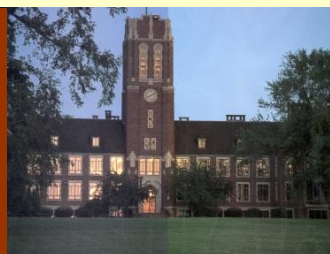




GROVE CITY COLLEGE
CHEMISTRY
eNEWSLETTER
FALL 2019
WITH SPRING 2019 REVIEW



Departmental News

From Dr. Joe Augspurger, Chair

It's hard to know where to begin with the news from this past semester. The most exciting news is that both Drs. Wong and Guevara had babies! We are confident that these are the first babies born to current Chemistry department faculty. We were able to deal with their absences through several faculty, including Drs. Falcetta, Cramer, and Kriley, covering classes. We also brought in Dr. Mary Sisak, a retired chemistry professor from Slippery Rock University, who helped us cover classes two years ago as we were conducting the search that brought us Dr. Guevara. I should also mention that Dr. Shaw covered a biology seminar class, while the Biology Department was searching for a new faculty member.

Sadly, as I hope you have already heard, retired professor Dr. Harold Conder passed away unexpectedly. Before his retirement in 2016, he taught chemistry for 43 years at GCC and ran a productive and successful research program. His collaboration with faculty at Texas A&M led to several of our students going to graduate school there. His contributions to the department will be long remembered.

Aside from births, it was a difficult semester in terms of health. One of our junior chemistry majors broke his tibia, fibula and tore ligaments at the end of March. He was away from campus for three weeks, but we helped him keep up with classes by videotaping his lectures and, with the help of the A/V department, made them available via a streaming service. On Study Day, Dr. Cramer needed to have her appendix removed, and while we chipped in to proctor her finals, she recovered quickly enough to grade them. During Intersession, Drs. Falcetta and Kriley both taught SCIC 203 (baby chem) and got their students together for a cookout and game night. Unfortunately, Dr. Falcetta tore an Achilles tendon playing volleyball, which required surgery.

Dr. Falcetta completed his class, but Dr. Kriley had to give his final for him and I had to drive him to the hospital and pick him up after surgery since his wife was out of town. He supervised summer research students using a kneewalker.

The College leadership is undergoing many changes. The Provost and the Dean of the Hopeman School (Science and Engineering) both left last summer. Dr. Rich Savage, formerly the Dean of Graduate Education at California Polytechnic University, joined us as our new Dean. He earned a Ph.D. in Analytical Chemistry and spent many years in the semiconductor industry before joining CalPoly as faculty member. Additionally, Dr. Peter M. Frank (ECON and RELI '95) will be joining GCC in January as its new Provost. He is currently the Dean of the School of Business at Wingate University, where he has been an administrator and professor since 2003. He earned his Ph.D. from George Mason University.

I taught the last of the three chemical engineering courses required for the Chemical Engineering minor. Two of chemistry majors completed the minor, and there are 11 students signed up for the first course next spring, including five chemistry majors. I will be teaching that course, too. I really enjoyed teaching Chemical Reaction Engineering, after taking it nearly 40 years ago. The biggest change I observed were the problems that can now be solved as homework with the computing power students have in their laptops.

Finally, we graduated a large class of 25, five of whom earned ACS certified degrees for a total of 21 since we began being able to award the certifications in 2015.

Retired Faculty Passing

Dr. Harold Conder
November 26, 1945 - April 19, 2019
Professor of Inorganic Chemistry 1973-2016
Grove City College

It is with great sadness that we report the passing of Dr. Harold Conder on April 19, 2019. Dr. Conder passed away peacefully in his sleep at his family home in New Springfield, OH.

Harold graduated with a B.S. in Chemistry from Youngstown University in 1967 and then went on to obtain a Ph.D. in inorganic chemistry from Purdue University under the direction of Dr. W. R. Robinson in 1971. Upon graduation from Purdue, Harold obtained a post-doc position under the direction of Donald and Marcetta Darensbourg at Tulane University.

