



WESTERN MICHIGAN UNIVERSITY
College of Arts and Sciences
Department of Chemistry

Newsletter

A Newsletter for Friends of the Western Michigan University Department of Chemistry

Dear Alumni and Friends:

As we begin this fall 2011 term it seems more than appropriate to wish you all the best in the hopefully waning days of this torrid summer. Your commitment and pride in the past and future of the department means a lot to faculty, staff, and students, and it is my pleasure to bring you up to date on some of the progress which has been made in the last couple of years.

We have a new chair of the department! Dr. Donald Schreiber became chair in July, taking over from Dr. Ekkhard Sinn who returned to the faculty. Don has been a productive faculty member since 1988, and served as associate chair from 2006-11. He recently was named a Faculty Fellow of the WMU Lee Honors College for his commitment to high-quality innovative undergraduate education and advising. He also is co-PI on the department's GAAN (Graduate Assistants for National Needs) grant to support outstanding graduate students. Don has named Drs. Sherine Obare and Steven Bertman as associate chairs.

On a sober note, Dr. John Chateaufneuf, faculty member since 1996, died suddenly on June 17, 2011. He published over 50 scientific papers and reports in "green" chemistry and chemical processes in supercritical fluids. His contributions to the field were significant, but above all, he would want to be remembered as a scientist. An element, Californium (Cf), has been purchased in his memory on our Periodic Table mural in the lobby of the Chemistry Building.

Our research-grant funding has averaged more than \$2 million per year over the last eight years. The range of funding sources has broadened beyond traditional NIH, NSF, and Department of Energy agencies in recent years to include community and Wilson's Disease foundations among others. Research output—as indicated by peer-reviewed publications—has exceeded 50 per year, including contributions in the Proceedings of the National Academy of Sciences and Nature-Chemistry. Major contributions to this work have been made by our students including six M.S. and 11 Ph.D. graduates in 2010-11.

While WMU has not been immune to the financial woes felt across the globe, we are moving forward in the Department of Chemistry to provide the best possible education to our students.

Chair of the department, Dr. Donald Schreiber is soliciting volunteers from our alumni and emeriti to serve on the Departmental Development Committee he currently is forming. The primary role of the Committee will be to assist the department in obtaining support to improve our programs and scholarships for students at all levels. He may be contacted at donald.schreiber@wmich.edu or 269.387.2856.

We are looking forward to the coming school year and wish you and your family health, happiness, and joy. If you have news, suggestions, or corrections, please let us know on the form on page 7.

Sincerely,

Dr. Michael J. Barcelona
Professor and Past Chair
Department of Chemistry
michael.barcelona@wmich.edu



Donald Schreiber



Researcher receives WMU's HIGHEST HONOR

Dr. Michael J. Barcelona, professor of chemistry and a veteran researcher whose work has focused on analyzing the impact of environmental pollution and designing remediation efforts to address it, has been named Western Michigan University's 2010 Distinguished Faculty Scholar.

He was honored with the highest accolade awarded to a WMU faculty member during the University's annual Academic Convocation in September.

For more than 25 years, Barcelona has been working to develop tools that can be used to monitor and remediate groundwater, and he is known internationally for his work in developing groundwater sampling methods and for advancing cleanup techniques. He is in demand as an expert witness to a number of states, federal agencies and other nations. According to colleagues around the country, his work has led to more effective enforcement, monitoring regulations and professional practice in tackling groundwater contamination and hazardous waste worldwide.

In receiving the award, Barcelona joins just 46 other faculty members who have been so honored during the award's 32-year existence. The award carries with it a \$2,000 cash prize and is designed to honor outstanding achievement that is widely recognized within the academic community.

Barcelona first joined the WMU faculty in 1989 as a full professor and director of the Institute for Water Sciences. He returned to WMU in 2001 after serving for more than seven years at the University of Michigan as operations director for the National Center for Integrated Bioremediation and Development.

Shortly after returning to WMU, he accepted the position of chair of the Department of Chemistry, and helped make the case for, and oversaw, the construction of a new instructional building for that discipline.

"He never gives up. He gives everything he has," said a WMU colleague in nominating Barcelona for the award. "...He embodies for me the scholar-scientist."

