



GROVE CITY COLLEGE
CHEMISTRY
eNEWSLETTER
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Departmental News

From Dr. Tim Homan, Chair

Another academic year is complete. The first year in STEM Hall went well. Faculty and students adjusted to the new laboratories quickly and smoothly. Professor Joe Augspurger fully utilized the dual use design of STEM by teaching physical chemistry lecture and lab in the same room. The study areas in the building have been put to good use by the students. Prospective students have been very impressed with the building and it has certainly aided our recruitment of next year's class.

We used the atrium in the building to host our chemistry department graduation breakfast this year (see pictures below). There were 16 graduates from our department this year; they are moving on to pursue graduate school, medical school and industrial employment. I want to highlight two of this year's seniors. James Kintzing graduated with a double major in chemistry and molecular biology. He was awarded a National Science Foundation Graduate Student Fellowship and he will be attending graduate school at Stanford University this fall. Julia Haines was a biochemistry major with a pre-law concentration. She was selected to be this year's student speaker at Commencement and was awarded a full ride scholarship to attend the University of Chicago School of Law where she will begin this fall.

This spring Professors Mike Falcetta and Charles Kriley took five students to the National ACS Meeting in Dallas, TX. The students presented research posters on work carried out during the summer of 2013 and this academic year. It was a very positive experience for all; particularly one senior who was able to land a job through the ACS Career Fair. Both professors are continuing these research projects with GCC students this summer.

Dr. Kriley's study of local water quality will be enhanced by a new piece of equipment which will be able to monitor water quality continuously for up to three months at a time. The purchase of this equipment was funded in part by a grant from the MacKenzie-Moore-Jewell fund. This fund was created by a generous \$500,000 donation from the Chairman of the Board, David Rathburn, and his wife, which is to be disbursed \$50,000 per year for ten years. Dr. Graham, the new GCC Provost, created a committee to establish guidelines for how the funds would be used, and among others asked Dr. Augspurger from our department to be on the committee. Dr. Kriley received one of the first grants awarded this year.

I want to finish by expressing my gratitude to our many alumni for your gifts designated to the chemistry department. The funds have been used to purchase instrumentation; to purchase equipment and support research during the summer and academic year; and to assist our students to attend professional conferences to present their research. Your gifts make a big difference in enhancing the educational and professional opportunities for our students!

2014 Graduates



Our 2014 graduates, pictured on the central stairway in STEM. Front row, Gabby Ahrens, Jennifer Toth, Laura DiFalco, and Bethany Lashbrook. 2nd row, Julia Haines, Jon Wood, and Sarah Schubert. 3rd row, Kristina Thomas, James Kintzing. 4th row, Jed Seltzer, Tommy Bloom, and AJ Motta. 5th row, Rob Brackbill, Arleigh McRae, and Dan Ackerman. Not pictured, Michael Grennek.



Our new graduates, their family members, and the Chemistry Faculty enjoyed a continental breakfast before graduation in the Atrium in STEM Hall. Nearly one hundred people attended in total.

Faculty Spotlight

Chuck Kriley '88

Chuck Kriley joined the faculty of the Grove City College Chemistry department in September, 1996. It was a return for him, as he graduated from Grove City College with his bachelor's degree in chemistry in 1988. His initial assignment was to teach two lecture sections of Chemistry 101 and 102 and the four laboratory sections required for the 120 – 130 students in those classes, primarily chemistry, biochemistry, and biology majors.

Chuck grew up outside Butler, PA, on a farm where the family raised cattle. He loves to tell his students stories of growing up on the farm, and often gives students the chance to earn a couple of bonus points on exams by recalling details from the stories he shares in class.

After graduating from GCC, he attended graduate school at Purdue University, studying inorganic synthetic chemistry under Ian Rothwell. While in grad school, Chuck served as the head teaching assistant over Chemistry 111, Chemistry for Agriculture and Nursing students. He completed his PhD in 1993.

