Mary-

crest College, where she devoted almost 60 years of ministry as professor, dean, consultant, and statistician. She received her M.S. at St. Louis University and her Ph.D in chemistry from the University of Iowa in 1952. She also taught applied physics to engineers at Caterpillar Works in Davenport, Iowa. Sister Marie was included in several listings of Who's Who in America and in American Men and Women of Science.

**Karl Spyros Vorres**, 88, from Tuscon, Arizona died August 7, 2015. Karl graduated from Michigan State University with B.S. and M.S. in chemistry and received his Ph.D. in chemistry from the University of Iowa in 1958. He is survived by his wife Nancy, children Bob, Janet, Carol, and Steve, and 5 grandchildren.

**Theodore C. Wilkinson**, 81, of Bellevue, Michigan passed away June 22, 2015. Theodore received his Ph.D. in chemistry from the University of Iowa in 1965.

**William F. Zelezny**, 96, of Kalispell, Montana died February 28, 2015. William was born to Joseph and Birdie (Loder) in a log cabin on the family homestead established in 1899 near Rollins, Montana. He received his B.S. in chemistry in 1940 from Montana State College and a M.S. in metallurgy in 1941 from Montana School of Mines. Bill was employed as a chemist at the Anaconda Copper Mining Company in Great Falls until he went into the U.S. Army Chemical Warfare Service and worked at the laboratory in Manila, Philippine Islands. He was badly burned in a laboratory accident and spent 11 months in a hospital until he was discharged from the Army in August 1946. Bill then received his Ph.D. in physical chemistry from the University of Iowa in 1951. Bill then worked at the National Advisory Committee on Aeronautics (now NASA) in Cleveland, Ohio, then at Washington State College, the National Reactor Testing Station in Idaho, and finally the Los Alamos National Laboratory. Bill was an avid gardener, well-known for his homegrown tomato plants and gourmet corn. He was an active member of the Rollins Volunteer Fire Department.

# DON BURTON

## 1934-2017

We are sad to report that one of our emeritus faculty, Professor Donald J. Burton passed away Wednesday, May 31, 2017. He was 82 years old.

Born July 16, 1934 in Baltimore, MD, Professor Burton was an internationally recognized organic fluorine chemist and was a member of the faculty at the University of Iowa Department of Chemistry for 45 years. He was a prodigious researcher, a mentor to scores of PhD and post-doctoral candidates, a passionate and rigorous teacher to thousands of undergraduate students, as well as a devoted husband, father, grandfather, and great-grandfather.

Dr. Burton graduated Summa Cum Laude from Loyola College in Baltimore in 1956. He studied Organic Fluorine Chemistry with Dr. W.T. Miller at Cornell University where he was awarded a PhD in Organic Fluorine Chemistry in 1961. He completed postdoctoral work with Nobel Laureate Dr. H.C. Brown at Purdue University in 1961-62.

In 1962 Dr. Burton was appointed Assistant Professor in the Department of Chemistry at the University of Iowa. He was elevated to Associate Professor in 1967, and promoted to full professor in 1970. In 1989 Dr. Burton was appointed the Roy Carver/Ralph Shriners Professor of Chemistry, a chair he would hold until his retirement in 2007.

Dr. Burton was a tireless researcher during his tenure at Iowa, working with his PhD candidates, publishing more than 350 original academic papers and reviews, delivering 330 lectures around the world, and coauthoring a number of chemistry textbooks. Students from around the world sought him out to study with him. His research brought in millions of dollars of grants to the university. After transitioning to emeritus status, he continued to publish papers in academic journals.

Dr. Burton's impact in his field was recognized with numerous awards and invitations to lecture internationally. In 1984, he was awarded a Special Creativity Award of the National Science Foundation as well as the ACS Award for Creative Work in Fluorine Chemistry. The State of Iowa awarded him the Governor's Science Medal for Scientific Achievement in 1988, and in 2003 he was recognized with an ACS Distinguished Service Award.

Dr. Burton was blessed to spend nearly 59 years



of marriage with Margaret Burton. Don and Marge were inseparable and she worked as his assistant for many years, after raising five children. They traveled the world together, enjoyed the company of good friends and family, and spent countless hours together on the golf course. Don is survived by Margaret and their five children, nine grandchildren, and two great-grandchildren. Don took great pride in his children's accomplishments and cherished his relationships with his grandchildren and great-grandchildren.

The family requests that any memorial donations be made to the Donald J. Burton and Margaret A. Burton Scholarship, c/o The University of Iowa Foundation, P.O. Box 4550, Iowa City, IA 52244-4550. This scholarship, established upon Dr. Burton's retirement by his five children, is awarded annually to an undergraduate chemistry major who shares Dr. Burton's passion for chemistry and demonstrates outstanding academic achievement in the classroom and in her/his research.

**Department of Chemistry  
The University of Iowa  
E331 Chemistry Building  
Iowa City, IA 52242-1294**

**Want to Know More?**

For Department of Chemistry news updates throughout the year, visit

[www.chem.uiowa.edu/news](http://www.chem.uiowa.edu/news)

Follow us on Facebook at

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

Got news for us? Email alumni updates to the department at

[chem-alumni@uiowa.edu](mailto:chem-alumni@uiowa.edu)

**Contributors and Staff**

Thanks to our interview subjects and departmental news contributors. Writing, editing, and photography assistance from Ellie Keuter, Brenna Goode, Trent Tappan, Lindsay Elliott, and Amy Charles. Design and layout by David Miessler-Kubaneck.