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Ellen R. Fisher

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Message from the Chair



As 2013 comes to a close, I am watching the snow fall outside my office window and yet cannot really believe it is already December! Finals and graduation are just two weeks away and Christmas is coming in 3 weeks, so my to-do list is about a mile long and growing. As you will read inside, our faculty and students continue "to do" amazing work that is being recognized globally. This fall, there is much "to-do" over our new faculty members, Jamie Neilson and Randy Booth. Jamie is an inorganic/materials chemist who comes to us from a postdoctoral position at

Johns Hopkins University and is interested in structure-property relationships in a wide range of materials systems. Randy is our new Academic Support Coordinator who will be working to build our programs and support mechanisms for our undergraduate majors and teaching in our General Chemistry program. Both Jamie and Randy have already had an enormous impact on the Department and will undoubtedly continue to do so over the coming years. We are also pleased to announce the first recipients of two new endowed graduate fellowships, the Louis S. Hegedus Fellowship and the Albert I and Joan Meyers Memorial Fellowship. Prof. Lou Hegedus, a synthetic organic chemist and University Distinguished Professor, was a long time member of our Department who had a deep, lasting and positive impact on both the Department and CSU. Lou continues to reside in Fort Collins and participated in the Department's recent symposium honoring Prof. Robert Williams. Prof. Al Meyers was also a synthetic organic chemist and University Distinguished Professor, and is largely credited with building the Department of Chemistry at CSU into a major, world-renown research-based department. Although Al passed away a number of years ago, he built a powerhouse organic chemistry program, which continues in our department today. Both Al and Lou were energetic mentors of both students and junior faculty and these fellowships seek to honor Al and Lou by supporting synthetic organic graduate students working for young faculty. I am excited that with these inaugural awards we are establishing what I hope will continue to be a true living legacy to the contributions these preeminent scientists made to our community. And now, I can cross at least one thing off my "to-do" list and move on to the next task I've been procrastinating on while watching the beautiful and ever-changing seasons in Colorado! As always, I encourage you to stay in touch and let us know what's going on with you. Please feel free to contact me at Ellen.Fisher@ColoState.Edu I wish all of you a safe and happy holiday season.

Upcoming Events

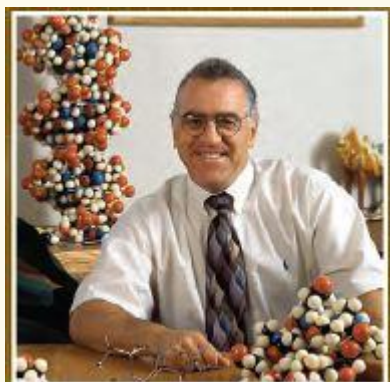
December 18, 2013
Chemistry Winter
Open House

December 20, 2013
Graduate
Commencement

December 21, 2013
Undergraduate
Commencement

Giving at Chemistry

Campaign for New Williams Endowed Chair



The College of Natural Sciences has begun a new campaign to establish the Dr. Robert Williams Endowed Chair in Chemistry. Dr. Williams has been dedicated to involving many students in his research through the Williams Research Group, training successive generations of scientists who are making their own marks in bio-organic chemistry and biosynthesis. His students have gone on to careers as scientists at pharmaceutical companies and as educators. "I love watching students become scientists," Dr. Williams has said. "By the time they are done here, they're ready to take on the world, and that's very satisfying."

The Dr. Robert Williams Endowed Chair in Chemistry will allow Colorado State University to recruit to the College of Natural Sciences, an established organic chemist or chemical biologist who is an outstanding scholar, gifted teacher, and exceptional researcher, who has made significant contributions to his or her field of study. Attracting and retaining top scholars and researchers allows Colorado State to recruit the best undergraduate and graduate students from Colorado, the nation, and around the world. A faculty member who is awarded the Dr. Robert Williams Endowed Chair in Chemistry will bring ongoing prestige to the University through research, mentoring, published works, and speaking engagements.

Please join us with a gift to support the Dr. Robert Williams Endowed Chair in Chemistry (<https://advancing.colostate.edu/WILLIAMSCHAIR>), and continue the legacy of teaching, mentoring, and groundbreaking research conducted by Dr. Williams, his colleagues, and his undergraduate, graduate, and postdoctoral students.

