Filling the Chemical Sciences Pipeline

Future chemists are being recruited by the Department of Chemistry at every age from grade school children to postdoctoral scholars.

Safety glasses and gloves in place, Johana and a dozen other fourth grade girls used pipettes to drip a creamy mixture into cups of liquid nitrogen, watching the drops freeze instantly into an ice cream treat. After the graduate students strained the tasty dots out of the cup, the girls were able to eat the result of their experiment.

These girls were attending an all-day event at the UM Chemistry building organized by FEMMES, Females Excelling More in Math, Engineering, and the Sciences. FEMMES aims to inspire young girls, encouraging them to consider their potential in science and math. Each event features hands-on activities led by volunteers. Chemistry's undergraduates, graduate students, and faculty are very active in the Michigan chapter of FEMMES. On a recent Saturday, FEMMES brought 300 girls to campus from Detroit and area schools to participate in twenty different activities. The liquid nitrogen activity was supervised by Assistant Professor Corinna Schindler’s students. The FEMMES group also does afterschool activities, and over four years has reached more than 1000 girls and 40 schools.

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Hands-on activities encourage girls to learn and explore their potential in science, technology, math and engineering. FEMMES, a UM student organization, organizes events for 4th-6th grade girls on campus and in afterschool programs.

Cass Technical High School students spent the summer doing research as part of the UM Detroit Research Internship Summer Experience, D-RISE. They participated alongside the UM graduate students in the Karle Symposium.

Thirteen postdoctoral fellows were hosted by the Department of Chemistry for NextProf Science, a UM workshop aimed at encouraging talented scientists to consider academic careers.
Welcome from the Chair

Robert T. Kennedy is the 15th Chair of the department since 1870.

This year, we have some firsts to report as well as some updates on our continuing efforts to improve student learning, excellent preparation of our graduate students, and continued progress in our research mission. Our faculty is dedicated to providing outstanding education for our students and performing exciting research which addresses some of the greatest challenges facing our planet.

I would like to take a moment to introduce myself as the new chair of the Department of Chemistry. I began a five-year term in July, 2015. I joined the University of Michigan faculty in 2002, after a decade at the University of Florida. My research focuses on analytical chemistry and its application to neuroscience, endocrinology, and biotechnology.

After a decade of outstanding leadership from Carol Fierke, who is now the Dean of the University of Michigan's Rackham School of Graduate Studies, the Department of Chemistry is thriving.

My aim as Chair is to help the Department sustain its upward trajectory through the ranks of world leaders in the chemical sciences. Achieving this aim requires us to recruit and retain the top research-scholars, innovate in delivering high value experiences for our students, and build an infrastructure to support these activities.

In these pages you can read about some of our activities and achievements:
- First ever commencement ceremony for our undergraduates
- Third time as winner of the College of LSA's Award for Outstanding Contributions to Undergraduate Education
- Efforts to inspire a new generation of chemists of diverse backgrounds from elementary school, to high school, to new faculty
- New infrastructure plans—our Catalysis Center, a priority in current capital campaign, and a Mass Spectrometry Center for complex mixture analysis.
- Alumni activities, including a graduate who has figured out how to prevent those headaches from sulfites in red wine.

If anything you read about in this newsletter particularly intrigues you, I urge you to contact us. We welcome the involvement of our alumni.

You can provide mentoring for our current students through CALC|UM and CSIE|UM (programs designed to support professional development of graduate students for careers in industry and academics, respectively), and we are deeply grateful for your generous financial support for the Department.

Share with us what you are doing by sending in an alumni update.

If you find yourself in the Ann Arbor area, I hope you will take the opportunity to stop by the Department.

Robert Kennedy
Chair, Chemistry Department
Hobart Willard Distinguished University Professor
Professor of Chemistry
Professor of Pharmacology

The Fierke Legacy

After two terms as Chemistry’s chair, Carol Fierke is now using her talents as an administrator to head the University of Michigan Rackham School of Graduate Studies.

At a dinner celebrating her tenure as chair, colleagues recognized her contributions to the Department. They remarked on her mentorship, her unflappable leadership, personal kindnesses, and in particular, her efforts to bring diversity to the faculty.

Chair Bob Kennedy remarked that Carol assumed leadership of the Department at a time of uncertainty. Retirements opened up opportunities for considerable hiring over her years, and her experience with the UM ADVANCE program brought strategies for increasing the diversity of the hires.

A member of ADVANCE’s advisory board, Fierke upholds its foremost goal—foster the most outstanding academic institution possible, and that includes finding talent that is being overlooked.

When Fierke arrived at UM in 1999, only two other female professors ran research labs in the Chemistry Department and one of them retired a year later. Her legacy is the changing face of the department. In the past 15 years, the Department has gone from about 8 percent to about 25 percent female, and 4 percent faculty of color to about 12 percent.

Carol Fierke is Dean of the Rackham Graduate School and the Jerome and Isabella Karle Distinguished University Professor of Chemistry. She also has appointments in Biophysics, College of Literature, Science, and the Arts, and Biological Chemistry in the Medical School.
Meet the New Faculty

Charles McCrory, Assistant Professor

Charles McCrory joined the faculty at the University of Michigan in 2015. His research program uses a combination of surface science and electrochemistry to study the mechanisms and kinetics of electrocatalytic transformations for energy storage and environmental remediation.

McCrory came to Michigan from the Joint Center for Artificial Photosynthesis (JCAP), a Department of Energy Innovation Hub located at the California Institute of Technology, for the development of integrated solar-fuels technology. As Lead Benchmarking Scientist at JCAP, he supervised a research team in the development and implementation of protocols for evaluating the activity and stability of (photo)electrocatalytic materials for the hydrogen evolution reaction (HER), the oxygen evolution reaction (OER), and the carbon dioxide reduction reaction (CO₂RR).

McCrory earned B.S. degrees in Chemistry and Mathematics from Indiana University, Bloomington. There, he conducted undergraduate research with Professor George E. Ewing studying the structure and composition of thin films of water on single-crystal salt surfaces. His graduate research at Stanford University, under the mentorship of Professor Christopher E. D. Chidsey, focused on understanding the kinetics and mechanisms of electrocatalytic oxygen reduction and alcohol oxidation by discrete molecular complexes immobilized onto carbon surfaces. He received his Ph.D. in Chemistry from Stanford in 2010, followed by postdoctoral research with Professor Jonas C. Peters at the California Institute of Technology where he studied the electrocatalytic hydrogen evolution reaction by homogenous Co- and Ni-complexes in acidic aqueous and non-aqueous solutions.

Alison Narayan, Assistant Professor

For Alison Narayan, joining the Chemistry faculty at the University of Michigan in 2015 was a homecoming of sorts. She earned her B.S. from the University of Michigan, doing undergraduate research with John Wolfe.