An official with the U.S. Environmental

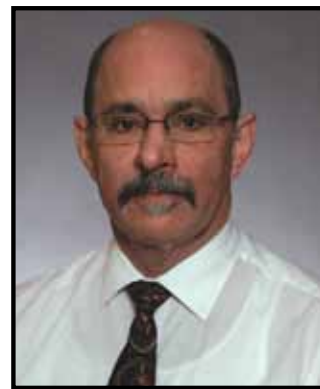
Protection Agency praised Barcelona's ability to marry the principles of science with the need to apply those principles to real-world problems. She also lauded his ability to empower students to do the same.

"Based on Dr. Barcelona's track record thus far, and the environmental problems we must undoubtedly face in the coming decades, I can come to no other conclusion but that he will continue to contribute significantly to the solution of emerging environmental problems as well as produce students who will carry on far into the future," she said.

A researcher at a university on the Eastern seaboard noted that Barcelona's career has been remarkably broad and his work has led to progress both in oceanic environments that face problems triggered by acid rain and in fresh groundwater environments in which officials combat pollution from motor fuels and chlorinated hydrocarbons.

"...Dr. Barcelona has remained a tireless advocate for quality and creativity in science and engineering research and education, often volunteering to work out innovative strategies to solve down-to-earth interdisciplinary problems," the researcher noted in a letter of nomination. "He is one of the most respected researchers in the groundwater contamination field. Ever since I met him, he has been an inspiration to me. I know he is also an inspiration to many others. Is that not the true distinction of scholarship?"

Barcelona earned a Bachelor's Degree in Chemistry in 1971 from St. Mary's College in Winona, Minn., a Master's Degree in Organic Chemistry in 1974 from Northeastern University and a Ph.D. in Marine Chemistry and Chemical Oceanography in 1977 from the University of Puerto Rico. He served for three years as a postdoctoral research fellow at the National Institute of Environmental Health Sciences, which is located at the California Institute of Technology.



Dr. Michael Barcelona received WMU's highest academic honor as Distinguished Faculty Scholar for 2010-2011. He continues his research on the transformation and fate of residual oil in floodplain soils from the July 26, 2010 pipeline oil spill on the Kalamazoo River.



Dr. Yirong Mo recognized as Emerging Faculty Scholar

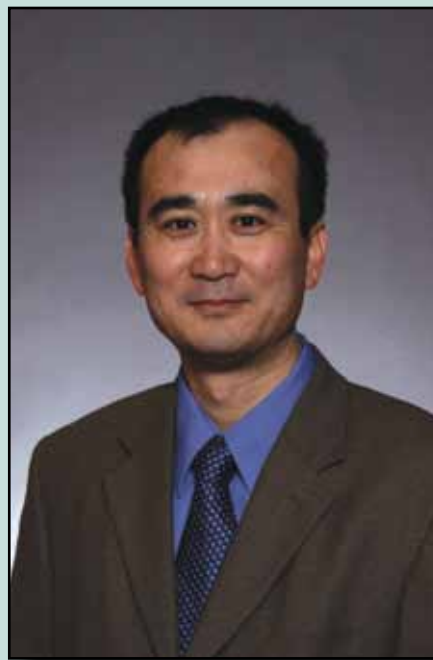
Dr. Yirong Mo, associate professor of chemistry has been recognized as an emerging faculty scholar by Western Michigan University. He was presented the award during WMU's annual Academic Convocation ceremonies.

Mo joined the WMU Department of Chemistry in 2002. As an adept and highly experienced computational chemist, he wasted no time launching independent research by assembling a cluster of computers and recruiting graduate students.

Mo has developed two very successful lines of research involving hardcore theoretical development, mostly in electron transfer theory, and computational biochemistry, a burgeoning interdisciplinary field. During the past seven years, he has excelled in both areas and has been well recognized by colleagues. He received coveted invitations to speak at the 2005 and 2008 Congress of the World Association of Theoretical and Computational Chemists, and the Sixth Congress of the International Society for Theoretical Chemical Physics, both held every three years.

Since 2003, he has published more than 50 papers in top peer-reviewed chemistry journals, one of which was selected as a "Hot Paper" in 2004 by *Angewandte Chemie*, while two others were recognized as "Most Accessed" and "Most Cited" by the *Journal of Physical Chemistry and Accounts of Chemical Research*.