Giving to Chemistry

Through the generous gifts of Chemistry alumni and friends, we are able to offer support to our students as well as resources to our faculty. Financial assistance through scholarships is very important to our students, and in many cases allows them to stay in school. In addition to improving learning opportunities, gifts also play a critical role in providing faculty the needed resources to perform cutting-edge research.

To make a gift, please visit <https://advancing.colostate.edu/CNS/CHEM/GIVE/>



Honors and Accomplishments



Professor Tom Ravis Named a 2013 Arthur C. Cope Scholar

John K. Stille Professor of Chemistry **Tom Ravis** has been named a 2013 Arthur C. Cope Scholar by the American Chemical Society, one of the most prestigious honors in organic chemistry. Continuing a long-standing history of excellence in organic chemistry at CSU, Ravis is the sixth member of the Chemistry Department to win the award, which includes a \$40,000 research grant and \$5,000 for Ravis.

Ravis's current work focuses on organic synthesis and methods that will make the creation of complex molecules faster and simpler. "We're trying to make molecules do things they're not supposed to do — turning them on their heads, so to speak," Ravis said.

If Ravis and his team of graduate and undergraduate researchers can find ways to accelerate the process, the work could help speed other research. For example scientists searching for a cure for cancer will be able to test results much faster than current methods allow.

Professor Delphine Farmer Receives Beckman Young Investigator Award

Assistant Professor **Delphine Farmer** is one of seven scholars who received the 2013 Beckman Young Investigator Award, an honor bestowed by the Arnold and Mabel Beckman Foundation that helps promote research in chemistry and the life sciences.



Dr. Farmer focuses her research on how chemistry in the atmosphere affects climate and the human population. Through the Beckman award, her goal is to build new instrumentation that will be more portable, stable and straightforward than the instrumentation atmospheric scientists use now. "The hope is that we'll be able to look at many different types of reactive trace gases in the atmosphere more rapidly and with more sensitivity than has previously been possible," said Farmer.

The instrumentation will also help chemists monitor pollutants by finding patterns in the atmosphere through field measurements as well as allowing scientists to use the new instrument to examine the acidity in the atmosphere and understand how it works to affect aerosol particles and their impact on air quality and climate, in addition to other broad applications.

Professor Amber Krummel Receives NSF CAREER Award

Assistant Professor **Amber Krummel** was awarded a \$600,000 five-year CAREER Award from the National Science Foundation. The NSF CAREER Award is a prestigious 5-year award in support of junior faculty who exemplify the role of teacher-scholar through outstanding research, excellent education and the integration of education and research.



The research goal of Dr. Krummel's CAREER project aims to identify the means by which a small pore-forming toxin, surfactin, will interact with model lipid membranes using two-dimensional infrared (2D IR) spectroscopy.

The educational component of Krummel's CAREER award focuses on producing a stronger foundation in mathematics and programming skills for undergraduate chemistry majors at CSU. During the course of this project, undergraduate researchers and graduate student researchers will be trained in advanced optical spectroscopy techniques, chemical modeling and data analysis. The same approaches also will be incorporated into the undergraduate curriculum for CSU chemistry majors.

Graduate Students Receive Honors from Protein Society

Graduate student **Sandra DePorter** (McNaughton Group) was honored with a Graduate Best Poster Award at the annual Protein Society Symposium. Sandra was one of only eight graduate students



Brett Blakely, Sandra DePorter & Lynne Regan, Yale University and Protein Society President

selected from a pool of 942 poster abstracts. Also acknowledged with this honor are Sandra's colleagues in the McNaughton lab, second year graduate student Virginia Bruce and three undergraduate researchers (Irene Lui, Melissa Gray, and Monica Lopez-Islas), all of whom have either co-authored published papers with Sandra, or have co-authored manuscripts currently under review.

In addition, Sandra and fellow fifth-year McNaughton group graduate student Brett Blakely received Finn travel awards from the Society. All of these honors highlight the international recognition the McNaughton group has recently garnered.

Honors and Accomplishments

CSU-CU Chemistry Team Scores Big with \$4.4M Grant for Sustainable Chemical Synthesis



Profs. **Eric Ferreira**, **Tony Rappé**, **Tom Rovis**, and **Matt Shores** along with CU-Boulder Associate Professor Niels Damrauer recently landed a four-year \$4.4 million NSF/EPA grant, one of the largest federal grants ever awarded to the CSU Chemistry Department and one of only 4 chosen nationwide.