Now she is establishing her research program in biocatalysis, leveraging the powerful reactivity and selectivity of enzymes from natural product pathways in concise approaches to natural products and their analogs. Her laboratory is in the Life Sciences Institute. Projects will be initiated with the identification of an enzyme with synthetic potential unmatched by chemocatalytic methods, then continue by demonstrating the substrate scope and potential applications of the biocatalyst including the synthesis of biologically active molecules. Synthetic efforts will feed biological studies on activity, which will inform the subsequent selection of synthetic targets.

Before her faculty appointment, she was a Life Sciences Research Foundation Postdoctoral Fellow at the UM of Life Sciences Institute, investigating the biosynthesis of complex natural products and enzymatic catalysis under the direction of Professor David H. Sherman.

She did her graduate research at the University of California-Berkeley on the development of new methods and the synthesis of complex natural products, under the direction of Professor Richard Sarpong.

She credits her high school chemistry teacher for inspiring her love for science. Along the way, her undergraduate advisor, John Wolfe, and her graduate and postdoctoral mentors, helped her develop as a scientist, she adds.

Faculty News

Mark Banaszak Holl received a 2015 Rackham Distinguished Graduate Mentor Award. This award is given to tenured faculty members who have guided a substantial number of graduate students in an outstanding manner.

Banaszak Holl has also been appointed Director of the Macromolecular Research Center. He is first director from the Chemistry Department since Charles Overberger, who founded the interdisciplinary program in 1968. Overberger was director until 1987. The program has been a leader in the field of polymer science and engineering for nearly 45 years.

Now housed within the College of Engineering, the interdisciplinary program includes students and faculty in the University of Michigan Medical School, Dental School, and College of Literature, Science, & the Arts. The 34 affiliated faculty bring their polymers expertise to a dozen different fields at Michigan. Their interests range from polymer synthesis, microfluidics, and tissue engineering to sensors, computational nanoscience, mechanical behaviors, and nanoelectronics.

“We have produced more than 150 graduates including more than 100 Ph.D.s. Of these, 28 have become faculty members at colleges and universities big and small, including four this year. Others head research groups at research institutions or serve as VPs of large corporations,” Banaszak Holl reports.

A highlight of the year is the annual symposium. This year’s topic was “Polymers and their Biomedical Applications.”

Charles L. Brooks, III has been elected as a Fellow of the Biophysical Society for his pioneering development and application of computational tools to multi-scale problems in biology and biochemistry. Charles has also become the Chairman of the Biophysics Department.
Preparing Our Students for Careers

CSIE|UM Future Faculty Program
Chemical Sciences at the Interface of Education at the University of Michigan or CSIE|UM program offers chemistry students who are interested in academic careers—undergraduate through post-doctoral associates—an opportunity to work on projects involving instructional development, implementation, and assessment.

These projects are led by the faculty and embedded in the instructional program in the department, which creates a mechanism and a culture for sustained improvement.

An annual symposium provides an opportunity to highlight chemistry education projects. This year’s event focussed on lab classes that delve more authentically into the process of research in the chemical sciences. In June, chemistry educators from around the region came to Ann Arbor to share experiences and challenges of moving away from canned lab activities.

Throughout the year, CSIE|UM offers seminars and other events. See the CSIE|UM website: sites.lsa.umich.edu/csie-um/

CALCIUM
Chemistry Aligned with Life and Career at UM or “Calcium” offers students who are planning on careers in industry and other parts of the private or government sectors a chance to explore options. Guided by the faculty, a student coordinating committee develops programs. The program aims to increase student understanding of critical features of their future professional lives where their scientific expertise intersects with the other constituencies typical in an industry setting such as business, law, and informatics. It also provides for first-hand leadership and multi-disciplinary team experiences that are relevant to their future professional lives. Learn more: sites.lsa.umich.edu/calc-um/

Zhan Chen, Brian Coppola and Carol Fierke have written a very interesting editorial in “the University of Michigan” issue of the Chinese Chemical Letters, 2015, 26(4), 393. It is a mini-history of the long interaction of the UM with China. The issue contains articles by nineteen UM professors.

Brian Coppola has been honored as a 2015 American Chemical Society Fellow.

Carol Fierke began a five year term as Dean of the Horace H. Rackham School of Graduate studies and Vice Provost for Academic Affairs in Graduate Studies, beginning on September 1, 2015. She will receive the 2016 National ACS Award for Encouraging Women into Careers in Chemical Sciences sponsored by the Camille and Henry Dreyfus Foundation. The award recognizes significant accomplishments by individuals who have stimulated or fostered the interest of women in chemistry, promoting their professional development as chemists or chemical engineers.

Amy Gottfried was given the 2015 Excellence in Departmental Advising Award.

Nancy Kerner has been named a Lecturer Emerita.

Bolstering Our Infrastructure

Complex Mixture Analysis Across the Sciences
Advances in chemical separations, mass spectrometry (MS), and bioinformatics make possible comprehensive studies that measure all the components in a single sample—as many as 106 chemicals. The Department of Chemistry is planning a dramatic expansion and re-organization of our current mass spectrometry service, with both dedicated equipment and highly skilled personnel, to create a world-class mass spectrometry facility that would address cutting-edge needs. It would provide complex mixture analyses, tissue imaging, and other measurements to push research objectives and catalyze discoveries across the sciences. The center will be led by UM Chemistry research groups, partnering with others across campus from the UM Life Science Institute, other LSA departments, Engineering, and the Medical School. Such a center will remove bottlenecks to collaborative research and become a streamlined conduit for industrial-academic collaboration. It will also offer our undergraduate and graduate students training and access to high quality instrumentation.

Catalysis Center
Grand challenges including sustainable food production, alternative fuels, and affordable medicines face our globe. By leveraging catalysis expertise throughout the UM campus, we can address these global needs. We aim to create a state-of-the-art facility with equipment and staff focused on accelerating advances in chemical and biological catalysis at UM. This would position UM as a nucleus for state, national, and global progress in catalysis. The Center will allow us to provide seed funds for high risk/high reward projects; recruit and support talented undergraduates, graduate students, postdoctoral fellows, and faculty; and facilitate productive collaborations with the chemical, pharmaceutical, biocatalysis, energy, automotive, and other relevant industries to solve critical challenges, and move innovative ideas to viable technologies more quickly. The Department if seeking both matching funds and strategic partnerships to develop the Center.

Anna Mapp received the 2015 Emil T. Kaiser Award at the 29th Annual Symposium of the Protein Society held in Barcelona, Spain in July 2015.

Adam Matzger has won the 2015 Akron Section ACS Award. The award is given annually to a scientist or engineer working in any branch of chemistry who is under 45 years of age and who has demonstrated exceptional promise for making significant contributions to chemical science.

