Grove City College Chemistry eNewsLetter

Fall 2011

Departmental News

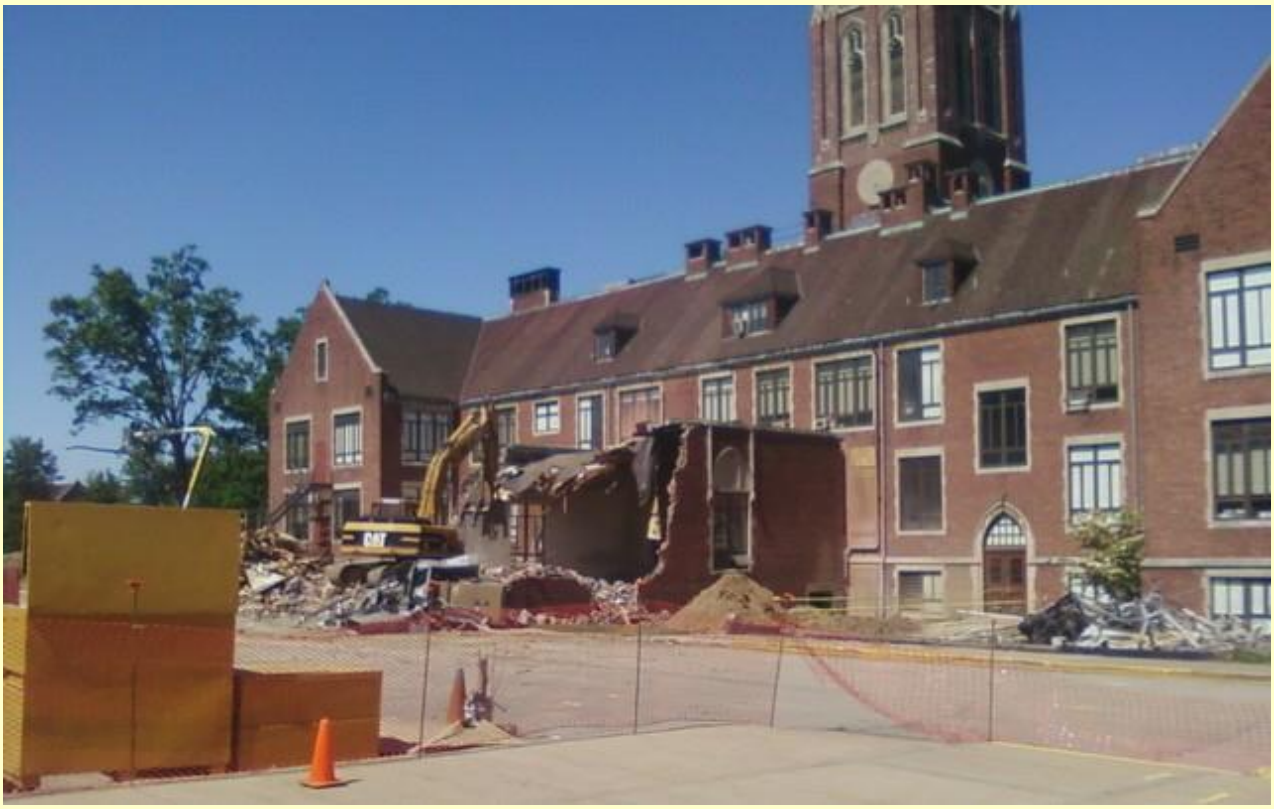
By Dr. Timothy Homan, Chair

The construction of Phase I of the new Science, Engineering and Mathematics building began the Monday after graduation last May. Even as Drs. Augspurger and Falcetta began to teach Science 203 (the general chemistry class taught for non-science majors) during the two-week Intersession period, construction began with demolition. Asbestos in the auditorium ceiling had to be removed first and all utilities cutoff in the labs below the auditorium. It was then torn down on June 2 (see the picture below). Also removed were the chemical storage shed (affectionately called Fort Naegele) just outside the organic lab and the greenhouse.

