

Department of Chemistry Newsletter 2011

Message from the Chair

The Connecticut College Centennial was another eventful year for the chemistry department. In addition to the usual outstanding teaching and research being done in the department, we experienced a changing of the guard of sorts, as Colleen Kaczmarek retired as a Senior Lecturer and Dr. Adriana Rosa Taboada was hired into her position as a full time lecturer. This was also the first year on the job for Assistant Professor Tanya Schneider, who got started in fine fashion by being awarded a grant from the Research Corporation.

This summer also marked the beginning of major new construction and renovation of New London Hall. The new building will provide an excellent modern facility for the life sciences, which in turn will offer tremendous benefits to students in our interdisciplinary majors in chemistry majors in *ACS Biochemistry* and *Biochemistry, Cellular and Molecular Biology*. We look forward to the completion of this project in Fall 2012.

And as I finished writing this welcome message, Hurricane Irene came barreling up the east coast. Connecticut on the whole took a pretty good whack, but fortunately the College made it without significant damage.

Also as I finish this newsletter, I just received notice that our own Dave Lewis has been honored with the 2012 ACS Award for Research at an Undergraduate Institution. This prestigious national award recognizes Dave's 40+ years of research/teaching, mentoring, and professional service. Well deserved, Dave!

Best Regards,

Stanton Ching

Best Wishes to Colleen Kaczmarek in Her Retirement!



Dr. Colleen Kaczmarek retired from her lecturer position this spring after serving the Connecticut College chemistry department for 14 years. Colleen was a mainstay in teaching labs for general chemistry and organic chemistry. She also taught Molecular Science for non-majors and once co-taught a freshmen seminar. She will be remembered best for her excellent teaching and the countless hours spent in her office patiently working with students.

Colleen and her husband Frank retired to the White Mountains. They have looked forward to this opportunity for quite some time.

Best Wishes and Good Luck, Colleen!



Welcome Dr. Adriana Rosa Taboada!



This spring the department welcomes Dr. Adriana Rosa Taboada as a chemistry lecturer. Rosa has a BA from Rhode Island College, a Ph.D. in organic chemistry from UConn, and postdoctoral experience from Yale. Prior to becoming our colleague, she was a lecturer at Rhode Island College and Bridgewater State College. She will be taking on Colleen's teaching responsibilities in general chemistry, organic chemistry, and molecular science.

Welcome Rosa! We're so pleased to have you joining us!

Other News

Tanya Schneider was awarded a \$35,000 Cottrell College science grant from the Research Corporation. Her grant proposal is titled "Disarming Bacteria Through Inhibition of the Biosynthesis of Quorum Sensing Molecules".

Bruce Branchini was issued a United States patent for his group's engineering of an enhanced version of Italian firefly luciferase. It marks the first ever patent from Connecticut College.

Marc Zimmer was awarded an endowed chair professorship at the college, the Jean C. Tempel '65 Endowed Chair in chemistry.

Timo Ovaska was the keynote speaker at the Student Honors and Awards Ceremony. Timo was last year's recipient of the Nancy Rash Award for Faculty Research.

David Lewis has been named the 2012 recipient of the American Chemical Society Award for Research at an Undergraduate Institution. Dave will be honored and his achievements celebrated during the National ACS Meeting in San Diego this coming March. We hope CC chemistry alums will join us at Dave's award reception at the meeting.

Congratulations!
Class of 2011 Chemistry Majors

ACS Chemistry

Anna Bianchini David Kriz

ACS Biochemistry

Samantha Brackett Francis Martinson Wayne Ong

Biochemistry, Cellular and Molecular Biology

**Angela KC Samantha Linder Wyatt Somogyi Sarah Spiegel
Craig Stanton Kelsey Taylor Tara Travaline Robert Walsh David Wu**

Environmental Chemistry

Chelsea Johnson Greg MacLennon Shawn Mulcahy

Senior Honors Theses

David Kriz (Ching)	<i>Nanostructured Manganese Oxide Catalysts</i>
Sarah Spiegel (Ovaska)	<i>Study Towards the Synthesis of Guanacastepene A</i>
Kelsey Taylor (Branchini)	<i>Studies of Firefly Luciferase: Development of a Radiometric BRET-FRET-Based Factor Xa Protease Assay and Attempts to Chemically Trap Luciferase in the Second Partition Conformation</i>

Independent Study

18 different students carried out independent study projects in 2010-11.

