

College of Liberal Arts and Sciences

Department of Chemistry

Fall 2011 Newsletter

Message from the New Dept. Head

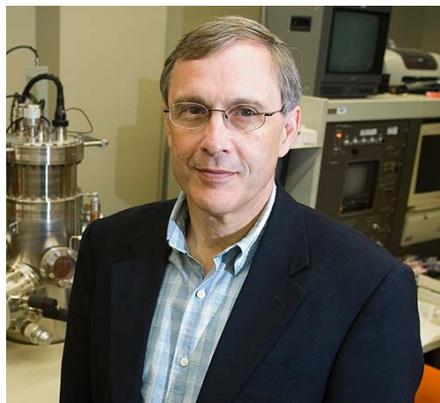


It is the people and what they do that make it exciting to take the position of Department Head in Chemistry. The Department is grateful to Steve Suib who steered us

through a decade of tremendous growth. In 2001, there were 82 chemistry majors, and now there are nearly 190. In the same time frame, the graduate student population rose from 97 to 140. Our immediate goal is to recruit more faculty, where we have seen a decrease from 28 to 24 over the last decade, largely because of State incentives for retirement. Our current faculty continue to excel in both teaching and research, as is evident from the highlights in this newsletter. Of particular note are the awards for research to Professors Suib (CT Medal of Science, ACS Fellow selection and CLAS Research Excellence Award) and Frank (AAUP Research Excellence Award) and for teaching to Professor Bailey (Honors Faculty Member of the Year). We are also proud of our current students and our alumni, and some of their achievements are highlighted in articles and in alumni news. We hope you will enjoy the newsletter and that you will take the time to share your news with us. If you are in the area, please drop in and visit. There are many changes, including upgrades, through grants, to our MS and NMR facilities.

Prof. Steven Suib Wins Connecticut Medal of Science

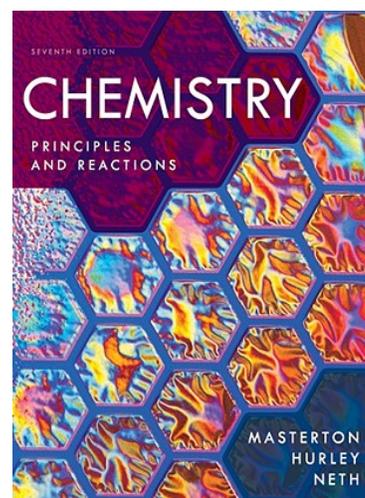
Steven Suib, whose work in solid state chemistry and the synthesis of novel materials has a strong environmental focus, was chosen for his “outstanding impact on the field of catalysis and materials science over the past 30 years.” He has collaborated closely with a host of Connecticut companies, including Pratt & Whitney, which funds research and a laboratory at UConn for studying fiber composites used in engine parts, and VeruTEK, for which Suib’s research team makes catalysts used in pollution prevention and water and soil remediation. His research has also aided companies looking for catalysts for upgrading fuel and those developing fuel cells. Suib has supervised more than 100 Ph.D. students, nearly 50 of whom now hold research positions in Connecticut industries. He has been designated a “Chemical Pioneer” by the American Institute of *(continued on page 2)*



*Steven Suib, winner of the
2011 Connecticut Medal of Science*

Following in the Footsteps...

-Article by Edward Neth



I freely admit my return to UConn as faculty seven years ago was one of the more daunting challenges I have undertaken in my career, beginning with an interview process that had me teaching in front of people who didn’t know me at all alongside those who knew me from my time as a teaching assistant and graduate student. That challenge having been met—so say my students and colleagues in the Chemistry department—I should have been more prepared for taking on the role as Cecile Hurley’s junior coauthor of *Chemistry: Principles and Reactions* – but it was even more daunting at first than the challenge of taking on large lecture classes, 21st century students, and the coordination of teaching assistants! For those TAs who’ve disagreed with Dr. Selampinar and me: I can admit that there were times when Mrs. Hurley and I disagreed on *(continued on page 2)*

Connecticut Medal of Science Cont.

(from page 1) Chemists for outstanding contributions with major impact on advances in chemical science and industry, and was inducted into the Connecticut Academy of Arts and Sciences in 2008.

Prof. Suib's work on solid materials—catalysts, polymers, ceramics, and semi-conductors—involves research into how to control their properties. He also studies how to control the size and shape of holes in porous materials and nano-particles. The goal is to make the chemical process or the final material “greener.”

A central question in his research is, “Can we make materials that no one else has made, using relatively simple materials?”

He holds 50 patents and has published more than 450 research

papers. His first patent involved the use of microwave energy to convert natural gas into gasoline.

Asked by the Connecticut Academy of Science and Engineering (CASE) how he would like to be known, Suib wrote: “I'd like to be remembered in the field of science as someone who was interested in many different areas, as someone who carried out research in a fundamental way to try to solve practical problems, and as someone who has collaborated effectively with a variety of academic, industrial, and government researchers to help improve our global situation.”

CASE is one of the sponsors of the Connecticut Medal of Science, along with the Board of Governors of Higher Education.

-Article adapted from UConn Today

Following in the Footsteps Cont.



