



Chemistry 2016

NEWS

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Letter from the Department Head

My first full year as Department Head, after Professor Keith Carron retired in May of 2015, has been a roller coaster ride. Construction delays associated with the ENZI STEM facility meant we could not move in until late in the fall 2015 semester (right before winter break). The third-floor of this 107,000 square foot facility located on the northwest corner of campus will be the new home for our general, organic and analytical teaching laboratories. We officially started teaching in ENZI in the spring 2016 semester by holding all our general chemistry laboratories in this new state-of-the-art building. Along with the new laboratory facilities with expanded sight lines, we purchased a variety of new instruments and equipment to better prepare our students for careers in science. Then this summer the organic labs moved to ENZI so that beginning fall 2016, all our freshman- and sophomore-level laboratories will be held in ENZI. This improvement in teaching laboratories has long been needed and we thank US Senator Michael Enzi for securing Abandoned Mine Land funds to construct the \$50 million building. This new building will invite our students to more fully engage in labs and hopefully spark a new culture for science loving students on campus.

As many of you are probably aware, the University of Wyoming is facing some real financial challenges due to the economic downturn of the state. In my spring meeting with A&S Dean Paula Lutz I was told that the operational budget for Chemistry would be cut by 10% (\$24K). Then, right as the spring semester was ending, Governor Mead met with the UW Board of Trustees and requested \$35M in additional cuts university wide (more than 10% of UW's state support!). In parallel with this



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budget crisis, UW brought on board the 26th president of UW Laurie Nichols. The reality of such large budget cuts is that they can only be achieved by reducing the UW salary pool. The uncertainty brought about by the budget crisis has really affected the moral of the university and I really hope we can weather this storm and come out the other side a stronger department. I have to admit that in certain moments I have my doubts, but I am working hard along with the faculty to make the necessary decisions to get us through this transitional period. In many ways I think some of the charm of UW will be lost in this process, but I also know that we have long prospered from some of the unique properties of Wyoming and that changes were inevitable. Don't get me wrong, UW is still a special place with many strong positives. A large part of my job is to be an advocate for our students and faculty. I want to constantly work to enable our faculty and students for success in an ever increasingly competitive global market.

Change is a constant in academics. While I am actively dealing with a lot of budget crisis issues, I am also helping plan for the future. One of the exciting areas where I see potential for improvement is our undergraduate teaching. With President Nichols UW will likely move to a decentralized budget model where schools and colleges will receive the tuition revenue they generate. To gain additional resources chemistry must increase student credit hours and our number of majors. I have therefore set a goal to increase student credit hours and the number of majors by 20% over the next 5 years. One way to do this is to change the way we teach undergraduates. Chemistry plans to implement a variety of new active learning pedagogies in our general chemistry and organic courses this coming year! In the summer of 2016 Professors Hoberg, Leonard, Hulley, and myself along with two chemistry graduate students (Morgan Balabanoff and Melissa Gelwicks) participated in the UW Science Initiative Summer Institute (SI)² on active learning. We visited the University of Minnesota (a leader in active learning) and participated in a grueling 5-day workshop. As part of (SI)² we have all agreed to implement (both small and large) pedagogical changes in the courses we teach over the next academic year aimed at increasing learning, engagement, and fun. Chemistry contributed the greatest number of participants in the inaugural (SI)² and I am truly proud of our faculty and students for taking a lead role in implementing new more effective teaching strategies in the STEM sciences at UW. We teach over 1000 students per semester in general chemistry alone and we need to do a better job educating them in chemistry, but also in striking the spark that brought many of us to careers in chemistry.

We were fortunate this year to orchestrate a successful faculty hire in the analytical division. Dr. Caleb Hill, currently a postdoctoral fellow at Texas A&M will be joining the chemistry faculty this fall. Dr. Hill is interested in the optical and electrochemical properties of single nanoparticles aimed at seeing how specific nano-structures are related to optical and electrochemical properties. Caleb and his wife Kristin Di Bona, who will be a postdoctoral fellow with David Fay in Molecular Biology, just recently had their second child named Felix. They have bought a house here in Laramie and plan on arriving sometime in early August.