After graduation, Chuck obtained a tenure-track teaching position at the Calumet branch of Purdue University near Gary, Indiana. He demonstrated his initiative by spearheading the writing of a grant proposal, which was funded and allowed their department to add an IR instrument that at the time was state of the art for running liquids, solids and gases.

When Chuck joined the GCC Chemistry department in the Fall of 1996, his position was an expansion of the department faculty. Chuck immediately took on the task of preparing designs for the renovation of the Gen Chem lab which took place in the summer of 1997. His design rotated the orientation of the lab benches and added a bench in front, from which he could instruct the students. The new design worked extremely well until we moved into STEM this year.

Chuck has added several courses to his repertoire in the succeeding years. He added Chem 302,

Laboratory Techniques, a course required of the students preparing to teach chemistry in high school, where they have to design a laboratory experiment, which is then incorporated in the Gen Chem labs. He added Chem 356, Group Theory, which is required for both the chemistry and biochemistry majors, and added an elective course in x-ray crystallography which is offered every other year after he led the effort for the department to purchase an x-ray diffractometer.

He had requested the diffractometer because it was important to his research. His research involves the synthesis of transition metal complexes, using novel ligands which in some cases he or the Rothwell group designed. Before purchasing the diffractometer, Chuck would send crystals of his compounds out for the structure to be determined; now, he and his students can do it in house. One possible use for these novel compounds is to serve as catalysts for hydrogenation reactions.

In the last few years (as previous eNewsLetters have detailed), he has expanded his research into new areas. Since 2010, he and his students have been collecting both ground and well water samples from areas where fracking has already occurred and where it has not, developing baseline data to examine what effects, if any, fracking causes on the water supply. Another project which grew out of a student's summer research experience at Scripps involves synthesizing potential cancer-killing agents, and testing their effects on cancer cells developed by colleagues in the Biology department.

But Chuck is not just active in the classroom and lab. He has advised the very successful GCC Rugby Club team for 18 years, advised fraternities (KAP's previously, Tri Rho's currently), and serves as co-chair for the All-College Sing at Parent's Weekend.



Alumni Highlight

Congratulations to Mr. Robert Ayton Recipient of the 2014 Florida High School Teacher Award from the Florida Section of ACS



Bob Ayton (CHEM, '99), from Abington, PA, was a member of ACS and an Associate Member of Sigma Xi, the Scientific Research Society. In 2013, he received his M.Ed. in Curriculum and Instruction degree summa cum laude from Concordia University. He currently teaches Advanced Placement Chemistry and Advanced Placement Physics at Dunnellon High School in Dunnellon, Florida.

After graduating college, Robert was employed as a chemist and laboratory manager at Pharmaceutical Manufacturing Research Services, Inc. (PMRS, Inc.) in Horsham, PA. At PMRS, Robert led an elite team of analytical chemists dedicated to improving the quality of lives through Phase III stability determination of Merck pharmaceutical products. During his tenure there, he supervised the successful approval of four New Drug Applications by the Food and Drug Administration.

In 2005, Robert began his calling in teaching at Dunnellon High School where he has built an Advanced Placement (AP) science program that serves almost 8% of the school's low-income, rural population. Students in his AP chemistry and physics classes consistently score at the top in the district. During Robert's service in education, he has received numerous awards such as being chosen as a Golden Apple Teacher in 2012, Florida state-finalist for the Presidential Award for Excellence in Mathematics and Science Teaching (PAEMST) in 2011, and Rookie Teacher of the Year for Marion County, Florida in 2007. He has been a Main Conference Presenter at the National Advanced Placement Conference in 2011 and 2012 for his exemplary, new methodology for teaching Chemical Equilibrium, and speaks regularly at local and state conferences on topics of education and pedagogy approaches in the areas of science education. He also maintains a chemistry website, www.mrayton.com, which is used by teachers and students around the nation to prepare for the rigorous AP Chemistry exam.