Professor Edward Neth

(from page 1) teaching approaches when she was my TA supervisor. That said, the experience of revising a text with her has been a smooth one—probably more so than I would have imagined at the outset. Time tends to level differences, and though we still don't necessarily see eye to eye on everything, we agreed well enough to present a united front to that other daunting challenge: working with our editors. I've not

had much military experience but suspect that any number of textbook editors might make excellent drill sergeants!

It has been an exercise in putting into words, symbols and figures what I've learned from my students over the past seven years (and those at the University of New Haven, Elizabethtown College, Winona State and Bloomsburg Universities, where I have taught before). It's been an exercise in bridging the traditional and the new and in adapting to the learning styles of the students of the 21st century. My thanks to Cecile Hurley for her words of wisdom and experience throughout the writing process – I've learned much from being part of the development of the seventh edition of what is now *Chemistry: Principles and Reactions*, by Masterton, Hurley, and Neth.

What's next? Well – it's time to put the new edition to the “acid test” – to use it in the classroom at UConn (and elsewhere) this fall.

John Tanaka Honored

On November 4th, 2011, the Department of Chemistry held a luncheon to honor Professor John Tanaka. The event included former graduate students, faculty, staff, students, the Dean of CLAS, the Honors Program, pre-med/pre-dental advisors, and the Tanaka family. Dr. Tanaka was presented a Lifetime Achievement Award.

Dr. Tanaka has given over 45 years of service to the department and university and has impacted thousands of students through chemistry, the Honors Program, the pre-dental society, and, occasionally, glass blowing.

John started his teaching career at South Dakota State College in the fall of 1956. He quickly became a “student magnet” according to former student, Craig Schnell, now vice president and provost of North Dakota State University. This was followed by a two year NASA postdoctoral traineeship in inorganic chemistry at the University of Pittsburgh. A meeting with Roland Ward at a 1965 ACS meeting led to an offer with

UConn, where Dr. Tanaka would spend the next 40 years as a professor. During this time, he graduated 15 Ph.D. students, spent 22 years as the director of the Honors Program, published 59 journal articles, co-authored 5 books, received 2 patents, and advised a countless number of pre-dental students. The university and Chemistry Department are very grateful for the dedication of Professor John Tanaka.



Professor Emeritus John Tanaka

CLAS Research Excellence Award

Four CLAS faculty members—whose research spans work on truth, social justice, ecology and novel materials—have won the 2011 CLAS Research Excellence Award. Amongst the recipients was Chemistry Professor Steven Suib.

Professor Suib's research focuses on nanotechnology and the control of solid state material properties. Suib

makes nanoparticles that can be used in catalysis, energy conversion, the production of semi-conductors and composites, and in making different types of novel coatings. Specific research projects include: porous manganese oxide octahedral molecular sieves, synthesis of nano-size catalysts via microwave heating, coatings of inorganic oxides and surfaces, and high temperature

ceramics.

He has collaborated with industry on problems such as the development of fuel cells and making more efficient jet engines. He is currently a lead researcher on a UConn biomass conversion plant pilot project designed to find bio-fuel sources suitable for the Northeast.

-Article adapted from CLAS news website



Three of the CLAS research awardees with Dean Jeremy Teitelbaum.

L to R: Michael Lynch, Teitelbaum, Nancy Naples, and Steve Suib

Dr. Harry Frank Recognized by AAUP

The UConn Chapter of the American Association of University Professors recognized four faculty from the College of Liberal Arts and Science, including Dr. Harry Frank from the Department of Chemistry. The 2010 AAUP Excellence Awards were presented at a ceremony at the State Capitol on April 9th.

Harry A. Frank, professor of

biological and physical chemistry and a former associate dean of CLAS, was recognized for his research excellence. Frank's research focuses on the class of biological pigments known as carotenoids. Carotenoids are long-chain, conjugated, pi-electron molecules, typified by β -carotene and lycopene that provide an abundance of coloration in nature.

"The AAUP has given peer awards for teaching research and service for many years. They were created at a time when there were few formal recognitions of excellence. With time, many other awards have been created but the AAUP awards have stood the test of time as peer initiated and peer approved," said Ed Marth, executive director.

-Article adapted from UConn Today



Professor Harry Frank

A Better Way to Photo Gray

Greg Sotzing, professor of chemistry and a member of UConn's Polymer Program, recently perfected a method for creating quick-changing, variable colors in films and displays, such as sunglasses. Sotzing and his colleagues have made these materials less expensive and less wasteful to manufacture than any previous method. And aside from creating vanity glasses, the technology is in high demand by the U.S. military.

"This is the next big thing for transition lenses," Sotzing says. The typical material behind a transition lens is

what's called a photochromic film, or a sheet of polymers that change color when light hits them. Sotzing's new technology does things slightly differently—his electrochromic lenses are controlled by an electric current passing through them when triggered by a stimulus, such as light. The electric current allows the lens to change colors virtually instantaneously.