The grant establishes a new Networks for Sustainable Molecular Design and Synthesis. The project combines a range of synthetic strategies to design inexpensive, selective, earth-abundant and solar radiation absorbent molecular catalysts. The research, led by PI Dr. Anthony Rappé, will investigate whether earth-abundant materials such as iron and titanium, when exposed to sunlight, can provide the chemical reactions required to create specific pharmaceuticals. If successful, the research could make pharmaceutical discovery and production safer and more environmentally friendly.

The lessons learned are expected to greatly improve the way chemistry is taught in grades K-12 and beyond. The project includes support for new educational initiatives and will also entail outreach efforts in partnership with Bill Timpson of CSU's School of Education as well as the Department's Undergraduate Chemistry Club.

Professor Amy Prieto Represents US at the 2013 Chemical Sciences and Society Summit

Associate Professor **Amy Prieto** travelled to Tokyo as part of a six person delegation representing the US and the American Chemical Society at the annual Chemical Sciences and Society Summit, or CS3, meeting of chemists from the US, Great Britain, Japan, China & Germany.

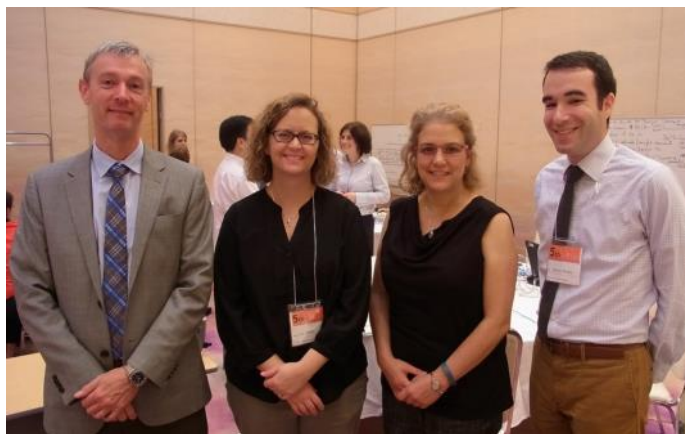
The annual CS3 meeting brings together the best minds in chemical research from around the world and challenges them to propose innovative solutions for society's most pressing needs in the areas of health, food, energy, and the environment. This unique event rotates each year among participating nations, and each year generates a white paper that will hopefully guide research activities for the next 5-10 years. The topic for this year was "Efficient Utilization of Elements." The meeting focused on sustainable catalysis and related areas that have potential to replace or reduce the use of rare/precious metals, including materials with applications for energy and the environment.

The CS3 initiative is a collaboration between the:

- Chinese Chemical Society (CCS)
- German Chemical Society (GDCh)
- Chemical Society of Japan (CSJ)
- Royal Society of Chemistry (RSC)
- American Chemical Society (ACS)

The symposia are supported by the:

- National Science Foundation of China (NSFC)
- German Research Foundation (DFG)
- Japan Society for the Promotion of Science (JSPS)
- UK Engineering and Physical Sciences Research Council (EPSRC)
- US National Science Foundation (NSF)



CS3 Delegates (left to right): Professors John Arnold, UC Berkeley, CSU's **Amy Prieto**, and Karen Goldberg, University of Washington Seattle, and Dr. Steven Meyers, Manager, International Activities, Office of International Activities for the American Chemical Society.

Welcome New Faculty

The department welcomes 2 new faculty members this Fall. Dr. James Neilson joined the faculty as an Assistant Professor, with research focused in functional inorganic materials for energy and biomineralization. Dr. Randy Booth joined the department as our Academic Support Coordinator, Key Academic Advisor and general chemistry instructor.

Dr. James Neilson



After growing up in Seattle, James (Jamie) Neilson attended Lehigh University for his undergraduate studies in materials science and engineering (2006) and followed his interest in making materials to the

University of California Santa Barbara where he completed his Ph.D. (2011) on understanding the influence of kinetics of hydrolysis on the atomic structures of materials, under the supervision of Prof. Daniel Morse.

During his postdoctoral work at Johns Hopkins University, in the Departments of Chemistry and Physics & Astronomy with Prof. Tyrel McQueen, he worked on strongly correlated electron systems in materials. This fall he joins the faculty of Colorado State University as an assistant professor in the Department of Chemistry.

As an avid rock climber and runner, the foothills of Rocky Mountains have formed an ideal home for Jamie to study how chemistry can be used to modulate structure-property relationships in materials.

Dr. Randy Booth



Randy grew up in Grand Junction, Colorado and after graduating high school attended Utah State University, earning a B.S in chemistry.