We always welcome gifts from alumni and friends. During these tough budget times we rely more and more on gifts to keep the department moving forward. Your gifts go toward awards, awards luncheons, student travel funds, and helping students with financial needs. It is easy to help out at our website <http://www.uwyo.edu/chemistry/giving.html>

You can keep abreast of chemistry department events by visiting our website at <http://uwadmnweb.uwyo.edu/Chemistry/>. You might even recognize an old friend or two on our alumni page (started by Keith). Please send us your stories so that we can post them. I love hearing from alumni and friends about memories of UW and Laramie or what is currently going on in your lives. So please drop me an email and make us aware of your accomplishments!

Best Regards,

Dave

Faculty News



Carla Beckett

The past year was extremely busy for Professor Beckett. She began packing and preparing for the move to the ENZI STEM building starting in January 2015, as the labs were scheduled to move in the summer. A large amount of time was spent sorting, organizing, and getting ready for the move. In addition, Professor Beckett still taught one general chemistry course (CHEM 1020) and supervised the teaching assistants in the general chemistry courses.

The move was then delayed until November so the fall semester was spent in the old physical sciences building. The enrollment for General Chemistry I was increased by 100 seats and all the other courses were full as well. It was a busy semester as all anxiously awaited the move to the new building. In late November, THE MOVE happened and it has been well worth the wait!

The new building is absolutely amazing and everyone who gets to teach or work in the new labs and prep room love it! The new labs are beautiful with such luxuries as benchtop ventilation and windows in every lab. There are also built in vacuum lines and distilled water tapped in. The students and TA's alike are thoroughly enjoying the new building.



John Hoberg

This year, the Hoberg group consisted of graduate students Amanda Landis and Melissa Gelwicks, and undergraduate students Jordan Brophy, Larissa Siirila, and Mark Nelson. The group focused on nitrogen graphene and solar capture for high-driven catalysis. Melissa Gelwicks presented results at the San Diego for the National ACS meeting, and also received a WWISE travel award. Amanda Landis presented at the Denver ACS meeting. Past Hoberg group member, Alyssa Pearson, is now a faculty member at the University of Northern Colorado. This is Dr. Hoberg's twelfth year with the Chemistry Department, teaching Organic Chemistry at the undergraduate and graduate levels. He recently received a "Top Prof" award from the University of Wyoming Cap and Gown Chapter of Mortar Board. This honor society selects professors who have made a positive impact on student's lives at UW.

Dean Roddick



The Roddick group currently has four graduate students and an undergraduate working in the lab. Tamara Sibray (Ph.D.) will be defending her thesis this summer- she is planning to move out to the Seattle area. Suman Debnath (Ph.D., 5th year) and Phil Miller (Ph.D., 5th year) both presented their research at the San Diego National ACS Meeting this March. This past Fall Tanner Remick started as a joint Ph.D. student with the Hulley group. In alumni news, Brian Gruver (Ph.D. 2012) continues to accumulate broader responsibilities working for Koch AG & Energy Solutions LLC (Fort Dodge, IA)- see his "Alumni Corner" article to discover how a student can start out majoring in Animal Ecology, go off to do bear hunt outfitting in Idaho, and finally wind up with a Ph.D. in chemistry from Wyoming.

Last July Dean and Patricia traveled to Montreal Canada as part of a Canadian exchange travel grant arranged by my collaborator Davit Zagarian. Dean gave seminars at the University of Montreal and McGill University and got to see the International Fireworks Competition. All bone fide chemists love fireworks!



Edward Clennan

The Clennan group currently consists of two graduate students, Thomas Bakupog and Jacob Weber, and two undergraduates, Toby Petek and Brandon Fulcher. Xiaoping Zhang received his Ph.D. and left in October to take a postdoctoral appointment at Dartmouth with Professor Katherine A. Mirica. Thomas is currently writing up his dissertation and hopes to finish this semester with his Ph.D. The group is busy making new helicenes and studying the properties of embedded viologens. They gave a poster and an oral presentation of some of this work at the Pacifichem 2015 meeting in Hawaii during the week of December 15-20th.

