



## Chemistry Dept. Newsletter

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Welcome to the Chemistry Department's first newsletter. We hope you enjoy reading about the exciting things going on in the department. The department is on the move with new equipment exciting things going on.

## Faculty Focus

### Dr. Mathew Cranswick.

Dr. Matthew Cranswick joined the Chemistry Department in fall 2012 as the new inorganic chemistry faculty member, replacing Dr. Linda Wilkes who is now enjoying retirement. Dr. Cranswick earned his B.S. in chemistry at Oregon State University, his Ph.D. from the University of Arizona under Professors John H. Enemark and Dennis L. Lichtenberger, and did post-doctoral work as a NIH Ruth L. Kirchstein National Research Service Award recipient at the University of Minnesota – Twin Cities under Professor Lawrence Que, Jr. Dr. Cranswick also worked for three years in industry between his completing his undergraduate degree and beginning his graduate studies. He worked at the pharmaceutical company AVI BioPharma (now Sarepta Therapeutics) during his senior year, and shortly thereafter moved to Seattle and began working for Sienna Technologies in Woodinville, Washington developing refractory ceramic materials as catalyst supports for micro thrusters.

After joining the faculty at Colorado State University - Pueblo, Dr. Cranswick established his research laboratory with his soon-to-be Master's student Christi Vergunst to focus on bioinorganic-related chemistry. Christi began synthesizing tungsten complexes to model the active site of the tungsten containing enzyme, acetylene hydratase. Christi graduated with her Master's degree in the summer of 2014.

Since then, Dr. Cranswick's research program has expanded to investigating synthetic systems that model the W-containing nitrate reductase, Fe- and Co-nitrile hydrates, low-valent manganese complexes for small-molecule activation, and a departmental collaboration with Professors David L. Dillon and Mel R. Druelinger to study metal-tetrazine interactions and their use as (photo) catalysts for small-molecule activation.

While at CSU-Pueblo, Dr. Cranswick has enjoyed preparing chemical demonstrations for local schools and bringing his love of chemistry to younger generations. He has especially enjoyed working alongside his research students that range from a high-school ACS SEED student to soon-to-be graduating seniors. Introducing these students to chemistry research, new concepts, and new laboratory techniques has been the highlight of his academic career thus far. Dr. Cranswick really enjoys seeing students make the connection between the lecture materials they are learning in a class and how that applies to their research. This past spring, three research students had the opportunity to present two student posters at the spring ACS Meeting in Denver, gaining valuable experience in disseminating their work and interacting with other chemists.

Dr. Cranswick chose to study chemistry in college because he really enjoys learning about the world about him – plus, he was good at it in high school. However, chemistry at the college level would prove difficult and frustrating at times, but he persevered and wouldn't let difficult material keep him from learning and enjoying chemistry and its applications to our daily lives. Dr. Cranswick enjoys learning how our lives are affected by chemistry on a daily basis and helping students understand these interactions also.

## Chemistry Day 2015 at CSU—Pueblo

Our annual Chemistry day was held on Thursday, October 22, 2015 in conjunction with National Chemistry Week. We had 40 high school students join us for a great day of activities. Dr. Bonetti, Dr. Dillon, and Dr. Farrer each held lab sessions for the students in which they were able to do hands on lab experiments. Dr. Cranswick along with the Chemistry club on campus provide a great demonstration during lunch activities. Lunch was followed by our guest speaker for the day: Dr. Paul Hurtado from the University of Nevada Reno. The day was concluded with College of Science and Math Student Research poster presentations.



Students working in lab. Dr. Farrer explaining results

Dr. Bonetti (far right) with students and their results from their experiments

## Our Featured Alumni

**Where are they now:** One company, twice the successful CSU-Pueblo Chemistry graduates:

The Cotter Corporation at the Canyon City Uranium Mill (a former uranium mill going through decommissioning) employs two generations of CSU-Pueblo Chemistry graduates. Actually that is technically one University of Southern Colorado graduate and CSU-Pueblo graduate. Charles Mitchell Abbate (“Mitch”) graduated with a BS in Chemistry, minors in Math and Business, and a two year Chemical Engineering Technology degree in spring 1981. Mitch is the Laboratory Manager at Cotter Corporation and is responsible for all phases of laboratory analyses, data reporting, and laboratory training. Jacob Michael Mutz is a recent graduate of CSU-Pueblo completing his ACS Certified BS in Chemistry and minors in Mathematics and Biology in spring 2015. Jacob is the Laboratory Analyst working under Mitch’s direction. Together Mitch and Jacob analyze samples related to the clean-up process at the former mill as well as other radiochemical analyses for other projects in the Cotter Corporation.

When asked about their memories from there time at CSU-Pueblo/University of Southern Colorado, Mitch recalled, “My first day in general (chemistry) lab a fellow student asked what grade we would get if we blew up the lab. Our Professor said, ‘You don’t know enough to blow up the lab, so if you happen to acquire that knowledge while you are here then you would get an A. Assuming he was there to still give out grades.’” Thankfully, the building is still standing.

Jacob added, “I will always remember sitting in Dr. Druelinger’s office waiting for the barrage of puns to hit. I remember harassing Dr. Farrer every morning in Quantum Mechanics and talking shop with Dr. Kinney during instrumental lab. I remember all the nights that my lab partner, Travis Zuniga, and I spent working on lab reports fueled my Monster energy drinks. I’ll remember making stupid jokes with Dr. Lehmpuhl and disappointing Dr. Cranswick with my own rendition of chemistry puns. I have really fond memories of every professor and friend that I made along the way and am very thankful for all the time that I had to spend with them.” Jacob also noted that, “Perhaps the most

impactful moment for me was during the question portion of my senior seminar. After correctly answering some very difficult questions, I realized just how much I had learned in the preceding four years and how confident of a chemist I had become because of my experience in the Chemistry Department at CSU-Pueblo.”

Both Alums had some good advice for future graduates from CSU-Pueblo. “You will bite off more than you can chew at least once in your college experience. When that happens, it’s important to know that Denny’s is open 24/7, they have free Wi-Fi, unlimited coffee refills, and outlets at the booths (great place to pull an all-nighter). I would also stress that it is super important to love what you’re studying in college. If you hate doing it in school, you will hate doing it for a living, so don’t force yourself to like something you don’t.”-Jacob. Sage advice from a recent graduate. Mitch wanted future graduates to know, “You have a tremendous opportunity to learn from a very good school. I attended CSU in Ft. Collins and they are not hands on like the Pueblo



Jacob Mutz (left) and Mitch Abbate (right) in the lab at Cotter Corporation in Canyon City, CO

campus and you relate directly with your professor, not a student assistant. Learn everything you can from them.”

They may have graduated more than 30 years apart, but Mitch Abbate and Jacob Mutz demonstrate that a quality education in Chemistry is a lasting legacy at Colorado State University-Pueblo.

How you can help contribute to our on - going quest for excellence in what we do.