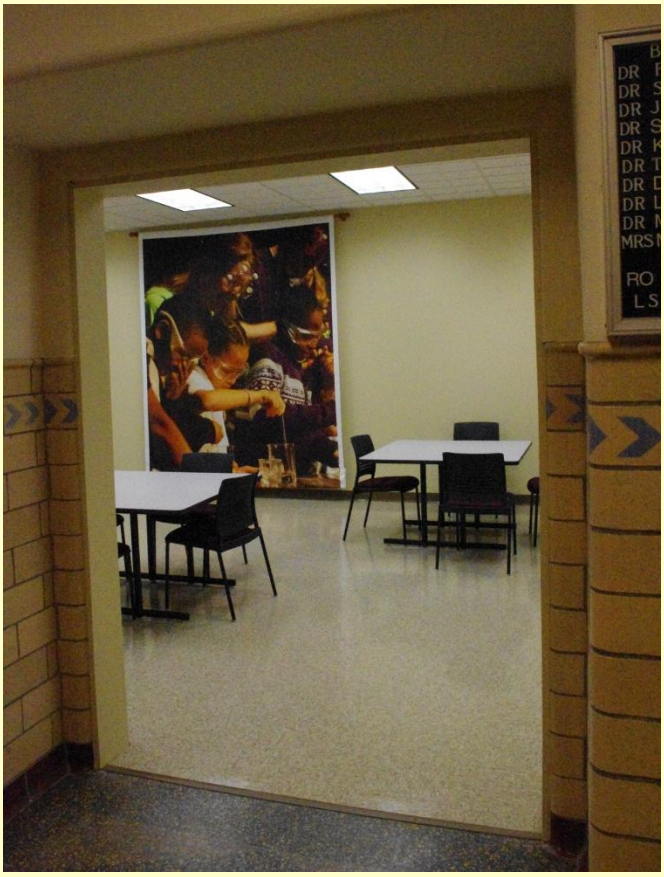
Significant utility upgrades also began. New sewer, water, and electrical lines were laid, which led to the quad being almost entirely torn up most of the summer. It made it quite an adventure just to be able to find a route to get to Rockwell during the summer. Excavation of the site began in late June and was completed by early August.

September brought not just the beginning of classes in the new year, but the construction of the foundations and cement walls. As this phase neared its completion, the erection of the steel skeleton began in early November.

While the construction is fascinating to watch and can be a distraction, it has had a relatively small impact on classes. The one exception is that the General Chemistry lecture has been consolidated into a single section taught in the Technological Learning Center auditorium, the facility built adjacent to Buhl Library in the 1980's to house campus computing facilities.



To see more construction photos, go to http://www.gcc.edu/New_Building_Construction_2011.php



Not all of the construction took place outside of Rockwell. Pictured at right is a new student study/meeting area reclaimed from the space that was formerly the back of the auditorium. If you look closely at the picture on the previous page, several of the windows appear to have been painted white. To meet building code for two buildings which will be as close as the new building and Rockwell, the amount of window space had to be reduced, and so many windows were covered with several layers of drywall to make it fire-resistant.

The photo below (taken November 29) shows the new steel skeleton beginning to take shape. You can also see the almost completed basement wall. The last section of the wall will be left open so equipment can still get into and out of the basement area until after the steel work is finished next Spring.

Summer Research at GCC

Several years ago, the college created the Swezey Fund to provide financial support for research at GCC. It was named in honor of Dean William W. Swezey, who was Vice President for Academic Affairs and Dean of the College for more than a quarter of a century. Serving first in 1946 as a professor of zoology and later in his administrative role, Swezey helped increase the quality of education and the preparation of science and engineering students.

