

CHEMISTRY NEWS

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The View From the Chair



Ron Viola

Greetings to our alumni and friends of the Chemistry Department. For those of you who are observant - and even for those who are not - you will notice the new face of the person who is now responsible

for writing this column. After fifteen years as department chair, Alan Pinkerton has returned to the lab to focus on his research program. I have been given the honor and the responsibility of leading our outstanding department as we continue our mission to train the future generations of chemists, contribute to the generation of new scientific knowledge, and improve our understanding of the world around us.

The new College of Natural Sciences and Mathematics is now well established, new requirements have been implemented to refine the focus of our degree programs, and the departments within the college have begun to explore interdepartmental degree programs and cooperative research ventures. The new School of Green Chemistry and Engineering is moving forward with several proposed new course offerings and plans for a professional master's degree program under the guidance of Mark Mason (Chemistry) as director and Glenn Lipscomb (Chemical Engineering) as associate director. The first faculty member hired through this school is Peter Andreana, who has moved his successful research program from Wayne State to The University of Toledo. Peter's areas of research interest include the development of carbohydrate-based anticancer vaccines and the use of cascade reactions to improve synthetic efficiency. His research group has moved into renovated laboratory space on the second floor of Wolfe Hall, and more details about

his scientific background and research projects can be found on page 2 of this newsletter.

Our faculty continues to make a major contribution to the teaching mission at the University, teaching chemistry to more than 5000 undergraduates each year, to students majoring in a wide range of science, engineering and other disciplines. The number of chemistry majors continues to grow this year with 120 bachelor of science and 37 bachelor of arts students and more than 200 students qualifying each year for a chemistry minor. Our undergraduate students are involved in not only learning in the classroom but are also making significant contributions to our research programs, with 34 students carrying out independent research projects in 17 different laboratories this semester.

Our faculty remains highly research productive, publishing groundbreaking research in top peer-reviewed journals, presenting our most recent research findings at regional, national and international meetings, and receiving new research grants even in this very competitive funding environment. The number of research presentations and publications are too many to list but can be found on our newly redesigned departmental website at utoledo.edu/nsm/chemistry, an ongoing project for which we have Don Ronning to thank. A listing of the most recently funded research projects is provided on page 3 of this newsletter. The number of new grants and continuing funded projects is a testament to the creativity and the innovative research ideas generated by our faculty.

Please let us know if you have any news to share with us and your fellow alumni, and certainly let us know if you are planning to be in the area. We would be disappointed if you didn't stop by to say hello. You are both the history and the future of our department and we want to stay connected.

New Faculty

Peter Andreana recently joined the chemistry faculty as a tenured associate professor. He will devote 50% effort to the areas of organic chemistry and chemical biology as well as 50% effort as a faculty member for the new School of Green Chemistry and Engineering beginning in the fall of 2012. Professor Andreana's



Peter Andreana

academic background includes an Hons. B.Sc. in Biochemistry (1998) from Brock University in Ontario, Canada where he worked in the area of biotransformations and discovered a benzamidase enzyme capable of modifying specific amino acids such as cysteine and methionine. In 2002 he obtained his Ph.D. in organic chemistry from Wayne State University under the tutelage of Professor Peng George Wang. During his Ph.D. years he worked on the chemo-enzymatic synthesis of biologically validated carbohydrates focusing on the α -Gal trisaccharide epitope and the role it played in xenotransplantation. Through his studies on α -Gal, it was determined that anti- α -Gal antibodies recognized specific sugar hydroxyl groups. The specific α 1-3 linkage between the terminal sugars has led to concepts for novel vaccine design encompassing a myriad of chronic diseased states, including cancer. His other area of research interest, while working toward a Ph.D., was in constructing chiral sugars from achiral starting materials. Simple methodology involved the use of Grubb's catalyst and Sharpless's dihydroxylation technologies to construct both rare D- and L- 2,6-dideoxy sugars for immunostimulatory purposes.

In the fall of 2002, he elected to pursue post-doctoral studies in the labs of Professor Stuart Schreiber at Harvard University. As a Ruth L. Kirschstein, NIH post-doctoral fellow, he actively pursued research in the area of Diversity Oriented

Synthesis (DOS), asymmetric catalysis and small molecule library development. His research focused on diastereoselective processes that lead to unique carbon-carbon connectivity in developing highly complex macrocycles with varying scaffolds. A component of that work entailed controlling the α -addition of isocyanides to carbonyl compounds for an asymmetric Passerini reaction. The work accumulated into a solid-supported library of small molecules readily amenable to chemical differentiation.

