MONTANA
STATE UNIVERSITY
Mountains & Minds

Montana State University Chemistry & Biochemistry News

Summer
2025

On the cover

Photo credit: Balyn Muffley. Bighorn sheep were spotted in Lamar Valley during the department's visit to Yellowstone National Park for our recruiting weekend. They were just one of many incredible wildlife sightings that recruits enjoyed throughout the trip.

Chemistry & Biochemistry Newsletter Team

Editors: Sharon Neufeldt, Doreen Brown

Reporters: Rory Benedict, Kendall Benton, Amethyst Demeritte, Alexander Flynn, Shanika Kothalawalage, Nate Larson, Balyn Muffley, Isaac Schomberg-Sanchez, Isabelle Schomberg-Sanchez, Samantha Walker, Ethan Wiita, M Wittkop

SHARE YOUR NEWS!

What do you want to see in the next issue of the newsletter? What did we miss in this issue? Share your news, somebody else's news, or your ideas with the newsletter team by reaching out to Sharon Neufeldt or Doreen Brown at **MSUChemNews@montana.edu**. Thank you!

Welcome from the Summer 2025 Newsletter Team

Dear MSU Chemistry and Biochemistry Community—

We are excited to share the Summer 2025 newsletter, which is full of exceptional achievements and stories.

Faculty highlights include Assoc. Prof. Sharon Neufeldt's Presidential Early Career Award for Scientists and Engineers, Asst. Prof. Martín Mosquera's Camille Dreyfus Teacher-Scholar Award, the promotion of Erik Grumstrup to full professor, and tenure and promotion of Michael Mock to associate professor. This issue also features an interview with newly promoted research professor, Garrett Moraski.

In our work-life balance article, authors Isaac and Isabelle Schomberg-Sanchez share their passion for gardening at the University Student Apartments. Be sure to check out the beautiful pictures of their garden and creative ways they store their harvest. Second year graduate student Balyn Muffley authored the outreach article focused on MSU's "Science Day and Night" and graduate students M Wittkop and Kendell Benton wrote a poignant and timely "Stand Up for Science" opinion piece. We are also excited to share interviews of recent alumni Raven Munson (B.S. in Chemistry, 2024) and Skyler Hollinbeck (Ph.D. in Chemistry, 2024), which include their perspectives as they transitioned from students to professionals.

In any given semester, when our department graduates seniors, masters, and doctoral students, the goodbyes are bittersweet. We congratulate and celebrate the Class of 2025 and wish everyone great success in the future.

Finally, we would like to extend a special thank you to Prof. Joan Broderick. Joan has been the department head for the past 7 years, and she is now passing the title and responsibilities to Prof. Rob Walker, as of July 1, 2025.

Joan was instrumental in leading the department during the unique and challenging times of COVID. She has been invaluable in helping negotiate the hiring of 5 junior faculty while navigating budget cuts at levels never experienced before by institutions. Under her leadership, we have remained one of the most productive departments on campus.

Thank you, Joan, for all your hard work and dedication to the department!

During the last faculty meeting of the semester, Dean William Thomas (CLS) stopped by to honor Joan for her service. He authored the following limerick, and we thought it was worthy to print!

Joan,

Thank you for leading this Chem and Biochem crowd

With your smile and joy unbowed.

Both the Wildcats and Bobcats are proud

Of you and the iron-sulfur interactions you found.

An Academy member,

With an h-index north of 50.

Your college is grateful, and your future looks nifty.

We look forward to officially welcoming Prof. Walker as department head in the next issue of this newsletter. In the meantime, if you have any information to share please reach out to us at msuchemnews@montana.edu

Have a great summer!