The Swezey fund provided stipends for summer student researchers in chemistry for the first time in 2008. Patrick Messner (BIOL, '09), under the direction of Dr. Kriley, synthesized transition metal coordination complexes using novel ligands. In 2009 and 2010, Chris Haskins (CHEM, '12) and Scott Harman (CHEM, '12) continued this work.

In 2010, the Swezey fund expanded to not only pay the students doing summer research a stipend, but to also provide lodging. Two students working on projects with Dr. Falcetta last summer were provided housing though the Swezey Fund in the new Colonial Apartments located on the lower campus (which were built in 2006).

Jamie Alburger (CHEM '13) spent the summer researching anion states of molecules using computational chemistry and developing a program to assess student attitudes regarding computational chemistry. He developed a survey and several computational "experiments" to be used in various chemistry classes. The project will assess changes in student attitudes as these labs are implemented. Dr. Augspurger has included computational experiments in the PChem lab since he arrived in 1996, but Jamie's work will help the department more fully integrate exposure to computational tools in our chemistry curriculum.

Caleb Stewart (BIOC, '12) spent the summer researching the characteristics of current students. The so-called "millennial" student thinks and behaves quite differently from past students, even those from 5-10 years ago. Caleb carried out an extensive survey of the literature, and provided the department with lots of information for us to consider as we seek to continue to effectively educate students in chemistry.

Dr. Kriley also supervised two students doing research last summer, but they were funded by a grant from the II-VI foundation. The II-VI Foundation was formed in April 2007 by Carl Johnson and his wife, Margot, with the goal of encouraging students to pursue careers in engineering and science. The foundation shares its name with II-VI Incorporated, a company also founded by Johnson in 1971. II-VI Incorporated is a worldwide manufacturer and distributor of lenses, mirrors, prisms and other optical components used to manipulate laser beams.

The students involved in this project were Jake Lytle (BIOC, '13) and Chris Haskins (CHEM, '12), and their work concerned the effects of extracting natural gas from the Marcellus shale formation on local drinking water. Hydrofracturing (or "fracking") involves drilling deep wells, and then water with various additives is pumped into the well under extremely high pressure to fracture the shale formation and allow the natural gas to be released.

This has become a highly controversial topic in the Northeast (the Marcellus Shale formation is found under most of Pennsylvania, as well as extending under surrounding states). Concern is being expressed that the additives to the hydrofracturing water or heavy metals found in the shale will cause contamination to surface or well water.

Dr. Kriley's parents own land under which natural gas will be extracted in the future, so they began to establish baselines from several water sources, as they developed protocols for sample preparation and carried out analyses using chromatography, atomic absorption spectroscopy, and other chemical tests.

(Retired) Faculty Focus: Drs. Ed and Sara Naegele

In 1958, Ed and Sara Naegele and their young son Karl moved to Grove City from Philadelphia when Ed accepted a position in the GCC Chemistry Department. Sara grew up in Sharpsville (20 miles west of GC) and Ed outside Philadelphia, but they met and married while at Temple University. After Ed earned his PhD and Sara an MS (both in organic chemistry), they worked in industrial research. When Karl was born, Sara stayed home to care for him.

Sara's mother was a teacher, who encouraged Ed to consider teaching. A connection was made with Grove City College, and in 1958 he was hired by President Harker. Ed took over GenChem as he joined George Bennett (organic), Ralph Booth (NaturalScience) and Jack Haas (PChem/Analytical) in the Chemistry department. He and Jack shared the office in 101 Rockwell.

When Dr. Bennett stepped down as chairman in 1961, Ed was appointed to be the interim chairman, and then was made fulltime chair of the department in 1962, and continued in that role until he retired.