After 3 years at Harvard University, Professor Andreana joined the faculty at Wayne State University in Detroit, MI as an assistant professor of organic chemistry. While at Wayne State, he became interested in two areas of research: 1) carbohydrate-based vaccines and 2) multicomponent cascade coupling reactions. He was the first to demonstrate that immunogenicity of carbohydrate cancer antigens could be increased when conjugated to an immunostimulatory zwitterionic polysaccharide, namely PS A1, in an entirely carbohydrate vaccine construct. This work led to an American Chemical Society New Investigator Award from the Carbohydrate Division and a five year, \$1.5 M NIH R01 grant (9/11-08/16). At The University of Toledo, the Andreana Group will continue to work in this area to explore and delineate the potential of entirely carbohydrate-based vaccines in cancer and other diseased states such as those that are viral- and bacterial-based.

Research in the area of multicomponent cascade coupling reactions has evolved into a green chemistry endeavor as atom economy, energy efficiency and non-toxic solvents/reagents from biomass feedstocks front the mission of the program. The Andreana Group has been able to exploit intramolecular coupling processes to access biologically validated small molecule motifs that may be used to treat a variety of diseases. The thermal driven processes take advantage of microwave irradiation and water as a solvent to incorporate all

atoms used in the starting substrates. The Andreana Group will actively pursue this research area and expand the scope of utility incorporating solid support-based reactions and in the development of assays for further screening purposes. While at The University of Toledo, the Andreana Group will also actively pursue evolving interests in immunotherapeutics, chemistry of DNA bases and collaborative efforts in green chemistry for small molecule drug design and development.



Department Highlights

External Grant Awards

Joe Schmidt received a \$100,000 grant for two years from the Petroleum Research Fund on his proposal entitled *New Homoleptic Rare-Earth Metal Complexes for Catalytic Hydrophosphination*.

Kana Yamamoto was part of a \$1.9 million multi-university collaborative project *Alkaliphilic SEP Collaborative: Alkaliphilic Microalgae-based Sustainable and Scalable Processes for Renewable Fuels and Products*. The project was funded by the National Science Foundation and will be supported for four years beginning October 1, 2012. Dr. Yamamoto's share of the grant is \$136,400.

Alan Pinkerton was awarded \$500,000 from NSF for his three-year project entitled *Quantitative Characterization of Weak Interactions*.

Jared Anderson received a grant of \$10,500 from the Beijing Institute of Technology/China Scholarship Council for his project *Collaborative UT-BIT Efforts in Analytical Separations*. This grant will support a student from Beijing Institute of Technology to spend one year at UT performing collaborative research on analytical separations beginning in October 2012.

Mark Mason, Sas Varanasi and Suganit Systems, Inc. were funded for a Phase I SBIR/STTR grant from the Department of Energy for their project *Direct Catalytic Conversion of Lignin to Aromatic Chemicals*. Drs. Mason and Varanasi received \$50,000 for the UT portion of the research through a subcontract from Suganit.

Jianglong Zhu received two new grant awards in 2012. His research project, *Umpolung Reactivity in Stereoselective Synthesis of 2-Deoxy Glycosides and Thioglycosides*, was funded by NSF for \$360,000 for three years. Also, his related project *Stereoselective Synthesis of 2-Deoxy Glycosides and Thioglycosides in Antitumor Natural Products* received funding of \$15,000 for two years from the Ohio Cancer Research Association.

Ron Viola in collaboration with Robert Blumenthal (UT Health Sciences Campus) received a two year NIH award of \$395,000 for their project *Agents to Block Virulence in Gram-Negative Pathogens*.

Terry Bigioni was a co-investigator on a NSF grant from the Division of Materials Research entitled *Earth Abundant Thin-Film Solar Cells as a Sustainable Solar Energy Pathway*. The project is in collaboration with Yanfa Yan (PI) and Michael Heban from Physics, Jiquan Chen from Environmental Sciences and Defne Apul from Civil Engineering. Dr. Bigioni's portion of the grant is \$285,000 for four years.

The Project SEED program continued in summer 2012 under the guidance of **Andy Jorgensen** through his grant of \$10,000 from the American Chemical Society.

Steven Zano (Ph.D. student, Viola) received a Graduate Student/Postdoctoral Fellow \$1,000 travel award to attend the 2012 ASBMB Annual Meeting in San Diego, which was held in April 2012.

