CHEMISTRY at UGA
SPRING 2016
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Welcome from the Head


Prof. Jon Amster

Greetings from the Department of Chemistry! It has been another productive year for UGA Chemistry, and I am pleased to report more good news for our department. We continue to be a major force both in the instructional and research missions of our university. In recognition of the important role that our department plays in undergraduate education, we will occupy a significant fraction of the new Science Learning Center, which will open for classes in the Fall 2016 semester. This building will provide state-of-the-art teaching facilities to the thousands of students, and hundreds of Chemistry majors, that are enrolled in General and Organic Chemistry each semester. We continue to hire young faculty with research programs in exciting new areas. We recently hired Dr. Alla Synytska, who is currently on the faculty at the Technische Universität Dresden, and who will join us this summer. Alla's research program is in the field of polymeric materials, and will complement the research activities of our other materials and polymer scientists, such as Jason Locklin, Shanta Dhar, Tina Salguero, Jin Xie, and Sergiy Minko. We are presently searching for an assistant professor in experimental physical or analytical chemistry, and have interviewed several outstanding candidates. We expect to have this position filled in the very near future. To help with the large teaching loads in Organic and General Chemistry, we have hired a Lecturer, Dr. Doug Jackson, and a limited-term Assistant Professor, Dr. Lisa Kendhammer. Both are outstanding teachers, and help us to maintain our excellence in chemistry instruction. After 25 years of distinguished service in our department, Professor Richard Dluhy left the University of Georgia in July to take the post of Department Head of Chemistry at the University of Alabama-Birmingham. Rich will retain adjunct status in our department, and will continue to interact with colleagues here at UGA. As his resignation leaves a significant hole in the analytical division, we expect to search in the coming year for an assistant professor in a related area of research.

Our faculty and students continue to be recognized for their research accomplishments. Jin Xie was recently awarded a NSF Career Award, and joins current faculty members Geoff Smith, Todd Harrop, Jason Locklin, and Gary Douberly as recipients of this prestigious young investigator award. Todd Harrop was selected by the American Chemical Society as an Emerging Investigator in Bioinorganic Chemistry. His research was featured in an ACS Select Virtual Issue, which covered the work of 17 researchers who have received their PhD's since 2004. Gary Douberly received the Coblentz Award, an international award presented annually since 1964 to an outstanding molecular spectroscopist under the age of 40. The last UGA recipient of this award was Butch Carreira, in 1979. Other previous recipients of this award include several members of the National Academy of Science, such as Brad Moore, Steve Leone, Geraldine Richmond, and Paul Alivisatos. In addition to our faculty, our

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Alumni Lecture and Banquet Scheduled for April 29, 2016


Prof. Mildred Dresselhaus, MIT

The Chemistry Alumni Lecture will be held on Friday April 29, 2016 in the Chemistry Department. The lecturer will be Prof. Mildred Dresselhaus from MIT. The evening banquet will be held at the Tate Student Center Reception Hall. It will include the presentation of student and faculty awards for the Chemistry Department as well as those for the Northeast Georgia Section of the ACS. The Distinguished Alumnus Award will be presented to Brad Crocker (B.S. 1987). On Saturday afternoon April 30, we will have the Chemistry Golf Scramble at the UGA course, followed by a barbecue at the golf course clubhouse. Please plan to join us for this fun weekend event. To make a reservation, please contact Ms. Laura Veatch (laveatch@uga.edu; 706-542-1919).

Prof. Mildred Dresselhaus received her high school degree at Hunter College High School, her undergraduate degree at Hunter College in New York, and carried out postgraduate study at the University of Cambridge on a Fulbright Fellowship and at Harvard University. She received a Ph.D. from the University of Chicago in 1958. After two years at Cornell University as a postdoc, she moved to Lincoln Lab as a staff member. She became a visiting professor of electrical engineering at MIT in 1967, a tenured faculty member in 1968, and a Professor of Physics in 1983. In 1985, she was promoted to Institute Professor – the first female institute professor at MIT.

In 2000–2001, Dresselhaus was the director of the Office of Science at the U.S. Department of Energy. From 2003–2008, she was the chair of the governing board of the American Institute of Physics. She also has served as president of the American Physical Society, president of the American Association for the Advancement of Science, and treasurer of the National Academy of Sciences. Dresselhaus has devoted a great deal of time to supporting efforts to promote increased participation of women in physics.

Dresselhaus has received many awards in Physics and in Science in general. She was awarded the National Medal of Science in 1990 in recognition of her work on electronic properties of materials as well as expanding the opportunities of women in science and engineering. She received the 2012 Kavli Prize "for her pioneering contributions to the study of phonons, electron-phonon interactions, and thermal transport in nanostructures." In 2010, she won the ACS Award for Encouraging Women into Careers in the Chemical Sciences, and in 2014, she was awarded the Presidential Medal of Freedom.

Dresselhaus is widely known for her work on graphite, graphite intercalation compounds, fullerenes, carbon nanotubes, and low-dimensional thermoelectrics.

WELCOME ...FROM PAGE 1

graduate students have also garnered significant awards. Francisco Sarabia, a member of Eric Ferreira's research group, was awarded a NSF Graduate Research Fellowship, joining Karson Brooks of the Locklin group as recent awardees of this highly valued fellowship. Ellen Broering, a member of Todd Harrop's research group, was honored by UGA's Graduate School with a Beverly Hirsh Frank Graduate Fellowship for Women and Science. Charles Stanton, a member of the George Majetich research group, received a Graduate Education Advancement Board Fellowship.

Our research funding continues to grow each year. For fiscal year 2015, the department brought in nearly $7.5M in federal grants, a 12% increase over the previous year, and double our grant total from a decade ago. In part, our funding increase is due to the early success of our junior faculty, all of whom have received federal grants within their first three years. Several of our junior faculty have received multiple grants, allowing them to expand their research programs quickly. Our graduate program numbers are holding steady at 160 students. Professor Greg Robinson is currently our Graduate Coordinator, and he works hard to bring in 30-35 well-qualified students each year. There is a substantial cost to recruiting excellent graduate students and providing scholarships that attract the most qualified. We are grateful for the generous donations from our alumni that support these activities. Please consider making a contribution that can be used to enhance the instructional or research missions of the Department of Chemistry.

Please feel free to drop in and visit the Department of Chemistry whenever you are in Athens. I hope that you will consider visiting us for the Alumni Lecture & Banquet on Friday, April 29, and the annual golf tournament on Saturday, April 30.

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Prof. Alan Marshall (Alumni Lecturer) and Dr. James Stephens (Alumni Award winner)

2015 Alumni Lecture and Banquet

The Chemistry Alumni Lecture and Banquet were held on Friday April 17, 2015 in the Chemistry Department and at the UGA Georgia Center. The lecture in the afternoon was presented by Professor Alan G. Marshall (Florida State University and National High Magnetic Field Laboratory) on the topic of "Reading Chemical Fine print: The Key to Exploiting Nature's Compositional Complexity." The banquet was held at the Georgia Center in the evening. The highlight of the event was the presentation of the Distinguished Alumnus Award, which was given to Dr. James (Jimmy) Stephens (Center for Disease Control, Atlanta).

Alan Marshall is Robert O. Lawton Professor of Chemistry and Biochemistry and Founding Director of the Ion Cyclotron Resonance (ICR) Program, a National Science Foundation user facility for mass spectrometry, at Florida State University. He is recognized as the co-inventor of Fourier transform ICR mass spectrometry, and leads the continuing development of this important instrumentation. His current research spans FT-ICR instrumentation development, fossil fuels and environmental analysis, and mapping the primary and higher-order structures of biological macromolecules and their complexes. His major recognitions include: Member, American Academy of Arts & Sciences; Fellow, American Physical Society, American Association for the Advancement of Science, Society for Applied Spectroscopy, and American Chemical Society; American Chemical Society Award for Chemical Instrumentation, Field-Franklin Award, and Analytical Chemistry Award; American Institute of Chemists Chemical Pioneer Award.

