



Chemistry Connections

Fall 2007

A newsletter from the Chemistry Department
at Bloomsburg University of Pennsylvania

Miscellaneous

☞ Bloomsburg University Open House: Saturday, March 29, 2008. Visit the chemistry department from 1:00 - 3:00 pm. For more information, go to: http://www.bloomu.edu/prospective/open_house.php

☞ If you're unable to attend an open house program, you're welcome to visit Monday through Friday. You can meet an admissions counselor, the Chemistry Department, and get a tour of campus. Call (570) 389-4316 to make arrangements.

☞ You can contact the chemistry department at Bloomsburg University several ways:

<http://departments.bloomu.edu/chem/Default.htm>

570-389-4895 (main number)

Dr. Michael Pugh, Dept. Chair:
570-389-4144;
mpugh@bloomu.edu

Sharlene Pollock, secretary:
570-389-5159;
spollock@bloomu.edu

Bloomsburg University is committed to equal educational and employment opportunities for all persons without regard to race, religion, gender, age, national origin, sexual orientation, disability or veteran status.



Kaitlyn Sanders, Jessica Pursel and Colleen Small show off the "Periodic Table of Cupcakes."

Mole Day at B.U.

You might be a chemist if... Someone says "I have a problem with moles" and you think they need help with a lab calculation.

Mole Day is an unofficial holiday celebrated among chemists on October 23, between 6:02 am and 6:02 pm. The time and date are derived from the Avogadro constant, which is approximately 6.022×10^{23} , defining the number of particles (atoms or molecules) in a mole, one of the seven base SI units.

B.U. Chemistry Club students promoted Mole Day last month with the Periodic Table of Cupcakes. Students who properly identified an element received a free cupcake.

Equipment Purchase Aids Research Efforts

The B.U. chemistry department recently purchased a second MBraun glove box that will be used by newly-hired faculty member, Dr. Philip Osburn, and students, in research activities which require an air-free environment. There are many important classes of molecules which are not stable in the presence of oxygen. To create and handle such molecules, the chemist must have access to a rigorously air-free environment. The surest way to achieve this is to fill an airtight metal container with some inert gas such as nitrogen or helium. Materials are transported inside the box through a vacuum antechamber. They are handled inside the container via two thick rubber gloves tightly sealed to circular openings on the box's front wall. This artificial environment opens up a whole new world of chemistry not accessible in an oxygenated atmosphere. Since their inception in the 1940s, when they were used primarily to protect scientists from radioactive materials, glove boxes have now become an essential part of the chemist's toolbox and are widely used not only in academic laboratories, but also in the chemical, pharmaceutical, and electronics industries.



Senior chemistry major Andrew Schmidt (Mt. Carmel Area HS) uses the new glove box.

Dr. Gregory Zimmerman has been a member of the B.U. Chemistry Department since the fall of 2002. His educational credits include a BA in Chemistry and BS in Education from Millersville University. After teaching high school for two years, he entered graduate school and received a PhD in Physical Chemistry from the University of Delaware. He was a postdoctoral fellow at Oak Ridge National Laboratory, and taught at Tennessee State University for seven years before moving to Bloomsburg. As a Physical Chemist, Dr. Zimmerman teaches Physical Chemistry 1 & 2, Advanced Topics for seniors, as well as general courses for allied health and science majors at B.U. He believes in active involvement of undergraduates in his research. He is presently studying dilute solutions in high temperature-pressure water with a unique flow-through instrument. Recent undergraduate researcher Michael Giano studied amino acid solutions with this instrument.

Dr. Zimmerman and his wife, Kathy, are the proud parents of three active boys, and they enjoy visiting with their families in nearby Lancaster, PA. He enjoys traveling, watching his boys play soccer, and is a die-hard Philadelphia Eagles fan.

Faculty Profile



Dr. Gregory Zimmerman

Chemistry Students Present Research in Boston

Three B.U. chemistry students recently presented their research results at the 234th American Chemical Society National Meeting in Boston. These three students are the first recipients of a new annual student summer research program which pays their salary, housing and meals for 12 weeks in the summer.

Kaitlyn Sanders (Annville Cleona HS) and Jonathan Shrimp (Meadowbrook Christian School) worked over the summer with Dr. John Morgan. Evan Thursby (Benton HS) worked with Dr. Mark Tapsak.

The students were selected from a group of chemistry majors who applied for this research opportunity.

A scholarship fund established in memory of former chemistry faculty member, Wayne Anderson, made it possible for these students to travel.



Seniors at North Schuylkill High School paid a visit to B.U. recently. They received a tour of the chemistry department, made aspirin, and enjoyed lunch at the Scranton Commons. Their teacher, Ms. Rachel Harris (back row, left), is a B.U. chemistry education graduate.

ALUMNI NEWS

Michael Galella graduated from B.U. with a BS in Chemistry in 1997. After graduation, Michael worked at DuPont's Experimental Station in Wilmington, DE and a year later, he moved to Bristol-Myers Squibb. While there, he was given the opportunity to work as a crystallographer and be mentored by Jack Gougoutas, one of only two Distinguished Research Fellows in the company. It is here where Michael found his true passion as a scientist. As a crystallographer, he crystallizes, analyzes, and at times crystal engineers different crystalline forms of active pharmaceutical ingredients (APIs) and their intermediates. This analysis helps in the characterization and development of the best crystal form to be used in making the drugs sold to the public.

In each of his positions, Michael has been told that his molecular and analytical knowledge are what have been the driving force for his hiring. He believes the diverse scientific curriculum offered to a chemistry major at Bloomsburg University is the main reason for his development in these scientific areas. He also attributes much of his success to the department's encouragement of chemistry majors to take advantage of scientific research opportunities.