

Department of Chemistry Newsletter 2012

Message from the Chair

Our department has experienced many highlights over the years, but 2012 was particularly noteworthy for Dave Lewis receiving the ACS Award for Research at an Undergraduate Institution. This is the most prestigious award for faculty at primarily undergraduate institutions. For Dave, it recognizes his mentoring of undergraduates in research over a 43-year career at Colgate University, Connecticut College, and Aerodyne, Inc.

This year also marked the first graduating class of Science Leaders students. This cohort of students arrived on campus four years ago as part of an initiative to bring more diverse backgrounds into science majors at the college. Under Marc Zimmer's leadership, the program is a great success. There are three more classes of Science Leaders working their way through the student body and with fresh NSF funding this will keep going for at least four more classes yet to matriculate.

Finally, I become more and more impressed each year with the broad-based talents of our chemistry majors. In addition to being gifted scientists, our students excel in other curricular and co-curricular activities that include the arts, athletics, student leadership, clubs, and international affairs. These diverse aspects of our majors are sprinkled throughout this newsletter and are worth noticing and appreciating.

Cheers!

Stanton Ching

David Lewis's accomplishments receive national recognition: 2012 American Chemical Society Award for Research at an Undergraduate Institution

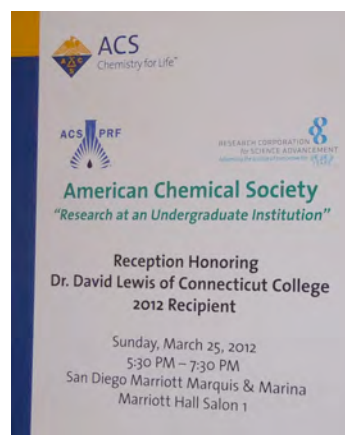
Professor David Lewis was honored this past year as the 2012 recipient of the ACS Award for Research at an Undergraduate Institution. Dave received the award in March at the spring ACS national meeting in San Diego. He is recognized for his achievements in research as a physical chemist, his long-time leadership and advocacy of research with undergraduates, and his recruitment of women and underrepresented minority into science through research. His 40+ consecutive years of summer research with undergraduates is probably a record. Dave's award coincided with the Centennial celebration of the Research Corporation for Science Advancement, which sponsors the award. Dave was recognized at the ACS awards banquet, addressed the attendees at the Research Corporation for Science Advancement reception, and delivered an award talk in the Division of Physical Chemistry.



ACS awards banquet presentation with ACS president, Professor Bassam Shakhshiri, and Dr. Sylvia Ronco of the Research Corporation for Science Advancement.



Connecticut College attendees at the ACS awards banquet: Robin Edwards '11, Prof. Tanya Schneider, Prof. & P' David Lewis, Prof. Stanton Ching, Dr. Maria Pelegrini ' and CC Trustee Carl Lewis '.



Posters at the ACS meeting advertise the reception for David Lewis.

Evelyn Bamford recognized for 25 Years of service



Evelyn Bamford, our Chemistry Department Administrative Assistant, was recognized for her 25 years of service to Connecticut College. Department Chair Stanton Ching spoke of Evelyn's excellent work and tremendous rapport with faculty and students at a Staff Recognition Celebration on November 11, which also happened to be Evelyn's birthday.

Conrratulations. Evelyn!

Class of 2012 celebrates the first graduation of Science Leaders



Commencement 2012 marked the first graduating class of **Science Leaders**. This program brings in cohorts of aspiring science, math, and computer science students from diverse backgrounds. Of the original 17 students in the cohort, all graduated in the Class of 2012 and all but two graduated in the sciences. They included student government leaders, student organization leaders, community volunteers, and varsity athletes. The program is under the direction of **Professor Marc Zimmer**. Three more classes of Science Leaders are still enrolled at the college.

And the National Science Foundation continues to fund the program!

The NSF recently awarded a \$436,307 grant to Connecticut College for continued support for the **Science Leaders**. **Professor Marc Zimmer** again provides the leadership for this program and **Professor Tanya Schneider** is also part of the team that was involved with submitting the grant.

Welcome Dr. Danielle Vellucci!

Dr. Danielle Vellucci joins the chemistry department this year as a one-year visiting lecturer. Dr. Vellucci earned her B.S. in chemistry from Boston College and her Ph.D. in organic chemistry from the University of California at Irvine. Her latest appointment was as a postdoctoral associate at the Scripps Institute. Dr. Vellucci will be teaching lab and recitation sections for general chemistry and organic chemistry.

Welcome Danielle!