Jimmy Stephens graduated from UGA with a B.S. Chem degree in 1984. He then attended Rice University in Houston, TX, and earned a Ph.D. in Chemistry in 1989 with Robert F. Curl, Jr. (who later won the Nobel Prize for his part in the discovery of Buckyballs). Following postdocs at Lawrence Livermore National Laboratory and the Morgantown Energy Technology Center, Jimmy began his career with the Centers for Disease Control and Prevention (CDC) in 1992 when he joined the National Institute for Occupational Safety and Health (NIOSH) in Morgantown, WV. As a researcher he studied the physicochemical properties of respirable particles and fibers which control their pathogenic properties, and developed a novel surface

analysis method for the correlated measurement of surface and bulk properties for these particles. He also developed new techniques for visualization of highly complex data sets. In 1999, Jimmy became a Senior Scientist in NIOSH's Office of the Director in Atlanta, and in 2004 he was appointed as the NIOSH Associate Director for Science (ADS). In 2006 he was named as the Acting Associate Director for Science for CDC within the Office of the Chief Science Officer, a role he assumed officially in 2007. In 2010, he became the Director of the Office of Science Quality (OSQ) within the newly formed Office of the Associate Director for Science. In these roles he served as an advisor on agency-wide scientific issues and as the senior scientific clearance official for CDC. In 2013 Jimmy was named the Deputy Director of CDC's National Center for Injury Prevention and Control and in 2014, he was appointed as the Acting Deputy Director of CDC's National Center for Environmental Health/Agency for Toxic Substances and Disease Registry (NCEH/ATSDR). In 2015, he was appointed to a dual role as the Director of both ATSDR Divisions, the Division of Toxicology and Human Health Sciences, and the Division of Community Health Investigations. In these positions he provides leadership and oversight of ATSDR's work protecting the public from harmful exposures from toxic substances. Jimmy is married to UGA Chemistry alumna Ann Berry, and they have a twelve-year-old daughter named Helen.

Science Learning Center Scheduled to Open in Fall 2016

After three years of planning, design, and construction, the Science Learning Center (SciLC) will be completed this spring, and the first classes and laboratories will be held in the new building this coming fall. The SciLC is a 122,500 square-foot state-of-the-art instructional facility for undergraduate science courses. Chemistry is a major stakeholder in this project, and has been assigned almost all of the laboratory space on the first two floors of this three story building, where all of the General Chemistry and Organic labs will be moved. The laboratories are being outfitted with new instrumentation, such as benchtop NMR spectrometers for the organic courses. In addition to housing laboratories, the SciLC will also have two 280-seat auditoria and two 72-seat SCALE-UP classrooms. SCALE-UP (Student Centered Active Learning Environment for Undergraduate Programs) is an active learning method in which students learn by solving problems in groups, rather than learning via a traditional lecture. In addition to Chemistry, Physics and Biology will also teach their large enrollment courses in this building. The SciLC will provide our undergraduate students outstanding facilities for their core science courses.

Faculty Awards and News

Professor Gary Douberly wins Coblentz Award

Dr. Gary Douberly, Associate Professor of Chemistry, was recently awarded the 2015 *Coblentz Award* from the Coblentz Society. The Coblentz Award is presented annually to an outstanding young molecular spectroscopist under the age of 40. The award comprises an honorarium, a plaque with a prism from the periscope of a World War II Navy submarine, and a travel allowance. The award was presented, and Gary gave the award lecture, at the *International Symposium on Molecular Spectroscopy* at the University of Illinois in June of 2015.

Douberly was recognized for the significant contributions made by his group in the development of laser spectroscopic techniques to investigate molecules using the helium nanodroplet isolation method. Continuous, effusive pyrolysis sources of molecular radicals and carbenes have been optimized for doping helium nanodroplets, and the Douberly group has reported infrared laser spectroscopic studies that describe the fundamental chemical physics of these helium-solvated systems. The low temperature (0.4 K) and rapid cooling associated with helium droplets provides an ideal environment in which to isolate and spectroscopically probe these transient species. Single and double resonance IR laser methods are used to probe the structural and dynamical properties of these systems, often with sufficiently high resolution to resolve rotational fine structure. Moreover, the Douberly group has leveraged the sequential pick-up technique developed previously by G. Scoles to investigate the mechanisms associated with several key elementary atmospheric and combustion reactions carried out inside the low temperature helium droplets. The rational for these studies is that spectroscopic measurements carried out downstream from the pick-up zones are capable of identifying the structural configuration of key intermediates along the reaction path, along with the associated product branching ratios.

Douberly received his B.S. degree in Chemistry from the University of Central Florida in 2000. He received a Ph.D. in Physical Chemistry from the University of North Carolina at Chapel Hill in 2006 under the direction of Roger E. Miller and Tomas Baer, where he contributed to the early development of the helium nanodroplet isolation method. Following postdoctoral work with Michael A. Duncan at UGA, he began his faculty appointment here in 2008. Professor Douberly has also received the *CAREER* award from the National Science Foundation, the *Early Career Award* from the Department of Energy Office of Science, the *Presidential Early Career Award for Scientists and Engineers* (PECASE) from the White House Office of Science and Technology Policy, and the *Journal of Physical Chemistry Lectureship Award*.

Wesley Allen A Mercator Fellow at Justus Liebig University, Giessen, Germany

Wesley D. Allen, Associate Professor in the Department of Chemistry, conducted research as a Mercator Fellow at the Institute for Organic Chemistry at Justus Liebig University (JLU), Giessen, Germany, during the summer of 2015. With the Mercator program, the German Research Foundation (DFG) promotes the intensive and long-term exchange of researchers as "fellows" within the context of projects both nationally and internationally. Allen's work supports the program "Control of London dispersion interactions in molecular chemistry," promoted by the DFG. The objective of the research is to better understand London dispersion interactions – the attractive forces between molecules or atoms – in molecular systems, to quantify those forces, and to specifically use them. Because individual London forces are weak, they have long been underestimated. However, their collective behavior provides a fundamental driving force of molecular aggregation (condensation of gases to liquids, and freezing of liquids to form solids) and accounts for the unusual stability of many molecules. Additionally, London dispersion plays a central role in chemical selectivity through the stabilization of transition states during chemical reactions, in protein folding, and in enzyme catalysis. Dr. Allen's research is focused on theoretical development and chemical applications of molecular quantum mechanics in this and other contexts.

Professor Todd Harrop was selected by the American Chemical Society, in its "Select Virtual Issue," (see http://tinyurl.com/jm3su4b) as one of 17 Emerging Investigators in the field of Bioinorganic Chemistry. The feature highlighted the group of early career researchers who have received their Ph.D. since 2004. Todd has been at UGA since 2007 as part of the Center for Metalloenzyme Studies in the Department of Chemistry. His research group is focused on the synthesis and properties of low molecular weight model complexes of metalloenzyme sites that are responsible for the breakdown/transformation of reactive oxygen (superoxide dismutases) and nitrogen species (nitrite reductases), which has been supported by the National Science Foundation.

Professor Michael Duncan stepped down from his position as Senior Editor of the *Journal of Physical Chemistry*, a post he held for just under 18 years. He will continue to serve ACS in the position of "Vice-Chair Elect" of the Physical Chemistry Division, an office to which he was just elected. This position is the first in a series leading in two years to Chair of the Division. In other news, Mike has just celebrated the publication of a new textbook, *Laser Experiments for Chemistry and Physics*, which he produced with co-author Robert Compton of the University of Tennessee. The book is published by Oxford University Press.