Mo received his bachelor's, master's, and doctoral degrees in physical chemistry from Xiamen University in China in 1986, 1989 and 1992, respectively. He also has been a research associate at the University of Minnesota and State University of New York at Buffalo, a research fellow at Bonn University, and a visiting fellow at the University of Erlangen-Nuremberg in Germany.



Yirong Mo

Dr. Yirong Mo's group has been developing novel computational methods to gain insights into chemical phenomena with more than 40 publications in the last five years. One notable example is the study on the anomeric effect, which plays a central role in carbohydrate chemistry. This work has appeared in *JACS* and in the very high-impact journal, *Nature Chemistry*. The *JACS* paper was featured in a recent *Chemical & Engineering News Concentrate*. Yirong also received an NSF grant for "New Computational Approach Deciphering Bonding Nature."



John Miller

Duo attends Indy 500 Technology Day

Drs. John Miller and Steven Bertman, Biofuels Research Team, participated in the Indy 500 Emerging Technology Day. A stock diesel car fueled by biodiesel produced from restaurant trap grease ran laps to showcase this sustainable alternate fuel source. Also representing WMU was the Sunseeker car of the solar racing team of the College of Engineering.

Bertman recently received an NSF grant titled "Collaborative Research: Biogenic Volatile Organic Compounds and their Impacts in a Changing Forest." His graduate student, Shino Toma, presented her work on volatile organic compounds in Michigan forests at the National American Geophysical Union Conference in San Francisco.



Steven Bertman



WMU students with the Sunseeker car at the Indy 500 racetrack.

Faculty Achievements



Sherine Obare

Dr. Sherine Obare was honored with the Black Engineer of the Year "Trailblazer" Award by the Council of Engineering Deans of the Historically Black College and Universities, Lockheed-Martin, and U.S. Black Engineer and Information Technology magazine. Obare, recipient of an NSF career award, also received a George Washington Carver Teaching Award from NoBCChe (National Organization of Black Chemists and Chemical Engineers).

She also recently received an American Competitiveness and Innovation Fellowship from the NSF Materials Research Division. Her students continue to receive Graduate College and other awards. Tova Samuels, one of her Ph.D. students, recently received an Eastman Kodak-Theophilus Sorrel Fellowship administered by NOBCChe for her work on nanosensors for environmental contaminants.

- Dr. David Huffman graduated three Ph.D. students in 2010-11. Wilson Okumu is teaching at Grand Valley State University. Joshua Muia is on a postdoc with Dr. Evan Sadler at Washington University Medical School. Brian Zeider, a postdoc with Dr. Dennis Winge at the University of Utah, recently passed away unexpectedly. An element, Neodymium (Nd), has been purchased in his honor. A recent undergraduate biochemistry major who worked with Huffman, Neil Blok, is pursuing M.D./Ph.D. degrees at Harvard Medical School. He is the first WMU chemist to enter this prestigious program.

- Dr. Ramakrishna (Ramki) Guda continues his spectroscopic and synthetic work on TiO₂ nano-composites and dye-sensitized solar cells as well as ultrafast luminescence studies. His group published papers in both the Journal of Physical Chemistry and the Journal of Physical Chemistry Letters in 2010.



Ramakrishna Guda

- Isurika Fernando, in Dr. Gellert Mezei's group, was the recipient of the Graduate Research and Creative Scholar Award this year. She presented her work at three American Chemical Society conferences (Boston 2010, Washington, D.C. 2009, and Chicago 2009) and published two papers in peer-reviewed journals (New J. Chem. 2010, 34, 221-235 and New J. Chem. 2010, 34-2097-2100).

- Dr. James Kiddle's collaborative work has resulted in three publications related to his efforts to understand the fundamental free radical chemistry of emerging environmental contaminants. Also Carlen N. Smith, an undergraduate

research associate in the group, received a Seibert WMU Undergraduate Research and Creative Activities Award from the Lee Honors College. Master's student Ben Strong was the recipient of the 2010-11 Graduate College Teaching Effectiveness Graduate Teacher Award.

- In Dr. Ekk Sinn's group, Melissa Basileo, an undergraduate student, received the Undergraduate Research Excellence Award, and Phillip Eskander received the Lee Honors Undergraduate Research Award.

- Dr. Andre Venter's group published papers in Analyst and Analytical Methods on their advanced sample introduction and mass spectrometric analytical research. His students have presented their work at Pittcon 2010, and the American Society for Mass Spectrometry Asilomar Conference.