Chemistry Department Awards

<i>ACS-Connecticut Valley Section Award</i>	Kelsey Taylor
<i>Jean V. Johnston Prize</i>	Wyatt Somogyi
<i>Dr. Joseph Nunes Pereira Prize</i>	Samantha Linder
<i>Paul Abel Swartz Memorial Prize</i>	Samantha Brackett
<i>American Institutes of Chemists Awards</i>	Wayne Ong and Sarah Spiegel
<i>CRC Press Chemistry Achievement Awards</i>	John Dronzek and Benjamin Bajaj
<i>Department Organic Chemistry Award</i>	Maia Taft
<i>ACS-Analytical Chemistry Award</i>	Amy Smith
<i>ACS-PolyEd Organic Chemistry Award</i>	Matthew Larkin

Publications (CC students in bold)

1. **Alex A. Samma, Chelsea K. Johnson, Shuang Song, Samuel Alvarez** and Marc Zimmer “On the Origin of Fluorescence in Bacteriophytochrome Infrared Proteins” *Journal of Physical Chemistry B* **2010**, *114*, 15362-15369.
2. Bruce R. Branchini, J. C. Rosenberg, D. M. Ablamsky, **Kelsey. P. Taylor**, T. L. Southworth and **Samantha J. Linder** “Sequential Bioluminescence Resonance Energy Transfer-Fluorescence Resonance Energy Transfer-Based Ratiometric Protease Assays with Fusion Proteins of Firefly Luciferase and Red Fluorescent Protein” *Analytical Biochemistry* **2011**, *414*, 239-245.

3. **Wayne J.-H. Ong, Samuel Alvarez, Ivan E. Leroux, Ramza S. Shahid, Alex A. Samma, Paula Peshkepija, Alicia L. Morgan, Shawn Mulcahy** and Marc Zimmer “Function and Structure of GFP-like proteins in the Protein Data Bank” *Molecular Biosystems* **2011**, 7, 984-992.
4. Stanton Ching, **David. A. Kriz, Kurt M. Luthy**, E. C. Njagi, and S. L. Suib “Self-Assembly of Manganese Oxide Nanoparticles and Hollow Spheres. Catalytic Activity in Carbon Monoxide Oxidation” *Chemical Communications* **2011**, 473, 8286-8288.

Student Presentations

1. **Samuel Alvarez, Ivan Leroux** and Marc Zimmer, “GFP-like Structures in the PDB – Yellow Chemistry and Proton Pumps,” Mercury Conference on Computational Chemistry, Hamilton College, August 1-3, 2010
2. **Ramza Shahid, Paola Peshkepija** and Marc Zimmer, “GFP-like Structures in the PDB – Natural Function & Cavity Effects,” Mercury Conference On Computational Chemistry, Hamilton College, August 1-3, 2010
3. **Binsen Li, Maritza Essis** and Marc Zimmer, “Water Diffusion In and Out of the GFP b-Barrel : TurboGFP And KillerRed.”, Mercury Conference On Computational Chemistry, Hamilton College, August 1-3, 2010.
4. **Jessica Yi**, David K. Lewis, A.B. Campbell, E.R. Klein and B.L. Kalra, "Kinetics of the Thermal Isomerization and Decomposition Reactions of Ethylcyclopropane," ACS National Meeting, Boston, MA, August 22-26, 2010.
5. **Erick Argueta** and David K. Lewis, "Temperature Dependence of Electrochemical Cell EMF: an Environmentally Friendly Physical Chemistry Lab Experiment." ACS National Meeting, Boston, MA, August 22-26, 2010.
6. **Sarah Spiegel** and Timo Ovaska, “Studies Towards the Synthesis of Guanacastepene A,” ACS National Meeting, March 27-31, 2011, Anaheim, CA.
7. **Binsen Li, Ramza Shahid, Paola Peshkepija** and Marc Zimmer, “Water Diffusion In and Out of the b-Barrel of Fast Maturing Fluorescent Proteins.” New England Science Symposium, Harvard Medical School, April 1, 2011. (Poster recognized with the Ruth and William Silen, M.D. Award, Honorable Mention)
8. **Binsen Li, Maritza Essis** and Marc Zimmer, “Water Diffusion In and Out of the GFP b-Barrel : TurboGFP And KillerRed.” Sigma Xi, North East Research Symposium, April 9, 2011.
9. **Binsen Li, Ramza Shahid, Paola Peshkepija** and Marc Zimmer, “Water Diffusion In and Out of the b-Barrel of Fast Maturing Fluorescent Proteins,.” Sigma Xi, North East Research Symposium, April 9, 2011.
9. **David Kriz** and Stanton Ching, “Synthesis and Characterization of Nanostructured Manganese Oxide Catalysts,” ACS Connecticut Valley Section Undergraduate Research Symposium, Trinity College, April 30, 2011. (oral presentation)
10. **Lauren Eichelberger, Yumi Kovic**, and Stanton Ching, “Manganese Oxide Hollow Nanospheres: Synthetic Routes and Catalytic Activity,” ACS Connecticut Valley Section Undergraduate Research Symposium, Trinity College, April 30, 2011.