Professor Geoff Smith was promoted to Full Professor. Geoff studies the optical properties and reactions of organic aerosol particles important in atmospheric chemistry.

Professor Tina Salguero was promoted to Associate Professor with tenure. Tina teaches Inorganic Chemistry and works in the area of hybrid materials that incorporate nanosheet components, such as graphene, graphite oxide or metal chalcogenides.

Professor Eric Ferreira received tenure. Eric recently moved to UGA from Colorado State. He teaches Organic Chemistry and focuses on the development of new synthetic transformations, primarily centered around transition metal catalysis.

Dr. Lisa Kendhammer was hired as a non-tenure-track assistant professor. She will be teaching in the General Chemistry program.

Dr. Doug Jackson (B.S. 2007; Ph.D. 2014, both at UGA) was hired as Lecturer in Chemistry, with duties primarily in the Organic Chemistry program.

Professor Jin Xie received the *NSF Career Award*. Jin teaches Analytical Chemistry and works on the development and evaluation of metal-, polymer- or protein-based nanoparticles for imaging and therapy.

UGA Chemists' Synthesis of Silicon Oxide Opens "New World in a Grain of Sand"

In an effort that reaches back to the 19th-century laboratories of Europe, a discovery by UGA Chemistry researchers establishes new research possibilities for silicon chemistry and the semiconductor industry. The study, published April 20, 2015 in *Nature Chemistry*, gives details on the first time chemists have been able to trap molecular species of silicon oxides. Using a technique developed in 2008, the UGA team succeeded in isolating silicon oxide fragments for the first time at room temperature, by trapping them between stabilizing organic bases.

Prof. Greg Robinson

"In the 2008 discovery, we were able to stabilize the disilicon molecule, which previously could only be studied at extremely low temperatures on a solid argon matrix," said Gregory H. Robinson, UGA Foundation Distinguished Professor of Chemistry and the study's co-author. "We demonstrated that these organic bases could stabilize a variety of extremely reactive molecules at room temperature."

Elements in the same group of the periodic table generally share similar chemical properties. Group 14, for example, contains the element carbon, as well as silicon, the most carbon-like of all the elements. However, there are significant differences between the two. While carbon dioxide and carbon monoxide are widely known, the molecular chemistry of corresponding silicon oxides is essentially unknown, due to the great reactivity of silicon-oxygen multiple bonds. Silicon monoxide, has been described as the most abundant

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silicon oxide in the universe, but terrestrially it is only persistent at high temperatures above 1200°C. Naturally abundant silicon dioxide (SiO_2) exists on earth in solid form as sand, the source of silicon used in the semiconductor industry, but does not occur as an isolated molecule. The paper reports two new compounds containing Si_2O_3 and Si_2O_4 cores that the team was able to isolate using the carbene stabilization technique. This synthetic strategy allowed the team to "tame" the highly reactive silicon oxide moieties at room temperature. The discovery breaks open an area of chemistry where difficulty with synthetics has limited the research activity. Silicon-oxide materials are found in every electronic device and could hold many more applications and uses.

"Our technique seems to be an attractive means to approach a number of these highly reactive molecules," Robinson said. "We've found a backdoor to approaching molecular species that contain various silicon oxides."

Robinson's team includes department of chemistry colleagues Prof. Henry "Fritz" Schaefer, Yuzhong Wang, Yaoming Xie and the late Prof. Paul von Rague Schleyer. The paper is available online at http://tinyurl.com/jjjpq45.

UGA Researchers Develop New Way to Manufacture Nanofibers

Researchers at the University of Georgia have developed an inexpensive way to manufacture extraordinarily thin polymer strands known as nanofibers. These polymers can be made from natural materials like proteins or from man-made substances like plastic, rubber or fiber, including biodegradable materials.

The new method, dubbed "magnetospinning" by the researchers, provides a very simple, scalable and safe means for producing large quantities of nanofibers that can be embedded with a multitude of materials, including live cells and drugs. Many thousands of times thinner than the average human hair, nanofibers are used by medical researchers to produce advanced wound dressings and for tissue regeneration, drug testing, stem cell therapies and the delivery of drugs directly to the site of infection. They are also used in other industries to manufacture fuel cells, batteries, filters and light-emitting screens.

Prof. Sergiy Minko

"The process we have developed makes it possible for almost anyone to manufacture high-quality nanofibers without the need for expensive equipment," said **Professor Sergiy Minko**, study co-author and the Georgia Power Professor of Polymers, Fibers and Textiles in UGA's College of Family and Consumer Sciences. Prof. Minko is also a joint professor in the Chemistry Department. "This not only reduces costs, but it also makes it possible for more businesses and researchers to experiment with nanofibers without worrying too much about their budget."

Currently, the most common nanofiber manufacturing technique – electrospinning – uses high-voltage electricity and specially designed equipment to produce the polymer strings. Equipment operators must have extensive training to use the equipment safely. "In contrast to other nanofiber spinning devices, most of the equipment used in our device is very simple," Minko said. "Essentially, all you need is a magnet, a syringe and a small motor." At laboratory scale, a very simple handcrafted setup is capable of producing spools containing hundreds of yards of nanofibers in a matter of seconds. Polymer that has been melted or liquefied in a solution is mixed with biocompatible iron oxide or another magnetic material and placed inside a hypodermic needle. This needle is then positioned near a magnet that is fixed atop a spinning circular platter. As the magnet passes by the tip of the needle, a droplet of the polymer fluid stretches out and attaches to the magnet, forming a nanofiber string that winds around the platter as it continues to spin. The device can spin at more than 1,000 revolutions per minute, enough time to create more than 50 kilometers – or about 31 miles – of ultra-thin nanofiber.

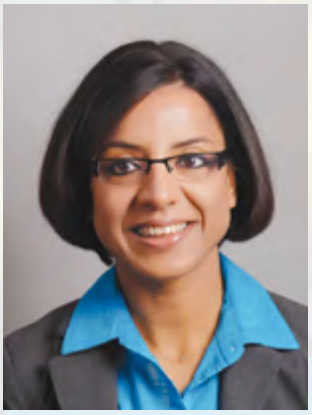
It's a relatively simple process, but it produces a very high-quality product, said Alexander Tokarev, paper co-author and postdoc in Minko's lab. "The product we can make is just as thin and just as strong as nanofibers created through other methods," he said. "Plus, users don't have to worry about the safety issues of using high voltages or the complexity of other machines."

The researchers can use this method to create a variety of nanofibers simply by changing the polymer placed in the syringe. They can, for example, create specially designed nanofibers that will promote the growth of stem cells. Fibers like these are currently used to create scaffolding for lab-grown tissues and organs. Nanofibers can also be loaded with proteins, nanotubes, fluorescent materials and therapeutic agents. "We can use almost any kind of polymer with this platform, and we can tailor make the nanofibers for different applications," Minko said. "It's like cooking. We just change the ingredients a bit, and the kind of fiber we get is very different."

The UGA Research Foundation has filed a patent application on this new method. The study is available at http://tinyurl.com/h85u2h6. A video of the process is available at https://youtu.be/CwxkAr74QQc.