This process could be very useful for the military, Sotzing says. For example, if a person emerges from a dark passageway and into the bright sunlight of the desert, a lens that would alter its color in-

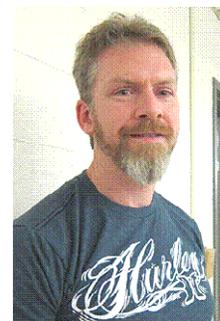
stantly to complement the surroundings could mean life or death for some soldiers. Currently, soldiers have to physically change the lenses in their goggles.

In November 2010, partially based on work supported by the Center for Science and Technology Commercialization's Prototype Fund, the UConn R&D Corp. started a company, called Alphachromics Inc., with Sotzing and colleague Michael Invernale—now a post-doctoral researcher at MIT—as founders. The University has a patent pending for this new technology, which is under option to the company. Alphachromics

is also testing applications of these polymer systems for energy-saving windows and custom fabrics.

Sotzing and Alphachromics are currently in talks with sunglass manufacturers.

-Article adapted from UConn Today



Professor Greg Sotzing

REU Program Renewed

-Article by Mark Peczuh and Christian Brückner

Research Experience for Undergraduates

It has long been recognized that the best way to promote graduate careers in the natural sciences is to expose students to a stimulating research program. This is just as true at UConn as it is elsewhere. In fact, a number of programs are in place to lead our own chemistry majors along this path. But what about students attending colleges that do not have the PhD-level research program our students enjoy? The National Science Foundation (NSF) funds a program, the Research Experience for Undergraduates (REU), to address this very need. It is the flagship program for undergraduate research in the US, funding travel, room and board, and a stipend for the participants. It also provides research funds as well as travel funds for the students to present their research at national meetings, such as American Chemical Society national meetings.

Our department has had the good fortune to serve as an NSF-funded REU site in chemistry since 1997. Over several three-year funding cycles, Professors Howell, McGrath (who left the department in 1999), Brückner, Bohn, and Peczuh have served as directors and/or co-directors of the program. The program was most recently renewed for the years 2011 through 2013 with Brückner as Director, Peczuh as co-Director, and with our undergraduate coordinator, Osker Dahabsu, to keep it all organized. Together, with a generous contribution by the Dean of the College of Liberal Arts and Sciences along with supplements to NSF research grants held by members of the department, this program has hosted >150 students (mostly at the rising junior and senior level) over the past 13 summers. We especially target women, minorities, and non-traditional students for our program.

The REU Program

The centerpiece of the program is an intense 10-week period where the REU student works on an active project under the guidance of one of our faculty members. Acceptance into the program is highly competitive (in some years we have had ~300 applications for 8 to 10 positions). In the application, students select a research group with which they would like to work. Once the candidates arrive on campus, they begin research. They also partake in a number of ancillary professional development offerings and social events. For example, seminars introduce the students to topics such as safe practices in the laboratories, how to present research

results effectively (this well-loved seminar has been given by Professor Michel since the beginning of our program!), ethical issues in science, careers in chemistry, and a scientific writing exercise. The group gets the opportunity to socialize with each other, students in the department, and other campus REU programs at ice cream socials and BBQs (the season opener that has been traditionally held at Professor Howell's house), and trips to baseball games or the beach. Another highlight of the program is a guided tour of a regional industrial research facility. Over the years, we have visited the research and development laboratories of Pfizer in Groton, CT; Boehringer-Ingelheim in Ridgefield, CT; and a United Technologies fuel cell center engineering and production line in South Windsor, CT.



Professor Christian Brückner

Forging a Partnership with CCSU

In the past few years, we have also created a special link to Central Connecticut State University (CCSU). We place one or two CCSU students each year into our REU program, and we have also traveled as a group to CCSU for a hands-on, day-long workshop in single crystal diffraction.

Hosted by Professor Crundwell, an expert in diffraction, this short course introduces an intellectually challenging technical component to the program that involves the entire cohort. It also provides the students a good visual and conceptual idea about this technique that is instrumental to all fields of chemistry. While UConn has a range of diffractometers for proteins or powdered samples, no equivalent instrument for small molecule diffraction is currently available. This fact brings the idea home to the

REU Program Cont.

students that not everything is available at the larger institution, and that smaller schools may indeed be more than a reduced version of the big schools.

Beyond the REU Experience

The UConn REU programs culminate in oral presentations and a poster symposium for which the university community, parents, and faculty from the students' home institutions are invited. By all measures, our program has been a resounding success. Of the many gifted students we have hosted, most have become chemistry graduate students, some even at UConn. Some have become doctors (the medical kind) and lawyers (the intellectual property kind). And the enthusiasm of the students for higher education has gone further, as several former participants have become professors at colleges and universities, nurturing their own students to become chemists. One even

made it her profession to direct undergraduate researchers. We believe their positive experience at UConn made them ambassadors for our graduate program. As one additional measure of success, 45+ peer-reviewed publications and 40+ presentations at national conferences with REU participants as co-authors emerged. These successes, and more, are listed on our web site. With funding for the next three summers secured, we are looking forward to introducing another generation of young scientists to the thrills of research at UConn.

For more information about the REU program, please visit:

<http://bruckner.chem.uconn.edu/WebREU/start.html>

Boosting Biofuel Production

A new \$1.8 million project with the Department of Energy (DOE)—led by chemistry professor Steven Suib—will develop new biofuel sources, catalysts, and reactors that would be suitable for the Northeast.