Michael Morris was honored by a symposium and dinner held on October 20, 2015. More than 80 his friends and associates attended the dinner, prior to which he presented this year’s biennial Elving Lecture on Analytical Chemistry. Mike is intending to retire at the end of this academic year.

Pavel Nagorny has been honored with a 2015 Amgen Young Investigator Award. The annual award is given to a young scientist whose contributions impact the field of drug discovery.
Research Experiences for Detroit High Schoolers

Chemistry Department faculty are also encouraging slightly older students to pursue their potential in science. This summer, five students from Cass Technical High School in Detroit performed full-time research for seven weeks in residence at UM. They were part of the UM Detroit Research Internship Summer Experience or D-RISE, a partnership formed with the high school by Associate Professor Nicolai Lehnert with National Science Foundation support. The first D-RISE group was in residence in Summer 2014, and two students are now enrolled at UM.

Bridges to Science

Once students are admitted to UM, Chemistry is also actively supporting their interests in science. Now in its 40th year, the UM Summer Bridge program prepares students to thrive at Michigan. As part of that program, Chemistry’s Anne McNeil, Stephen Maldonado, and Carol Fierke shared information about the kind of research they do and opened up their labs for tours for the students. A panel of current students answered questions about what life is like as a chemistry undergraduate.

Community College Connections

In 2015, three community college students participated in Chemistry’s summer research program with funding from Associate Professor Anne McNeil’s Howard Hughes Medical Institute grant that, in part, aims to encourage talented community college students to pursue further study in STEM fields. UM Chemistry undergraduate David Vargas—a community college transfer student—was a peer mentor, offering additional support and hosting social events.

The UM Undergraduate Opportunities Program (UROP) oversaw the community college summer research program. At the end of the ten-week internship, the interns presented their research findings at a campus-wide symposium.

Encouraging students to consider our graduate program

This November marks the third year that Chemistry has offered Michigan Chemistry Opportunities for Research & Education or M|CORE—a preview weekend for underrepresented minority undergraduate students. Potential graduate students from historically black or hispanic serving institutions come to campus to learn about the graduate program. Professor Nils Walter developed M|CORE with funding from Rackham’s Diversity Allies grant. So far, four M|CORE students have joined the University—three in Chemistry and one in an engineering PhD program.

NextProf Science—Preparing for a Faculty Search

Chemistry is also trying to recruit the current pool of talented young scientists into academic jobs at research universities. The Department hosted 13 postdoctoral scholars for NextProf Science, a UM program aimed at encouraging talented scientists with a demonstrated commitment to diversity to consider academic careers. The workshop helps prepare scholars for the faculty search process and provides networking with faculty and fellow scientists from across the country. It was funded by the College of Literature, Science, and the Arts and the natural science departments, with assistance from the UM ADVANCE program. Chemistry professor Carole Fierke co-chaired the event with Pamela Raymond, professor of Molecular, Cellular, and Developmental Biology. The very successful workshop will be repeated in May 2016. See the NextProf Science website at: sites.lsa.umich.edu/nextprof/

Vincent L. Pecoraro will receive the 2016 American Chemical Society Award for Distinguished Service in the Advancement of Inorganic Chemistry. The award recognizes individuals who advanced inorganic chemistry by significant service in addition to performance of outstanding research.

Ayyalusamy (Rams) Ramamoorthy has been elected a Hans Fischer Senior Fellow of the Institute for Advanced Study at the Technical University of Munich. In the summer of 2015 he was a guest Professor of the Department of Chemistry at Nankai University (China), where he taught a short summer course on Spectroscopy to undergraduates and graduate students.

Brandon Ruotolo has been promoted to Associate Professor of Chemistry with tenure.

Melanie Sanford has received the 2015 Organometallic Chemistry Directed Towards Organic Synthesis Award (OMCOS) which was presented in June in Barcelona, Spain. She has also been awarded the 2015 SABIC Young Catalysis Investigator Award by the ACS Division of Catalysis Science and Technology. Melanie and graduate student Nicole M. Canasso published an article in Science (2015, DOI 10.1126/science.aaa4526) on an unusual nickel complex in the +4 oxidation state. The article was the subject of C&E News Concentrate in the February 9, 2015 issue. Melanie has also been listed by Thompson Reuters as a Highly Cited Researcher for 2015.

Roseanne Sension has been elected to serve as a member of the LSA Curriculum Committee.

Corey Stephenson has been promoted to full professor of Chemistry. He has also been listed by Thomson Reuters as a Highly Cited Researcher for 2015.

Nils Walter was the 2015 Jean Dreyfus Boissevain Lecturer at Trinity College, San Antonio, TX. He also received the Harold R. Johnson Diversity Award from the UM.

John Wolfe has been recognized by the award of a Thurnau Professorship. Thurnau Professors are awarded for outstanding contributions to pedagogy and educational innovation.

Washtenaw Community College student Ederson Lugubone Tobisawa (above) and Nicole Kang joined Assistant Professor Matt Soellner’s lab. Tyler Lopez, from Delta Community College, joined Assistant Professor Nate Szymczak’s lab. Ederson and Tyler were awarded blue ribbons for their posters at the concluding symposium.
More than 150 Chemistry undergraduates celebrated their University of Michigan graduation at the Department’s first Commencement Ceremony. A more personal addition to the Michigan Stadium graduation ceremony, the celebration in Ann Arbor’s Michigan Theater on April 30 offered an opportunity to have their names called as they walked across the stage.

The commencement address was presented by John Gladysz, a 1971 University of Michigan graduate with a B.S. in Chemistry who has gone on to become a Distinguished Professor of Chemistry at Texas A. & M. University. The Gladysz family has established an endowed fellowship for undergraduate students in recognition of the experience that John had at Michigan.

From December 2014 through Summer 2015 terms, a total of 243 students graduated with majors from our Department. The distribution was: Biochemistry: 59; Biomolecular Science: 154; Chemistry: 6; Interdisciplinary Chemical Science: 3; Chemical Science: 2; BS in Chemistry: 19.

Robust Summer Undergraduate Research Program in 2015

Thirty-nine students received support for summer research in 2015. These are transformative research experiences. Selections are based on recommendations by the faculty, as well as their academic records. Funding for these awards comes from generous donors to the Summer Undergraduate Research Fund, and the James E. Harris, the Walter Yates, Margaret and Herman Sokol, Albert Euclid Hinsdale, and William Smeaton Memorial endowment funds. The complete list of students and awards made at the ceremony is available on the Chemistry website.

Chemistry Celebrates Graduates at Commencement Ceremony

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LSA Scholarships Awarded to Chemistry Students

**Carlene Friedley Memorial Scholarship**
This scholarship was established in 1991 in memory of Alyce Carlene Friedley by her husband, Wilbur C. Bigelow. She was a University of Michigan graduate with two Chemistry degrees: B.S. (1947) and M.S. degree (1948). She was also a Lecturer in Chemistry at Michigan in the early 1950s.