In 1973 Dr. Conder started his teaching career at Grove City College. Over his career, he taught a variety of classes both in the Chemistry Department, Humanities (Science Key) and in Chemical Engineering. In his later years he taught Advanced Molecular Spectroscopy, Organometallics, Inorganic/Bioinorganic, Inorganic Synthesis lab, and Organic Laboratory for Chemistry and Biochemistry majors. Harold was also a co-advisor to Kemikos (GCC Chemistry Honorary) and to our local student chapter of the American Chemical Society. Dr. Conder also supervised an active on-campus research program and took students to Texas A&M for summer REU opportunities. Dr. Conder was also the advisor for Sigma Alpha Sigma, a local fraternity, for many of the years that he taught at Grove City College. Dr. Conder received the 2003 Abbott Excellence in Pre-Graduate Mentoring Award from Texas A&M.

Dr. Conder published in a variety of refereed journals including *Inorganic Chemistry* and the *Journal of the American Chemical Society*.

Harold was born on Nov. 26, 1945, son of Harry and Viola Paden Conder. He was a lifetime farmer and a Chemistry Professor from 1973 to 2016. Harold leaves five children: Dianna Conder of Vancouver, WA, William, Michael '12, and Jonathan of New Springfield, and Nancy (Eric) Shubert; two brothers, George of New Springfield and Ralph (Robin) of Newport, TN; four grandsons; and one great-grandson.

Doctoral Thesis

Topic: Transition Metals as Lewis Bases. Complexes of Mercury (II) with Transition Metal Carbonylate Anions, Halides, and Neutral Ligands.
Director of Thesis Work: Dr. W. R. Robinson

The Department of Chemistry is looking to start a merit-based scholarship for a rising Biochemistry or Chemistry student in honor of Dr. Conder's dedication to our students for 43 years. Endowed scholarships require at least \$25,000 and must be fully funded within five years. We appreciate any donations that our alumni are willing to contribute to the Dr. Harold L. Conder Memorial Scholarship Endowment.

Donations can be sent to the Office of Advancement, Grove City College, 100 Campus Drive, Grove City, PA 16127. Checks should be made out to Grove City College, with Dr. Conder Scholarship printed in the memo line. Or visit www.gcc.edu/givenow and note Conder Scholarship.



Congratulations, Graduates!

It was our pleasure to watch 25 incredible students graduate on May 18, 2019. While we have enjoyed our time with them at Grove City College watching them grow and develop into both great scientists and great people, we are excited for the new opportunities that await them. At least four grads have found jobs in chemical industries. Five students have begun Ph.D. programs at schools around the country including George Washington University, University of Pittsburgh, Duquesne University, and Baylor University. Three students have started specialty graduate programs including Doctor of Physical Therapy, Doctor of Dental Surgery, and Pharmaceutical Sciences. Five grads received ACS certified degrees. We will miss the class of 2019 but are so excited for what God has in store for them! Congratulations!



Chemistry Alumnus Wins Grove City College Kennedy Award

Timothy W. Coffindaffer '81, Ph.D., is a retired research fellow with The Procter & Gamble Company. He earned a B.S. degree in Chemistry from Grove City College and a Ph.D. from Purdue. He worked in research and development for Procter & Gamble. By blending physical, chemical, analytical and biochemical science, he and his coworkers developed Downy, Bounce, Head & Shoulders, Pantene, Olay and Gillette products. His research efforts resulted in more than 40 new product launches and more than 75 patents and applications. Coffindaffer's professional and personal development has been through the constant support of family, professors, colleagues, friends and Christ.

Tim was presented with the Jack Kennedy Memorial Alumni Achievement Award during Homecoming in October 2018. Tim also presented a talk to our students and faculty entitled: "The Science of Shaving."

The Jack Kennedy Memorial Alumni Achievement Award has been given out for the past 55 years. The award seeks honor the exemplary service and workplace success of GCC alumni. Recipients of the award come from many areas of interest, including industry, education, business, and more.

Congratulations, Tim on your award!