Dr. Booth went on to pursue a Ph.D. in Medicinal Chemistry from the University of

Utah in Dr. Glenn Prestwich's lab, studying cell signaling mechanisms phosphoinositides.

Upon completion of his graduate work, he became a post-doctoral fellow with the Huntsman Cancer Institute, investigating the role of lipid mediated peroxiredoxin 1 signaling in oncogenesis.

For the past nine years Randy has been teaching general chemistry and biotechnology courses while working to create undergraduate research opportunities through the Innovabio program at Salt Lake Community College, as well as evaluating and implementing online methods of general chemistry instruction in collaboration with the chemistry department at Brigham Young University-Idaho.

Giving Supports Student Scholarships



Professor Albert I. and Joan Meyers Memorial Family Fellowship

This fellowship was created by the Meyers family in honor of Dr. Albert I. and Joan Meyers.

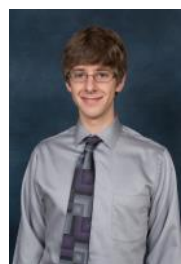
The growth in size and prestige of the Chemistry Department at CSU, the Organic Division in particular, can be directly attributed to Dr. Meyers' reputation and efforts. Professor Meyers' numerous achievements and contributions to organic chemistry have been recognized with over 75 national and international awards and honors. Pictured are Dr. Bruce Barner (Donor and former Meyers postdoc) and 2013 recipient Eric Newcomb.

Rodney Bush Fellowship in Organic Chemistry



The fellowship was created in memory of Rodney Bush through his wife, Mrs. Cheryl Bush. Rodney recruited for Procter & Gamble at CSU, and he specifically recruit-

ed CSU students due to their outstanding abilities. Pictured are 2013 Recipients Angeline Ta, Christine Dunne, Chemistry Chair Ellen R. Fisher, Randall Cannizzaro, and Scott Thullen.



Professor Leslie DiVerdi Scholarship

Established in honor of Dr. Leslie DiVerdi, a professor of Chemistry at Colorado State University from 1989 to 2009, the fund provides scholarships to benefit undergraduate students majoring in Chemistry. Mr. Ryan Whitcomb is the inaugural recipient of this scholarship.

ACS Hach Land Grant Scholarship and Clifford C. Hach Memorial Scholarship

The ACS Hach Land Grant Scholarship was established by the Hach Scientific Foundation to provide scholarships to undergraduates in the field of Chemistry and is administered by the ACS.

The Clifford C. Hach Memorial Scholarship was established by Kathryn Hach-Darrow in memory of her husband, Clifford C. Hach, founder of the Hach Company and provides financial support for exceptional undergraduates in the field of chemistry.



Professor Louis S. Hegedus Fellowship

Established in honor of Dr. Louis Hegedus, University Distinguished Professor, John K. Stille Chair, and professor emeritus of organic chemistry at Colorado State; the fellowship benefits graduate students in organic chemistry. Mr. Alex Chapman is the

2013 recipient of the Hegedus fellowship.



Dr. Jennifer Dawn Alexander Scholarship

This scholarship was created by Bruce and Carolyn Edlund as a remembrance of Jennifer's research impact as well as her bright and affable personality. This

scholarship will provide support to students majoring in chemistry who have made a significant impact upon, or who hold exceptional promise in, the field of chemistry. Pictured are 2012 recipient Lisa Lindberg, Professor Nancy Levinger, and 2013 recipient Hannah Vik.



Gary E. Maciel Fund

This fellowship was established by Mrs. Robert Nissen-Haugh to honor her family's long-standing involvement in science and education and to recognize the contributions of chemistry professor Gary Maciel. Recipients demonstrate outstanding academic achieve-

ment and promise in chemical research. Mr. Jacob Nite is the 2013 recipient of the Maciel fellowship.



ACS recipients Kelsey Schulte, Kristin Olsson, Susannah Miller, Chemistry Chair Ellen Fisher, Melissa Gray, Brittany Ramer, and Kenzi Moore. (not all recipients are pictured).

Recent Events

2013 NSF Research Experience for Undergraduates (REU) Celebrates 20 Years

For the 20th consecutive summer, the Department of Chemistry at Colorado State University hosted an NSF-sponsored undergraduate research program in chemistry. Currently co-directed by Chemistry professors Amy Prieto and Matt Shores, the 10 week program hosted 18 undergraduate student researchers.