*2015-16:* Kara Price  
*2014-2015:* Sarah Hanner, Christie Michelle Mueller, Grace Mattie McKenna, Camille Marie Akemann

**Helen Schwarz Schaefer Scholarship**
Alexis Jo Lawton

**Gomberg Scholarship 2014-2015**
Kelsey Ann Kerr, Yale Kaylor Williams, Lauren Nicole Chibucos, Wyatt Forrest Kuhlman, Sarah Elizabeth Thompson, Fahad Sarvari, Benjamin Richard Kreitz
The Department of Chemistry has received the LSA 2015 Department Award for Outstanding Contributions to Undergraduate Education. This is the third time the department has received the award.

The University of Michigan College of Literature, Science, and Arts (LSA) initiated this program as a way to recognize and reward its units for their contributions to undergraduate education. The Department of Chemistry received the first award, in 1992, and then again in 2009.

In her citation to the department, LSA Associate Dean Angela Dillard remarked:

“While Chemistry received this award only six years ago, it is clear that the department has not rested on its laurels, but continued to renew and extend its commitment to a deep-seated culture of educational excellence and innovation. There are many examples of this pattern: CSIE|UM ...provides a remarkable forum for innovation in undergraduate courses. The department’s participation in the REBUILD project and recognition through the Third Century and other grant programs... And the department has worked to provide greater customization and a better fit between student interests and available educational opportunities via programs like Research Match and the Biomolecular Sciences major.”

The department receives an unrestricted $25,000 award as a part of this recognition.

Graduate Program News

Karle Symposium Showcases Graduate Student Research

Participants filled the Chemistry building auditorium, and poster sessions lined the atrium hallways for the Isabella & Jerome Karle Symposium on August 7, 2015. Coordinated by Michigan Chemistry graduate students, the symposium is a venue for sharing department research. Since 2003, the annual symposium has helped foster collaborations, inspire new research, and nurture a sense of community within the Department. This year’s symposium was chaired by Kevin Ileka of the Kubarych group.

The event featured major addresses from Chad A. Mirkin, Northwestern University, and Mark Sonnenschein, Dow Chemical. Six graduate students presented 25-minute talks, and three student posters sessions were held throughout the day. Awards were made for best posters and presentations. The Dow Chemical Foundation provides support for the awards. The list of awardees is on the Karle Symposium Chemistry website at: http://sites.lsa.umich.edu/karle-symposium/

Previously named the Vaughan Symposium, the event has been renamed in honor of Isabella and Jerome Karle, who earned UM PhDs in physical chemistry. The Karles had long careers at the Naval Research Laboratory, and earned many honors including a Nobel for Jerome and the National Medal of Science for Isabella.

Authentic Research Connection

Two sections of Chemistry 125/126, an introductory laboratory course, are piloting a new approach to teaching basic laboratory topics. The sections are part of a program funded by Howard Hughes Medical Institute to bring research experiences into introductory chemistry and biology labs, called the Authentic Research Connection. Through the semester, the students learn introductory techniques but in the context of research underway in the Department.

Assistant Professor Kerri Pratt led a section on snow chemistry that included learning to analyze samples she had collected in Alaska last summer, culminating in a poster session where the students got experience in presenting scientific results.

Associate Professor Stephen Maldonado’s section learned techniques necessary to build solar cells and then made versions, based on their own hypotheses of what might improve the cells, that they tested for the ability to convert light to electricity.

Graduate Students Awards

This summer, the Department of Chemistry recognized award-winning students with a ceremony and ice cream social. Ninety students were recognized with Department, Rackham Graduate School, or external awards. Six students received National Science Foundation Graduate Research Fellowships. The complete list of awards and the award recipients is available on the Chemistry website: www.lsa.umich.edu/chemistry/graduate/awards. Support for some of these awards is outlined on our gifts page.

Chemistry Expands Masters Degree Options

This summer, the Department of Chemistry has established two new ways to earn a Master’s degree.

Accelerated Degree Program

This program provides an opportunity for undergraduates to earn a Master’s degree, following their Bachelor’s work. It is a research-based Master’s Degree completed during one additional year of graduate study.

MS in Chemical Sciences

For students with bachelor’s degrees who are interested in pursuing continuing education in chemistry to advance their career opportunities in the field, the Department now offers a nine-month graduate degree. There are two options for students pursuing the MS in Chemical Sciences degree: a coursework-only curriculum or curriculum with research opportunities.
Alums & Students Enjoy Networking Dinner

Chemistry graduate students facing the job market took away advice and encouragement from alumni at the networking dinner partnered with the Karle Symposium in August. Alumni were invited back to campus to learn about current research at the University and engage with graduate students throughout the day.

Following the symposium, ten alumni and sixteen graduate students met for dinner at the Michigan Union. The dinner provided a relaxed environment for students and alumni to connect on a more personal level and learn about what graduates have done since entering the workforce, explains Peter Goldberg, a PhD candidate in the Anne McNeil’s group. He chairs the Chemistry Professional Development Organization, which organized the dinner.

Some alumni came from companies that actively recruit students, so learning about what these companies are looking for, how grad students can better market themselves, and making those initial connections with the company was very valuable, students reported.

For alumni, this event provided an opportunity to connect back to the University at many levels. They could meet up with former advisors, and could interact with students throughout the day at the Karle Symposium. Some used it as a reunion with others from their old labs. “As our attendance grows, there will be more opportunities for these types of reunions,” Goldberg points out.

The 2016 dinner will be held on Sunday evening, July 24, 2016 and the Karle Symposium, the following day, Monday July 25, 2016. Email the CPDO at chempdo2009@umich.edu for more information and to receive reminders of the 2016 dinner.