Dr. Clennan is still a member of the Petroleum Research Foundation Advisory Board. The PRF Board meets twice a year. In October the Board met in Charleston South Carolina and will meet again in May in Chicago. Dr. Clennan is also still busy as the Editor of the Journal of Sulfur Chemistry. If you would like to volunteer as a reviewer, drop him a line!



Ginka Kubelka

Dr. Ginka Kubelka received her PhD at the University of Wyoming in May 2015. She has been very busy since joining the Chemistry Department as an APL/lab coordinator in fall 2015. During the fall semester, Dr. Kubelka taught Biological Chemistry and assisted Dr. Debashis Dutta by coordinating the Instrumental Analysis Lab. She also helped Dr. Jan Kubelka with the Physical Chemistry Lab.

Dr. Kubelka felt it was a great start into her new position, because she had wonderful students and everyone was very helpful whenever she needed advice. The spring semester brought up some challenges: the move to the new Enzi building! Next to teaching Intro to Organic Chemistry and assisting with the Physical Chemistry Lab, Dr. Kubelka was coordinating the Quantitative Analysis Lab that was taking place in the Enzi building. The department got four new instruments for the lab there: a UV-Vis spectrophotometer, a fluorometer, an ICP and a GC. This new lab is a great opportunity for students to be able to operate state of the art equipment, and hopefully benefit from it when applying for jobs! Overall, Dr. Kubelka really enjoyed her first year of teaching. Being not only a lecturer but also a lab coordinator was a way to combine two of her favorite things: interacting with people and figuring out instruments



Alexander Goroncy

The nuclear magnetic resonance (NMR) facility has been updated with the acquisition of three additional NMR spectrometers: Anasazi Eft-60 NMR Spectrometers. They will be used mainly for undergraduate teaching, starting in Fall 2016. The instruments are capable of performing proton, carbon, as well as multidimensional experiments that are useful for organic, analytical, and biological work. Suitable experiments for each are currently being tested and should delight the students.

The installations of the diffusion, imaging and solid-state NMR probes for the Bruker Avance III 300 wide-bore NMR spectrometers have been completed. Together with the high-resolution Bruker Avance III NMR 400 MHz and 600 NMR MHz instrument with liquid and solid-state capabilities and variable temperature control, these make the NMR facility at UW even more remarkable in its versatility. It is also especially suitable for the special Wyoming's strength in the primary energy sector (oil, coal, rocks), but certainly not limited to it. The facility attracts many users

within the department, the university, and beyond. I am happy to work with them.



Jing Zhou

This year, Dr. Jing Zhou's group continued the research effort on the growth of doped ceria thin films and the understanding of structure-reactivity relationships of ceria-supported Ni and Au nanoparticles. The group currently has Erik Peterson and Yunkai Zou. Erik is in his 3rd-year of the Ph. D. program. Jing took a sabbatical leave and visited Dr. Jose Rodriguez's research group at Brookhaven National Laboratory with Erik in the spring of 2015. Later, Erik spent nearly two months in the summer with Dr. Yingge Du for research at Pacific Northwest National Laboratory. Both trips were exciting and fruitful!

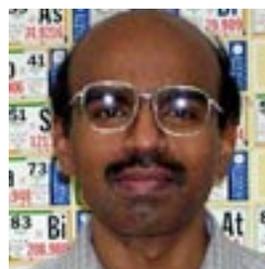
Yunkai, an exchange undergraduate student from Shanghai Normal University, joined the group in the fall of 2015. She is the recipient of UW CPAC Undergraduate Research Fellowship and is working on the *Growth and Characterization of Ce_{1-y}Zr_yO_x-supported Ni Nanoparticles as Steam Reforming of Ethanol Catalysts for Hydrogen Production* with Erik. The group said good bye to Yifei Shao and Rachel Huang last year. Yifei conducted one-semester undergraduate research and returned to China upon obtaining his B. S. degree in Chemistry. Rachel from Laramie High School competed at the Wyoming State Science Fair in the spring of 2015 and was the 3rd-place winner. The group results were presented at the 249th and 250th American Chemical Society Meetings in 2015 and were further reported in five peer-reviewed journal articles. The group is thankful for the financial support from NSF ([CHE1151846](#)) and Wyoming NASA EPSCoR (NNX13AB13A).