11. **Sarah Spiegel** and Timo Ovaska, "Studies Towards the Synthesis of Guanacastepene A," ACS Connecticut Valley Section Undergraduate Research Symposium, Trinity College, April 30, 2011.

Other Happenings

Student Advisory Board co-chairs **Sammi Brackett '11** and **Wyatt Somogyi '11** represented the chemistry department at the Student Government Association-sponsored academic majors fair.

Sammi and Wyatt also designed and ordered beaker mugs for the department.



The **big hole is the ground** this summer in front of Hale and Olin is from construction on the long-awaited renovation and expansion of New London Hall. Chemistry is helping out a little bit by providing the biologists with temporary storage space for chemicals and equipment.

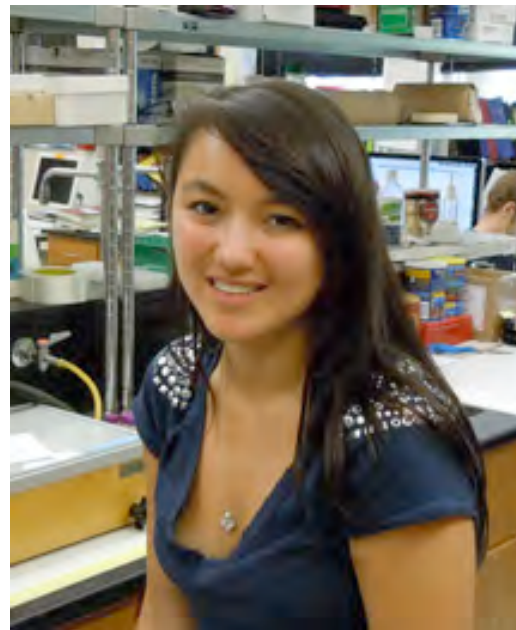
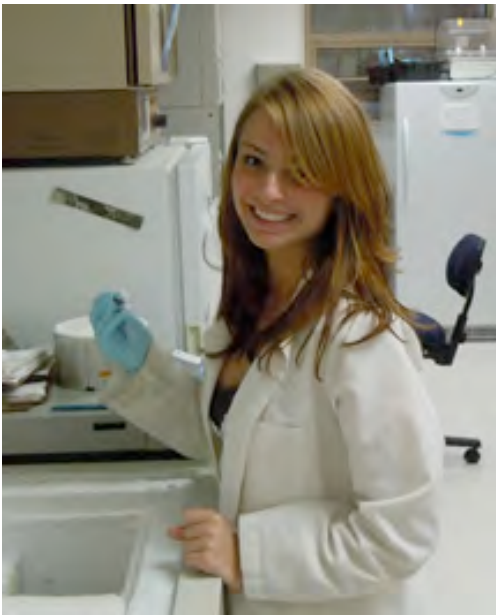
2011 Summer Research Students



