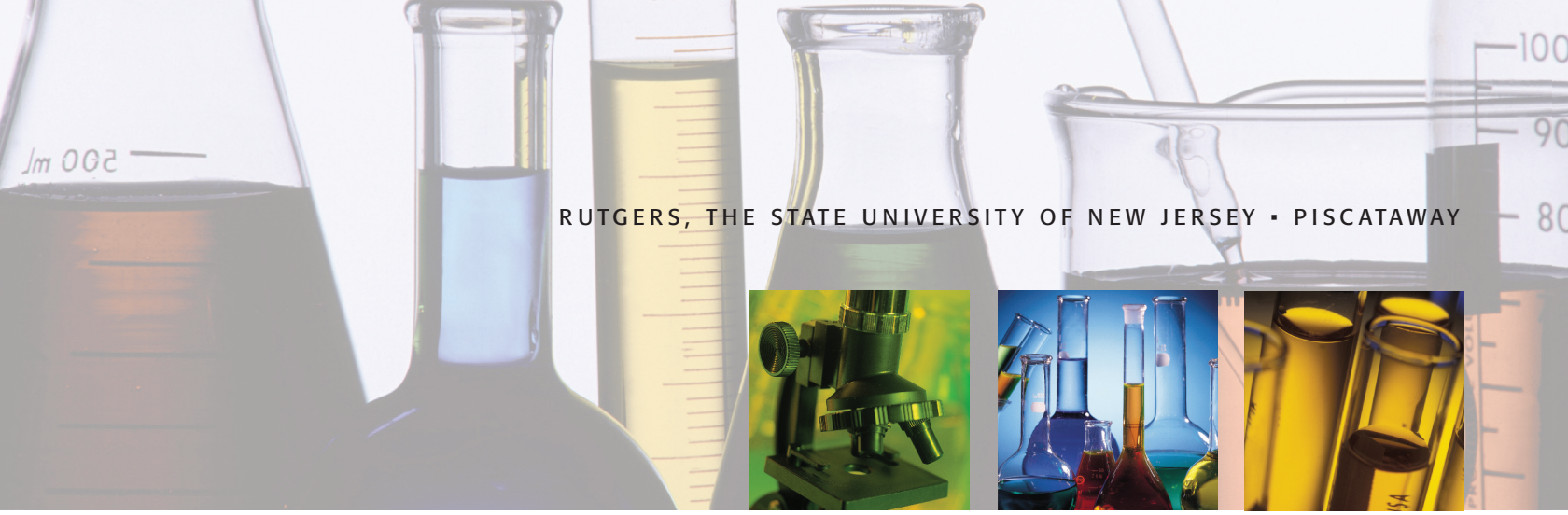

RUTGERS, THE STATE UNIVERSITY OF NEW JERSEY • PISCATAWAY

Chemistry & Chemical Biology News

Rutgers in the Rockies

The Chemistry and Chemical Biology Department made its presence known in Denver this past August when it helped host two alumni events at the 242nd American Chemical Society (ACS) National Meeting and Exposition.

A dinner was held on August 30th for Rutgers faculty, students and alumni attending the ACS meeting. Those present worked for companies including Jacobus Pharmaceutical and Bristol-Myers Squibb. Suresh Damle, an area resident and Rutgers alumnus who worked with PPG Industries until his retirement, spoke at the event. Damle, a former student of Professor Emeritus Ron Sauers, had been looking forward to seeing him, as had three other of his past students. Unfortunately, Hurricane Irene's visit to the East Coast prevented Sauers and several others from leaving New Jersey. Thankfully, Professors Kathryn Uhrich, SAS Dean of Mathematical and Physical Sciences, and Eric Garfunkel, immediate past chair of the department, were able to make it to Denver and speak at the dinner. The pleasant evening resulted in new and renewed connections, and was enjoyed by all.

The next night, the Rutgers Club of the Rockies and the Rutgers University Alumni Association co-hosted an event open to all alumni in the greater Denver area. Over 30 attendees listened as Uhrich spoke about recent developments at Rutgers, including the search for a new university president. Garfunkel noted departmental accomplishments, including the $30 million in external funding that it brings in annually (placing it in the top three nationally), and the facts that four of the department's faculty members are among the top 16 obtainers of grants at Rutgers and in the past decade Chemistry generated 250 patents and $170 million in venture capital. He also discussed the capital campaign and some of the department's exciting new research and development efforts in biomaterials, energy and chemistry. Professor Charles Dismukes was also on hand to represent the department and describe his recent transition from Princeton University to Rutgers. "It was a great event," notes Uhrich, "and a great way for us to catch up with alumni."