Jan Kubelka

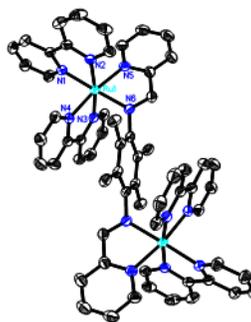
The Kubelka group has been involved in a number of research projects that range from the structure and function of biological molecules (peptides, proteins, enzymes) to uncovering the origins of

life (molecular predecessors of nucleic acids) to metal nanoparticles and semiconductor quantum dots. Many of the projects are done in collaboration, mainly with the group of Dr. Krisztina Varga in the Chemistry Department, and with Dr. Brian Francis from the Molecular Biology. In 2015 three students finished their PhDs (Dr. Benjamin Anderson, Dr. Ginka Kubelka and Dr. Jason Lai), bringing the current size of the group to zero. In the spring 2016 Dr. Kubelka has taken his Sabbatical leave in Europe (Germany and the Netherlands), where he has been working in the area of theoretical and computational chemistry and spectroscopy.



Navamoney Arulsamy Research Scientist

Arulsamy worked on two research projects. One aimed at the synthesis of the ruthenium complexes of 2,2'-bipyridyl and redox-active ligands, and the other his continuing project on propellants and explosives.



Three undergraduate students worked with him and obtained valuable results. The highlight of their research is the preparation of a new self-detonating explosive. This work and our progress in the ruthenium project were presented by two of the students at the Undergraduate Research Day. Our research is

supported by grants from the University's Faculty Grant-In Aid and the Wyoming NASA Space Grant Consortium. Arulsamy taught the Advanced Inorganic Chemistry Laboratory course (CHEM4100) in the fall semester. This laboratory course introduces synthetic and characterization techniques to undergraduate students. Arulsamy also manages the Bruker APEX2 X-ray diffractometer, Bruker EMX EPR Spectrometer and the Thermo LCQ ESI-MS Spectrometer. Last year, he trained and assisted students and researchers in the operation of the instruments.

He has established collaboration with researchers at the Idaho National Laboratory, Idaho Falls, ID. Arulsamy presented a chemistry demonstration to illustrate the *1937 Hindenburg Airship disaster* to the fifth and sixth graders of Slade Elementary in Laramie.

Patricia Goodson



This academic year, Patricia's teaching responsibilities focused on general chemistry (CHEM 1020) and organic chemistry (CHEM 2420). While it was a busy semester adapting course materials to a new textbook, she really

enjoying teaching organic chemistry I. It had been about 3 years since she last had the opportunity to cover those topics. Patricia is to interacting with a couple of student groups in the next few weeks. In late April, Jennifer Merriam's advanced high school chemistry class from Cheyenne came for an instrumentation field trip. Then, in early May, Dr. Ginka Kulbelka, graduate student Melissa Gelwicks, and I offered a workshop on "Turning Pennies into Gold" to groups of 5th and 6th



Bruce Parkinson

The current Parkinson group members are: Kevin Watkins, Brandon Durrant, Ted Kraus (grad students), Lenore Kubie, Peng Wang, Josh Stecher (post docs), Guobao Li, (visiting scientist), Qian Yang,

Zach Witten, Stephanie Callahan (undergrads). Fei Liu, the first Parkinson Group member to do her complete PhD work at UW, graduated this last fall and moved back to China to be near her family. Former post doc Laurie King is now doing an additional post doc at Stanford University. Meghan Kern who was also a post doc in the group is now working for e-Ink in the Boston area and Kasia Skorupska, a former visiting scientist is employed at the Fritz Huber Institute in Berlin. The group also had two sabbatical visitors in the last year, Steve Drew from Carleton College and Guru Khalsa from Thiel College. Over the past year, the group's research has focused on Solar

grade students as a part of UW's "Women in Science Conference."