The goal of the interdisciplinary project is to develop the technology to the stage where it could be transferred to small biofuel businesses that would use locally available resources for fuel.

This would eliminate one major cost associated with biofuels: transporting the raw biomaterial to the site of the plant.

By developing new catalysts that can be used with different types of biofuels, and by testing pilot plants (specifically a new fuel source of rapid-growth poplar trees would thrive in this climate), the UConn researchers will demonstrate how bio-energy technology could be important in the Northeast region of the U.S.

Connecticut alone has 8 million square feet of greenhouses that generate \$1 billion in sales annually. If the greenhouses generated their heat through direct combustion of a locally produced wood such as poplar, it would reduce fossil fuel consumption by at least 10 million gallons per year in the state.

The project involves five faculty researchers, including Steven Suib, who is developing catalysts that can be tailored to different types of biofuel operations. Among other problems, the liquid-based catalysts that are now often used are hard to separate from the product, Suib says. His lab is developing solid catalysts that won't leach into the solution and that are stable, relatively cheap, and induce a high rate of reaction. They can be tailored to work best with the particular type of biofuel that is used – vegetable oil or plant materials, for example.

The project was contracted with the DOE in September for one year but may be extended an additional year.

Suib and Richard Parnas, professor in the Institute of Materials Science and in the Department of Chemical, Materials, and Biomolecular Engineering, have visited biofuel plants in Connecticut, New Jersey, Rhode Island, and Cape Cod. "There is a lot of interest in the technology among small manufacturers," says Suib. "They use a variety of fuels, all requiring different catalysts and different processes."

-Article adapted from UConn Today



Photo courtesy of:
bio-fuel-watch.blogspot.com

Clean, Green Chemistry



Prof. Nicholas Leadbeater

Nicholas Leadbeater has a reputation. People call him a “microwave chemist,” because he—you guessed it—is a chemist who uses microwaves in his laboratory. But even though these humble machines have enabled him to develop chemical techniques that are faster, cleaner, and “greener” than many similar methods before them, the associate professor of chemistry doesn’t give them too much credit.

“There’s nothing magical to microwaves,” he says. “We

use microwaves to facilitate what we do, and that’s chemistry—chemistry with a purpose and a use.”

Using two of the chemical reactions that earned the Nobel Prize in chemistry earlier this month, Leadbeater has over the past decade discovered techniques for making natural products, pharmaceuticals, polymers, and other advanced materials with a fraction of the waste, in a fraction of the time, and at a fraction of the cost. The techniques he has developed allow scientists to quickly and easily create products, such as potential new medicines, to be tested for use in the marketplace.

“Our work builds on what these famous Nobel Prize winners [Richard Heck, Ei-ichi Negishi, and Akira Suzuki] did: we’re developing new ways to build new molecules,” says Leadbeater.

A Clean Water Act

Conventional chemistry often uses a combination of high temperature, a high level of pressure, a catalyst, and a liquid chemical solvent to make a chemical reaction happen. But the appeal of microwaves was that they allowed chemists like Leadbeater to reach higher temperatures and pressures more safely and easily than conventional heating methods. This led to his first discovery.

Chemical reactions generally need to occur in some sort of fluid, and the standard approach is to use organic chemicals as solvents. Using water and his microwave, Leadbeater shortened the famous Suzuki reaction—the procedure named for Akira Suzuki that won him a share of this year’s Nobel Prize—from several hours down to just five minutes. Not only did this procedure save chemists immense amounts of time, but it also greatly reduced the waste byproducts created when using organic solvents. Now, instead of having to incinerate their waste, Leadbeater found that much of it was clean enough to reuse.

Leadbeater then turned his attention to the other part of the equation: chemical catalysts. The element palladium was traditionally thought to be the best catalyst for these Suzuki reactions, but wasn’t as readily available as other more common metals. When Leadbeater found that the reactions worked just as

well using copper or lead, he says, “alarm bells started going off in my head.”

Leadbeater then set about describing the minimum amount of palladium needed to run a Suzuki reaction. He found that the metal was necessary in only trace amounts: 50 parts per billion, or the equivalent of 50 drops of ink in a tanker truck full of water.

Scaling Up

Creating amounts of newly-discovered products large enough to be tested for commercial use meant that chemists would now need to scale up their research. Reactions that produced a milligram would need instead to produce a kilogram of product.

“Getting to this level of scaling was a big leap because of engineering and safety issues,” says Leadbeater. Microwaves not only afford greater heating and pressure, but need to be constructed with a cavity that protects the reaction from the outside world, and vice versa. However, with the right microwave equipment, Leadbeater and his recently graduated students William Devine, Chad Kormos, and Jason Schmink showed that it is possible to easily scale up these reactions.

Leadbeater says these discoveries are also an invaluable tool in the classroom. Microwaves have made it possible to complete a reaction in the laboratory that once took hours in mere minutes, a feat that allows students much more flexibility and time to actually experiment in the lab.