Professor Shanta Dhar Starts New Biotech Company

Partikula, LLC or "Partikula," was founded in 2013 by **Shanta Dhar**, Assistant Professor at UGA, together with CEO David Kolb. Partikula will develop technologies with the abilities to direct therapeutics to the mitochondria for cancer and other diseases. One of the leading programs in Partikula is based on cancer cell metabolism and this platform is in the preclinical stage. Clinical trials are expected to begin in late 2016. Dr. Marc Lippman, Deputy Director of the Sylvester Cancer Center, serves as the Chief Medical Officer and Dr. Nagesh Kolishetti is the Vice President for the Chemistry Division of the company. Partikula has recently hired several scientists in their lab located in Sunrise, FL; one of them recently graduated with a Ph.D. degree from the Chemistry Department of UGA. Early in 2015, Partikula received $5 million in "Series A" funding from 2M Companies to assist in the development of inhibitors for cancer metabolism under the oncology umbrella program. 2M Companies is a Dallas-based investment company that is focused on companies which work in life sciences, other technologies, and on oil and gas mineral resources. Late last year, Partikula reported its first positive results on the precise modulation of tumor micro-environments by using a mitochondria-targeted platform KULA101 in a syngeneic mouse model of breast cancer. Dysfunctions related to cellular mitochondria play a key role in many major diseases such as cancer, neurodegeneration, cardiovascular and metabolic disorders. Partikula hopes to provide technologies targeting these mitochondrial dysfunctions, which could therefore have far-reaching implications to significantly improve human heath.



Prof. Shanta Dhar

Prof. Geert-Jan Boons

Geert-Jan Boons Wins Arthur C. Cope Scholar Award

Professor Geert-Jan Boons has been awarded an Arthur C. Cope Scholar Award by the American Chemical Society. The award recognizes his seminal contributions to glycoscience by developing novel methods for oligosaccharide assembly, preparation of important glycoconjugates, and their use in biological studies. The Arthur C. Cope Scholar Awards are designed to recognize and encourage excellence in Organic Chemistry. 10 awards are presented annually, consisting of a $5,000 prize and a $40,000 unrestricted research grant.

Boons received his B.S. and M.Sc. in Chemistry, as well as his Ph.D. in synthetic carbohydrate chemistry, from the University of Leiden in The Netherlands. He presently holds joint appointments as the UGA Foundation Distinguished Professor in Biomedical Sciences at UGA and also as Professor and Chair of the Department of Medicinal Chemistry and Chemical Biology at the University of Utrecht in The Netherlands.

Boons says his biggest present research challenge is to "Design, synthesize, and evaluate a multicomponent vaccine that could break immunotolerance to a tumor-associated glycopeptide epitope and elicit innate, cellular, and humoral immune responses. The ultimate aim of this program is to develop a therapeutic vaccine for cancer based on a type of glycosylation uniquely found on cancer cells."

According to former UGA colleague Paul Schleyer (recently deceased), "Dr. Boons's prolific contributions to glycoscience have earned him a highly respected international reputation as a leader in the field. The high research productivity of Dr. Boons is matched by his ability to train graduate students and postdoctoral researchers."

Recipients of the Cope Scholar Awards will be honored at a ceremony at the fall national meeting of the American Chemical Society in Philadelphia, PA on August 21–25, 2016.

Staff News

Mamie Watson Retires

Ms. Mamie Watson retired from UGA after 32 years of service at the end of December 2015. She grew up and attended school in Jefferson, GA. After attending Athens Tech, she started work at UGA in the Procurement Department. After that, she worked in the Psychology Department and for the UGA Vet School, before joining the Chemistry Department in the spring of 1998. In Chemistry, she worked for Prof. Michael Duncan as assistant in his editorial office for the *Journal of Physical Chemistry*, published by the American Chemical Society. In this capacity, she assisted in the selection of reviewers, handled correspondence with authors, helped to organize special journal issues, and processed materials for papers to be published. In her 17 years in the editorial office, she handled approximately 8000 papers that were submitted for publication. In recognition for her dedicated service to JPC and to the Chemistry Department, Mamie was given the 2015 Peggy Norman Award.

Sarah Conkin-Anderson Receives 2014 Peggy Norman Award

Sarah Conkin-Anderson was awarded the 2014 Peggy Norman Award for staff excellence. Sarah is the Chemistry Department's primary point of contact for students seeking registration assistance, transfer credit information and course information for both the General Chemistry and Organic Chemistry programs. This is a herculean task due to the 3000+ students every semester that depend upon her expert advice and direction. She also provides administrative support to all faculty instructors for these programs. She handles for these two programs all interactions with a number of other campus entities including, for example, the Disability Resource Center, the UGA Registrar and UGA Scheduling. In all of her responsibilities, she exhibits consummate professionalism and competence. Especially admirable are her pleasant demeanor and courteous disposition that characterizes her interactions with students and faculty alike. In every way Sarah continues Peggy Norman's legacy of competent and amiable service to others. She is an essential and greatly appreciated member of the Chemistry Department.

This award is given in honor of Ms. Peggy Norman, who worked in various capacities within the department for 35 years before her retirement in 2004. Peggy was one of the most hard-working and well-loved staff members the Department has ever had. Her colleagues and friends were saddened at her untimely death from cancer in September 2007, just a short time after her retirement.

Ellen Broering Awarded a Beverly Hirsh Frank Graduate Fellowship

For the third year in a row, UGA's Graduate School has honored an outstanding doctoral student in the Department of Chemistry with a Beverly Hirsh Frank Graduate Fellowship for Women in Science. **Ellen Broering** was the 2015 recipient of this award, which provides special recognition of her research.

Ellen joined Dr. Todd Harrop's group in the spring of 2012. Her research focuses on the synthetic modeling of the nickel form of superoxide dismutase (NiSOD). SODs are metalloenzymes crucial in the detoxification of oxygen-based radicals and have been implicated in a variety of human disease states. However, NiSOD is the outlier in the SOD family of enzymes utilizing the Ni(III/II) couple in an unusual coordination environment. Ni-enzymes catalyze some of the most crucial redox reactions on this planet that are relevant to alternative energy (hydrogenase), the environment (CO dehydrogenase) and free radical detoxification (SOD). Ellen has synthesized several molecules that address this redox activity. Utilizing a carefully designed ligand construct, she has been able to access Ni(III)-S complexes that are isolable and do not result in S-ligand degradation. Based on this work (see *Inorg. Chem.* **2015**, *54*, 3815), it appears that redox activity in Ni-enzymes is actually more delocalized across Ni-thiolate bonds in nature.

In addition to this paper, Ellen has co-authored a 'Current Trend' paper in *Biochemistry* (see *Biochemistry* **2013**, *52*, 4) – a first for the Harrop group as synthetic chemists don't usually publish in the biological literature. She was also an invited speaker at the 2014 Bioinorganic Chemistry Gordon Research Seminar. Ellen received her Bachelor's degree in Chemistry and Spanish from Spring Hill College (Mobile, AL) in 2010.

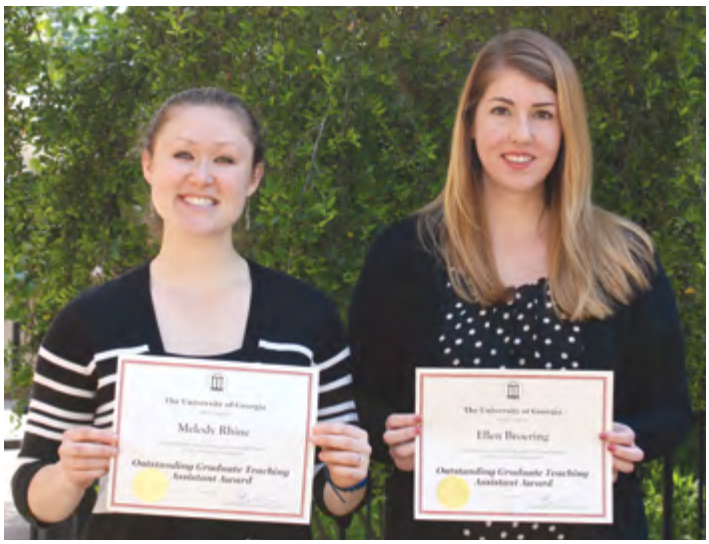
Francisco Sarabia Awarded NSF Graduate Research Fellowship

Francisco Sarabia, a graduate student in the UGA Chemistry Department, was named a 2015 National Science Foundation Graduate Research Fellowship recipient in the area of sustainable chemistry. Francisco is currently a second year student under the direction of Professor Eric Ferreira, where he is investigating the design and application of light-activated catalysts based on earth-abundant metals. He is one of only eight graduate students at the University of Georgia who received this award.