Dr. Margaret Clennan (who is the coordinator for the undergraduate organic chemistry laboratories CHEM 2420 and 2440) devoted a large part of the past year packing, and moving, glassware and equipment in the two organic chemistry laboratories in the Physical Science building into three new laboratories in the STEM/ENZI facilities. This new facility has three times the number of hoods for the students providing them with plenty of space to carry out experiments. Two rooms designed to host instrumentation (three 60 MHz NMR's, two GC-Mass Spectrometers, and six FT-IR's) also reduce the crowding in the laboratories and create a less congested environment for the instruments and the computers associated with them. Both these features will provide the students with a much safer environment to learn organic laboratory manipulations. Work has also already started to modify and introduce new experiments that will use these facilities and the two new rooms adjacent to the laboratories that host a set of computers for molecular modeling calculations.

Energy conversion and storage, photochemical process on Mars and new 2D graphitic materials.

Professor Parkinson spent the first part of the year on sabbatical at Caltech and Lawrence Berkeley lab visiting the Joint Center for Artificial Photosynthesis. He then spent several months in Germany to receive his Humboldt Research Prize and to do collaborative research with German scientists in Darmstadt and Berlin.

The Solar Hydrogen Research Kit (SHARK project), a distributed science outreach program, progressed with valuable input from former post doc Laurie King and current postdoc Lenore Kubie to where it is now a more efficient and robust way for undergrads and high school students to help discover new materials for storing solar energy by producing hydrogen from water. This group has formed a company, SHARK Science Outreach LLC, to sell the kits to interested high school and undergraduate students. The group received a new \$300k grant to research a new method of solar energy storage from the National Science

Foundation and Bruce and Carrick Eggleston from Geology were awarded a \$415k grant from NASA to research photo electrochemical processes on the surface of Mars. He has continued funding of his grant from the Basic Energy Sciences Division of the DOE for \$200k per year for fundamental studies of photoinduced electron transfer at single crystal oxide surfaces.

Professor Parkinson and his group have published 10 papers in 2015 and so far in 2016. He is looking forward to spending another month in Germany this summer to continue collaborations with German scientists.



Brian Leonard

The Leonard group consists of graduate students: Sami Schmucker, Jimmy Thode and Daniel Harris, and

undergraduates: Ken Madsen, Chris Bammerlin, Britney Beck and Sean Kasprisin. The group's research has focused on synthesis and catalytic activity of metal carbide nanomaterials. Group member Ken Madsen traveled to San Diego for the National ACS meeting, and many group members received awards. Chris Bammerlin received the CPAC

Undergraduate Research Award, as well as the NASA Undergraduate Research Award. Brittny Beck received the EPSCOR Research Award, and Ken Madsen received both the Asplund Undergraduate Research Prize and the E.R. Schierz Scholarship in Chemical Sciences. Dr. Leonard received a Grant in Aid Award.

The group graduated two members this year, Yagya Regmi and Cheng Wan. Since graduating, Cheng is now and post doc at John Hopkins, and Yagya is a post doc at the University of Tennessee. Past group member Kyle Duffee is not attending graduate school at University of North Carolina. This is Dr. Leonard's sixth year with the Chemistry Department. This year, he taught Inorganic Chemistry and a graduate level Solid State Chemistry course. His accomplishments this year include publishing several papers and continuing his work towards tenure. He also became ACS Chair Elect.

Finally, Dr. Leonard and his wife, Beth, are excited to announce the birth of their daughter, Lillian Mae Leonard! Lillian was born on August 28th and has brought so much joy to the entire department.