The Summer 2025 Newsletter Team

FACULTY NEWS

Assistant Professor Christopher Lemon Awarded Prestigious NIH MIRA Grant

By Ethan Wiita

Assistant Professor Christopher Lemon was awarded the National Institute of Health's (NIH) Maximizing Investigators' Research Award (MIRA or R35) for early-stage investigators in January 2025. Lemon is entering his fourth year at MSU and has an interdisciplinary research lab integrating protein biochemistry and synthetic inorganic chemistry. Projects focus on the design of novel fluorescent proteins and dyes for biomedical imaging and sensing, as well as the synthesis of small molecule protein active site mimics and artificial metalloenzymes for alkane oxidation. This NIH award will fund Lemon's research dedicated to the goal of designing fluorescent metabolite sensors for the early detection of disease by providing the groundwork for biosensors amenable for *in vivo* applications.

With an expertise in heme proteins, Lemon seeks to develop designer heme proteins with novel functionality for biomedical imaging and sensing. This goal is achieved through the incorporation of synthetic heme analogs with desired chemical properties into a protein scaffold. Much of the current research in the Lemon lab focuses on designing BODIPY-based (boron dipyrromethene) dyes and red fluorescent proteins (RFPs) for the construction of two-color sensors that emit red and near-infrared light. Tissue is transparent to these wavelengths, which allows for these sensors to efficiently function in vivo for high-resolution deep tissue imaging. These sensors will help to better understand the metabolic changes of diseases and potentially delineate cancer stages by quantifying key metabolites that are associated with these cancers. For instance, most diseases display hallmark changes in metabolism, but much of the understanding is derived from indirect methods, such as gene transcription. Lemon's research will provide direct in vivo quantification of these metabolic changes. Notably, dysregulation of glutamine metabolism or "glutamine addiction" is a characteristic irregularity observed in various cancers such as pancreatic ductal adenocarcinoma (PDA), which has a dismal prognosis due to its late-stage detection. Lemon's metabolite sensors will provide a high-resolution and reliable method to study the biochemistry of disease progression at a molecular level, beginning by studying intracellular glutamine concentrations.

The initial research questions Lemon seeks to answer are: What is the intracellular glutamine concentration? Do glutamine concentrations change as the disease progresses? Lemon says, "This sensor design strategy will be a generalizable platform that can be extended to a wide range of metabolites beyond glutamine." This new molecular insight will ultimately provide researchers with the answers to fundamental biochemical questions of disease progression and potentially develop clinical assays for early detection. To learn more about the Lemon Lab, visit https://www.lemonchemistry.org.

Lemon Lab

Associate Professor Sharon Neufeldt Receives PECASE Award

By Dr. Nathaniel Larson

Associate Professor Sharon R. Neufeldt, an organic chemistry faculty member at Montana State University and the founder of this newsletter, has been honored by the Biden administration with the Presidential Early Career Award for Scientists and Engineers (PECASE)—the highest recognition bestowed by the U.S. government on early-career researchers. Her lab's research largely centers on investigating selective palladium-catalyzed cross-coupling reactions with a particular emphasis on the selectivity-determining step of oxidative addition. This work has not only advanced fundamental understanding in the field but also inspired new strategies for achieving unconventional selectivity in the construction of high value small molecules.

Neufeldt is one of only five MSU researchers to ever receive this prestigious award, joining a distinguished group of researchers from around the country that includes her own graduate advisor, Prof. Melanie Sanford (University of Michigan, 2006), and fellow MSU Chemistry and Biochemistry faculty member Prof. Erik Grumstrup (2017). PECASE recipients are nominated by federal funding agencies such as the National Science Foundation in recognition of their outstanding research, leadership, and potential to advance science and benefit society.

Reflecting on the honor, Neufeldt acknowledged the broader challenges facing scientific research in the country today but chose to focus on the bright spots—especially the influential role of several former students whose work helped shape the research that led to her nomination. In particular, Dr. Emily Elias (PhD from MSU, 2021) contributed significantly to the direction of the lab's research through her discovery of new systems for chemodivergent Pd-catalyzed cross-couplings of chloroaryl triflates. Other instrumental contributors include Dr. Emily Entz (BS from MSU, 2019; MD from WWAMI, 2024), Dr. Leidy Hooker (BS from MSU, 2019; PhD from Colorado State, 2024), and Dr. John Russell (PhD from MSU, 2022) for their work on the development of C–O selective Ni-catalyzed cross-couplings of chloroaryl tosylates.