In front of the early-stage New London Hall construction site



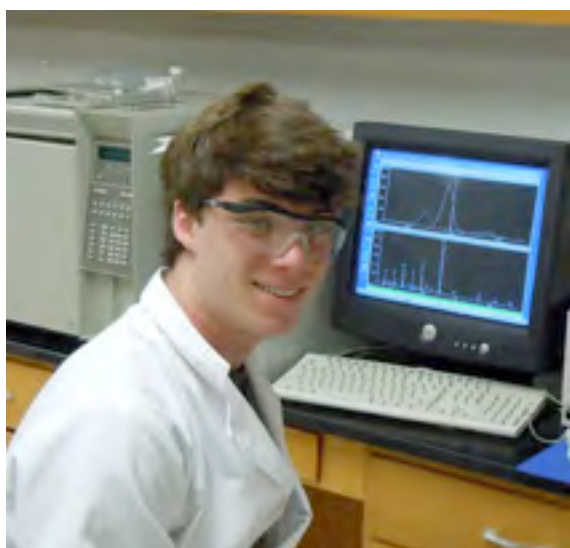
In the Ching group, **Kathryn Tutunjian '13** and **Ian Richter '14** pour liquid nitrogen into the SEM EDAX detector while **Jeff Carchmichael '14** operates the SEM.



Kelsey Row '14 and **Yumi Kovic '14** worked on bioluminescence research in the Branchini group.



Binsen Li '13, Ivan Leroux '13, Jennfier Cunningham '13, and Ahlam Rashid '13 carry out computational chemistry as their research in the Zimmer group.



In the Ovaska group, **Sam Field '12** operates the GC-MS; **Taryn Campbell '12** and **Aaron Feldman '13** at work on organic synthesis. Taryn was awarded a summer undergraduate research fellowship from the ACS Division of Organic Chemistry.

Alumni Updates

Suzanne Grimes Pakkala '64 replied to having received last year's newsletter. She recently retired from a west coast prep school where she had been teaching regular and AP chemistry course.

Maria Pellegrini '69 recently joined the Connecticut College Board of Trustees. Dr. Pellegrini is Executive Director for Programs at the W. M. Keck Foundation.

Kathy (Kerr) Bragdon '92 has been working in the United States Patent Office since 1999. Before that, she received her PhD in enzymology from Brandeis and did postdoctoral work at the NIH.



Ray Dudek '94 is a physical chemistry professor at Whittenberg University in Ohio. This past year he earned tenure and promotion.

Amy (Nemser) Orce '97 gave birth this summer to a baby girl, Kyla. Amy works at Pfizer and regularly assists the department by teaching evening lab sections for general chemistry.

Jamie Tuttle '99 was co-recipient of the Green Chemistry Award at Pfizer. Jamie donated the \$5000 monetary portion of the award to Timo Ovaska, who is using the funds for summer stipends for research students.





Kevin Wilkinson '01 in the Carolinas with his wife and parents (also CC alums). Kevin received his PhD from the University of North Carolina and is employed by Enthalpy Analytical in Durham, NC. He is the special projects chemist for the company, developing and improving analytical test methods for environmental samples.

Sarah Reisman '01 is an assistant professor in the chemistry department at Caltech. Sarah received her PhD from Yale and was an NIH postdoctoral fellow at Harvard. Her research interests are in the field of natural product organic synthesis.



Steve Hughes '02 is a visiting professor at Whitman College in the state of Washington. Steve earned his PhD at the University of California at Berkeley. He and his wife Amy (also a CC alum) are shown with their son, Calvin.

Alicia Morgan '10 returned to campus to meet with students and discuss graduate school opportunities. She is currently a graduate student at Worcester Polytechnic Institute.

We Want to Hear from You!

We solicit updates from alums for this section, but we would love to get unsolicited alumni news as well. So please let us know what you've been up to! Send your updates to Stanton Ching: sschi@conncoll.edu.