PhDs Awarded

Fall 2014

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<tr>
<th>Student</th>
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<tr>
<td>Carter,Kelsey King</td>
<td>McNeil</td>
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<td>Streamlined Gelator Discovery through the Analysis of Intermolecular Interactions in the Solid State.</td>
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<td>Carter,Tyler Joseph</td>
<td>Szymczak</td>
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<td>Metal Mediated Reduction of Borazines for the Regeneration of Boron-Nitrogen Hydrogen Storage Materials</td>
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<td>Donehue,Jessica</td>
<td>Biteen</td>
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<td>Plasmon-Enhanced Fluorescent Protein Emission: A New Paradigm for Improved Single-Molecule Bio-Imaging</td>
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<td>McMurtrey,Kate Butler</td>
<td>Sanford</td>
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<td>Development and Mechanistic Studies of Palladium-Catalyzed Ligand-Directed C-H Bond Functionalization Reactions</td>
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<td>Nguyen,John Duy</td>
<td>Stephenson</td>
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<td>The Development and Investigation of Catalytic Photochemical Radical Reactions Mediated by Visible Light</td>
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<td>Talapatra,Surma</td>
<td>Geva</td>
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<td>Study of Reactive and Non-Reactive Chemical Processes in Condensed Phase</td>
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Winter 2015

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<tr>
<td>Bornschein,Russell</td>
<td>Ruotolo</td>
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<td>Development of Charge Manipulation Nanoelectrospray Ion Mobility-Mass Spectrometry Techniques for Multiprotein Complex Analysis</td>
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<td>Furgal,Joseph</td>
<td>Goodson, Richard Laine</td>
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<td>Synthesis and structure-photophysical property relationships of T8, T10, T12 and oligomeric organic functionalized silsesquioxanes</td>
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<td>Guo,Ping</td>
<td>Matzger</td>
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<td>Water Interaction with Microporous Coordination Polymers: Energy Efficient Dehumidification, Antimatter Probing and Polymer Coatings</td>
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<td>Hendrickson,Heidi Lynn Phillips</td>
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<td>Utilizing Electronic Structure Approaches to Understand Charge Transfer and Transport in Molecular Building Blocks for Organic Optoelectronic Applications</td>
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<td>Kahlhoefer,Matthew</td>
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<td>Characterization of pre-mRNA Dynamics and Structure throughout Spliceosome Assembly and Catalysis</td>
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<td>Kim,Sojeong</td>
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<td>Electrochemical and Structural Analysis of Li-ion battery Materials by In-situ X-ray Absorption Spectroscopy</td>
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<td>Klepser,Benjamin</td>
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<td>Photosensitization of Molecular Water Oxidation Catalysts Using Semiconductors</td>
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<td>Miller,Zachary</td>
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<td>New Strategies for Stereo- and Regiocontrol in Allene Hydrosilylation</td>
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<td>Nelson,Emily</td>
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<td>Understanding Magnesium-ion Electrochemistry through Modification of Lewis Acid/Base Pairs</td>
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<td>Pfund,Laura</td>
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<td>Accelerating Solid Form Discovery for Pharmaceuticals</td>
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<td>Roman Melendez,Gabriel David</td>
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<td>Studies on the radical enzymes glutamate mutase and viperin</td>
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<td>Sun,Shuwen</td>
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<td>High Throughput Screening for Enzyme Modulators Using Segmented Flow Coupled to Electrospray Ionization-Mass Spectrometry</td>
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<td>Walk,Jordan</td>
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<td>Sugar Silanes: Versatile Reagents for Stereocontrolled Glycosylation via Intramolecular Aglycone Delivery</td>
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<td>Wright,Lindsay Kay</td>
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<td>Single- and Multi-Transducer Arrays Employing Nanoparticle Interface Layers as Vapor Detectors for a Microfabricated Gas Chromatograph</td>
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Summer 2015

Arruda, Brenden Sension
Ultrafast Photochemistry of the Cyclohexadiene Chromophore: Model Systems for the Biological Synthesis of Vitamin D

Beck, Michael Lim
Development of Small Molecules as Chemical Tools for Investigating the Role of Metal–Protein Interactions in Neurodegenerative Diseases

Borovika, Alina Montgomery/Sanford
Advances in Brønsted acid catalysis: reactions of oxocarbenium ions

Bruno, Paul Mapp
Developing Proteomimetic Inhibitors of Large Surface Area, Low Affinity Protein-Protein Interaction

Bryan, Zachary McNeil
Developing New Catalysts and Methods for Catalyst-transfer Polycondensations (CTP)

Chow, Chun Yin Pecoraro
Modulating the Single-Molecule Magnet, Magnetocaloric and Luminescent Behavior in Metalloacorns

Cichowicz, Nathan Russell Nagorny
Development of Tandem Chemical Processes for the Synthesis of Bioactive Natural Products

Cipolla, Cynthia Marie Kennedy
Analytical Techniques for Evaluating Function in Islets of Langerhans

Crawford, Andrew McCarten Penner-Hahn
Development of an X-Ray Flow Cytometery Instrument, the Associated Methods of Analysis, and MBank XRF Fitting Software.

Dougherty, Casey Ann Banaszak Holl
The Phosphophysical and Biological Implications of the Fluorophore:Polymer Ratio

Dutta, Ananya Matzger
Multicomponent Approaches to the Synthesis of Microporous Coordination Polymers

Everett, Renata Kathleen Wolfe
Development of New Reactions Employing Boron-Enolate Wittig Rearrangements

Goh, Garrett Brooks
Development & Application of Constant pH Molecular Dynamics (CPhMDMSL) for Investigating pH-mediated Transient Conformational States and Their Effects on Nucleic Acid & Protein Activity

Hale, Wendi Hakansson
Quantitative Bottom-Up and Top-Down LC/FT-ICR MS for Multisite Phosphoproteins and Natural Product Biosynthetic Pathways

Hankett, Jeanne Chen
Spectroscopic Studies on the Molecular Structural Changes of Plastics and Plasticizers at Model Environmental Interfaces

Hopkins, Brett Wolfe
Enantioselective Synthesis of Heterocycles via Palladium Catalyzed Alkene Difunctionalization Reactions

Jackson, Evan SP/SU 2015 Montgomery
Chemistry Doc Advances in Regiocontrol and Bench Stability in Nickel Catalyzed Reductive Couplings of Aldehydes and Alkynes

Larsen, Brian James Nagorny
Total Synthesis and Biological Evaluation of Anti-Cancer Lactimidomycin and Diterpene-Based Products and Analogs

Liao, Yi Biteen
Single-molecule localization, dynamics and interactions of DNA replication and repair proteins revealed by live-cell super-resolution microscopy

Lotz, Monica Diane Sanford
Mechanistic Insights with Homogeneous Pd and Pt Complexes for the Oxidative Coupling of Methane

Phadke, Sameer Dilip Soellner
Chemical Modulation of Phospho-Signaling Pathways Involved in Cancer

Plegaria, Jefferson S. Pecoraro
De Novo Design of Copper Metallopeptides Capable of Electron Transfer: From design to function

Pyper, Kayla Bartlett
Metal Oxide Semiconductor Materials for Photooxidation of Water and Organic Amine Groups

Winschel, Grace Alexandra Nagorny
Chiral Phosphoric Acid-Catalyzed Stereoselective Transformations of Vinyl Ethers and Acetals

Zhou, Ying Kennedy
Improving capillary LC-MS method for trace level peptide/protein detection and its application in in vivo neuropeptide monitoring

Alumni News

Taking Stock of the Unusual Career of Harvey W. Schiller

Robert L. Kuczkowski, Professor Emeritus

Popular wisdom predicts that the current generation of students will change jobs several times during their professional lives. Among students I have interacted with at Michigan, the one who developed the most unusual and varied career biography is Harvey W. Schiller.