Neufeldt's dedication extends beyond research– to her students and the broader university community. Her commitment to teaching, mentorship, and academic excellence was recognized with the 2025 Fox Faculty Award, which honors MSU faculty who demonstrate outstanding achievement across teaching, research, scholarship, creativity, and mentorship. This award reflects her deep investment in cultivating a high-achieving and supportive academic environment, both in and out of the lab.

Looking ahead, Neufeldt plans to continue elevating the student experience by spending part of her upcoming semester-long sabbatical developing a series of animated videos that illustrate fundamental organic chemistry transformations. These videos will help make complex concepts more accessible and engaging for learners.

To learn more about the research, members, and accomplishments in the Neufeldt lab visit the research website at https://neufeldt-chemistry.com/

Neufeldt Lab

Assistant Professor Martín Mosquera Receives Camille Dreyfus Teacher-Scholar Award

Assistant Professor Martin Mosquera was honored with a 2025 Camille Dreyfus Teacher-Scholar Award from the Camille and Henry Dreyfus Foundation, announced in May 2025. Mosquera was nominated by Department Head Joan Broderick and was one of only 19 faculty nationwide to receive this prestigious award. The honor comes with a $100,000 research grant. More details about Mosquera's award will be included in the next issue of this newsletter, but for now you can read the MSU press release by clicking this link or using the QR code.

PROMOTED TO FULL PROFESSOR

Erik Grumstrup

Professor Erik Grumstrup is a materials chemist interested in elucidating structure-function relationships in heterogeneous systems using various nonlinear microscopies and ultrafast laser spectroscopies. His lab specializes in building sophisticated optical systems with a high degree of temporal, spatial, and spectral tunability to interrogate the optical, chemical, and electronic properties of complex material systems. This work informs future endeavors in designing next-generation materials for optoelectronic devices, green photocatalysis, and advanced solar energy schemes. Grumstrup was the first professor hired for the Materials Science Graduate Program in 2014. He teaches graduate classes in both chemistry and materials science and has taught several undergraduate classes in general chemistry, analytical, and physical chemistry. Grumstrup has been the recipient of several prestigious national awards including a Department of Energy Early Career Award, a Beckman Early Investigator Award and a Presidential Early Career Award for Scientists and Engineers. At MSU, Grumstrup has been awarded an Outstanding Teaching Award for Teaching Excellence in the Classroom and Laboratory and the James and Mary Ross Provost's Award in Excellence.

PROMOTED TO ASSOCIATE PROFESSOR WITH TENURE

Michael Mock

Associate Professor Michael Mock is an inorganic chemist whose research focuses on understanding reactivity of small molecules such as N2, H2, NH3, and CO2 with transition metal complexes. His lab is developing molecular catalysts for nitrogen fixation and NH3 oxidation. Mock's research is broadly aimed at developing energy applications that are environmentally friendly and sustainable. He came to MSU in 2018 after 10 years as a staff member in the Catalysis Science Group at Pacific Northwest National Laboratory in Richland, WA. He quickly established a research group comprising both undergraduate and graduate students. In the classroom, Mike teaches undergraduates in General College Chemistry (I), Honors General Chemistry (I), and an advanced synthetic laboratory techniques class in Inorganic Chemistry. He has also taught graduate classes in Advanced Inorganic Chemistry. Mike received a College of Letters and Science Outstanding Teaching Award and is the faculty advisor for the Department's Undergraduate Chemistry Society. Mock and his wife, Dr. Molly O'Hagan (a teaching professor in the department), regularly plan STEM community outreach events in the Bozeman elementary schools.