Recipients of the 2018 Jack Kennedy Memorial Alumni Achievement Award. See the GCC Awards website for more details about the recipients: alumni.gcc.edu/awards



Dr. Tim Coffindaffer, Mrs. Sara Naegele, and Dr. Chuck Kriley at the Kennedy Awards Ceremony

New Additions to Our Chemistry Family

Our department welcomed not one, but two new babies this past semester. Dr. Ven Ney Wong and her husband Bryan welcomed their son Wynston Quah on January 18, 2019. He has brought so much joy to the Wong family. He loves going for walks and climbing on everything these days!

Three months later, Dr. Holly Guevara and her husband Paul welcomed their new addition, Timothy Paul, on April 16, 2019. Holly decided to work until the day before her delivery, only mentioning that her back hurt a bit. We're guessing she was having contractions all day. Early the next morning Timothy entered the world while Dr. Cramer graciously proctored the exam Holly was supposed to give!

Both babies were born healthy and ready to take on the world. As a department we would like to congratulate both families. We would also like to thank the rest of the faculty in the department who helped cover courses while Dr. Wong and Dr. Guevara were on maternity leave. We are glad to have them back on campus this fall.



Wynston Quah



Timothy Paul Guevara

Students Present Research at ACS Orlando

Nine of our students presented their research in the undergraduate poster session at the National American Chemical Society meeting in Orlando, FL, in March of 2019. The research was directed by Drs. Falcetta, Kriley, and Wong.

Three students, (Hannah Tack ('19 PHYS), Aidan Sutter ('19 BIOC), and Daniel Maienshein ('19 CHEM), presented posters on electron-molecule interactions.

Kelsey Aldrich ('19 CHEM) presented a poster on nanoparticles for photodegradation.

Lisa Ma ('19 CHEM) presented a poster about her work analyzing branched polyethylenimine polymers of varying molecular weights. Lisa and Dr. Wong are looking to see if there are correlations between structure, pH, and charge properties with the polymer's role in killing bacteria.

Isaac Williams ('19 CHEM) presented a poster about his work on the synthesis and characterization of samarium bipyridine complexes.

Sam Henson ('19 CHEM) and Ethan Conto ('19 CHEM) presented their work on the synthesis of resveratrol and quercetin derivatives for targeting T3HA cancer cells.

Katie Hammes ('19 CHEM) presented a poster describing her work towards the synthesis of quercetin and resveratrol derivatives targeting the cancer cell line T3PA.

Also, Daniel Maienshein won the Jeffrey Madura Outstanding Research Award for "an excellent undergraduate poster presentation in ACS COMP (computers in chemistry) division."

Finally, Dr. Falcetta gave an oral presentation titled, "Prediction and characterization of a non-valence temporary anion shape resonance for a model $(\text{H}_2\text{O})_4$ system."



Students presented their research at the ACS meeting in Orlando in March 2019. From left to right: Sam Henson (BIOC), Isaac Williams (CHEM), Kelsey Aldrich (CHEM), Katie Hammes (BIOC), Hannah Tack (PHYS), Lisa Ma (CHEM), Aidan Sutter (BIOC), Daniel Maienshein (CHEM), and Ethan Conto (BIOC)

Congratulations to our 1969 Chemistry Graduates on their 50th Year Reunion

We would like to honor the class of 1969 Chemistry graduates on their upcoming 50-year reunion. We reached out to this group of alumni to hear about what they have been up to since graduating from GCC, to learn about their contributions to society, and to learn how their time at GCC helped shape them. Below are some of their stories.

Members of the class of 1969: Mr. John Ballentine, Mr. William Blaine, Dr. Roger Grey, Mr. John Ide, Mr. Carl Kennedy, Mr. J. McFerron, Mr. Thomas Rea, Mrs. Susan (Sam) Vladuchick, Dr. John Shaner

Mr. Thomas Rea: “Thanks for the message regarding our upcoming 50th reunion. While I am indeed a member of the Class of 1969, I did not graduate as a Chemistry major. I originally declared as a Chemical Engineering major, switched to Chemistry, and then graduated as a Mathematics major. I'm retired now, but my career was in computer and information processing. With that in mind, I still enjoy the periodic newsletters from Dr. Augspurger.”