His college career began at The Citadel, The Military College of South Carolina, where he graduated in 1960 with a commission in the Air Force. Having excelled in chemistry he was encouraged to continue studies in graduate school. This led to a fellowship at Michigan (and where he met his wife Marcia) and an M.S. from the department in 1962.

This was a turbulent period and the build-up of armed forces in Vietnam affected his decision to enter Air Force pilot training. He learned to fly and served as a pilot delivering supplies to troops in Vietnam logging more than 1,000 combat missions. In 1967 he was reassigned stateside and was appointed as an instructor at the Air Force Academy.

The Air Force encouraged Schiller to obtain a PhD to strengthen his role at the Air Force Academy so he returned to Michigan in 1968. Under the direction of his PhD advisor Ralph Rudolph, Schiller had synthesized a new fluorophosphine, H2P-PF2, for which more characterization data was desirable. He asked me if I could help. I was developing a program using microwave spectroscopy to characterize volatile compounds, so this was an attractive opportunity to collaborate. I trained him to use the microwave spectrometer to gather the necessary data to determine structural parameters for the compound.

We spent evenings in the lab running the spectrometer which led to a chapter in his thesis and a publication. We had many conversations, not all chemistry related, while continued on page 10
Carlos R. Baiz (PhD 2011, Kubarych) is now an Assistant Professor of Chemistry at the University of Texas, Austin. After his UM graduation, he was a postdoctoral fellow at MIT and the University of Chicago.

Nicholas Ball (PhD 2011, Sanford) is now an Assistant Professor at Pomona College, CA.

Andrew Boughton (PhD 2011, Chen) recently accepted a new position as Software Developer at the Center for Open Science at Charlottesville, VA.

Donald Borseth (PhD 1982, Kuczkowski) writes that he retired in 2000. In 2002 he moved back to the US from the UK where he worked for several years as a consultant, while his wife Pat Merry was on assignment from Ernst and Young. They now enjoy their leisure by gardening and travelling. An around-the-world trip is on the horizon. Don and Pat have made a bequest to the Robert Kuczkowski Endowed Faculty Research Fund.

Dennis Brinkman (PhD 1976, Sacks) recently retired as Associate Dean at Indiana Wesleyan University, where he taught chemistry and was an administrator for 14 years. Before that he had been research director for Safety-Kleen (a hazardous waste management company) for twelve years and worked for the US Department of Energy for twelve years.

Sara J. Buhrlage (PhD 2008, Mapp) started as an Assistant Professor at Dana Farber Cancer Institute (Cancer Biology) and Harvard Medical School (Cellular & Molecular Biology) in September 2015.

Paul Bruno (PhD 2015, Mapp) started a fellowship position at Dana Farber Cancer Institute on September 1.

Saumen Chakraborty (PhD 2011, Pecararo) and his wife Amrita announce that they have a new son, Sounak, who was born in Los Alamos, NM on July 7, 2015.

Matthew Clarke (PhD 2006, Chen) has recently moved to the Freer Sackler Galleries, Washington, DC, where he works as a conservation scientist. His work focuses on Asian Art from the National Gallery of Art.

Michael Coan (BS 1965, PhD 1971, U. Georgia) has been honored as a 50 year member of the American Chemical Society. He spent his entire career at Bayer Health Care in Berkeley, CA. He is now retired, living in El Cerrito, CA.

Richard J. Cook (BS 1969, PhD 1973 Princeton) and his wife Teresa M. Lahti visited the Department this summer. Richard had been the Provost of Kalamazoo College, MI and the President of Allegheny College, PA. He is now President Emeritus of Allegheny College and Chairman of the Board of Second Nature, Inc. Second Nature is the umbrella organization of the American College and University Presidents’ Climate Commitment, dedicated to significantly reducing the carbon footprint for a sustainable ecosystem and society. He is also a Managing Partner of Lahti Search Consultants.

Richard writes that his undergraduate experience in the Department of Chemistry and particularly his undergraduate research with Professor Mark Green set the trajectory of his personal and professional life. He and his wife have now established the Richard J. Cook Undergraduate Research Endowment which will be used

Schiller continued from page 9

we sat waiting for results from the spectrometer. He was older than the usual grad student, in fact my age. Not inhibited by my faculty position and a good raconteur, he described experiences in the Air Force and flying out of the Selfridge, MI Air Force base on weekends to keep his skills up-to-date. We shared family histories and stories. I learned he was an Air Force captain assigned to Michigan to get his PhD, so he could advance at the Air Force Academy where he aspired to lead the chemistry program. Schiller defended his PhD after two years of study.

Schiller served in a number of flying and other assignments returning to the Air Force Academy in 1978. In 1980 he was appointed professor and head of the chemistry program, a permanent appointment, with the approval of Congress and the President. During these years, he become involved with the Olympic boxing program leading to organizing the boxing venue and program for the 1984 Los Angeles Olympics. He also became the faculty representative to the NCAA and served on the NCAA Executive Committee.

I had little contact with him subsequently but began to note his name appearing in unexpected roles. In 1986 he retired from the Air Force at the rank of brigadier general and was appointed the commissioner of the Southeastern Conference (SEC), which then aspired to compete more visibly with the Pac 10 and Big Ten football conferences on the national scene.

In 1990 he became the executive director of the US Olympic Committee, before leaving to become the first president of Turner sports in 1994. In 1999 he was appointed chairman and CEO of YankeeNets, a new conglomerate of the New York Yankees, New Jersey Nets, and New Jersey Devils, partially owned by George Steinbrenner, before it was dissolved in 2002 evolving into a regional TV network.

In 2007 Schiller became CEO of GlobalOptions Group, a crisis management and security public company. Other more recent appointments and national boards, to mention a few of many, include President of the International Baseball Federation, a member of the White House Commission on Presidential Scholars, member of the Board of the Baseball Hall of Fame, and most recently the Commercial Commissioner of America’s Cup 35. He has received honorary doctorates from The Citadel, Northern Michigan University and the United States Sports Academy.

Like others of our generation, normal retirement age has not been a time to relax and entirely slow down. In addition to traveling around the world with America’s Cup, he returned to his love of science by starting a recycling company, Renew Merchandise, converting polyethylene and polycarbonate bottles and other items into environmentally friendly clothing and other useful materials. He also serves on the board of Patent Properties, a new company working to simplify the relationship between patent holders and industry.

Still married to his Michigan sweetheart Marcia, they have two children, Erika, a lawyer in Washington, DC, and Derek, Vice President of the Atlanta Braves, and two grandchildren.
to provide research fellowships for undergraduates in the Department of Chemistry. [See page 13.]