RESEARCH NEWS

Department Statistics at a Glance

numbers represent the time frame of January – June 2025

23
Publications
authored by members of the department

~27+
Student Coauthors
from our department, including post-doctoral scholars

5
New Grants
awarded to faculty members in the department

48
Active Grants
with departmental faculty as PI or Co-PI

$30.1M
Current Funding
research dollars associated with active grants

RECENT PUBLICATION

Cracking the Code of Hepatitis B: MSU-Led Research Sheds Light on How Small Molecules Disrupt Viral Assembly

By Shanika Kothalawalage

Ravi Kant, an MSU alumnus and former member of the Bothner lab, is the lead author of a recent study featured in *JACS* titled "Small Molecule Assembly Agonist Alters the Dynamics of Hepatitis B Virus Core Protein Dimer and Capsid," which provides new insights into Hepatitis B virus (HBV) assembly. The research was published six years after Kant's graduation. His work explores how small molecules influence the assembly of the HBV capsid—the protective shell surrounding the virus's genetic material—marking a breakthrough that could guide the development of future antiviral strategies. This study builds upon a sustained collaboration between Professor Brian Bothner (MSU) and Professor Adam Zlotnick (Indiana University) that began in 2004. The project builds on work initially conducted by Kant during his graduate studies at MSU. Years later, when Kant and Bothner revisited the data, they recognized its strong potential, leading to the development of this study.

To investigate how a class of compounds known as capsid assembly modulators (CAMs) influence the HBV core protein, the primary structural element of the viral capsid, the researchers employed hydrogen-deuterium exchange mass spectrometry (HDX-MS).

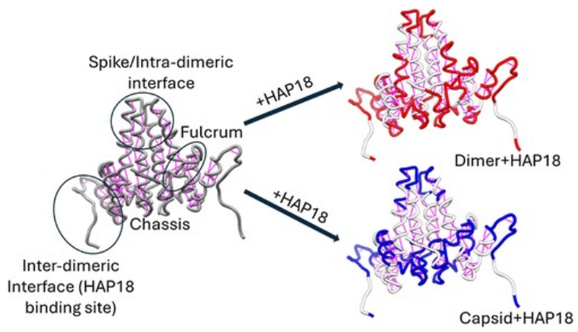
The data showed that one such CAM molecule, HAP18, associates with the virus's core protein in two distinct ways. If HAP18 binds to free protein dimers (the building blocks of the capsid), it increases structural flexibility by disrupting hydrogen bonds, making them more dynamic thereby destabilizing the protein. In contrast, when the same molecule interacts with fully assembled capsids, it produces the opposite effect by enhancing structural stability and reducing movement, likely through the reinforcement of hydrogen bonding networks. The way that HAP18 associates with capsid proteins demonstrates the phenomenon of allostery, where a molecule binding at one site causes changes at distant parts of the protein.

This research expands beyond structural biology; it has real-world implications. Certain CAMs like HAP18 are now in clinical trials due to their potential to "misdirect" viral assembly and prevent HBV replication. Understanding how these molecules work at the atomic level will help improve their design and effectiveness in combating the virus. The paper highlights the importance of combining structural and biochemical methods to gain a deeper understanding of complex viral processes.

Beyond this study, Kant's time at MSU was defined by his fearless approach to scientific challenges. He was the first in the Bothner lab to attempt HDX-MS on large CRISPR complexes, such as the Cascade system, in collaboration with the Wiedenheft lab. This system includes six different proteins and 11 subunits, making it a complex puzzle to map thousands of amino acids. The project was time-consuming and technically demanding, yet it laid the groundwork for future research in the lab.

After earning his PhD, Kant pursued a postdoctoral fellowship at Washington University in St. Louis with Dr. Michael Gross. Kant is now an assistant professor at Guru Gobind Singh Indraprastha University in New Delhi. This publication highlights the lasting impact of Kant's graduate research and the strength of cross-institutional and interdisciplinary collaborations in advancing research.

link to publication



RESEARCHER SPOTLIGHT

Garrett Moraski Promoted to Research Professor

By Amethyst Demeritte

"Don't just look for a road map – be engaged and be part of it." That's the philosophy that has guided Research Professor Garrett Moraski throughout a remarkable career that spans more than two decades across industry, nonprofit research, academia, and even drug discovery work with a law firm. Today, we are proud to celebrate his promotion to Research Professor at Montana State University – a milestone earned not by following a traditional path, but by helping shape it.