Adam Keith (Ph.D. student, Mason) was selected to receive a 2011 Ciba Travel Award in Green Chemistry from the American Chemical Society. Applications were judged by an external selection committee assembled by the ACS Green Chemistry Institute. The \$1600 travel reimbursement award sponsored Adam's trip to the 16th Annual Green Chemistry & Engineering Conference held in Washington D.C., June 2012.

University Research Grants Funded for 2011-2012

Dragan Isailovic, *Visible-Wavelength MALDI-MS Imaging under Atmospheric Pressure*, Summer Research Awards and Fellowship Program, Amount awarded: \$10,800

Don Ronning, *Understanding and Inhibiting Genome Structural Organization in Mycobacteria* deArce-Koch Memorial Endowment Fund Award, Amount awarded: \$20,000

Kana Yamamoto and **Dragan Isailovic** with S. Varanasi and S. Viamajala, *Fuels*

and Products from Alkaliphilic Microalgae, Interdisciplinary Research Initiation Awards, Amount awarded: \$100,000

University Undergraduate Research Awards

Will Cole (**Jared Anderson**), *Photoinitiated Copolymerization of Ionic Liquids for Applications in Solid-Phase Microextraction*, Amount awarded: \$2,750

Anthony Bova (**Mark Mason**), *Conversion of the Renewable Biomass Resource 2-Furaldehyde to Polymer Precursor Molecules and Polymers*, Amount Awarded: \$3,000

Marcus Cluse (**Steve Sucheck**), *The Formation of Glycosyl Ceramide Cores Through the Synthesis of Aziridines and Epoxides*, Amount Awarded: \$3,000

David Long (**Steve Sucheck**), *Synthesis of α -L-Rhamnoscylceramides*, Amount Awarded: \$3,000

Faculty Blogs

Jorgensen Group. We are continuing work on climate change education, which is funded by the National Science Foundation. Our efforts are in partnership with the Washington, D.C.-based National Council for Science and the Environment. Two undergraduate students are currently developing online resources for the project. In collaboration with the National Wildlife Federation and the Boston-based Jobs for the Future, I am assisting instructors in three community colleges as they integrate climate change science into their courses for technical programs

Lind-Kovacs Group. In addition to the regular group members working on their master of science and Ph.D. degrees, we have had the pleasure of hosting exchange students from the University of Mainz in Germany. Since Fall 2011, Ilka Hermes and Anne Soldat have conducted six months of research modules in Toledo, and Martin Kluecker is currently completing his internship with us at this writing. Anne Sendecki, a 2011 REU student from the University of Pittsburgh, is in her first semester of graduate school at Penn State.

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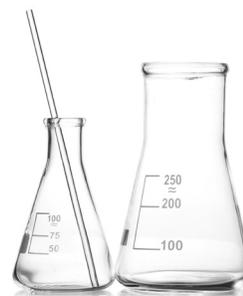
Department Highlights *continued from page 3*

Viola Group. There have been a number of changes in our group throughout the past year. Dr. Al Luniwal completed one year in the lab as a Postdoctoral Fellow and then took a position as a Quality Control Chemist at NAMSA in Northwood, Ohio. Dr. Pravin Bhansali (Ph.D., Med. Chem., The University of Toledo) has joined the group to head our synthetic efforts, Dr. Mojun Zhao (Ph.D., S. Dakota State; Postdoc., Georgia State) is coordinating our molecular biology studies, and Dr. Nitesh Poddar (Ph.D., New Delhi; Postdoc., Rice) recently joined the group and is applying his expertise in protein chemistry. Our NIH funding continues on the antibiotic development project and we just started a new NIH funded project on quorum sensing inhibition. Our group has grown to now include four postdoctoral/senior scientists, four graduate students and two undergraduates, and the group continues to be highly productive. You can check out our group website at aries.wo.utoledo.edu/

viola for the latest updates regarding group activities. Please let me know about any personal or career news that you want to share with the group.

Zhu Group. The Zhu group started in fall 2010 at The University of Toledo. During past two years, there have been several undergraduate students working with us. Two of them graduated in summer 2011 including Avani Pathak, who joined the PharmD program at The University of Toledo, and Narendrakumar Patel, who joined PharmD program at Long Island University. In addition, Hanin Dughayli graduated in summer of 2012 and joined the PharmD program at The University of Toledo. Currently there are two students, Christopher Lopez and Mallory Walker, working with us. We have also trained two high school students, James Dunaway (Summer 2011) and De'Jonette Morehead (Summer 2012), supported through the ACS Project SEED program. In particular, James Dunaway joined our

chemistry undergraduate program this fall. Furthermore, Joseph Duffey, a high school teacher from Cardinal Stritch High School joined our group in summer of 2012 through support by The University of Toledo IMAGINE 2 program. In addition, several international graduate students joined our group over the past two years. These are Surya Adhikari, Kedar Baryal, Hem Khatri, Danyang Zhu, and Hai Nguyen. They come from diverse backgrounds and are currently working on the development of new methods for the synthesis of bioactive natural products and biologically important oligosaccharides.