Leadbeater’s microwave chemistry techniques have been included in one of the major organic chemistry lab manuals in the country (*Clean, Fast Organic Chemistry: Microwave-assisted Laboratory Experiments*, 2006). Although not all chemistry teaching labs have access to microwaves, a growing number are investing in them, he says.

Going with the Flow

Despite using microwaves extensively in his lab, Leadbeater is now turning his attention to another new technique that could be the next wave of chemistry innovation.

Called flow chemistry, this new idea uses a metal or plastic tube coiled tens or hundreds of times around a central heating apparatus. Reaction mixtures are flushed through these coils, which heats the liquid evenly and effectively. Using this approach allows much greater control over the time a reaction is exposed to heat, which Leadbeater says can eliminate unwanted byproducts.

Leadbeater and many of his colleagues think that flow chemistry is the field’s next big thing. “Seeing what we can do with flow chemistry is a hot topic at the moment,” he says. “We’re starting to feel excitement now about flow. It’s the same kind of excitement we were feeling with microwaves 10 years ago.” Although microwaves have contributed greatly to Leadbeater’s success over the last decade, he firmly believes that technology is simply a tool to do more interesting chemistry, and he’ll never be wed to just one technique.

“We want to be the early adopters when new equipment becomes available,” he adds. “You’ve got to recognize an opportunity and just jump.”

Outreach Update

-Article by Mary Ann Ruud

The Chemistry Department continues to inspire young adults to pursue science, math, engineering, and technology fields by hosting exciting events that challenge middle school and high school students from the region. This spring, these events have brought over 500 of the best and brightest students to the UConn campus, allowing us to showcase our sophisticated facilities and talented faculty.

On February 26th, we held the 6th Annual Middle School Science Bowl, with 30 teams and over 300 students involved in a Jeopardy competition and in fuel cell car races. This was our largest Science Bowl so far. The winning team, Academy for Science and Design, Merrimack, NH, consisted of Caleb Avery, Alexander Jaferey, Bryan Li, Sahil Shah, Aashish Welling, and their coach, Jennifer Betournay. The team then competed at the National Event in Washington, D.C., placing in 5th place overall.

The 48th Connecticut Junior Humanities & Science Symposium is a first-rate event that invites high school students to present research they have independently conducted. This year's winner, Yiyuan Hu of Hamden High School, presented "Role of MyD88 in DNA Damage Response." He was awarded a scholarship

valued up to \$16,000 to the University of Connecticut. Forty three students presented oral presentations and poster presentations that were judged by faculty, graduate students and teaching professionals. Another 100 students attended the event to learn the process of presenting science research. The students stayed overnight, participating in fun science workshops, and awoke



*Connecticut Middle School Science Bowl:
Academy for Science and Design, Merrimack
NH: Caleb Avery, Alexander Jaferey, Bryan Li,
Sahil Shah, Aashish Welling, and their coach
Jennifer Betournay*

the following day to observe their fellow students present and to tour research laboratories throughout the campus. Our keynote speaker, Ron Mallet of the UConn Physics Department, wowed them with a speech about time travel. The Chemistry Department left a great impression on these students, and I am certain they will consider putting UConn at the top of their lists when they consider universities after high school.

Kids are Scientists Too (KAST) had a successful summer with 108 students participating in workshops on the campus. Year after year, parents rave about these camps. One in particular said, "Keep up the great work! I would recommend this to any family who has academically inclined or intellectually curious children. Thank you for providing such a wonderful program for our children!" Dr. Martha Morton taught the chemistry workshop this summer, and it was a delight to see young children enthused by her demonstrations and the hands-on experiments she had them conduct.

If you are interested in supporting an Outreach event by volunteering or by any other means, we are always gratefully accepting help. Please contact our main office and you will be directed to the correct person.

Undergraduates Visit China

This past July, three UConn students were flown to Shanghai, China, where the 2011 Universitas21 Undergraduate Research Conference was being held. One of the students, Dayton Horvath, is a senior chemistry major conducting his University Scholar Project/Honors Thesis in Dr. Suib's research group. Here is a personal account:

Our first day started with meeting conference members from New Zealand, Canada, the Netherlands, and Australia. We met other students from over a dozen nations as the days passed. Our little group stumbled upon the Shanghai Aquarium and the Shanghai National Museum. Visits to ancient lingering gardens and Tiger Hill showed the rich,

traditional history of the country. In the evening, a boat tour on the Huangpu River aboard a two-headed dragon ferry showcased the skyscrapers that doubled as billboards, lighting up the skyline. The food was very unique; adventurous eaters were rewarded as the quality was always excellent, and the variety rarely left you without options.

As for the academic experience, it was a multidisciplinary conference ranging from social psychology to economics and tax law, all the way to chemical physics, surface science, biology, medical research, and various engineering disciplines. The diversity of research, including over 30 oral presentations and 20 or so poster presentations cre-

ated an atmosphere of curiosity and interest throughout the event hall. I got the opportunity to see a chemical physics lab at the university through one of the students from Fudan University, as his research was quite similar to my own at the conference. These seven days in Shanghai have given me some unforgettable memories. Although I may not visit China again anytime soon, there are half a dozen countries where I can feel welcome, given all the friends and connections I have made. It was truly a one of a kind conference that will be a part of me forever. The hospitality, the people, and the city have made me a better world traveler, while the presentations motivate me to learn and discover even more.