Our unique summer experience combines an enviable environment with access to world-class researchers working in all areas of chemistry, at length scales ranging from molecules to extended materials. In addition to individual research projects, students participate in enrichment activities such as discussions on scientific ethics and career building skills. The program culminates with a poster session, highlighting the research progress of the participants.

Twenty-six potential faculty mentors, including faculty from Chemistry, Chemical & Biological Engineering, Mechanical Engineering, Electrical & Computer Engineering, and Soil and Crop Sciences, gives our program significant flexibility in matching participants to projects relative to other REU programs sponsored by NSF.

Visit our website at www.chem.colostate.edu/reu

Nobel Laureates Present Inspiring Lectures at CSU



Prof. Grubbs with sophomore David Mast (left) and senior Steven Glade (right)

Chemistry was honored to host two Nobel Laureates this fall. 2006 Nobel Laureate Dr. Roger D. Kornberg, Mrs. George A. Winzer Professor in Medicine at Stanford University on October 7, 2013 and Dr. Robert H. Grubbs, Victor and Elizabeth Atkins Professor of Chemistry at Caltech and 2005 Nobel Laureate, as the Boulder Scientific Distinguished Lecturer on October 18, 2013.

The 2005 Nobel Prize in Chemistry was awarded jointly to Robert Grubbs, Yves Chauvin (Institut Français du Pétrole) and Richard R. Schrock (MIT) "for the development of the metathesis method in organic synthesis". Grubbs earned his bachelor's ('63) and master's ('65) degrees from the University of Florida and his PhD from Columbia University in 1978. He spent a year at Stanford as a postdoctoral fellow before joining the Michigan State University faculty. He joined the faculty at Caltech in 1978 and was named the Victor and Elizabeth Atkins Professor of Chemistry in 1990.

The 2006 Nobel Prize in Chemistry was awarded to Roger Kornberg "for his studies of the molecular basis of eukaryotic transcription". Kornberg received his bachelor's degree in chemistry from Harvard in 1967 and his doctorate in chemistry from Stanford in 1972. He was a postdoctoral fellow and member of the scientific staff at the Laboratory of Molecular Biology in Cambridge, U.K., from 1972 to 1975. He joined Harvard Medical School in 1976 as an assistant professor in biological chemistry. Kornberg returned to Stanford in 1978 as a professor in structural biology.

Alumni Spotlight

Dr. Glenn D. Boutilier Receives 2013 CNS Honor Alumnus Award



The Colorado State University Alumni Association Distinguished Alumni Awards program recognizes CSU alumni and friends who have distinguished themselves professionally, brought honor to the University, and have made significant contributions of time and/or philanthropy to the university or their community.

Glenn Boutilier (BS '74, Chemistry), has worked for Procter & Gamble since 1980. He started as a staff scientist in the paper product development department, became a research fellow in 1992, and was admitted to the prestigious Victor Mills Society in 2000; it is the highest scientific and technical honor that can be bestowed upon a company technologist. Dr. Boutilier's area of focus is fiber modification and adhesion problems. He has worked on such products as the papermaking belt materials for Charmin, Glad Press N Seal, and Luvs elastomeric waistband. He has 21 U.S. patents assigned to Procter & Gamble. In 1995, Procter & Gamble received the National Medal of Technology Award, citing technology in the tissue and towel products that use technology covered by patents on which Dr. Boutilier is a co-inventor.

Dr. Boutilier received a doctorate in analytical chemistry from the University of Florida. He is a member of the American Chemical Society and the Society for Applied Spectroscopy. He has received several awards, including the Model Mentor Award (2003), Cincinnati Chemist of the Year (2003), and the Be Winners Award for Impress Process Development (2002). He has 19 publications in refereed journals, including two from undergraduate research at CSU. In 1983 a group of Procter & Gamble analytical chemists developed a one-day course to better inform chemistry students about careers as industrial analytical chemists. Dr. Boutilier has taught this course 54 times at universities, regional and national American Chemical Society meetings, and other conferences.

Dr. Boutilier and his wife, Donna, have enjoyed a season subscription at the Cincinnati Symphony Orchestra for more than 30 years. They have three daughters, Sara, Emily, and Joanna. The family has spent at least one week each summer on organized bicycle tours, including 21 years on the Great Ohio Bicycle Adventure. This summer, they completed the Transamerica Trail – a 4,300 mile cycling route from Virginia to Oregon.

Congratulations 2012-2013 Graduates!