Emeriti News

Lance Thompson was one of eight (two of them posthumous) Legends awardees for 2012 recognized by the African American Legacy Project. The Legacy Project was established in 2004 to document and preserve the history of northwest Ohio's African-American community. Celebrating the achievements of the Legends, distinguished African-American leaders, is a major part of the Legacy Project's effort.

The highlight of the recognition luncheon was the presentation to Dr. Thompson of his personalized Kente stole. Kente is a ceremonial cloth hand-woven on a horizontal treadle loom by the Asante people of Ghana, Africa, which is worn for important social and religious occasions.

H. Bradford Thompson, 84, died on August 21, 2011. He had resided in St. Peter, Minn. since his retirement from

UT in 1990. Dr. Thompson joined the university as Professor of Chemistry in 1967. He chaired the department from 1968 to 1969 and again from 1974 to 1975. He was the resident computer expert in the department, pioneering not only the use of computers in research, but also in developing computer-assisted-instruction and course record-keeping programs.

15 Years of Growth



Alan Pinkerton

From 1997 to 2012, Alan Pinkerton served as chair of the Department of Chemistry. Through several changes in presidents and deans, downward spiraling budgets, and challenges brought about by student demand for chemistry classes Alan provided excellent leadership for the somewhat rocky and transformative times. The department benefitted greatly from his stewardship by putting the department's goals at the forefront and assisting faculty to reach their potential. Thus the department made tremendous steps toward national recognition during this period.

For some perspective let's consider some numbers. Student head count in fall 1997 was 3,098 when Alan began his tenure as chair and in fall 2011 it had risen to 5,151; an increase of 67 percent. During this

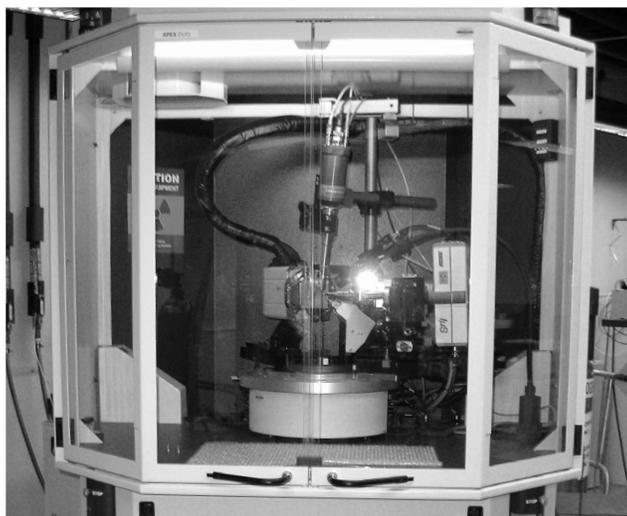
same period, the faculty tenured/tenure-track ranks went from 17 to a low of 12 in 2000 after an early retirement buyout and several other factors gutted the faculty. At the same time, the number of visiting faculty went from 2 to as many as 8. He successfully argued for and acquired full-time faculty positions to rebuild the faculty, which now stands at 22 tenured/tenure-track faculty and three full-time lecturer positions. Six of the tenure-track hires earned coveted NSF CAREER Awards to start their research programs in addition to several local, national and international awards. Faculty research funding also grew from \$700,000 to \$3.5 million.

During this period, space was critical for teaching and research. The department research enterprise moved into Wolfe Hall, the undergraduate teaching laboratories on three floors of Bowman-Oddy were renovated without disruption of the teaching mission, new major pieces of instrumentation were acquired including a SEM, two NMRs, several diffractometers and a MALDI-TOF mass spectrometer. Other notable accomplishments included a doubling of the number of chemistry majors, and establishment of the biochemistry bachelor of science and bachelor of arts degree programs, a non-thesis master of science degree program, and the School of Green Chemistry

and Engineering. He maintained ACS certification for the bachelor of science degree program, and expanded our exchange programs with French and German universities.