Raised in a small town with big dreams of becoming a scientist—though uncertain of what kind—Moraski credits his older siblings for blazing a trail that pushed him to keep pace and move forward. It was during his first organic chemistry course at the University of Notre Dame that his path became clear. "I fell in love with carbonyls, nucleophiles and turning negatives into positives," he recalls, inspired by the teaching of Professor Marvin Miller.

From that spark, Moraski went on to make an indelible mark in medicinal chemistry and drug discovery. He has "run the corporate gauntlet," working at Pfizer, Array BioPharma, and Thios Pharmaceuticals, contributing to oncology pipelines and developing novel inhibitors of the sulfur transferase pathway. Before the age of 40, he had already developed treatments that continue to improve countless lives. One such drug is the kinase inhibitor Mektovi (binimetinib), used in combination with encorafenib, to inhibit cell proliferation via MAP2K.

Yet, it was a return to his roots at Notre Dame that marked a profound turning point. Rejoining his alma mater as a research scientist and lab manager, he helped lead *Mycobacterium tuberculosis* projects and played key roles on NIH, NSF and DoD funded programs. That work yielded numerous publications, patents and licensed technologies, reinforcing his passion for impactful chemistry and mentorships. Building on this momentum and looking to broaden his impact beyond academia, Moraski took a small venture into the nonprofit sector.

At SRI International, a nonprofit research institute, he embraced the challenge of both internal innovation and externally funded discovery – experiences that would further prepare him for academic independence. When the opportunity arose at Montana State University (MSU), he made the leap once again, this time to a new chapter as a research scientist developing his own scientific vision.

Now, Moraski leads a lab focused on small molecule antibacterial agent discovery to combat drug-resistant pathogens, including promising advances in the fight against *M. tuberculosis*. His recent publication explores the development of novel antibiotics that simultaneously inhibit dihydrofolate reductase (DHFR) and disrupt bacterial membranes. By modifying the cycloguanil scaffold, new compounds were created with activity against *M. tuberculosis* and *Pseudomonas aeruginosa*, as confirmed through X-ray crystallography and in vitro assays. This dual-action approach offers a promising strategy to combat antibiotic resistance by targeting bacteria through multiple mechanisms.

He credits his smooth transition into academia to the strong mentorship he received at Notre Dame, which helped him navigate grants, build collaborations, and understand the inner workings of a university. "Most people step into academia and never leave – But I've seen a lot more," he says. "Industry taught me how to operate efficiently, and academia taught me how to integrate science into every part of life. It's not unusual to be thinking about experiments while taking the kids to taekwondo or updating notebooks at midnight."

Though he could have kept his head down and focused solely on his work, Moraski chose a different path – one that emphasized mentorship, community, and saying yes to opportunity. Encouraged by Dr. Mary Cloninger to take on mentoring students, he saw the chance to give back. "I want people to grow and evolve in their lives and careers, even if it takes them elsewhere. It's all about the journey, and I'm glad I get to be a part of people's journey." So far, at MSU, Moraski has mentored over 15 students (graduate and undergraduate).

His promotion was not something he chased, but something he earned by doing the work first. "A lot of people get promoted and fill the box. I filled the box and then got promoted," he says with a smile. His colleagues saw the ethics, legacy and impact behind his work – leading to a rare direct promotion to Research Professor, bypassing the traditional assistant and associate ranks.

Above all, Moraski brings a grounded sense of humility and gratitude to MSU. "The kindness and consideration here are real. Sometimes people see more for me than I see for myself. That kind of support makes all the difference."