Distinguished Chemist Returns to UConn



Alumni, Azita Owlia

When Azita Owlia, PhD '84, traveled from her home of Tehran, Iran to visit family in Connecticut in 1978, she didn't expect to stay – let alone to go on to earn a BS, MS and PhD in chemistry at UConn. But when the senior vice president at Bayer Material Science returned to Storrs this year for the first time in 23 years, her heart swelled with nostalgia for her former home.

"It was such a homecoming for me," Owlia said. "It's been such a long time, but every time I hear people talk about UConn, I have such a sense of pride."

Owlia returned to UConn as the first recipient of the chemistry department's Distinguished Alumni award, presented by her graduate adviser, Professor Jim Rusling. The award recognizes Owlia's achievements in the field of chemistry and materials science, and also as a trailblazer: she is the first woman vice president at Bayer.

After earning her PhD, Owlia took a job as a chemist at Bayer in Houston, Texas, and earned a business degree in the evenings. Now, more than a decade later, she's based in Hong Kong but spends most of her time traveling for the company, which conducts \$50 billion in sales yearly. Although she admits that for much of her life she's been a woman in a man's world, Owlia has never seen her situation as having to do with gender. "I love diversity, and Bayer is very diverse. I take pride in that," she says. "It's not really about being male or female because everyone comes from such different backgrounds. And we naturally find areas of commonality with other people."

Owlia also spoke with chemistry graduate students during her visit and encouraged them to follow the advice that she always gives herself. "I tell students that they should be open-minded," she says. "I didn't have every step planned in my life. When you have an open mind, you expose yourself to things you never thought you'd find."

-Article adapted from CLAS Today

Departmental News

ACS Fellow

The American Chemical Society has named 213 members as ACS Fellows, including our own Steven Suib. The new fellows will be honored at the society's fall meeting in Denver later this month. The Fellows program began in 2009 as a way to recognize ACS members from academe, industry, and government for outstanding achievement in and contributions to science, the profession, and ACS.



*Photo courtesy of:
pubs.acs.org/cen/*

Honors Faculty Member of the Year

The Honors Program recognizes William Bailey as the 2010-2011 Honors Faculty Member of the Year Award recipient. Professor Bailey was honored at the 2011 Medals Ceremony on April 30, 2011.

Journal Dedicates an Issue to Professor William Bailey

The organic journal, *ARKIVOC*, Volume 2011, Pt. V is a commemorative issue honoring Bill Bailey for his 65th birthday. The issue includes 20 papers covering 262 pages. The authors of the papers are friends, students, and colleagues of Professor Bailey.

Innovation Connection

The Department of Chemistry hosted the Innovation Connection on April 21, 2011. The Innovation Connection's mission is to foster innovation and opportunity creation by bringing together members of entrepreneurial, business, and academic communities to collaborate. The event included faculty members, department heads, and deans from UConn and industrial researchers and investors from Connecticut. The purpose of the program was to initiate new efforts between academic and industrial researchers and make everyone aware of the different ongoing research and development programs occurring throughout the state of Connecticut.

Committee Chair

Robert Michel has been selected as the new chair of the College of Liberal Arts and Sciences Courses & Curriculum Committee.

Marathon

Aimee Morey and Amy Lafountain ran the 2010 Philadelphia Marathon in November, 2010 and the Vermont City Marathon in Burlington, VT in May, 2011. Aimee Morey, now a UConn Chemistry faculty member, was a PhD candidate working in Professor Steven Suib's research group. Amy Lafountain is a laboratory technician in Professor Harry Frank's research laboratory. This chemistry duo has been running together and training for 2 years now.



Morton to Head Nebraska NMR Facility

After eleven years of dedicated service, our NMR Director, Martha Morton, is leaving the University of Connecticut. Dr. Morton has created and maintained UConn NMR labs—one in chemistry, one in pharmacy—while training students in the art of NMR spectroscopy.

One of Martha's big achievements was installing three NMR spectrometers in her lab during the spring semester of 2004. This was a major physical and technological accomplishment. Her final achievement at UConn was spearheading a \$190K grant from the NSF for the installation of an Advance II 400 console this past August. The new NMR system is more sensitive and allows the recording of NMR spectra of every NMR-active nucleus without the need to change probes. For in-

stance, new capabilities have allowed Professor Brückner's research group to acquire ^{19}F - ^{19}F and ^1H - ^{19}F correlation spectra, allowing the characterization of compounds that previously were little understood.

Martha has trained hundreds of students in NMR spectrometry. She is one of the unsung heroes, helping students develop important skills that will help them succeed as scientists. Martha has accepted a position with the University of Nebraska as the NMR Director/Associate Professor of Research, where she will begin December 14th. The faculty, staff, and students of UConn will miss the skills and knowledge that Martha brought to the department and her lighthearted, good-natured attitude.