Other News

Bruce Branchini spent spring semester on sabbatical carrying out research in Italy. (and taking in the sights)



Stanton Ching was profiled in the winter issue of the NCAA quarterly Champion magazine. Stan is the NCAA faculty athletics representative (FAR) at Connecticut College and is currently serving on the NCAA Division III management council. His profile ran on the Division III web site for the first half of 2012.



Stan is joined by research students Jeff Carmichael and Kathryn Tutunjian (both rowers, left) and student-athletes from his general chemistry class.

David Lewis received an honorary degree from his alma mater, Amherst College.



Dave is congratulated by Amherst President Carolyn “Biddy” Martin as he receives his honorary degree at the Amherst College graduation ceremony on May 20.

Timo Ovaska delivered an endowed chair lecture on February 1 that celebrated his Hans and Ella McCollum '21 Vahlteich professorship in chemistry. The evening was culminated by a special dinner in Timo’s honor.

Tanya Schneider designed a wildly successful poster session for her Biochemistry course (CHM 304), with the theme *A Festival of Metabolism*. The scheduled one-hour event went on for much longer and attracted over 70 students, faculty, and staff. The CHM 304 students presented their posters at a level that showed off their knowledge of biochemistry but was also accessible to students in lower level courses. Topics included alcohol metabolism, lactose intolerance, performance enhancing drugs, the acai berry, gluten-free foods, and dietary fructose.



Marc Zimmer spent the year overseas (in more ways than one): In the fall he led a *Study Away Teach Away* study abroad program in South Africa with Connecticut College students. In the spring he spent his sabbatical as a professor on board a *Semester at Sea* program, voyaging around the world on a ship that served as a floating campus. The ship crossed all the oceans and visited over a dozen countries.

SATA group in Rhodes, South Africa



Semester at Sea travels

Zimmer family in Singapore



Marc hacks through the Amazon



Congratulations!
Class of 2012 Chemistry Majors

ACS Chemistry

Sam Alvarez Taryn Campbell Sam Field

Amy Smith Ha Eun Jessica Yi

ACS Biochemistry

Paul McCarthy Colin Tasi

Biochemistry, Cellular and Molecular Biology

Erick Argueta Nick Assif Kurt Polley Shuang Song
Stephen Squire Christina Stabile Jeffrey Sumner Tiffany Wong

Environmental Chemistry

Lauren Eichelberger

Senior Honors Theses

Taryn Campbell (ACS Chemistry, Ovaska)

Nanostructured Manganese Oxide Catalysts

Jeffrey Sumner (BCMB, advised by Page Owen in Botany)

*Analysis of the Extrafloral Nectaries and Nectar of *Nepenthes alata**

Independent Study

15 different students carried out independent study projects in 2011-12.

Chemistry Department Awards

<i>ACS-Connecticut Valley Section Award</i>	Taryn Campbell '12
<i>Jean V. Johnston Prize</i>	Jeff Carmichael '14
<i>Dr. Joseph Nunes Pereira Prize</i>	Jeff Sumner '12
<i>Paul Abel Swartz Memorial Prize</i>	Erick Argueta '12
<i>American Institutes of Chemists Awards</i>	Amy Smith '12 Shuang Song '12
<i>CRC Press Chemistry Achievement Awards</i>	Victoria Iannarone '15 Ben Weinstein '15
<i>Department Organic Chemistry Award</i>	John Dronzek '14
<i>ACS-PolyEd Organic Chemistry Award</i>	Yumi Kovic '14

Publications (CC students in bold)

1. **Binsen Li, Ramza Shahid, Paola Peshkepija**, and Marc Zimmer “Water Diffusion In and Out of the β -Barrel of GFP and the Fast Maturing Fluorescent Protein, TurboGFP” *Chemical Physics* **2012**, *392*, 143-148.
2. Bruce R. Branchini, **Justin C. Rosenberg**, Danielle M. Fontaine, Tara L. Southworth, Curran E. Behney, and **Lerna L. Uzasci** “Bioluminescence is Produced from a Trapped Firefly Luciferase Conformation Predicted by the Domain Alternation Mechanism” *Journal of the American Chemical Society* **2011**, *133*, 11088-11091.
3. Iain A. Larmour, **Erick A. Argueta**, Karen Faulds, and Duncan Graham “Design Consideration for Surface-Enhanced (Resonance) Raman Scattering Nanotag Cores” *Journal of Physical Chemistry C* **2012**, *116*, 2677-2682. (Publication from work done in Glasgow, Scotland thru a 2010 ACS-International REU award.)