Doctor of Philosophy

Daniel J. Bates	May 2013, Elliott
Ercan Bayram	August 2012, Finke
Jennifer M. Bubb	August 2012, Williams
Michael F. Cuddy	August 2012, Fisher
Daniel A. DiRocco	August 2012, Rovis
Qian Guan	August 2012, Henry
Jennifer M. Howell	December 2012, Wood
Megan S. Lazorski	May 2013, Elliott
Ashley M. McDaniel	May 2013, Shores
Daniel J. Pulsipher	December 2012, Fisher
David M. Rubush	December 2012, Rovis
Yupaporn Sameenoi	December 2012, Henry
Myles A. Sedgwick	December 2012, Levinger
Timothy R. Welch	December 2012, Williams
Philip A. Wheeler	May 2013, Rovis
Min Zhang	May 2013, Szamel

Bachelor of Science

Wala A. Algozeeb	August 2012*
Chelsea K. Anderson	May 2013*
Briana L. Carroll	December 2012*
David R. Daley	May 2013*
Jordan M. Dennison	May 2013*
Tucker H. Dunivan	May 2013*
Hannah C. Feldman	May 2013*
Lacey A. Fleming	December 2012
Craig W. Forsthoeft	May 2013*
April N. Hall	August 2012*
Ammon P. Lehnig	May 2013
Eric B. Martin	May 2013
Benjamin T. Melzer	December 2012*
Damaris L. Roosendaal	May 2013*
Zhuoran Wang	December 2012*
Garrett P. Wheeler	May 2013*

*ACS Certified

Master of Science

Kathleen M. Altmiller	December 2012, Reynolds
Rebecca L. Bayer	August 2012, Prieto
Jennifer M. Blaser	August 2012, Krummel
Nicole A. Forseth	August 2012, Prieto
Noah K. Hendricks	December 2012, McNaughton
Stacie E. Hoffman	August 2012, Bailey
Mark Holfelder	May 2013, Bernstein
Kristoffer R. Persson	December 2012, Elliott
Timothy B. Rhorer	August 2012, Rovis
Ryan R. Trott	May 2013, Levinger
Marie D. Trujillo	December 2012, Williams
Laura M. Wally	August 2012, Prieto/Rickey



Alumni News

Mark Boggs (B.S. 2006) received his Ph.D. from Washington State University and is currently a postdoctoral fellow at Lawrence Livermore National Laboratories.

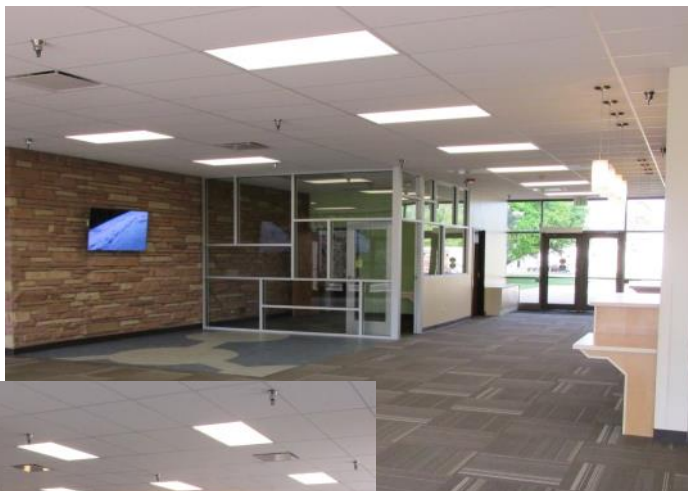
Lacey Scriven (BS 2003) is living in the Syracuse area where she owns a farm and vineyard with her husband Kevin.

Jason Smee, former postdoc with Dr. Debbie Crans, is a faculty member at the University of Texas-Tyler and received a University of Texas Systems 2013 Regents Outstanding Teaching Award.

What's New

Chemistry Lobby Hall Gets Facelift

Thanks to generous support from the University Facilities Fee Advisory Board as well as the College of Natural Sciences, the Chemistry lobby received a much needed facelift. Welcomed improvements include an Academic Advising Center for undergraduate students, two new study areas, and additional seating with charging stations.



Looking good! Accounting staff members Jane Burkman, Karen Kahler and Connie Cooley sport high-fashion hardhats during this summer's lobby construction.



Ah, the lazy days of summer! Don Heyse, staff instrument specialist with the Central Instrument Facility, retired after 17 years at CSU. Congratulations Don!