Alumni Corner

Brian Gruver, Ph.D. 2012

My career has been more of a winding path than a straight line, but I have enjoyed every step along the road. I grew up in Iowa spending time enjoying outdoor activities and, as I was completing high school, I decided that I wanted a career working with wildlife and natural resources. I attended Iowa Central Community College taking general courses preparing for the Animal Ecology – Wildlife program at Iowa State University. While I was at Iowa Central, I took the chemistry courses required for the program at Iowa State and found that I really enjoyed them. I enjoyed them so much that Organic Chemistry II was the only free elective I took at Iowa Central that was not a requirement for the wildlife program at Iowa State.

I graduated with my Associate of Arts degree from Iowa Central and transferred to Iowa State, where I earned a Bachelor's of Science degree in the Animal Ecology – Wildlife major and minored in English. I had worked summers for the Iowa Department of Natural Resources at Dolliver State Park near my home and upon graduation I was fortunate enough to land a full time Conservation Technician job with the Grundy County Conservation Board. I worked for two years in Grundy County before I decided I wanted to live out west and enrolled in the Western Montana School for Guides. I had ridden horses and mules all my life and enjoyed hunting, but guide school taught me the skill of packing and I put it to good use with a job as a guide for Five Bears Outfitters, operating in the Clearwater National Forest in Idaho.

I greatly enjoyed my adventures packing mules and guiding bear and elk hunts for Five Bears. Since there is no electricity in a hunting camp fifteen miles from the nearest logging road, I spent a lot of my free time reading and I eventually started reading books deeply based in chemistry and physics. It soon became clear to me that I was not finished learning and, based on my experiences in chemistry at Iowa Central, I made the hard decision to move back to Iowa to enter the graduate program for chemistry at the University of Northern Iowa.

When I got to Northern Iowa I don't think I had ever heard the word "organometallic" but I soon began working in the lab of Dr. Martin Chin on NCN pincer platinum and iridium complexes and I greatly enjoyed the work. Dr. Chin is a woodworker and he used to say "there are chemists who build things and chemists who measure things." I was clearly a chemist who built things and enjoyed the synthesis of new complexes; stringing atoms together in ways that they had never been configured before fascinated me. I also enjoyed finding useful applications for the new complexes and studied their fluorescent properties in the lab of Dr. Jeff Elbert to determine their usefulness as organic light emitting diodes.

When I was ready to defend my thesis at UNI, I knew that I wanted to continue my study of organometallics in a doctorate program. Dr. Dean Roddick had given a seminar at UNI a couple of years before I got there and Dr. Chin told me I should consider The University of Wyoming. I visited several programs, but my visit to Wyoming made it very clear where I wanted to go and who I wanted to work with. Dr. Roddick seemed like a great guy and he was working on organometallic pincer complexes and studying their catalytic reactivity.

Dean was able to line up a summer stipend so that I could get to work right away and we never looked back. Dr. Jeramie Adams was working in Dean's lab as a post-doc at the time and set a great example of how to work efficiently in the lab. Dean, Jeramie, and I worked closely over the next couple of years and developed new group 8 metal PCP complexes that showed increased activity rates for hydrogen transfer catalysis relative to their group 9 and 10 counterparts. Catalyst lifetime was short, but the work was exciting enough to land us the cover and featured article of the primary journal in our field, *Organometallics*.

I greatly enjoyed my time at The University of Wyoming. The department was very supportive and I made many lifelong friends with whom I enjoyed going to football games at War Memorial and spending time in the Snowy Mountains. I learned to play the guitar and the banjo in my free time during those long Wyoming winters and have many good memories of Dean playing my National steel guitar at his annual Christmas party.

After my dissertation defense I accepted a job as the Lab Manager at Koch Fertilizer in my home town of Fort Dodge, Iowa in 2012. Every seminar talk I gave at UW began with a slide on the importance of hydrogen transfer reactions for industrial processes such as steam reforming of methane. Koch manufactures anhydrous ammonia by steam reforming methane and it is still absolutely fascinating to me to see hydrogen transfer reactions happening on such a massive scale every day. My first prelim at UW was on the water gas shift reaction, which just happens to be the second step in our process in manufacturing anhydrous ammonia. Looking back on it now, it seems my career was being developed for the ammonia industry long before I realized it.