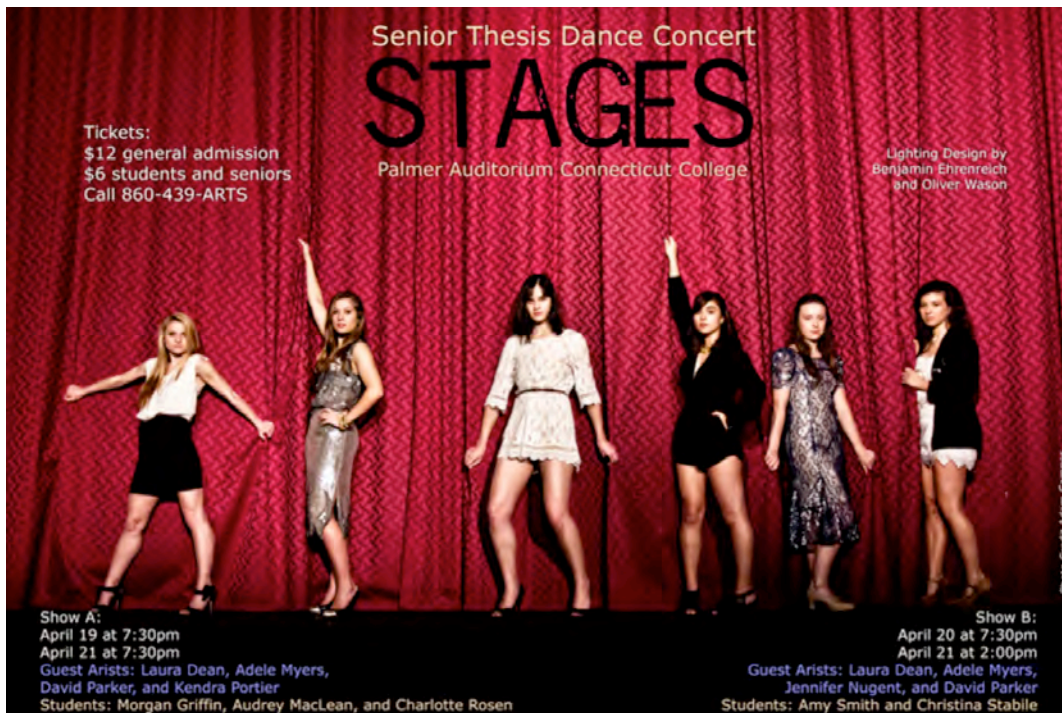
Student Presentations

1. **H. E. Jessica Yi**, Danielle M. Fontaine, and Bruce R. Branchini “A Firefly Luciferase-Based Turn-On Sensor for Biothiols” Poster presented at the 4th Annual Northeast Undergraduate Research and Development Symposium; University of New England; Biddeford, ME; March 10-11, 2012.
2. **Lauren Eichelberger** and Stanton Ching “Manganese Oxide Hollow Nanospheres: Synthetic Routes, Metal Doping and Catalytic Activity” Poster presented at the American Chemical Society – Connecticut Valley Section Undergraduate Research Symposium, Springfield College, Springfield, MA April 28, 2012.
3. **Ian Richter, Kathryn Tutunjian**, and Stanton Ching “Synthesis of Porous Manganese Oxide Nanoparticles Through Oxidation of Butanol” Poster presented at the American Chemical Society – Connecticut Valley Section Undergraduate Research Symposium, Springfield College, Springfield, MA April 28, 2012.
4. **Taryn Campbell** and Timo Ovaska “Studies Toward the Total Synthesis of Frondosin D” Poster presented at the American Chemical Society National Meeting in San Diego and at the American Chemical Society – Connecticut Valley Section Undergraduate Research Symposium, Springfield College, Springfield, MA.

Other Happenings

ACS-Certified chemistry major **Ha Eun Jessica Yi** is our very first major to also complete the certificate program for the Center for International Studies in the Liberal Arts (CISLA). Jessica did her CISLA internship through the Panama International Cooperative Biodiversity Groups Project at the Smithsonian Tropical Research Institute in Panama City, Panama. Her Senior Integrated Project was titled *From Discovery to Application: The Natural Products Research Process*.



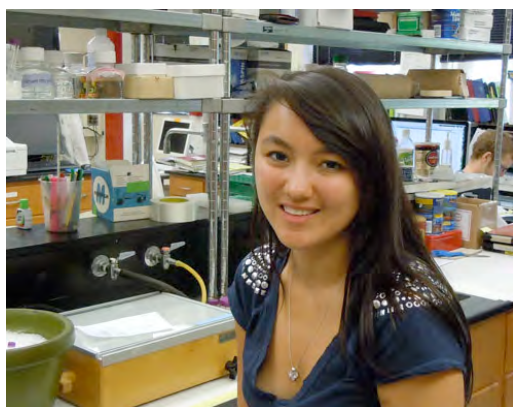


Chemistry majors were well represented at the Senior Thesis Dance Concert this year, as **Christina Stabile** and **Amy Smith** performed and choreographed original work. Christina and Amy are first and third from the left, respectively, and both are Chemistry-Dance double majors.