These events mark the first time that Rutgers has hosted alumni events at a national meeting, and they were so successful that the department is planning another event at the ACS Fall 2012 meeting in Philadelphia (August 19–23). Be sure to check the department's website, http://chem.rutgers.edu, for more details as they become available. You won't want to miss this opportunity to catch up with old friends, colleagues and professors.

New Graduate Fellowship in Chemistry and Chemical Biology!

The McCoy family has generously instituted a fellowship for female Ph.D. students in our department who are also taking business courses. More information will be available in the next issue of *Chemistry & Chemical Biology News.*

WINTER 2012
VOLUME 12

This newsletter is published for alumni and friends by the Department of Chemistry and Chemical Biology
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School of Arts and Sciences

Associate Professor Seidel's Award-Winning Year

"I am extremely pleased for our research contributions to be recognized in this way."

Last year was a good one for Chemistry and Chemical Biology Associate Professor Daniel Seidel. Not only did he receive Rutgers' SAS Award for Distinguished Contributions to Undergraduate Education, the Amgen Young Investigator Award, and the Alfred P. Sloan Research Fellowship, he was awarded the Rutgers Board of Trustees Research Fellowship for Scholarly Excellence and Presidential Fellowship for Teaching Excellence on the same day.

Seidel arrived at Rutgers in July 2005, after doing undergraduate work in his native Germany, then coming to the United States to obtain his Ph.D. at The University of Texas at Austin. As a postdoctoral fellowship at Harvard University was ending, Seidel says he interviewed at ten institutions and chose Rutgers because it was "the best match."

He feels that he made the right choice, saying the chemistry department provides a very supportive environment for conducting research. He adds that he was fortunate to be able to recruit "some very talented and hard-working students," who have been integral to his success.

Seidel's research partly focuses on asymmetric catalysis. "We strive to invent truly practical catalytic enantioselective reactions that enable the preparation of valuable synthetic intermediates," he explains. He and his team also research the development of new reactions that can generate complex structures quickly from starting materials, focusing on redox-neutral amine functionalization.

This work was noticed by Amgen: Seidel was one of only four scientists to receive their 2011 Young Investigator Award, which is given to those whose scientific contributions and commitment to academic excellence impact research in the pharmaceutical and biomedical research industry. The Alfred P. Sloan Foundation took note as well, recognizing him as an "early-career scientist and scholar of outstanding promise" by awarding him a two-year Research Fellowship. Of the awards Seidel says, "I am extremely pleased for our research contributions to be recognized in this way."

The professor has always enjoyed teaching as well as research. Rutgers honored his skills in this area with the SAS Award for Distinguished Contributions to Undergraduate Education, the Board of Trustees Research Fellowship for Scholarly Excellence and the Presidential Fellowship for Teaching Excellence. Seidel says that he is "delighted" that "my contributions to teaching are valued by the university."

Though it would be hard for Seidel to top last year's slew of awards, it appears this year will be another good one for him—he has already received the Carl Duisberg Memorial Prize from the German Chemical Society.

Courtesy of D. Seidel

Associate Professor of Chemistry and Chemical Biology Daniel Seidel

Alumna Founds Environmental Consulting Firm

Christina Schwerdtfeger credits the wise words of a Rutgers teaching assistant with helping set her on the path that led her from Rutgers, where she studied chemistry as an undergraduate, to Southern California, where she founded the environmental consulting company, Coto Consulting, Inc.

Schwerdtfeger, now 50, explains that in her junior year at Rutgers she didn't understand that graduate school was an option for her, since neither her working class parents nor any of their acquaintances knew much about it. But that spring, one of her teaching assistants explained how it worked, and she realized that it was a viable path. "It was a critical turning point for me," she says.

She had loved studying science since seventh grade, and she credits Rutgers for helping her "bloom academically—and socially." By the time she reached her final year, when Greg Herzog advised her on her senior project, she was set on graduate school.

After falling in love with Southern California during a visit, Schwerdtfeger decided to get her Ph.D. in x-ray and neutron diffraction studies of transition metal complexes of rhodium and iridium at the University of Southern California. As she neared the end of her four years there, she asked one of her professors if he knew anyone in industry. He did, and before long she was working as an analytical chemist at Hughes Aircraft Company.