Koch Fertilizer has been a great fit for me and I thoroughly enjoy my work. Koch encourages Principled Entrepreneurship, which ties in to the entrepreneurial spirit of synthetic chemistry, and has allowed me the freedom to experiment leading to increased safety for our analysts and improved control of product quality for our customers. I led a team to design an anhydrous ammonia sample station that performs the entire analysis in the field and eliminates analyst exposure to ammonia vapors, which is a significant safety advancement for our industry and was installed at all ammonia producing Koch Fertilizer plants last year. We have also developed new-to-industry online process applications for analytical instrumentation and have recently become the first to trend online urea ammonium nitrate solution results with near infrared spectroscopy, helping us deliver more consistent product to our customers.

Due to my background with organometallic catalysis and the success that I enjoyed through innovation projects, I have been presented multiple opportunities from Koch. About a year ago senior leadership in the company asked me to take on the role of Cross Site Catalyst Subject Matter Expert in addition to my responsibilities as Lab Manager. In that role I began supporting all Koch Fertilizer plants to better understand current catalytic performance and future opportunities. More recently, I moved out of the lab and accepted the role of Business Improvement and Innovation Leader. I will maintain my role as Cross Site Catalyst SME, but will have the opportunity to foster further innovation within our organization by helping other employees develop their ideas. I will also have increased leadership responsibilities and will be heavily involved with long term strategic planning for the plant.

I am very pleased with where my somewhat winding path has taken me and if I were to offer any advice to current students I would say: *don't be afraid to do what feels right. You never know where the road may take you.* Thank you to everyone who has helped me along my path, especially Dean Roddick and the University of Wyoming for cultivating my interest in catalysis.

2016 Undergraduate Awards

The following students were acknowledged at our Annual Undergraduate Awards Luncheon on April 20th, 2016.

Superior Student Award

Kaycee Fillmore
Alexander Sawaya
Jessica Hunt
Gemma Szott
Catherine Cloetta
Joshua Henry
Trey Herrera
Jacob Williams
Tyler Schriber
Jonathan Cauffman
Larissa Siirila
Jonathan Kephart
Brandon Wehrle
Marisa Moret
Toby Petek
McKenzie Brogan
Sophia Kwende- Indah Daisy
Jacob Schmied
Hannah Mills

Jim Schroeder
Sally Murray
Courtney Long
Courtney Colwell
Sierra Jech
Amanda Markus
Trae Travitz
Emily Woodard
Sean Kasprisin
Elayna Mahone
Rachael Coleman
Erin Fulton
Kenneth Madsen
Aron Jessien
Juliet Kiyai-Bartlett
Matthew Hurlock
Jencee Reardon
Manford Hur



Department of Chemistry Awards

CRC Press Freshman Chemistry
Achievement Award
Alexander Sawaya

2016 Undergraduate Award in
Analytical Chemistry
Joshua Henry

2016 Undergraduate Award in
Inorganic Chemistry
Jonathan Kephart



2016 Undergraduate Award in
Organic Chemistry
Catherine Cloetta

Board of Visitors Student
Service Award
Jonathan Kephart

Outstanding Freshman Award
Kaycee Fillmore

Outstanding Sophomore Award
Gemma Szott
Sophia Kwende Indah Daisy

Outstanding Junior Award
Toby Petek



Outstanding Senior Award
Jonathan Kephart

Howard H. Heady Scholarship in Chemistry
Jim Schroeder

Walter F. and Barry D. Gasdek
Scholarship
Jonathan Cauffman



Arthur Gray Janssen Award
Jordan Brophy

Asplund Academic Excellence Prize
Jacob Williams

Asplund Undergraduate
Research Prize
Kenneth Madsen

Raulins Undergraduate
Research Prize
Emily Woodard



Edgar Bailey Smith
Chemistry Scholarship
Trae Travitz

Clifford C. Hach Memorial Scholarship
Tyler Myers & Ashley Moody



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