What a difference a year makes! Last year we were looking at a big hole in the ground outside Hale Lab. Now we view the newly renovated and expanded New London Hall. The building will be open for business this fall.



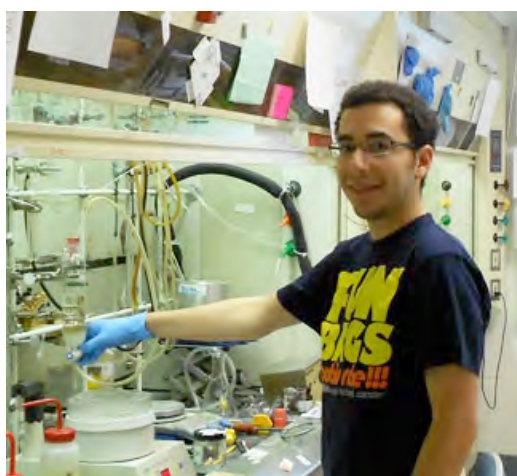
2012 Summer Research Students



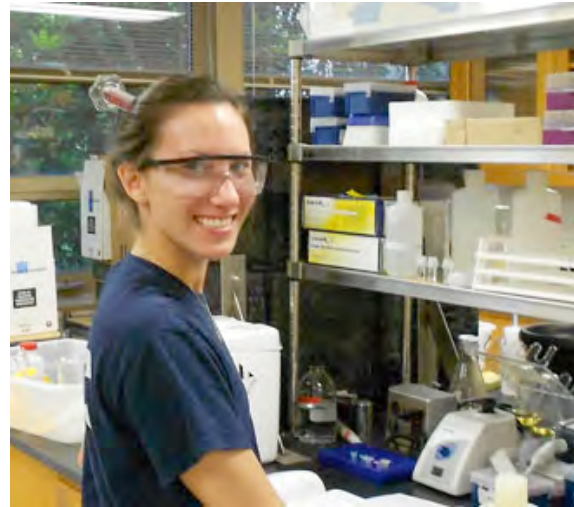
Bruce Branchini's group: Yumi Kovic '14 and Milton Garrett '14



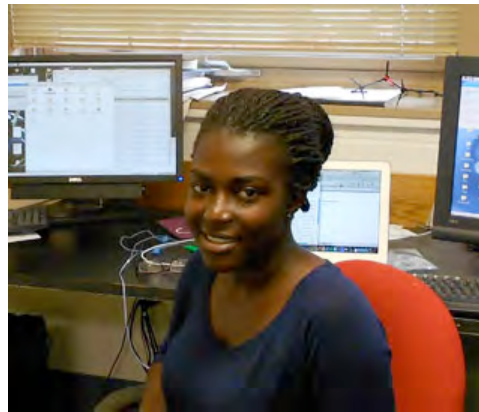
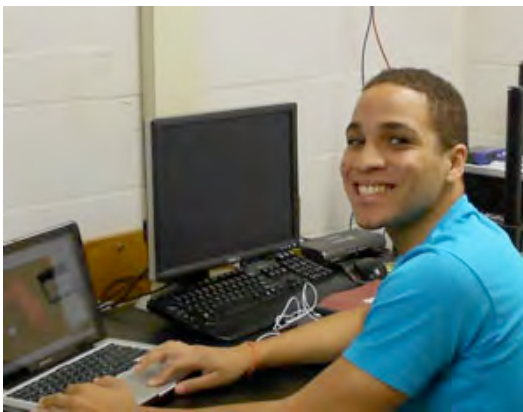
Stanton Ching's group: Ian Richter '14



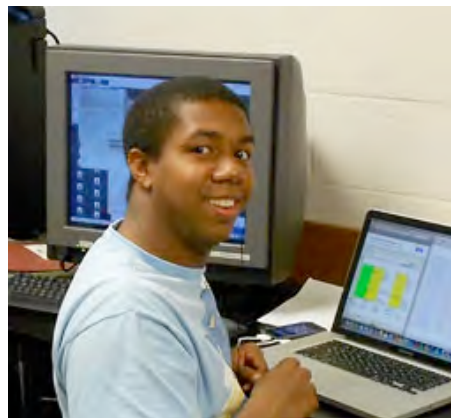
Timo Ovaska's group: Aaron Feldman '13 and Evan Landstrom '13



Tanya Schneider's group: John Dronzek '14 and Kathryn Tutunjian '13



Marc Zimmer's group: Steven Natera '15 and Amanda Amoh '15



Danielle L'Heureux '14 and Chris May '14