Elizabeth Irwin Denis (BS 1966, MS 1968, MD 1979, UCLA) writes that she is retired and she and her husband now spend at least four months each year in the south of France. They also travel extensively elsewhere.

Keary M. Engle (BS 2007, PhD 2013, Scripps) has become an Assistant Professor of Chemistry at the Scripps Research Institute in La Jolla, CA.


Joseph Gurrentz (BS 2015) is in graduate school at U. Texas, Austin.

Roland F. Hirsch (PhD 1965, Rulfs) has been honored as a 50 year member of the American Chemical Society. Since 1991 he has been employed as a Program Manager in the Office of Biological & Environmental Research, Office of Science, U.S. Department of Energy. He notes that his UM doctoral dissertation, “Some Analytical Aspects of the Chemistry of Technetium,” has been very helpful in his work at DOE since the element is important in their subsurface work and an earlier program in nuclear medicine. Dr. Hirsh is an ACS Fellow (2011) and an Honorary Fellow of Library of America. Retirement is a year or so off when he and his wife expect to be able to spend more time with their family.

Jerry Hribar (BS 1965, 1969 PhD, Wayne State U.) has been recognized as a 50 year member of the American Chemical Society.

Chelsea Huff (PhD 2014, Sanford) has started a job at DuPont Agrochemicals.

Kami L. Hull (PhD 2009, Sanford) is an Assistant Professor at the University of Illinois, Urbana-Champaign. She is profiled in “The Talented Twelve,” selected by C&E News, as one of “a dozen of the best and brightest young researchers who are using chemistry to solve global problems.” She is recognized for developing greener methods for modifying molecules. (July 6, 2015 issue).

Alexander Johnson-Buck (PhD 2012, Walter) is a post-doctoral fellow at Harvard Medical School.

Matthew Kahlscheuer (PhD 2015, Walter) has taken a job with Apeel Sciences, a start-up Biotech company in Santa Barbara, CA.

Dipannita Kalyani (PhD 2008, Sanford) is an Assistant Professor at St. Olaf College, Northville, MN. She has received a Henry Dreyfus Teacher-Scholar Award as well as a Cottrell College Science Award from the Research Corporation.

Alexander Khmaladze (Post-doctoral 2008-11, Chen, 2011-13 Morris) is an Assistant Professor of Physics at SUNY- Albany.

James Kornacki (BS 2009, PhD 2015, Northwestern) is the founder and CEO of Ullo (http://ullowine.com). Ullo markets a filter which removes sulfites from wine. Sulfites are a big problem for people who are allergic or sensitive to sulfites. So far Ullo appears to be a very successful start-up company in Chicago.

Dominick Labianca (PhD 1969, Overberger) was honored as a 50 year member of the American Chemical Society. He is currently Professor Emeritus of Chemistry at Brooklyn College of CUNY and former Chairman of its Chemistry Department. He continues to work part-time as a forensic consultant and expert witness in alcohol-based legal cases.

Yuwei Liu (PhD 2014, Chen) has been appointed as a chemist with Royal Adhesives and Sealants in Jackson, MI.

Monica Lotz (PhD 2015, Sanford) has joined Exxon Mobil.

Tomas Lyons (PhD 2011, Sanford) has started a job at Merck.

Karen Morse (PhD 1966, Parry) retired from Western Washington University (Bellingham) in 2008 after serving as President for 15 years. In 2012 the WWU Board of Trustees celebrated her service by naming the chemistry building the Karen W. Morse Hall and creating the Institute for Leadership in her name. Joseph Morse (PhD 1967, Parry) retired from WWU in 2006 after a stroke slowed his speech and movement. A lecture hall in the Science and Technology Education Building was named the Joseph G. Morse Lecture Hall in honor of his service as the first director of the Science Education Program. Karen and Joe now live in a retirement community in La Jolla, CA near a son and family. They enjoy travel, music festivals and monitoring the progress of their grandchildren.

Sethu Pitchiaya (PhD 2011, Walter) is now a post-doctoral in the UM Medical School.

Will Pomerantz (Postdoctoral 2008-12, Mapp), an Assistant Professor at the University of Minnesota, received a 2015 Kimmel Scholar Award and a 2015 NSF Career Award.

Douglas J. Raber (PhD 1968, Lawton) and his wife Linda have published their third book, Eastern Colonies. Doug writes, “It is a thriller that delivers accurate science, fast-paced action, and just enough hot stuff to keep the pages turning.” It is available in paperback and as a Kindle download.

Arlie Rinaldi (PhD 2013, Walter) has become a visiting Assistant Professor of Chemistry in the Keck Science Department at Claremont McKenna College, CA.

Roy W. Roth (MS 1953, Bachmann, PhD 1955, MIT) writes that he started reseacch work with Bachmann in 1950. After Bachmann’s untimely death he transferred to MIT obtaining his PhD working with Professor John Sheehan, ironically a Bachmann student. He is now retired from research with the US Army Laboratory at the Research Triangle Park, NC.

Larry Sanford (MS 1975) retired after 36 years as assistant manager of Ann Arbor’s water treatment plant. He is now on the board of directors of the Ypsilanti Community Choir. He is also registered as an official of MHSAA for track and cross country.

Tracy (Lent) Schloemer (BS Chem. 2009, MA Education 2010) has just started her sixth year teaching high school chemistry in Denver. She teaches at a problem based learning school focused on a STEM curriculum. She is a senior fellow with the Knowles Science Foundation and a blogger for ChemEdX.
Thomas W. Smith (PhD 1973, Overberger), a Professor at Rochester Institute of Technology, has been nominated as a candidate for Director-at-Large of the American Chemical Society.

Kurt H. Stern (MS 1950, PhD Clark U) has switched to composing music since retiring from chemical research. Several of his works are performed at concerts in Washington, D.C. His career included a faculty position at the University of Arkansas, the National Bureau of Standards, the NIH graduate school, and the Naval Research laboratory.

Weihong Tan (PhD 1993, Kopelman), a professor at the University of Florida, has been named by Thomas Reuters as one of 198 chemists who were recognized as, “The World’s Most Influential Scientific Minds, 2014.”

Aaron van Dyke (postdoctoral 2009-13, Mapp), currently an Assistant Professor at Fairfield University, received the 2015 Alpha Sigma Nu Outstanding Undergraduate Teacher of the Year Award.

Anna Wagner (PhD 2014, Sanford) has started a new position at Gilead Laboratories.

James W. Webb (PhD 1972, Elving) has been honored as a 50 year member of the American Chemical Society. He is Professor Emeritus of Chemistry from Illinois State University, Bloomington. He retired in 2006 but taught part-time at ISU and Illinois Wesleyan for a few years. Also, he assisted other ISU and Wesleyan faculty in developing resource material for climate science workshops. He recently moved to Maine where he is working with the Maine ACS section in organizing workshops for educators. He enjoys bicycling, fishing and (of course) snowshoeing.