His message to aspiring scientists and students is simple, but profound: "Stay motivated and go for things. If you're not in the place to do what you want – move and plant your flag when it feels right. Life is an adventure, and even though time only moves in one direction, it's okay to hit the reset button and bring something new to wherever you are."

Congratulations Garrett Moraski on this well-earned and deeply meaningful promotion.

link to recent publication

TEACHING AND COMMUNITY ENGAGEMENT

Science Day/Night at MSU

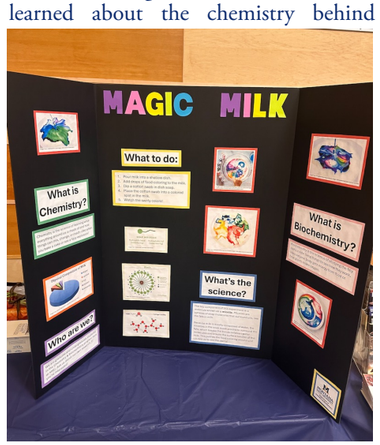
By Balyn Muffley

First year graduate students Balyn Muffley, Gabe Gracza, Sal Martoglio, and Tagert Mueller, joined by senior undergraduate student Jared Green, hosted the Chemistry & Biochemistry booth "Magic Milk" at the Montana State University Science Day and Science Night on February 6th.

Organized by MSU Academic Technology & Outreach, the MSU Science Day and Night featured numerous science, technology, engineering, and mathematics (STEM) based activities in a free-flowing, festival-like atmosphere. Students were able to hop from booth to booth to engage in various demonstrations and hands-on experiments hosted by local businesses, clubs, and departments from MSU.

The MSU Science Day hosted 223 local fourth and fifth grade students as a school day field trip. Later in the evening, the MSU Science Night welcomed another 203 members of the community, including kids of all ages and parents. Having a huge passion for STEM outreach, Muffley jumped on the opportunity of planning and hosting a booth for the Chemistry & Biochemistry department, and Gracza, Martoglio, Mueller, and Green volunteered their time in running the activity, Magic Milk.

At the Magic Milk booth, visitors learned about the chemistry behind dish soap in a colorful and seemingly magical way. The booth hosts explained the molecular composition of milk and soap molecules while setting up the hands-on demonstration for each visitor. After pouring a small amount of whole milk in the bottom of a paper plate, the hosts had each visitor pick which color(s) of food coloring they wanted to add to their magic milk, which was explained to them as just a way to visualize the fun chemistry that was about to take place. Then, each visitor was prompted to formulate a hypothesis, like every good scientist does, about what they thought would happen when they touched a cotton swab dipped in dish soap to a drop of food coloring in the dish of whole milk. After talking about their hypothesis, the visitor was instructed to perform their experiment: dip the cotton swab in some dish soap and touch it to a colored dot in the whole milk.



The Magic Milk poster.

And then the magic happened.

Colorful explosions shot around the dish of milk as the soap molecules were orienting themselves in an energetically favorable manner: the hydrophobic tails positioning themselves in spheres (known as micelles) around the fat molecules in the milk.

The dramatic, tie-dye-like explosions of color sparked a huge amount of joy and amazement in the students (and parents) visiting the booth. Perhaps the best reaction was from a fifth-grader performing the experiment with Gracza, as he yelled "HOLY SMOKES!" in reaction to his Magic Milk.

By the end of the night, the booth hosts had their hearts filled with joy from spreading awe in science to the community and their hands completely dyed with food coloring.

When asked to comment on his experience at the MSU Science Night, Martoglio reflected that "MSU Science Night offered me a rare opportunity to connect with Bozeman residents and the future generation of scientists." He explained that "The children who came to our table were interested and inquisitive, happy not just to watch our prepared reaction but to learn the science behind it. It's certain that some of these kids will make great leaps forward in STEM, if only they're exposed to topics such as chemistry." He concluded that "Science Night was, for me, a valuable platform to keep young people excited about science and engaged with the world around them."

Gracza, Muffley, and Martoglio explain the Magic Milk experiment to elementary school students.