Alan was and still is a highly visible presence in the international scientific community bringing recognition to UT in the area of X-ray crystallography. While he was chair he served as president of both the Pittsburgh Diffraction Society and the American Crystallographic Association, as well as a member of the US National Committee for Crystallography. He continues to serve on the editorial board and as co-editor of *Acta Crystallographica Section B*, as well as on the International Union of Crystallography Journal Commission and numerous funding review panels. He published 82 papers since 1997, brought in \$1.8 million in research funds for his group and was involved in additional collaborative grants of \$2.52 million. His research has been cited more than 2,100 times during this timeframe.

Alan has now moved into his new office and is busy setting up his lab in his more focused role as a Distinguished University Professor. We look forward to your next 15 years of scholarship! Thank you, Alan.



Recently acquired 600 MHz NMR Spectrometer and X-ray Diffractometer

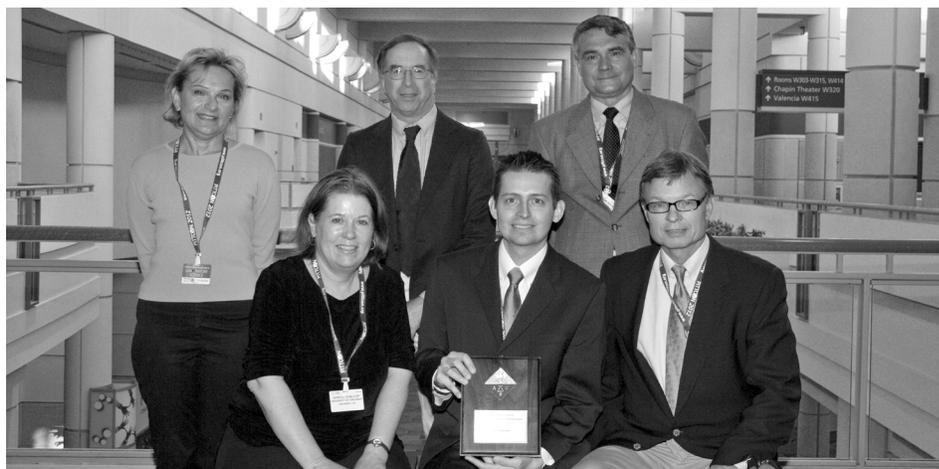
Awards and Achievements

Andy Jorgensen was honored this year in Philadelphia, Pa. by the American Chemical Society as a member of the 2012 class of ACS Fellows. At next spring's ACS national meeting in New Orleans, La. he will be receiving an ACS-CEI Award for Incorporating Sustainability into Chemistry Education sponsored by the American Chemical Society's Committee on Environmental Improvement (CEI). This award is based on his more than 50 presentations on climate change that he has given to a wide range of student, educator and public groups.

Max Funk received a 2012 Excellence in Professional Service Award and **Jared Anderson** received the 2012 Outstanding Research Award from the College of Natural Sciences and Mathematics at the recent college convocation.



As we announced last year, **Jared Anderson** was the recipient of the 2012 ACS Division of Analytical Chemistry Award for Young Investigators in Separation Science. The international



award was presented at a symposium arranged in his honor by Susan Olesik from The Ohio State University on March 14 at the Pittsburgh Conference in Orlando, Fla. Speaking in his symposium were Daniel Armstrong (University of Texas at Arlington), Apryll Stalcup (University of Cincinnati), Janusz Pawliszyn (University of Waterloo) and Jon Kirchhoff (The University of Toledo). Jared is also shown receiving his award from Shanya Kane from Agilent Technologies, the award sponsor.

Alvin Holder, visiting assistant professor from 2001 to 2002, received a National Science Foundation CAREER Award. He is currently working at The University of Southern Mississippi in the Department of Chemistry and Biochemistry.

The brothers of the Gamma Psi Chapter of the Alpha Chi Sigma Professional Chemistry Fraternity were established

in December 2011 and their installment ceremony was held on April 14, 2012. The chapter's three objectives are: to bind its members with a tie of true and lasting friendship, strive for the advancement of chemistry both as a science and a profession and to aid its members by every honorable means in the attainment of their ambitions as chemists throughout their mortal lives. **Tony Bova** (B.S., '12) was master of ceremonies.

Ashley Teow, 2011 Project SEED student from Sylvania Southview High School with **Jared Anderson**, received a Project SEED College Scholarship for 2012. The scholarship helps students transition from high school to a college career and provides up to \$5,000 for tuition and fees while enrolled in a science related field of study their freshman year.