Dr. John Shaner: “A ‘Pre-Dental’ student at GCC with a Chem major, Dr. Naegele was instrumental in guiding me along my career path with excellent advice and his dry, tongue-in-check humor. In response to your request for career info, following graduation from GCC, I completed my dental degree at the University of Pittsburgh, entered the USAF Dental Corps to pay back AFROTC scholarships, and had a rewarding career in the USAF. I completed a two-year residency at University of Texas Houston Dental Branch and received an MS in Biomedical Science. My thesis compared various treatments of acidulated phosphofluoride and stannous fluoride in reducing the enamel solubility of human teeth. Following a 30-year career in the USAF, I was recruited to teach at Creighton University School of Dentistry in Omaha. I taught there for 18 years, retiring as the Department Chair of Diagnostic Science. I always felt that my chemistry education at GCC was top shelf and I relied on it for many aspects of my dental career, especially etiology and prevention of dental caries, pharmacology, dental materials, local anesthesia and parental sedation, drug abuse and especially as related to the methamphetamine problem. Thanks to the GCC Chemistry Department for my superb chemistry education, I was the first to publish several scientific papers on the etiology of dental caries associated with methamphetamine abuse debunking the street myth that it was due to the chemical agents used in meth production.”

Dr. Donald and Susan (Vladuchick '69) Sam: This mineral collection (pictured on right) has been given by Dr. Donald and Susan Sam in memory of Professor Carroll and Bertha (Buff) Haviland Egar.



Chemistry Faculty Member Takes Sabbatical

Dr. Timothy Homan had the privilege of taking a sabbatical during the fall of 2018 at the University of Wisconsin, in Madison. His wife, Dr. Kris Homan (Department of Psychology and Social Work), was also able to take a sabbatical at the same time and at the same institution.

Dr. Homan spent the fall semester with Professor Wieping Tang in the Department of Pharmaceutical Sciences. Professor Tang, a synthetic organic chemist, conducts research in the field of carbohydrate chemistry. Part of his work is focused on active pharmaceutical compounds isolated from bacteria that have sugar molecules attached to them. The sugars are difficult to isolate in useful quantities, and in many instances, a change in the structure of the sugar can have a significant impact on its efficacy. Devising



methods to synthesize these sugars and analogs is important if they are to be studied. There are two approaches taken; the one the Tang lab utilizes is referred to as the *de novo* approach (from the beginning) which starts with non-sugar compounds and builds the desired sugars from them. Dr. Homan worked on the synthesis of amino-deoxy sugars (many bacterial sugars have carbons without oxygen atoms bonded to them and/or have nitrogen atoms bonded to carbon in place of oxygen). One proposed strategy was the introduction of nitrogen via a C-H insertion reaction with a metallonitrene reagent. Dr.

Homan's lab work included the synthesis of the desired deoxy-sugar and a series of different methods to generate a metallonitrene to do the nitrogen C-H insertion reaction. Dr. Homan also helped write a review article in the journal *Carbohydrate Research* entitled "Recent Advances in Site Selective Functionalization of Carbohydrates Mediated by Organocatalysts."

Aside from working in the lab, the Homans spent time enjoying Madison by foot and bike, finding great restaurants, attending concerts, and more. They really enjoyed being able to walk to work every day and even participated in a bike tour of southwestern Wisconsin. Dr. Homan went into the sabbatical looking to get involved in a high-level synthetic research environment, to engage in a current project intellectually, and to get back into a research lab again. He had a wonderful experience in the Tang lab. Dr. Homan also enjoyed the opportunity to work with and get to know the international students in the lab. They are a talented and hard-working group. The students would take the Homans out to eat at their favorite Chinese restaurants and graciously order for them.



We are happy to have Dr. Homan back on campus and are glad he and Kris had such a great experience in Madison.