Andre Venter

- Dr. James (Gus) Guzinski, part-time instructor of general chemistry and First Year Experience (FYE) courses, received an Outstanding Service Award. Guzinski blends both academic and industry (Kalsec) experience in his FYE course which is aimed at awakening student curiosity and interest in science.

- Robin Lenkart, office associate, has been handling enrollment, account reconciliation, and purchasing since she joined the staff three years ago. She won both a WMU "Make a Difference" award and a Dean's Award in 2010.

Faculty Achievements



Dr. Susan Stapleton (right) with Dr. Renee Schwartz, assistant professor of biological sciences and Mallinson Institute for Science Education.

Dr. Susan Stapleton, associate dean of the College of Arts and Sciences, received an American Council for Education (ACE) fellowship last year. During this time, she worked closely with the president and provost of Bowling Green State University, as well as ACE fellows across the country to share the culture, policies, and decision-making processes in higher education. Stapleton continues to conduct research in biochemistry and supervises the Howard Hughes Medical Institute traineeship for undergraduate science students.

Dr. Elke Schoffers was promoted to full professor in June 2011. Her research has appeared in *Applied and Environmental Microbiology* as well as in *Chirality*.

Her most recent Ph.D. student, Lars Kohler, was the recipient of the Gwen Frostic Doctoral Fellowship, and is pursuing a postdoctoral position with Dr. Randy Thummel at the University of Houston, Texas.



Elke Schoffers

Welcome New Faculty

This fall we welcome the arrival of two new faculty members, Drs. Megan Grunert and Blair Szymczyna to the department.

Megan Grunert received a B.S. from the University of Indianapolis in 2004, majoring in Chemistry, Biology, and Spanish, where she was also an All-American swimmer. She obtained her M.S. in 2008 and Ph.D. in 2010 in chemistry, both from Purdue University under Dr. George M. Bodner. Following completion of her Ph.D., she moved to Iowa State University to join the American Chemical Society Division of Chemical Education Examinations Institute as a post-doctoral researcher under the supervision of Dr. Tom Holme.

While at Iowa State, she was also a lecturer for general chemistry. Grunert's research interests include diversity in chemistry and other sciences, feminism and gender issues in science, motivational theories, educational psychology, and curriculum development to foster inclusive education. She is primarily a qualitative researcher, but incorporates mixed methods into her projects as well. Grunert has a paper accepted at and a paper submitted to peer-reviewed international science education journals and has numerous presentations at national and international conferences.

Dr. Blair Szymczyna obtained his B.S. degree in Biochemistry from the University of Manitoba in 1996 and his Ph.D. degree in Medical Biophysics from the University of Toronto in 2004. His Ph.D. studies focused on the molecular structure and function of nucleic acid binding proteins and understanding how they

assemble into complexes. As a postdoctoral fellow in the laboratory of Professor James Williamson at The Scripps Research Institute in La Jolla, Calif. since 2004, he also studied the structure and dynamics of biomolecules that are associated with the assembly and maturation of viruses.

The focus of Szymczyna's research is to understand the mechanisms and specificity determinants involved in the formation and maturation of ribonucleoprotein assemblies, biomolecular complexes that contain proteins and RNA molecules. Aberrant formation, structure and function of ribonucleoprotein assemblies are implicated in numerous diseases, including cancer, and unique ribonucleoprotein complexes are often associated with the lifecycles of etiologic agents, such as viruses. The Szymczyna laboratory will use molecular biology and biochemical approaches, computational methods, nuclear magnetic resonance (NMR) spectroscopy and other biophysical techniques to obtain key structural and dynamic information about these biological systems, which are important in the medical and nanotechnology fields.

Szymczyna currently has 13 papers in peer-reviewed journals and has presented his research at many international conferences. Szymczyna was awarded a Medical Research Council of Canada Studentship to support his Ph.D. studies and a Canadian Institutes of Health Research Fellowship for his post-doctoral research.



Dave Ansel is 2011 Alumni Achievement recipient



David S. Ansel recently retired after a 32-year career as an industrial chemist at WACKER Chemical Corporation, Adrian, Mich. He came to WACKER after receiving a master's in chemistry from Colorado State University ('80) and bachelor's in chemistry and mathematics from WMU ('74). He is an American Chemical Society member. He desires to write about his father, travels and other experiences in retirement. Community college teaching is also under consideration.