Francisco grew up in Southern California, and he did his undergraduate studies at UC-Davis, where he received his B.S. degree in Pharmaceutical Chemistry in 2013. While there, he had multiple research experiences in both chemistry and biochemistry, including working with Prof. Jared Shaw on the syntheses of protein inhibitor analogs with potential antibacterial activity. He also participated in the Pharmaceutical Chemistry Study Abroad Program at the Academica Sinica in Taipei, Taiwan. Upon completing his undergraduate degree, Francisco began his graduate studies at Colorado State University and moved to UGA with Prof. Ferreira in 2014.

The NSF Graduate Research Fellowship program provides three years of financial support for graduate study that leads to research-based master's or doctoral degrees in science or engineering. This year, the NSF awarded 2,000 fellowships from among 16,500 applicants to the program. We congratulate Francisco on this prestigious honor!

Graduate Students Receive Outstanding Teaching Award



Melody Rhine and Ellen Broering

Two graduate students in the Department of Chemistry have been awarded the 2015 Outstanding Teaching Award – **Melody Rhine** and **Ellen Broering**. These awards are conferred annually by the UGA Center for Teaching and Learning. The recipients are recognized for their exemplary qualities as teaching assistants, and for contributions above and beyond normal expectations.

The Department of Chemistry has a critical teaching mission at UGA and is very proud of all of the dedicated, talented, and outstanding teaching assistants that serve in this mission. Congratulations Melody and Ellen!

2015–2016 Graduate Education Advancement Board Fellowship Awarded to Charles Stanton

Charles Stanton

Congratulations to **Charles Stanton** on being named the recipient of the Graduate Education Advancement Board Fellowship for the 2015-2016 academic year! Charles received his Bachelor's degree in Chemistry from the University of Florida and a Master's degree in Organic Chemistry from The University of Georgia. He then worked for six years in the Medicinal Chemistry Department at Wyeth Research (now Pfizer), contributing to five patents. Charles decided to return to UGA to pursue his doctoral degree. He now works with Drs. George Majetich and Jay Agarwal in developing new materials that chemically convert CO_2 into useful fuels, in the hopes of producing a material that will be robust enough for industrial application and allow for the mitigation of CO_2 release on the commercial scale. During his graduate career, Charles has been honored for his excellence in teaching with the following awards: Outstanding Teaching Assistant Award (UGA), the Henry L. Richmond Graduate Fellowship (UGA), Teaching Assistant of the Year (UGA), and the Kenneth W. Whitten Outstanding Teaching Assistant Award (UGA). The father of three children, Charles actively participates in a Chemistry Outreach Program with both Chase Street Elementary School and the Boy Scouts of America, performing chemistry demonstrations for various grade levels. As he continues his Ph.D. studies at UGA, he plans to further develop programs that will provide additional learning opportunities and education to others in Chemistry. We are lucky to have Charles as a graduate student, and congratulate him on this award!

Spring Reception Honors Graduating Seniors

Left to Right: Rahul Kadakia, Krystal Vo, Sarah Mansoura, Meryom Pattillo, Alexandria Cox, Nicole Schumacher, Katherine Jennings, Natalie Hoza, Patrick Eaves, Jennifer Evans, Alai Fernandez, Emily Daniels, Derrick Weeks, Camilo Sarmiento, Nick Nguyen, Matthew Plott, Anish Patel, Krupa Merchant, Ali Mohammadizadeh, Austin West, Kristine Martin, and Christopher Stagg

36 seniors graduated with degrees in Chemistry at the end of spring semester 2015. The Chemistry Department honored these graduating seniors with a reception on graduation day last May in the Miller Learning Center Rotunda. Faculty, staff, seniors and their families attended. Prof. Douberly recognized each of the seniors present, noting their various activities and accomplishments throughout their undergraduate careers, including the impressive statistic that 14 of these seniors graduated with GPAs greater than 3.5. He also outlined the future employment or educational plans for each student. All were encouraged to return to UGA often for visits and to send money to Chemistry regularly!

UGA Chemistry and Northeast Georgia ACS Section Awards Night 2015

Henry Niedermaier, Roshini Ramachandran, Nidhi Bhatt, winners of the Kenneth Whitten Award, and presenter Prof. Richard Morrison

The UGA Chemistry Department presented its annual awards at the spring Alumni and Awards Banquet on Friday April 17, 2015. This banquet was held jointly between Chemistry and the Northeast Georgia Section of the ACS. Prof. Richard Morrison presented the Chemistry Department awards to various students and faculty, as indicated below:

Pamela Ann Henkel Award – Awarded to the most outstanding undergraduate student in Organic Chemistry: **Hirel Patel**

Alfred W. Scott, Sr. Award – Awarded to the most outstanding rising senior ACS certified Chemistry major student: **Joshua Miller**

L.B. "Buck" Rogers Award – Awarded to the undergraduate student who performs the most outstanding research over the last year: **Avery Weins**

Martin Reynolds Smith Award – Awarded to the graduate student who published the best research paper in a refereed journal between January 1, 2014 and December 31, 2014: **Brian Sanders**

Kenneth W. Whitten Awards – Awarded to the graduate students who are judged to be our best Graduate Laboratory Assistants for this academic year: **Henry Niedermaier, Roshini Ramachandran, and Nidhi Bhatt**

The Northeast Georgia ACS Section presented its annual awards at the same Alumni and Awards Banquet. Prof. Greg Robinson, president of the local section, presented these awards:

NEGS ACS Chemist of the Year for Service: **Dr. Quincy Teng**, US Environmental Protection Agency

George Philbrook Award for Outstanding Undergraduate Teaching: **Prof. Tina Salguero**, Department of Chemistry, UGA

NEGS ACS Award for Outstanding High School Chemistry Teacher of the Year: **Mr. Keith Crandall**, Flowery Branch High School

NEGS ACS Outstanding Graduate Student of the Year: **Thomas Irvin**, Department of Chemistry, UGA

NEGS ACS Outstanding Undergraduate Students of the Year: **Chris Stagg**, Department of Chemistry, UGA.

Retirement

Richard Dluhy Retires

Professor Richard Dluhy retired from the UGA Chemistry Department in July of 2015. He left the university to move to the Chemistry Department at the University of Alabama-Birmingham, where he is now the new Department Head.

Rich was born in the New York City area and received his undergraduate degree at the University of Connecticut. He received his Ph.D. at Rutgers and then did postdoctoral work at the National Research Council of Canada in Ottawa. He worked in industry at Hoffman-LaRoche and later at Battelle Memorial Institute (Columbus, OH) before joining the faculty at UGA in 1990.

At UGA, Rich ran an active research program in bioanalytical and biophysical vibrational spectroscopy and imaging, including work on nanotechnology-based plasmonics for biomedical sensing. He was well-funded by agencies such as NIH, NSF, DOE and the Howard Hughes Medical Institute. In addition to research and his teaching in Analytical Chemistry, Rich served as Graduate Coordinator and Associate Department Head. He also served a term as Director of the Nanoscience and Engineering Research Center.

1943, *Wooten, W. Carl,* Raleigh, NC. B.S.