Events/Activities

Saturday Morning Science, under the direction of **Joe Schmidt** and **John Bellizzi**, finished its 6th year. The program is funded by an Academic Excellence Award and focuses on the importance of science to the general public. The speakers and topics this year were: Prof. Emeritus John J. Fortman, Wright State University, who spoke on Energy from Chemistry Through the Ages: A Demo Presentation; Chad Orzel, Union College, who spoke on What Every Dog Should Know About Quantum Physics; The Search for Other Worlds and Life in the Universe was the topic from Scott Gaudi from The Ohio State University; UT's own **John Bellizzi** spoke on What do Molecules Look Like? The Structures and Shapes of Drugs, Proteins and Other Important Molecules and Anne Simon, University of Maryland, spoke on The Real Science Behind the X-files.



Ei-ichi Negishi

Dr. Ei-ichi Negishi, 2010 Nobel Laureate from Purdue University, was this year's 2012 Frontiers in Chemistry speaker. Dr. Negishi received the prize for developing palladium-catalyzed cross-coupling in the mid-1970s. He was born in 1935 and came to the United States in 1960 after graduating from the University of Tokyo.

In 1962, while studying for his doctorate at the University of Pennsylvania, he met Purdue chemistry professor Herbert C. Brown - a pioneer in synthetic organic

chemistry. Negishi admired Brown's research and predicted, "Brown will change the whole world of organic chemistry and that is why I came to Purdue." With Brown as a mentor, Negishi arrived in West Lafayette as a postdoctoral researcher in 1966. He then moved to Syracuse University where he served as an assistant professor from 1972 to 1976 and associate professor from 1976 to 1979. Dr. Negishi joined the faculty at Purdue in 1979 - the same year Brown was awarded the Nobel Prize in Chemistry - and has been a researcher in the department for more than thirty years. In 1999, he was named the Inaugural Herbert C. Brown Distinguished Professor of Chemistry. Dr. Negishi has won many awards, authored several books, and published more than 400 research papers, <http://www.chem.purdue.edu/negishi/bio.asp>.

SEM Goes Cyber

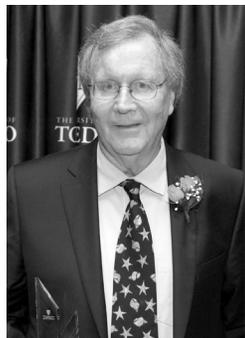


One of the features of the new SEM is the cyber enabled capability. The cyber connection allows remote access to the microscope from high school and college classrooms in the greater Toledo area. Students can design experiments as part of their curriculum and perform experiments in their classroom using remote desktop control software. Shown in the photograph is ninth-grader Patrick Giolando focusing the electron beam to illuminate his sample and explaining the results directly from the SEM to his science class at Ottawa

Hills High School. The cyber enabled capability was developed by **Stacy Gates** (Ph.D. '08, Lind), **Pannee Burckel** (M.S. '89, Edwards; Ph.D. '01, Pinkerton) and **Kristin Kirschbaum** of the College of Natural Sciences and Mathematics Instrumentation Center through funding by the National Science Foundation.

Alumni News

Outstanding Natural Sciences and Mathematics Alumnus



Ken Shea

Dr. Kenneth J. Shea, Professor of Chemistry at the University of California-Irvine, was recognized as the 2012 Outstanding Alum of the College of Natural Sciences and Mathematics

during Homecoming Weekend, October 5-6. Dr. Shea, a native of New York, received his bachelor of science degree in chemistry in 1966, and a master of science degree in chemistry in 1968. His master's thesis research was carried out under the direction of Dr. Paul Block, Jr. He earned his Ph.D. at Pennsylvania State University in 1973, where his research director was Dr. Philip S. Skell. This was followed by a 1973-74 post-doctoral appointment at the California Institute of Technology with Dr. Robert G. Bergman. Dr. Shea joined the UC-Irvine faculty in 1974. He chaired the department from 2001 to 2004.

Dr. Shea has a variety of research interests in synthetic and mechanistic organic chemistry, polymer chemistry and materials chemistry. He has also published in the areas of analytical chemistry, chemical biology, and nanoscience, and is currently working on imprinting peptides using metal coordination. To date, he has more than 260 publications and has received more than \$8.5 million in research funding. At UC-Irvine, he has been a mentor to more than 120 graduate students and post-doctoral research fellows, and has also involved more than 60 undergraduate students in his research program. In addition to several hundred presentations at scientific meetings/symposia, and invited and plenary lectures at international symposia, and at academic and industrial institutions, he has been awarded seven U.S. patents. He has also been a consultant to more than ten companies.

In 2007, Dr. Shea received an Arthur C. Cope Scholar Award. Sponsored by the American Chemical Society, the award recognizes and encourages excellence in organic chemistry, and consists of a \$5,000 cash award, a certificate, and a \$40,000 unrestricted research grant. He has also been recognized as a University of California Regents Faculty Fellow, and an NIH Senior International Fellow. He is a Fellow of the American Association of the Advancement of Science.