Under Ed's leadership, the department exhibited remarkable stability. Michael Pelipetz arrived in 1962 to teach physical chemistry (Ed often says the worst year of his life was when he had to teach PChem the year before!). After Dr. Pelipetz' untimely death in 1964, Don Chab arrived to teach PChem. John Shaw was hired in 1965 to teach organic after Dr. Bennett's retirement (and Ed moved into his office in 208 Rockwell, where he and Sara remained throughout their time at GCC). In 1966, with the construction of Hoyt Hall and the expansion of engineering and sciences, Sara was hired to teach GenChem labs and recitations. In 1973, the department added Harold Conder (Inorganic/Analytical) and Arnie Sodergren (Biochemistry). The faculty remained unchanged until the Naegeles retired in 1990, with the exception of Dr. Sodergren moving to the biology department.

The Naegeles taught General Chemistry to many generations of GCC chemistry, biology, and engineering majors. While Ed taught the GenChem lectures, Sara taught the recitations, up to 11 of them some years. They also taught the GenChem labs, Ed running Qualitative Analysis for one semester and Sara running Quantitative Analysis the other. In a time when funds were more limited than now, Sara's request for 15 Mettler analytical balances was approved for the Quantitative Analysis, and she fiercely protected them from the hands of careless students.

Ed was always concerned for safety. Upon

Ed and Sara at the groundbreaking ceremony for Phase I of the new Science, Engineering and Mathematics Building on May, 13, 2011. Standing directly behind Ed is Dr. Chuck Kiley '88, an inorganic chemist in the department since 1996. To Chuck's right is Dr. Kevin Shaw '95, our biochemist since 2008 and his wife Tammy. Diane Grundy, Head Librarian, is standing behind Sara. At far right is GCC trustee Jody Mathie (BIOL, '77).

becoming chairman, Ed pointed out the danger of storing flammable solvents in the small room at the bottom of the stairwell. In response to his request for a more suitable storage space, a brick storage building was built directly in front of Rockwell, which became known as Fort Naegele. He was also played an important role in getting the greenhouse built for biology.

Sara was a jack-of-all-trades in chemistry. Besides teaching the GenChem labs and recitations, she added a course in Ionic Equilibria in 1974. When the chemical engineering major was discontinued, she was asked to teach the Introduction to Chemical Engineering course for the last few years it was required. She added a Natural Sciences course that was needed for education majors to fulfill their science requirement, and the last year before retirement she taught a course on nutrition.

Outside the class room, she helped to organize and prepare the dinner after the Kemikos Induction Ceremony. After hosting it initially in the newly renovated basement lab, it moved to their home for a few years, and the finally was held in the Chem Library. Sara would have the butcher cut her roasts the perfect size to fit her oven, and spend much of the day preparing them and the rest of the meal.

The Naegeles retirement in 1990 signaled a major change in the chemistry department. Their retirement was followed by John Shaw's the next year, and Don Chab in 1996. Ed and Sara have been regular visitors to the GCC Chemistry department, and still reside at the same house they purchased in 1958 on State Street.

Alumni Highlight

Coincidentally (in light of Dr. Kriley's research concerning Marcellus shale gas), it has come to our attention that one of our alumni, Dr. Stephanie (Corrao) Hamel (CHEM, '86), has written a book about her experiences dealing with the possible opportunity of reaping the benefit of royalties from leasing family farmland for Marcellus Shale gas exploration. Coffeetown Press released *Gas Drilling and the Fracking of a Marriage* on October 15. Dr. Hamel earned an MS in Chemistry from Lehigh University, worked as an organic chemist in the pharmaceutical industry, and taught chemistry part-time at community colleges. She returned to graduate school and earned Her PhD in Exposure Assessment from the Robert Wood Johnson Memorial School and Rutgers University. Her book, which grew out of her diaries, details the struggles she faced seeking to balance the potential damage that gas extraction could cause to the environment against lucrative royalties being offered.

If you are aware of any other accomplishments or noteworthy happenings concerning GCC Chemistry alumni, please send an email to Dr. Augspurger (jdaugspurger@gcc.edu) so that it can be included in future editions of the GCC Chemistry Department eNewsletter.