Carl Wooten, age 92, died on November 8, 2014. After serving in World War II in mainland Asia, Carl earned his Ph.D. in Organic Chemistry from the University of North Carolina in 1950. He worked at Eastman Kodak in Kingsport, TN for 37 years, eventually managing the Polymer Research Division. Under his leadership, many polymer materials were discovered. Wooten himself held 25 patents from this work. After retirement in 1986, he returned to UNC-Chapel Hill where he was an adjunct professor.

1974, *Ladner, David,* Cumming, GA. Ph.D. w/ Hill.

David presently owns and operates Ladner Patent Management LLC. He presented a colloquium in the UGA Chemistry Department on September 9, entitled "Understanding Chemical Patents and Chemical Patent Practice." He also joined us for the Chemistry Golf Scramble in April.

1975, *Bowers, Larry D.,* Colorado Springs, CO. Ph.D. w/ Peter Carr.

Dr. Larry Bowers joined U.S. Anti-Doping Agency (USADA) in September 2000 and was named the Chief Science Officer in 2009. He is globally recognized for his expertise and experience in anti-doping science and for being a pioneer in the field. Bowers provides leadership and scientific support for USADA's programs in research, sample collection planning, results management, arbitration, and education. Dr. Bowers frequently speaks on anti-doping science and deterrence. He has organized the prestigious USADA Annual Symposium on Anti-Doping Science since 2002, and serves as Chairman of the Scientific Advisory Board for the Partnership for Clean Competition, an organization co-founded by USADA that funds research in anti-doping science. Bowers was Associate Editor (Drug Testing and Toxicology) for the journal, *Clinical Chemistry*, and the deputy director of the drug testing laboratory for the 1996 Olympic Games. He was the recipient of the 2007 Franklin & Marshall Alumni Citation for Distinguished Professional Achievements, the 1990 American Association for Clinical Chemistry Award for Outstanding Contributions in a Selected Area of Research, and the 1985 Leroy Sheldon Palmer Award in Chromatography from the Minnesota Chromatography Forum. Larry will be speaking at the UGA "Return to the Arch" Alumni Seminar Series on Sunday, May 1, 2016.

1981, *Govindan, Meledath, Fitchburg,* MA. Ph.D. w/ H. Pinnick.

Mel has been on the faculty at Fitchburg State University for the past 20 years, having taught in a similar capacity for 11 years before that at the University of the Virgin Islands. He took over as the Chair of the combined Department of Biology and Chemistry in July 2014. He continues to teach organic chemistry and to serve as the pre-health advisor for the University. This past year he served as the Chair of Central Massachusetts Section of ACS and he will be the Councilor of the local section for the next 3 years.

In addition to these activities, Mel is the President of the New England Association of Chemistry Teachers (NEACT), the oldest organization of its kind in the country, having been founded in 1898. One of its main activities is the annual Summer Conference and he is the Program Chair for the next one, to be held in North Adams in the Berkshire Mountains in the Northeast part of Massachusetts. The dates are August 8-11 and the conference theme is "Chemistry, Naturally!" Anyone who is planning to be in the New England area in the summer is invited to attend and to make a presentation. Typically there are lectures in the morning and workshops in the afternoon, and the audience is mainly high school chemistry teachers as well as college faculty. On the personal side, Mel is married to Geetha, also a chemist, who works for Biogen, Inc. in Cambridge and they have two children – Ramesh, a second year student at Tufts Medical School in Boston, and Mallika, a post-bac research trainee at the Institute of Virology in Baltimore, MD.

1981, *Renbaum, Louis,* Baltimore, MD. Ph.D. w/ Hill.

Louis is president of DC Foam Recycle, Inc. in Baltimore. He recently sold this company to Wellman Plastics Recycling in SC but is staying on for several years to oversee the transition. His wife Laura practices Psychiatry in Columbia, MD. They are contemplating retirement and/or future work options and may relocate to Georgia. Louis' daughter Lindsay also attended UGA and received a Ph.D. in 2011 working with Geoff Smith.

1987, *Crocker, Brad,* The Woodlands, TX. B.S.

Brad is President and CEO of American Styrenics LLC, in The Woodlands, TX (just outside of Houston). American Styrenics is a leading integrated producer of polystyrene and styrene monomer. It is the second largest producer of polystyrene in the Americas and the third largest producer of styrene. Brad and daughter Katie attended the Georgia Southern football game in November and visited with Chemistry faculty there.

1992, *Lee, Minsu,* Korea. Ph.D. w/ Phillips.

Minsu retired from Doosan.

1993, *Gorman, Gary,* Birmingham, AL. Ph.D. w/Amster.

Gary was recently promoted to full professor in the McWhorter School of Pharmacy (MSOP) at Samford University Birmingham Alabama. Gorman joined MSOP in 2010 as an associate professor.

1993, *Willey, Kenneth F.,* Collegeville, PA. Ph.D. w/ Duncan.

Ken is now Business Analytical Specialist, Dow Coating Materials, with The Dow Chemical Company. He and wife Deb (née Leister, Ph.D. 1993 w/ Kutal) have two boys 15 and 12 who are heavy in sports. Connor, a sophomore this year, plays lacrosse. Brian, in 7th grade, plays both baseball and soccer. Ken also coaches lacrosse in the spring. Deb has been working since they arrived in Collegeville. She is currently fund raising for a local hospital network. Ken was in the surface group within analytical when first arriving at Rohm and Haas back in 2001. Dow acquired Rohm and Haas around 2010 and he made the change to his current role then, working in the Analytical Technology Center in Dow that supports manufacturing. He supports quality testing globally for the 35 plants within the Coatings business. It is a long way from laser spectroscopy, but it utilizes troubleshooting skills developed in grad school and throughout his career. He still tells stories about building parts for the instrument in grad school out of pieces from the scrap metal drawer.

1993, *Yeh, Chen-Sheng,* Taiwan. Ph.D. w/ Duncan.

Yeh and wife Nancy are doing well in Taiwan. Their daughter Ning-ning is working as a secretary in an accounting agency at Taipei. Nancy continues to take care of family members as a housewife.

Currently, Yeh holds a position as a coordinator of the chemistry discipline of Ministry of Science and Technology, Taiwan that keeps him busy.

1996, *Brock, Lori,* Ipswich, MA. Ph.D. w/ Duncan.

The Boston area had the snowiest winter on record last year. According to Lori, it was insanely deep in Ipswich (10+ feet). Her boys had 5 snow days this year and really enjoyed it. To get away from the winter, the family went on a cruise with her mom, dad, sister and brother-in-law. Ambrose and Perry had to make up the snow days at the end of the year, so their last day of school was June 23rd. Ambrose is 10, entering 5th grade. Perry is 8, entering 3rd grade. They are both fine students (thankfully). Ambrose is learning to sail this summer, and plays both piano and trumpet. Perry also has the music bug (piano and violin). He is going to day camp this summer and will also do some sailing. Both kids can solder rather well already (thanks to Daddy, Warren) and enjoy tinkering in the shop in our basement (building mainly things like robotic arms).

Her husband Warren retired around two years ago from Sylvania. They offered a nice early retirement package, and he took it. It has really been great for the whole family. This arrangement is much less stressful than two full-time working parents.

Lori is director of a global technology field (called "Application Solutions") in Osram's Corporate Innovation-Advanced Technologies function. Her team is located in both Munich and Beverly, Massachusetts. The objective is to demonstrate and bring to market all the new and cool and smart concepts that are possible with LED lighting. It is a very diverse department with expertise ranging from physics and chemistry, to software development, human factors, lighting and industrial design, mechanical, electrical, and optical engineering. It is a different level of leadership for her, where she is not as involved in the scientific details, but she likes it. An example of one innovation from her group can be found at this link: www.youtube.com/watch?v=ueQ-1OtQ80A.