Dr. Shea collaborated with a biomedical engineering faculty member in 2005 to receive one of the first Nicholas Foundation Prizes for Cross-Disciplinary Research awarded at UC-Irvine. The purpose of the prize is to encourage "... collaboration among faculty members on high-risk, high-yield pilot research relevant to CALIT2's (The California Institute for Telecommunications and Information Technology) mission".

For the 1979-80 academic year, Dr. Shea was one of three faculty members recognized for his outstanding contributions to undergraduate education. The award was presented by the UC-Irvine Physical Sciences Student Affairs Office.

In addition to his teaching and research, Dr. Shea is extensively involved in professional organizations. He has been a member of the Scientific Advisory Board of the Society for Molecular Imprinting since 1997. Additionally, among his many other responsibilities, he has served on the International Advisory Board since 2002 for *Polymers and Organic Chemistry*, the Editorial Board for *Biosensors and Bioelectronics* since 2003, and has been president of the Society of Molecular Imprinting since 2006.

Dr. Shea is married to Bonnie DeShetler Shea, a UT graduate of the former College of Business Administration. They have two grown children, Kerry and David.

Births

Ryan Rondo (Ph.D. '10, Mason) and his wife, Shannon had their second child, Kyle Ryan, on September 12, 2012. Big sister is Kelsey. Rondo continues to work for Boulder Scientific in Colorado as a process chemist.

Weddings

Cora Lind-Kovacs (Associate Professor) married Clyde Kovacs on August 25, 2012. They honeymooned in Hawaii.

Joe Tucker (B.S. '08) and **Patricia Reynolds** (B.S., '08) were married on October 8, 2011 and now reside in Temperance, Mich.

Shuang Cai (MS '07, Kirchhoff) and **Xiaoning Li** (MS '07, Huang) were married in May 2010. Shuang is currently a senior scientist at Nanopharm, LLC and Research Associate at the University of Kansas in Lawrence, Kan. while Xiaoning is a Developer at Level-3 Communications in Denver, Colo.

Career Updates

Tianxia Zhu (M.S., '12, Kirchhoff) recently accepted a contract lab position at ConAgra Foods in Columbus, Ohio to perform lab analyses of flour and other raw materials by analytical chemistry technology.

Yang Xu (M.S., '12, Isailovic) accepted a position as a research technician at the Ragon Institute of Massachusetts General Hospital, MIT and Harvard in Charlestown, Mass.

Haoyi Yao (M.S., '12, Yamamoto) received a position at the Chengdu Environmental Protection Bureau in China.

Hari Muvvala (M.S. '12, Viola) is currently working for Chicago Discovery Solutions in Chicago, Ill.

Suraj Saraswat (Ph.D. '12, Isailovic) is a postdoctoral fellow at Indiana University in Bloomington, Ind.

Sourav Sarkar (Ph.D. '12, Suheck) is doing his postdoctoral work at Georgia State in Atlanta, Ga. Sourav is working in the group of Professor Geert-Jan Boons at the Complex Carbohydrate Research Center at Georgia State.

Shannon Kraemer (B.S., '11) is attending graduate school at Michigan State University in East Lansing, Mich.

Francis Umesiri (Ph.D. '10, Suheck) is an assistant professor at John Brown University in Siloam Springs, Ark.

Rommel Talan (Ph.D. '10, Suheck) is working at Peptides International in Louisville, Ky. as a research scientist.

Stacy Gates (Ph.D. '08, Lind-Kovacs) accepted a position as Senior Scientific Editor with the International Centre for Diffraction Data in Newton Square, Pa.

Joe Tucker (B.S., '08) received his J.D. from The University of Toledo College of Law in 2011 and is now working for MacMillan, Sebanski and Todd, LLC as an associate attorney focusing on intellectual property related to chemistry-related inventions. Prior to joining the law firm he served as a law clerk for Magistrate Judge James R. Knepp of the United States District Court for the Northern District of Ohio.

Patricia Reynolds Tucker (B.S., '08) completed her Ph.D. in chemistry from Florida State University in Fall 2012 under the direction of Susan Lattuner. Her research involved investigation of new solid state materials. Patricia is currently working at Guardian Industries in Carelton, Mich. performing product testing and evaluation.

Amber Peariso (M.S. '05, Funk) is a Senior Associate Biologist at Eli Lilly and Company in Indianapolis, Ind.

