



Chemistry Department Newsletter

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Welcome to the Chemistry Department's spring semester newsletter. We hope you enjoy reading about the exciting things going on in the department. The department is on the move with new Title III Grant and other exciting things going on.

Alumni Spotlight

Mr. Pradeep Gautam

Chemistry: A World of Opportunities

Chemistry students at CSU-Pueblo take varied routes to reach our campus. However, there are probably few students who traveled further than Mr. Pradeep Gautam to be a chemistry student at CSU-Pueblo coming all the way from Nepal. Mr. Gautam initially came to CSU-Pueblo as a Degree Plus student in 2009 having already earned a Bachelor's degree in Nepal. After completing a few courses as a Degree Plus student Mr. Gautam enrolled as a graduate student in the Chemistry-MS program in fall 2011. Mr. Gautam worked in Dr. Chad Kinney's lab on his thesis research, and like many students working in Dr. Kinney's lab he studied the presence and fate of anthropogenic organic contaminants in the environment. Specifically his thesis research focused on the application of analytical methods to monitor the transport of antimicrobial agents in a regional stream. The title of his thesis is "Monitoring antimicrobials, triclosan and triclocarban, using active and passive sampling techniques in Fountain Creek and Arkansas River, CO" (<https://dspace.library.colostate.edu/handle/10217/70776>). His thesis research included both field and laboratory work. Mr. Gautam was a very motivated and productive student. The results of his thesis research were summarized and published in *Water Research* (Gautam, et al., 2014. *Water Research*, 48, 247-256). After successfully completing his Master's degree in 2012 Mr. Gautam took a position in an analytic lab with the food producer Bolthouse Farms in Bakersfield, CA. With Bolthouse Farms Mr. Gautam was responsible for heavy metal analysis of soils and food products as well as vitamin analysis in some products. Following his time at Bolthouse Farms, Mr. Gautam took a position as a Method Development Chemist with HUMCO Pharmaceutical in their R&D lab in Austin, TX. His responsibilities include among other things development of analytical methods for quantitative analysis of pharmaceutical active ingredients, authoring laboratory protocols and reports, and data review and analysis. Most recently his work at HUMCO Pharmaceutical has resulted in two publications in *International journal of pharmaceutical compounding* and *Pharmaceutical Analytical Chemistry*. Like many students before him, and hopefully many after him, Mr. Gautam has taken the knowledge gained as a chemistry student at CSU-Pueblo and gone on to be a very productive scientist. And even though we expect great things of our students it is always rewarding to learn of the good things they are doing.



Mr. Pradeep Gautam in a HUMCO Pharmaceutical laboratory

Earth Day 2017: The Chemistry Department Goes Green with Educational Fun!

Earth Day was celebrated a couple of days early this year on April 20th in the Chemistry Department. About 60 students from three area middle schools participated



Graduate Student Brent Schofield assists students at the "Properties of Water" Rotation.

in water and water quality.

Activities were intended to be fun and educational at the same time. And "hands-on" is the name of the game when it comes to Earth Day in the Chemistry Department. All of the activities gave students the opportunity for hands-on, fun science experiences.



Abby Davidson from the CBASE Science Learning Center leading the "Water Quality Rotation".

this year. Students came from Fowler Middle School, Heaton Middle School, and from Pueblo Arts Academy. Students participated in a rotation of activities centering around the theme of **WATER**. Activities focused on properties of water, reactions

And no day of science fun would be complete without some flashy chemistry demonstrations being put on during lunch. Dr. Matthew

Cranswick and students from the Chemistry Club entertained the visiting middle school students with science while the students enjoyed lunch provided by the Dean's office. The demonstrations were a hit with a certain "flare" all its own. Included among the demonstrations were exploding hydrogen balloons, exploding bubbles from electrolysis of water, and the snap, crackle, and pop of nitrogen triiodide. Perhaps you are detecting a theme.

When it was all said and done it appears that all involved (middle school students and teachers, as well as CSU-Pueblo students and faculty) had a good time celebrating Earth Day 2017 in the Chemistry Department. We will just have to wait to see what kind of fun Earth Day 2018 will bring.



Dr. Sandra Bonetti led students through a colorful exploration of the properties of water.



Students listen intently while participating in the "Reactions with Water" rotation being led by Dr. Rick Farrer.

CBASE Activities Hit Full Stride This Summer

The Communities to Build Active STEM Engagement (CBASE) is excited to kick off the first summer research with the faculty mentors, post-doc mentors, and research fellows and interns. The fellows and interns will immerse in a three day training that will range from doing community building activities such as outdoor ropes course, strengths based skill assessments, diversity and inclusion training, to how to become a better researcher.

As a collective research community varying from biology, chemistry and engineering backgrounds, twenty four students in total that consists of eight fellows and sixteen interns will all be working on a research project. The eight weeks of activities and research during the summer encourages fellows and interns to be ready to present

the results of their research at the Fall 2017 College of Science and



Mathematics Research Symposium as a paper or a poster. All work and no play is no fun. Enrichment opportunities such as picnics, field trips, and other social community building activities will be incorporated into the young researchers' busy schedules. Summer 2017 awaits emerging student researchers eager to maximize their exposure working closely with faculty mentors and post-docs. For more information visit the [CBASE website](#).