1999, *Reddic, John,* Simpsonville, SC. Ph.D. w/ Duncan.

John recently moved from Columbia, SC to the Greenville area, where he is now Chemistry Laboratory Technical Director for the Greenville Hospital System. His wife Mollie is a Methodist minister. John and Mollie just got settled in June of last year in time for the other big change in their lives. Their son Luke was born on August 21st and it has been quite an adventure ever since. A new sister is on the way, expected summer of 2016. Molly has recently accepted a position at St. Paul Methodist.

1999, *Tschumper, Greg,* Oxford, MS. Ph.D. w/ Schaefer.

Greg is Professor of Chemistry and Biochemistry at the University of Mississippi, and is the 2015 recipient of the university's Faculty Achievement Award. He has established himself as an expert in physical chemistry, theoretical chemistry, computational chemistry, non-covalent interactions, hydrogen bonding and van der Waals forces. Since joining the UM faculty, he publishes an average of four-plus peer-reviewed journal articles per year. Tschumper has received more than $3 million in federal grants for student support and research. Tschumper is also the principal investigator on a major research instrumentation award from the NSF for a GPU supercomputer housed at the Mississippi Center for Supercomputing Research on campus. He is the father of two daughters, Kate and Anne Paige.

2003, *Valeev, Ed,* Blacksburg, VA. Ph.D. w/ Schaefer.

Ed, a professor at Virginia Tech, has received the two most prestigious awards in the world for a theoretical chemist under the age of 40. These are the Annual Medal of the International Academy of Quantum Molecular Science, and the Paul Dirac Medal of the World Association for Theoretical and Computational Chemistry. Ed's lovely wife Reagan just gave birth to their first child, a son Nikolai Valeev.

2003, *Walker, Nick,* Newcastle, U.K. Postdoc w/ Duncan.

Nick is a Senior Lecturer in the Chemistry Department at the University of Newcastle in the U.K. His research has been going very well, as this was the first full year of experiments since the university finally finished his lab refurbishment in November of 2013. His group has accumulated a mountain of data using a new chirped-pulse microwave spectrometer they have constructed. They recently acquired an infrared OPO laser for MW-IR double resonance experiments that are still under construction. He finds that writing everything up promptly is a challenge, as well as funding his group within the constraints of the British system.

Nick had a busy year organizing things in and around the house he moved into last January. This house is fundamentally sound and watertight but it soon became apparent that the previous owners had taken all the usual steps to make sure the house sold quickly but neglected some more important but less visible details. He spent a large part of 2014 fixing, painting, putting up curtains and buying all kinds of appliances he had never used before. One of these was a lawnmower. For the first time in his life, he now has a garden and really enjoyed maintaining this over the year. Another first for 2014 was that Nick bought his first car in the UK, which is the only one he has owned outside of the state of Georgia. It is a Honda Jazz and is very easy to drive. The same cannot be said of some of the city's roads and roundabouts. Only 4 weeks after buying the car, he braked hard on a roundabout to avoid a car that was changing lanes ahead of him and the car behind ploughed straight into him. It turned out that the car which ran into him was a police vehicle. This was followed by an hour of insurance and other checks, a breathalyzer test etc., but ultimately, everything was fine. The police said it wasn't his fault, fixed the minor damage on the car on their insurance, and there have been no long term adverse consequences to either Nick or the car.

Nick enjoyed visits to Newcastle from a few friends and family during 2014, and became very familiar with the well-trodden tourist trail out to Hadrian's Wall and the castles of Northumberland. He also spent time in Croatia in the summer. He learned to dance Lindy Hop which keeps him busy when not travelling or working.

2004, *Westlake, Brittany,* Palo Alto, CA. B.S.

Brittany Westlake earned her Ph.D. in Physical Chemistry from the University of North Carolina at Chapel Hill in 2010. Her doctoral work, under the direction of Profs. John Papanikolas and Tom Meyer, focused on light driven electron-proton transfer. Following her doctoral work, she was a Science Policy Fellow at the American

Chemical Society in Washington, DC. There she researched and analyzed policy related to energy, chemistry research, and the chemical industry. After this, she was an American Association for the Advancement of Science (AAAS) Science and Technology Policy Fellow at the U.S. Department of Energy in Washington, DC. She worked in the DOE Office of Electricity Delivery and Energy Reliability on US electric grid Issues, Transmission Planning, and the Energy-Water Nexus. She is now an Engineer Scientist at the Electric Power Research Institute (EPRI) in Palo Alto, CA. At EPRI, she directs the cost and technology research and assessment projects related to energy storage technologies.

2005, *Anfuso, Chantelle,* Winder, GA. B.S.

After receiving her Ph.D. in Chemistry at Emory (working with Prof. Tim Lian), Chantelle is now Assistant Professor of Chemistry at Georgia Gwinnett College in Lawrenceville. She has been teaching General Chemistry, but is also teaching Physical Chemistry now. Additionally, she recently moved to Winder, and is looking forward to stopping by UGA for lunch before too long.

2008, *Carnegie, Prosser,* Charlotte, NC. Ph.D. w/ Duncan.

Prosser was recently promoted to Head of Brand Management CVT, for the Commercial Vehicle Tires division of Continental Tire in Fort Mill, SC. It is a challenging new position but exciting. He and wife Curry are still located in Charlotte and enjoying being there close to family. Currie has been working for a company that provides marketing services to the tire industry for the past 3 years. She found this position on her own without any connection to or help from Prosser's company. They both feel strange working in the tire industry together, but it is a good one to be in right now.

Their second piece of news, and the more important of the two, is that Currie and Prosser welcomed their first child on 1/30/15. His name is Logan Alexander Carnegie and both he and his mom are healthy and happy. He was 8 lbs. 11 oz. and 20.5" at birth and was pushing 13 lbs. and 23.5" in 5 weeks. Granted, his parents are not the smallest people, so they expected a big boy! He is very mellow and sleeps pretty well (3 hours between feedings at night). They are happy and amazed at how much he changes every day.

2008, *Ticknor, Brian,* Oak Ridge, TN. Ph.D. w/ Duncan.

Brian is working in the Nuclear Analytical Chemistry and Isotopic Laboratories at Oak Ridge National Laboratory. He and wife Peyton had their first child in March 2015. Bridges Wesley Ticknor was born March 11, and weighed 7 lbs., 14 oz. (even though he was supposedly almost 3 weeks early). Peyton and the baby are both doing well.

2009, *Reed, Zach,* Gaithersburg, MD. Ph.D. w/ Duncan.

Zach got converted over to a NIST staff member last year, which is basically a tenure track position as a research chemist. He has been splitting his time between work on photoacoustic spectroscopy and cavity ringdown spectroscopy of atmospheric gases. He presented a talk at the International Symposium on Molecular Spectroscopy in Urbana, IL on a new CRDS technique he has been working on that has very promising results. In Urbana, he spent time with the Duncan and Douberly groups who also attended that conference.

2011, *Renbaum, Lindsay,* Boston, MA. Ph.D. w/ G. Smith.

Lindsay did a postdoc at the University of British Columbia, and now works for Aerodyne and does research at Boston College. She has been married for four years to Jeremy Wolff (UGA Ph.D. 2008 w/ Amster). Jeremy is working with Brücker in Boston. Jeremy and Lindsay have a two-year-old daughter, Isla, and recently had a second daughter, Marin, born this February.

2012, *Williams, Anna,* Columbia, SC. M.S. w/ Urbauer.