At WACKER, Ansel delivered technical support using silicone technology, meeting various customer opportunities. More specifically, he created silicone solutions for textile, home and car care, industrial defoaming, water repellency, general industrial release and high heat coating applications. He also advocated various fumed silica systems to meet customer process and product needs.

During his first 24 years, Ansel provided a "WACKER technical face" to customers while supervising a laboratory staff. Additional responsibilities included silicone polymer and product development and production technical support.

The highlight of his career was 11 years of being associated with rolling out, on-site customer processing support and overseeing production start up of the WACKER DEHSIVE® pressure-sensitive adhesive release line in Adrian. He also spent one year working at WACKER's Burghausen, Germany plant and spoke regularly at industry consultant sponsored seminars.

Ansel's remaining eight years were spent on the WACKER Distribution Management team. He provided technical assistance to WACKER's national NAFTA distributor and their

customers. This commercial role focused on maintaining WACKER as a major distributor principal while growing WACKER Division Silicone NAFTA.

As a resident of Sylvania Township, Ohio Ansel enjoys his two cats and all forms of music, particularly jazz. WMU has always been a major part of his life. His father, James, was a 1935 graduate and a 26-year WMU professor of education. David Ansel attended WMU's Campus school for 10 years, through it's closing after Grade 9. Volunteering as an Alumni Ambassador for southeastern Michigan and northwest Ohio from 1988-2000, a Centennial project and supporting chemistry students through "sponsoring elements silicon and tin" are three of many WMU alumni activities he has been involved with. He never misses WMU home football games.

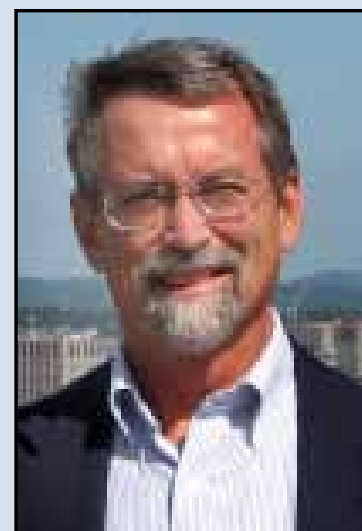
John Nappier is 2010 Alumni Achievement recipient in Chemistry

Dr. John L. Nappier, M.A. '78, Ph.D. '83 is an associate research fellow with Pfizer Animal Health located in Kalamazoo, Mich. He earned a Bachelor of Science degree in Chemistry from the University of Missouri, St. Louis in 1972 before coming to WMU. At Western, Dr. Nappier earned graduate degrees in chemistry specializing in analytical chemistry (M.A.) and biochemistry (Ph.D.) while working full time at the Upjohn Company. After receiving his doctorate, he was promoted within Upjohn into the scientist career path, where he advanced through several promotions to his current position.

Within the Upjohn Company, the merger with Pharmacia, and finally the acquisition by Pfizer, Dr. Nappier has remained in his same research unit. He currently designs and conducts pharmacokinetic, metabolism, and residue studies to address human food safety of veterinary medicines developed for use in livestock.

Dr. Nappier is a member of the American Chemical Society, the Animal Health Institute, the International Federation for Animal Health, and the International Cooperation on Harmonization of Technical Requirements for Registration of Veterinary Medicinal Products (VICH) Expert Working Group on Metabolism and Residue Kinetics.

Dr. Nappier is internationally recognized as an expert in metabolism and residue chemistry and currently is a topic leader within the VICH Expert Working Group on Metabolism and Residue Kinetics. This working group consisting of experts from regulatory agencies and industry is tasked with developing harmonized food safety study guidelines for the conduct of studies that will be considered acceptable by the regulatory authorities in the U.S., Europe, and Japan.





Alumni Information Update

Please use this form to update our mailing list, and/or to let us know what you have been doing, and what you would like to see in future newsletters. Fill out any portion of the form below and return to: Editor, Department of Chemistry, 1903 W. Michigan Avenue, Kalamazoo, MI 49008-5413 or e-mail to: chem-info@wmich.edu.

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In a time when state funding is increasingly restricted, the support we receive from friends and alumni is vitally important. Such funds are used to take advantage of new or unbudgeted opportunities in order to enhance the teaching or the research of the department, or to assist students in achieving their educational and professional goals. *Thank you for considering a gift to the WMU Department of Chemistry.*

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