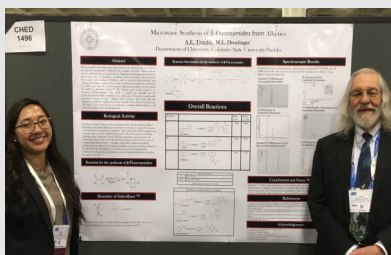
Internship: Colorado Bureau of Investigation

This past January, senior chemistry major Bobby Troutdt started as a forensic services intern with the Colorado Bureau of Investigation (CBI) in Pueblo, CO. The primary objective of the internship with CBI was to assist in case studies, results of

which could be of great interest to the forensic community. He was directly involved in projects involving drug analysis in toxicology and the processing of sexual assault kits in biological services. (Continued on pg. 3)

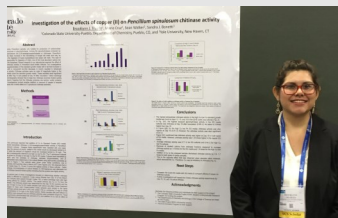
CSU-Pueblo at the ACS Meeting

Earlier this month (April 2-6) the American Chemical Society (ACS) held its spring meeting in San Francisco. The Chemistry Department at CSU Pueblo was well represented. Drs. Sandra Bonetti and Mel Druelinger participated in the meeting along with 4 student presenters and one staff/student presenter from the Department.



Andy Trimble with mentor Dr. Mel Druelinger

Student presenters included undergraduates Andrea (Andy) Trimble, Brooklynn Trujillo, and graduate students Travis Marshall and Brent Schofield. In addition to students from CSU-Pueblo, Mr. Jim Carsella, Stockroom Coordinator extraordinaire at CSU-Pueblo and current



Brooklynn Trujillo next to her research poster

Internship (continued from pg. 2)

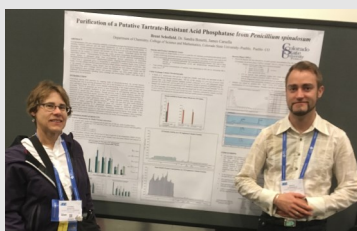
Both projects involved examining completed cases through the laboratory information management system in order to make determinations as to which cases qualified for the case studies.

Outside of his case studies, Bobby had the chance to shadow forensic scientists in the latent prints, drug chemistry, toxicology, and biological services disciplines. He learned about the handling of evidence, testing methods, and laboratory protocols for all of the disciplines at the Pueblo lab. He was able to learn which scientific skills learned throughout undergraduate study are utilized on a daily basis along with the day-to-day operations at a forensics lab.

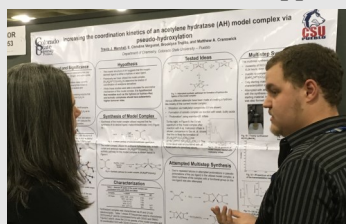
When reflecting on his internship, Bobby stated, "Perhaps my greatest take away from this opportunity was to be exposed

to all of the experienced forensic scientists and learn from them on a daily basis. I learned that what goes on at the lab is nothing like what is portrayed on TV shows like CSI. The experience that I have gained has been invaluable, and I've enjoyed every minute of it." Due to his internship experience, Bobby has decided he wants to pursue a career in either drug chemistry or toxicology upon graduating in May.

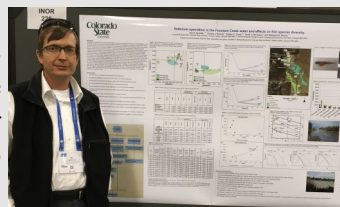
While research is a requirement of graduate students, it is also a valuable opportunity for undergraduate students to gain experience putting their education into practice tackling real-world research questions. Communicating the results of their research to their peers is a culmination of the research process.



Brent Schofield with his thesis advisor Dr. Sandra Bonetti



Travis Marshall discussing his research with an interested scientist



Jim Carsella next to his research poster representing a collaboration between CSU-Pueblo and CSU-Fort Collins

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Bobby and the personnel in the Forensic Services Section at the Pueblo CBI Lab



How can you help support excellence in education and research within the Chemistry Department?

If you are interested in supporting the Chemistry Department with a gift for program enhancement or student scholarships please call the CSU-Pueblo Foundation office at (719) 549-2380 or visit www.csupueblo.edu/foundation/ and simply specify that your gift is to support the Chemistry Department or Chemistry Student Scholarships.

Recently the Chemistry Department used some funds donated to the department through the CSU-Pueblo Foundation to assist students attend and present research at the National American Chemical Society Meeting in San Francisco. If you are interested in helping support student research or student travel to meetings to present the results of their research, please consider a donation to the Chemistry Club Scholarship fund through the CSU-Pueblo Foundation.

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