Part of her job there involved analyzing environmental samples. "It was really timely that I got experience in the environmental sciences," she says, explaining that during the late 1980s, hazardous waste laws were first being put into effect by Congress. "I was fascinated!" she recalls. "It really ignited this new interest for me."

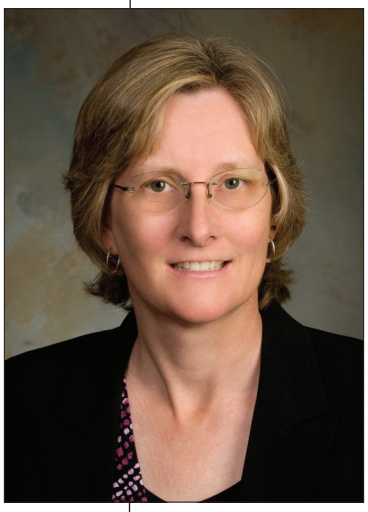
Next, Schwerdtfeger moved to Northrop Corporation as an environmental professional. Her work involved auditing hazardous waste disposal facilities, which brought her into contact with environmental consultants. "I liked the variety of the work that they did," she says, "so I went to work with environmental consulting companies Radian International and CH2M Hill. During her 14 years there, she moved up the ranks and became a vice president with regional management responsibilities. "I really flourished," she notes. "It was a key part of the thread that led me to where I am now."

Schwerdtfeger's next step was to work for a series of smaller companies, which gave her the experience she needed to start her own business. In 2009, she recalls, "I said, 'I am now perfectly capable of doing this myself.'" So she founded Coto Consulting, which is based in Coto de Caza, CA, where she lives with her husband, David Robinson, and her two teenage sons, Christopher and Peter.

She chose to focus on multimedia compliance for air, water and hazardous waste, with particular emphasis on greenhouse gases and sustainability. The company managed to secure over $150,000 in new projects in its first four months of operation, and has worked on projects with Marine Corps Installations West, Lockheed Martin, the Department of the Interior, and the U.S. Environmental Protection Agency, among others. "The opportunities that have come my way have been amazing," she notes. 'It's all been really wonderful."

To raise awareness of her company and to share her knowledge, she also decided to start teaching. She's now an instructor in the Sustainability Business Management and Environmental Management Certificate Programs at the University of California, Irvine, and has taught MBA students at Claremont Graduate University. She is also affiliated with the Los Angeles/ Orange County Environmental Training Center.

Coto Consulting has earned many accolades, including awards from the *Environmental Business Journal* and *Climate Change Business Journal* and being elected a finalist for the International Green Industry Hall of Fame. "But the most important part for me," notes Schwerdtfeger, "has been the positive feedback from my customers and my students." In particular, she hopes to offer career and academic advice to students who find themselves in the same kind of situation she was once in. "I'll never forget that Rutgers graduate student who gave me that crucial information," she says. "I hope to be able to fill that role for others."



Courtesy of C. Schwerdtfeger

Christina Schwerdtfeger, DC '83, Founder and President of Coto Consulting, Inc.

Super Funding for Supercoiling

"This is one of the most exciting areas of contemporary biology."

Marking 25 years of funding, the National Institutes of Health (NIH) has renewed the grant for Professor Wilma Olson's research project, Theoretical Aspects of DNA Supercoiling. This also marks the 38th year that the NIH has continuously funded the Mary I. Bunting Professor of Chemistry and Chemical Biology's research program.

Olson, who has been at Rutgers since 1972, says that she is "excited that our work will continue to be supported." That work involves developing methodology for modeling long DNA molecules with bound proteins and studying the effects of these components on long-range communication along genomic sequences. Although the genetic messages in DNA are stored in a linear sequence of base pairs, the genomes of living species do not function in a linear fashion. Gene expression is regulated by elements that often lie far apart along the DNA but come close together during genetic processing. The grant will allow Olson to investigate these processes at a three-dimensional level, potentially connecting the positioning of proteins on DNA and their effects on DNA folding and fluctuations to biological function.

The scientist's previous work has already led to pioneering discoveries regarding the supramolecular organization of DNA and the effects of protein binding and promises to help move molecular studies to the larger scale.

Olson notes that, "Aside from the fundamental importance to an understanding of biology, knowledge of the interplay between local and large-scale biomolecular structure and genetic function could transform life-science technologies."

Courtesy of W. Olson

Wilma Olson, Mary I. Bunting Professor of Chemistry

Even after over 40 years of research, Olson says she is still intrigued with her work: "To me, the complex interplay of DNA and these different types of proteins is one of the most exciting areas of contemporary biology."

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