Degree Recipients

Bachelor of Science

Mary Banh
Anusuya Bharadwaj
Tanner Burk
Kyle Cole
James Dombroski
Rachel Feldstein
Daniel Hagen
Jackson Herget
Edward Kissel
Andrew Koutrakos
Monique Lai
Pamela Levesque
Morgan Marx
Alexandra Moore
Stacy O'Brien
Elizabeth Pedrick
Joseph Qui

Allesandro Rizzo
Matthew Rovero
Jennifer Schrader
Timothy Walsh
Danny White
Jiawen Xiao
Eric Willett
Aliaksandr Yeudakimau

Master of Science

Ian D. Berghorn:
United States Army
Shaun C. Christian
Leah R. Giaccotto
Ron R. Ramsuhag:
PhD Candidate,
Florida State University

Keegan E. Soncha:
Teacher, Cheshire
Academy

Doctorate of Philosophy

Chun-Hu Chen: Postdoc,
The Ohio State
University
Michelle L. Dean:
Assistant Professor,
Kennesaw State
University
Tanmoy Dey: Research
Scientist,
Bioformix
Michael A Invernale:
Postdoc, Children's
Hospital, Boston and MIT

Chad M. Kormos: Postdoc,
RTI, North Carolina
Sadagopan Krishnan:
Postdoc, Oxford
University, UK
David P. Penaloza, Jr.:
Postdoc, Japan
Paromita Raychaudhury:
Postdoc,
Sloan Kettering
Lauren M. Stencil:
Laboratory
Instructor, Amherst
College
Linlin Zhao: Vanderbilt
University

Student Recognition

American Chemical Society Award

*Presented to the Top
Graduating Senior*
Joseph Qiu

American Institute of Chemists Award

Elizabeth Pedrick

ACS Division of Analytical Chemistry Award

Patrick Field

ACS Division of Inorganic Chemistry Award

James Dombrowski

Catherine DeStefano Rossi Memorial Scholarship

Gina Guerrero

CRC Press Chemistry Achievement Award

Katie McClain
Laura Purcell

Dr. Victor Rizza Scholarship Fund

Faith Crittenden
Dayton Horvath
Jessica Johnson
Johnna D'Amruoso
Gina Guerrero

Hach Chemistry Teacher Scholarships

Kendrick Henes
David Thibodeau

Roland Ward Thesis Award

Joseph Qiu

Summer Undergraduate Research Fund Grants

Patrick Field

William R. Granquist, Jr. Memorial Scholarship

Christine Scanlon

Alumni News

Natalie Shurman, BS '44,
36 years as an analytical Chemist for Esso, American Cyanamid,
and Canada Dry. Also spent 15 years as a manager with Canada
Dry. Now retired and living in Massachusetts.

Ralph Moyer, PhD '69 with John Tanaka,
Scovill Professor at Trinity College, Hartford, CT.

Richard Molinelli, PhD '71 with John Tanaka,
Joined the Analytical Research Department of Stauffer Chemical
Company as a research chemist. In 1979, he was promoted to a posi-
tion in the corporate Regulatory Department. Stauffer was sold in
1986 at which time he founded a regulatory affairs consulting firm
serving the chemical industry until 1999. He then joined a retained
search firm focused on engineers and scientists. In 2003, he joined
Western Connecticut State University as a Chemical Technical Spe-
cialist and also serves as an adjunct professor.

Conrad Stanitski, PhD '71 with John Tanaka,
Conrad grew up in eastern Pennsylvania and received his B.S. de-
gree from Bloomsburg State. After briefly teaching and coaching at
the high school level, he received a masters from Northern Iowa and
a Ph.D. from the University of Connecticut. Conrad began his col-
lege teaching at Georgia State University where he also began his
career as a writer and has since written a number of popular chemis-
try textbooks. After serving as assistant to the president of Franklin
and Marshall and as Provost at Mount Union, Conrad became chem-
istry department chair at UCA in 1992. During his tenure as chair,
Conrad oversaw a significant increase in the research activities in
the department and the certification of the department by the Ameri-
can Chemical Society. He has served since that time as an adjunct
professor at Franklin and Marshall.

Timo V. Ovaska, PhD '90 with Bill Bailey,
Timo Ovaska, the Hans and Ella McCollum Vahlteich Professor of
Chemistry at Connecticut College, is the recipient of the 2010 Nancy
Batson Nisbet Rash Faculty Research Award, presented annually to
a faculty member selected on the basis of outstanding scholarly or
artistic accomplishments (<http://www.conncoll.edu/news/6257.cfm>).
Ovaska is interested in the development of novel methods and strate-
gies for the preparation of complex polycyclic ring systems that may
have medicinal benefits.

Lyn M. J. Zarcone, PhD '90 with Bill Bailey,
Lyn is Vice President-International at Sherwin-Williams Auto-
motive Finishes.

Heather N. Gilletti (now Heather N. Frost), BS '99,
Senior Scientist, Pfizer Inc. Co-author of Chapter 17,
Practical Synthetic Organic Chemistry: Reactions, Princi-
ples, and Techniques. Edited by Stéphane Carone, John
Wiley & Sons Inc., Copyright 2011.

Regina So, PhD '03 with Amy Howell,
Associate Professor at the Ateneo de Manila University,
Philippines. Recipient of the Outstanding Young Scientist
award for 2011 by the NAST, Philippines.