Tatyana Barkhimer (Ph.D. '04, Kirchhoff) is a Pharmacist at St. Luke's Hospital in Maumee, Ohio.

Jeff Smith (Ph.D. '03, Davies) is Director of Research and Development at Fresh Products, LLC, in Toledo, Ohio.

Duane Wilson (B.S. '02) is working as a research chemist for U.S. Borax Inc. in Greenwood Village, Colo.

Francis Burns (Ph.D. '99, Kirchhoff) completed a one-year position as an analytical chemistry professor at Koya University in Kurdistan and now is back

teaching at Ferris State University in Big Rapids, Mich. as a visiting assistant professor.

Jennifer Sealy (M.S. '98, Flowers) left Elan Pharmaceuticals to pursue a career change. She is now a criminalist in the Drug Analysis Unit and the DNA Unit at two different crime labs in California.

Nicholas Richardson (Ph.D. '97, Davies), associate professor of chemistry at Wagner College, Staten Island, N.Y., received the Excellence in Service award at the annual Faculty Awards Dinner in November 2011.

Anthony Gallacher (M.S. '89, Pinkerton) is continuing his tenure as Director of Business Development SE for Ricerca Biosciences, LLC in the Washington, D.C. area.

Condolences

Henry R. Kreider, Jr. (B.S. '33 and son of founding Chairman Henry R. Kreider, Sr.) passed away on March 31, 2012 after having celebrated his 100th birthday with his family in December 2011 where he lived in Florida.



Dr. Henry Kreider

Vance Dodson (B.S., Eng. '44, M.S. '47) was an instructor in the department from 1946-1957. He passed away on December 20, 2011 in Maine. He had been a technical consultant to the Construction Productions Division of W.R. Grace and Co., Cambridge, Mass.

Morris Srebnik, faculty member from 1990-1996, passed away December 2, 2011 in Israel from an apparent heart attack where he was working at Hebrew University in the School of Pharmacy.

Nathalie Hilaire-Jenes (MS '04, Kirchhoff) passed away on July 26, 2011 in Florida.

New Alumni (December 2011-May 2012)

Bachelor of Arts

Bassam Alsaegh
Nivhan Arumugasamy
Erin Carter
Liza Cholin
Rosaline Cordova
Hye Hwang
Sura Khuder
Jose Lopez
Matthew Miller
Megan Montague
Mario Romero
Michael Saloiye
Michael Sand
Caroline Schneider
John Schuette
Jacklyn Stohl
Alicia Trumbull
Adam Zettel

Bachelor of Science

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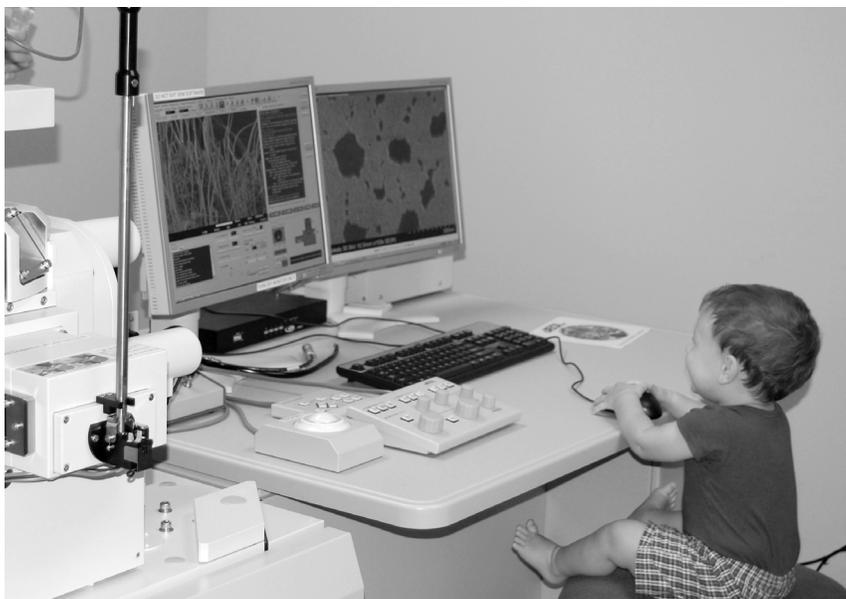
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Accelerated Studies in Chemistry

Indiana Mock, son of **Kristi Mock** (Ph.D. '12, Kirchhoff), visiting assistant professor of chemistry, is shown getting a leg up on his pre-school classmates through advanced training on one of his mom's favorite toys, the scanning electron microscope.



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