Anna earned her M.S. in 2012 and entered law school at the University of South Carolina in the fall of 2012. She graduated in the spring of 2015, and she is specializing in personal injury law. She is currently working as a law clerk at the firm of Williams, Hendrix, Steigner & Brink P.A. in Columbia, SC.

2013, *Brathwaite, Antonio,* St. Thomas, Virgin Islands. Ph.D. w/ Duncan.

Antonio is Assistant Professor at the University of the Virgin Islands. After completing his first year of teaching, he was a visiting professor in the summer at Yale University with the group of Prof. Mark Johnson. Antonio stopped by Athens for a few weeks with the Duncan group before returning home, but met up with the group again at the SERMACS meeting in Memphis. His big news for the year is that he got his first research grant! The funding from NSF will allow him to do computational work during the school year with his students at UVI, and then to come to Athens for experiments each summer with the Duncan group.

2013, *Dibble, Collin,* Monroe, GA. Ph.D. w/ Duncan.

After completing his postdoctoral research at Pacific Northwest National Lab in Richland, WA, Collin, Lisa and kids (Nolan, Elsie, and Francis) have moved back to Georgia. He accepted a science teaching job at the George Walton Academy in Monroe where he attended high school. This is something he always wanted to do, and thinks he'll be really happy there. Colin and Lisa just had their fourth child, Abram, in February, and bought a house in Monroe.

2013, *Sexton, Daniel,* Macon, GA. M.S. w/ Salguero.

Daniel is now Coordinator of Undergraduate Science Laboratories at Wesleyan College.

2014, *Bilbrey Pope, Jenna,* Athens, GA. Ph.D. w/ Locklin.

Jenna is the Associate Developmental Editor at Wiley. She works with a group of chemistry and materials journals focused on either polymers or computational chemistry.

2014, *Irvin, Thomas,* Washington, D. C. Ph.D. w/ Majetich.

Tom is working at the National Institute of Health as a postdoc with Dr. Kenner Rice.

2014, *Norris, Isaiah,* Pendergrass, GA. B.S.

Isaiah is now Lead Chemist at Seydel-Woolley & Co., a supplier of high performance textile and other specialty chemicals.

2015, *Cox, Alexandria.* B.S.

Alexandria plans to gain experience in industry while applying to graduate programs in Chemistry.

2015, *Daniels, Emily.* B.S.

Emily has been accepted into UGA's College of Pharmacy PharmD program.

2015, *Eaves, Patrick.* B.S.

Patrick will be entering into the industrial workforce this year but plans to pursue a graduate degree in Chemistry in the future.

2015, *Evans, Jennifer.* B.S.

Jennifer will be working in industry as she applies to Ph.D. programs in Chemistry.

2015, *Fram, Brandon.* B.S.

Brandon intends to pursue a career as a physician, and he is actively working through the application process.

2015, *Hoza, Natalie.* B.S.

Natalie is attending Georgia Regents University College of Dental Medicine starting last August.

2015, *Jennings, Katherine.* B.S.

Katherine will continue doing lab work and tutoring organic chemistry, and she plans to apply to either medical school or Ph.D. programs in Chemistry.

2015, *Kadakia, Rahul.* B.S.

Rahul plans to hike Machu Picchu, backpack Europe, and visit Puerto Rico and India before attending medical school.

2015, *Mansoura, Sarah.* B.S.

Sarah plans to travel before pursuing a career in industry.

2015, *Martin, Kristine,* Warner Robbins, GA. B.S.

Kristine will be working at her hometown hospital as a Health Unit Coordinator. She is actively applying to medical schools.

2015, *Merchant, Krupa.* B.S.

Krupa has been admitted to Duke University's Master of Biomedical Sciences program with a scholarship.

2015, *Mohammadizadeh, Ali.* B.S.

Ali will be attending the Georgia Regents University Dental Program.

2015, *Nguyen, Nick.* B.S.

Nick is now in graduate school at UGA in the Ph.D. program in Chemistry.

2015, *Patel, Anish*. B.S.

Anish is getting started on the medical school application process.

2015, *Pattillo, Meryom.* B.S.

Meryom has an offer from RockTenn and will be entering their Early Career Development Program.

2015, *Plott, Matthew.* B.S.

Matthew has an internship at Shaw Industries in Dalton, GA and is actively applying for medical school positions.

2015, *Schumacher, Nicole.* B.S.

Nicole is a volunteer and shadow with the Pediatric Anesthesia Group at Emory Hospital and Children's Healthcare of Atlanta.

2015, *Stagg, Christopher.* B.S.

Chris backpacked through Europe last summer and started a Ph.D. degree in Chemistry at the University of Arizona in the fall of 2015.

2015, *Vo, Krystal.* B.S.

Krystal plans to "Explore and assist in a variety of research fields!!"

2015, *Weeks, Derrick.* B.S.

Derrick has an internship at *Lonza*, a global chemical supplier of wood preservatives in Conley, GA.

2015, *West, Austin.* B.S.

Austin rapidly moved through the undergraduate curriculum and now intends to pursue a medical degree.

In Memoriam

Dr. Paul Allen Grutsch (1950 - 2015)

Dr. Paul Grutsch, 64, of Athens, Georgia died suddenly on Thursday, April 23, 2015. Beloved son of James (late) and Florence. Beloved brother of Dr. James (Maria) and Claudia. Uncle to Rebecca (Grutsch) Beron, James, Michael, Catherine, Thomas and Karina Parrish and Great Uncle to Grace Beron. He was a 1968 graduate of Bishop Noll Institute in Hammond, Indiana. He earned his B.S. from the University of Notre Dame in 1972 and his Ph.D. from the University of Georgia in Chemistry in 1976. He became an adjunct instructor in Chemistry at Athens Technical College in Athens, Georgia while writing many research papers.

He authored more than fifty articles on various subjects of the faith. He was involved in many ministries at St. Joseph Catholic Parish in Athens, Georgia. A funeral Mass was held at St. Joseph Catholic Church at 134 Prince Avenue at 11:00 am on Friday, May 1.

Courtney Pape (1934 - 2015)

Courtney Pape, 80, of Athens, GA passed away Monday, April 27, 2015. A native of Savannah, GA, Mr. Pape was the son of the late Joseph and Rubye Tarrant Pape. He was a retired research chemist with the University of Georgia, having worked for many years in the Chemistry Department instrumentation laboratories for mass spectrometry and NMR spectroscopy. Mr. Pape is survived by his wife, Elizabeth Horn Pape of Athens. A private graveside service was held at Oconee Hill Cemetery.

The winning team of Mark Cooney, Bob Scott, Griff Doyle and Derek Eberhart

2015 Chemistry Golf Scramble

The 2015 Chemistry Golf Scramble took place at the UGA Golf Course on Saturday April 18. The afternoon golf was followed by a barbecue, sponsored by the Chemistry Department. The teams of Mark Cooney, Bob Scott, Griff Doyle and Derek Eberhart and that of Eric Mueller, Monica Mueller, Mike Maxey and Keith Oelke both shot impressive scores of 65 to tie for the win. The team of Cooney, Scott, Doyle and Eberhart won the tie-breaker via a put-off. These two teams were followed closely by that of Jon Amster, David Ladner, Mike Duncan and Richard Walters, who shot a 66. Jonathan Mosley won the putting competition that took place on the putting green after the round. Jack Howell won both the longest drive competition on hole number 18 and the closest-to-the-pin shot on hole number 13. Alumni players included Richard Walters, David Ladner, Jonathan Mosley, John Brewer and Doug Jackson.

Send us your updates on new jobs, marriages, children, retirements, special trips, etc. to Laura Veatch at head@chem.uga.edu, or call 706-542-1919. We are especially interested in receiving your email addresses, so that we can send out reminders about upcoming events.

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