Matthew R. Luderer, PhD '04 with Bill Bailey,
Matt, Associate Professor of Chemistry at the University of Pitts-

burgh at Greensburg, was the recipient of the University of Pitts-
burgh Chancellor's Distinguished Teaching Award for 2011 ([http://
www.chronicle.pitt.edu/?p=7679](http://www.chronicle.pitt.edu/?p=7679)). Luderer was selected to receive
the award because of his "many contributions to the Biology and
Chemistry curricula of the University of Pittsburgh at Greensburg,"
the chancellor wrote in his notification letter. Specifically, the chan-
cellor cited Luderer's development of an organic chemistry labora-
tory manual, which was published by McGraw Hill in 2007.
In addition, Luderer also has been chosen by 45 students as a mentor
for their undergraduate senior capstone experiences. "As is evident
from your outstanding student evaluations, your classroom teaching
is inspiring while simultaneously making a traditionally difficult
subject, Organic Chemistry, enjoyable for your students. ...You
consistently provide your students with the tools and methods to
pursue their professional goals." Luderer also developed a teaching
assistant training program for the organic laboratories designed for
students who plan to pursue a graduate degree in chemistry or
biology.

Nathaniel (Neil) C. Lim, PhD '04 with Christian Brückner,
Recently became Associate Director of Radiopharmaceutical Devel-
opment at Avid Radiopharmaceuticals (now a wholly owned sub-
sidiary of Eli Lilly and Co.), located in Philadelphia, PA.

Mark R. Luderer, PhD '07 with Bill Bailey,
After finishing law school at Boston University, Mark joined the
firm of Woodcock Washburn, LLP in Philadelphia, PA.

Justin D. Fair, PhD '09 with Bill Bailey,
Justin, an Assistant Professor of Chemistry at Indiana University of
Pennsylvania (his alma mater), was the recipient of the IUP Center
of Teaching Excellence Award for 2011.

Amber Onorato, PhD '09 with Micheal Smith,
Assistant professor at the college of St. Benedict and St. John in
Minnesota.

Yu Shi, PhD '09 with Xudong Yao,
After completing postdoctoral research with Professor Ian Blair at
University of Pennsylvania, Yu Shi started her industrial career with
Glaxo Smith Kline in April 2011.

Ashley L. Bartelson, PhD '11 with Bill Bailey,
Ashley began her independent career as Assistant Professor of
Chemistry at Seton Hill University in Greensburg, PA in fall of
2011.

Anais Espinal, PhD '11 with Suib Group,
Materials Scientist Engineer at United Technologies Research Cen-
ter (UTRC), East Hartford, CT.

Elisa Farber, PhD '11 with Amy Howell,
Post doc at the University of Pittsburgh with Dr. Peter Wipf.

Lei Jin, PhD '11 with Steven Suib,
Research Chemist, MacDermid, Waterbury, CT.

Alumni, Please Send Us Your News



What's new?

Degrees, Jobs, Promotions, Marriage, Births,
Awards, Publications, etc.?

The Department of Chemistry would love to
share the great news with
members of the department and
fellow alumni!

Send us your updates, and we'll feature your
story in the next publication!

Please mail or e-mail your updates
to Ashley Butler at:

Ashley Butler
Department of Chemistry
University of Connecticut
55 North Eagleville Road, Unit 3060
Storrs, CT 06269-3060
Tel: (860) 486-2012
Fax: (860) 486-2981
ashley.butler@uconn.edu

Investing in the Future

The Chemistry Department has experienced significant growth over the last decade. Currently we have ~150 graduate students and 190 undergraduates in chemistry programs. While this is exciting for us, it is a challenge to provide essential enrichment opportunities in the face of shrinking budgets. The following UConn Foundation accounts help supplement the activities and opportunities that are a vital part of the UConn chemistry experience. We hope that you will assist us by contributing to the program that best represents your hopes for the future of the department.

The three funds are:

An unrestricted **Chemistry Department Account (20111)**. This money is used to assist the Department in everything from maintaining supplies to making it possible for us to invite top-level scientists into the department.

The **Chemistry Undergraduate Development Fund (22491)**. This account will be used to enrich and expand the Department of Chemistry undergraduate program, from equipment and instrumentation, to making it possible for talented students to present their work at meetings, to scholarships.

The **Alumni Graduate Student Development Fund (22492)**. This account will be used to enrich and expand the Department of Chemistry graduate program, from helping us to attract the best quality graduate students, to summer support, to helping expand the research possibilities for talented students.

The **Emeritus Fund for Undergraduate Chemistry Research (30496)**. This account is used to fund internships for freshman and sophomores participating in the Undergraduate Research Apprentice Program. This offers a unique research opportunity for students just beginning their scientific career path.

Donations should be mailed to the UConn Foundation:

The University of Connecticut Foundation, Inc.
2390 Alumni Drive, Unit 3206
Storrs, CT 06269-3206

In the memo line, please note the fund(s) of your choice:

**Account 20111 | Account 22491 | Account 22492 |
Account 30496**

Or, visit our website:

<http://clas.uconn.edu/deptgiving/chemistry.html>

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