Fugen Wu (postdoctoral 2011-13, Chen) has been appointed full professor at Southeastern University, Nanjing, China.

Yingda Ye (PhD 2013, Sanford) has stated a new job with Incyte Pharmaceuticals in Wilmington, DE.

K. Lynn Hall (PhD, 1956, Meinke) died in San Rafael, CA on January 23, 2015 at the age of 87. Prior to attending UM he received a BS from Reed College and a MS from UC, Berkeley. He studied radiation chemistry with Meinke. Following graduation he was a research chemist at Chevron Research, Richmond, CA for 31 years. He specialized in work on lubricants. His outside interests included music. He was co-founder of the Jubilee Jazz Band with whom he played trombone.

Dr. Hall was predeceased in 2002 by his wife of 50 years, Jacqueline Tucker Hall. He is survived by his children Randall, Mark, Kirstin and Hannah and seven grandchildren.

Charles Weyand Heitsch (BS, 1956, MS, 1957, PhD, 1960 Parry) died on December 3, 2014 at the age of 83. Dr. Heitsch was born in Pontiac, MI in 1931. His education at UM was interrupted by service in the US Army during the Korean War. He attended the US Army Language School in Monterey, CA after which he was a voice intercept operator [Russian] in Alaska.

After receiving his PhD with Bob Parry in 1960, he was an instructor in inorganic chemistry at Iowa State University 1959-63. He was then a research chemist at du Pont, Wilmington, DE 1963-67 and a senior research specialist at Monsanto 1967-85. From 1986-97 he was assistant chairman of the Chemistry Department at the University of Missouri, Rolla. He retired in 2000. During his retirement he tended his three acre apple orchard and also kept bees.

Dr. Heitsch is survived by his wife, Leona Mason Heitsch (BS, 1952), their five children, seven grandchildren and eight great-grandchildren.


Dr. Rowsell grew up in Cambridge, Ontario. He received his BS in chemistry with honors at the University of Waterloo in 2001. At the UM he received the Kasimir Fajans Award for the best PhD dissertation in Chemistry, 2004-2005. He also received Outstanding Graduate Student Researcher and the Outstanding Graduate Student Instructor Awards. After graduation he served as a consultant for Nanotech Innovations, a carbon nanotube start-up company. In 2005 he joined the faculty of the chemistry department of Oberlin College. His colleagues at Oberlin remember him for his infectious enthusiasm and his tireless efforts with students.

Dr. Rowsell is survived by his wife of eight years, Rebecca Whelan (Postdoctoral fellow with Bob Kennedy, 2003-2005)

Peter G. Sherman (BS 1970, PhD 1977 U. Oregon) died of a brain tumor on December 18, 2014. After earning his BS with honors in Chemistry at the UM, he went on to complete a PhD in Chemical Physics at the University of Oregon in 1977. He did postdoctoral work at the SUNY at Stony Brook and Brookhaven National Laboratory. He was employed by Kearfott Guidance and Navigation in NJ and Draper Laboratory in Cambridge, MA. He worked in the fields of guidance and navigation, MEMS and sensor technology.

He is survived by his wife, Ruth Owen, and children Randy, Sabrina, and Mike Sherman.
DEPARTMENT SUPPORT

Chemistry Strategic Fund
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Seyhan N. Ege
Gerald D. Fong
Sheldon G. Shore
Robert Kuczkowski Endowed Faculty Research Fund
Arthur J. Ashe
Carol A. Fierke
Gerald D. Fong
Robert L. Kuczkowski
Nils G. Walter
For Arthur Huerta, doing research in Professor Anna Mapp's laboratory has changed his opinion about a chemistry career. A biochemistry major, he is on track to graduate in May, 2016. Based on his experience in lab classes, he didn't think he would want to spend his life in the lab. But he discovered research is rewarding in a way that course work wasn't.

"If something doesn't work, then you figure out why, and you have the time to make it work. It's your job to get it to work, or try another avenue."

A big advantage of a research experience, he says, is actually touching the NMR and all the other modern equipment. In classes, students usually hand over their samples to the instructor and rarely touch the instruments. He also learned that he is "not all thumbs" when it comes to lab work, and he is picking up other skills such as how to keep a good lab notebook.

For the Mapp group, he is doing a synthesis. Fluorescent polarization will be used to study slight variations in the molecule. A graduate of Pioneer High School in Ann Arbor, Huerta came to UM thinking about medical school, and started out as a math major. When he found he has a greater passion for chemistry than for medical topics, he switched to biochemistry. Unlike many of his fellow students in biochemistry, he says, he actually enjoys the inorganic and physical chemistry, and he finds himself tutoring his friends in these classes.

Going forward, he plans to pursue graduate school working on artificial photosynthesis. He envisions an academic career because he has found that he likes teaching.

He is grateful for the support from his undergraduate research fellowship. "School isn't getting any cheaper," he says. If not for the fellowship, he would need to be working at other jobs—not likely anything as inspiring as research.
Establish your legacy

Every gift is important and makes a difference in the Department’s ability to provide for students and faculty. We especially need your support for these priorities.

CSIE|UM Future Faculty Program 732330
Your gift will support seminars, workshops, and other programming related to teaching and learning, as well as travel to professional events for participants in the Chemical Sciences at the Interface of Education|UM program.

Kuczkowski Endowed Faculty Research Fund 796725
Established by Emeritus Professor Robert Kuczkowski and faculty and friends, this award recognizes and supports an outstanding assistant or associate professor in Chemistry.

Summer Chemistry Scholars Fund 318850
Funds for summer undergraduate fellowships, which directly support UM Chemistry and Biochemistry majors. Research opportunities are essential for students to compete for elite graduate programs and jobs in industry.

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Seed funding for new faculty research and innovative research projects, curriculum development, research lab maintenance and upgrades, and purchase or repair of major instruments for the research and teaching labs.

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Include news of your current activities or suggestions for the next Newsletter:

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Position ______________________________________________________

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NEWS ABOUT YOURSELF:
(Unless you request otherwise, we will feel free to mention this in future Newsletters)
Save the Date!

Alumni Networking Dinner
July 24, 2016

Karle Symposium
Monday, July 25, 2016

Learn more on page 8.

The Regents of the University of Michigan:

- Michael J. Behm, Grand Blanc
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- Laurence B. Deitch, Bloomfield Hills
- Shauna Ryder Diggs, Grosse Pointe
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Shrinking polymers —seeing the effect of heat at the fall FEMMES event.

Stirring up a little interest in Chemistry at the fall FEMMES event.