Visit the MSU Science Day/Night next February to see the Magic Milk booth in action once again. Contact Balyn Muffley to learn more or to be involved with the booth next year!


Hearts filled with joy and fingers full of dye.

OPINION

Stand up for Science Rally

By M Wittkop and Kendall Benton

On Friday, March 7th, 250-300 students, faculty, staff, and community members gathered outside Montana Hall to protest the distrust in science and its defunding and weaponization by the federal government. Hundreds of protests occurred worldwide, including one that drew over 5,000 people to the Lincoln Memorial in Washington, D.C. The demonstrations were sparked by the Trump Administration and Elon Musk's Department of Government Efficiency (DOGE) freezing or cancelling scientific grants and censoring proposals, prompting both researchers and citizens to voice their opposition. The US is under threat of seeing the largest cut to science and biomedical and technology research budgets in history. For example, the proposals by the Trump administration would decrease the budget of the National Institutes of Health by 40% and that of the National Science Foundation by 56%. Assoc. Prof. Roland Hatzenpichler says "This would be the greatest gift to its global competitors the U.S. could give."

MSU's Stand Up for Science (SUFS) rally was organized by Hatzenpichler, whose efforts were made as a private citizen and not as a representative of MSU. "The whole point is to bring awareness to the fact that there are severe threats to science and technology in the United States," Hatzenpichler told local TV station KBZK during the rally. His speech highlighted the devastating impact of rollbacks to science funding at MSU, in Bozeman, greater Montana, and beyond: "For every dollar that the National Institutes of Health invests in research in Montana specifically, there is a return on investment of 2.24 dollars. It makes zero sense to cut that if you have a 224% return on investment."

Following Hatzenpichler, other activists discussed additional consequences of these cuts—the loss of graduate students and their funding support, targeted attacks on marginalized groups and their research, elimination of climate research, and job losses. Speakers urged attendees to contact their representatives and elected officials, while suggesting ways to engage in local political action.

Some CBB graduate students who attended the rally reported feeling inspired and have increased their political engagement. "The SUFS rally showed me that although I can't directly impact the laws being made, I can do other things. I had a conversation with my parents, who are very conservative, about how the censorship of science and information goes against their big government ideals. I also talked to them about how it could affect my future career, and they believe I am doing good work. I have started calling my representatives and attended other rallies and protests to make my voice heard," says graduate student Kendall Benton.

Here in the CBB, faculty have expressed concerns about the current political climate's impact on science. "Diversity is on a banned list of words that can't be used in scientific proposals. Biodiversity is a common research area that has nothing to do with DEI (although DEI is a good thing) and is quite important to understand so we can be good stewards of our environment," says an anonymous source. Across the country, hundreds of research grants unrelated to DEI initiatives have been cancelled or frozen simply for containing flagged words like 'women' and 'diversity'.

These attacks on science have also created additional stress for our undergraduate students. A senior in MSU's chemistry program had her graduate school acceptance to a Midwest university rescinded after the program lost funding. Many universities have frozen or limited graduate admissions for similar reasons.

CBB's graduate students worry about their current and future careers. "I'm looking into transferring to an international university to finish grad school, because I am worried about the future of this country and the scientific institution. I don't want to be complicit. America is going to drive its best scientists out of the country," says an anonymous source. Though the US has led the world in science and innovation for decades, this progress is now threatened by its own leadership.

Students and faculty have also voiced concern about other changes introduced by the new presidential administration. Rowan Edwards says "Overall, the current political climate is terrifying, and current policies are headed in a direction that I believe threatens basic human rights, and the constitutional rights of health, happiness, and liberty of American citizens and residents." Benton adds, "A true leader should consider the betterment of his people, not fill his pockets and promoting xenophobic, racist ideals to control the masses." With ongoing mass deportation and detention of non-citizens (with remarks of deporting "homegrown criminals" next), erasure of people of color and LGBTQ+ history, science censorship, attempts to end birthright citizenship, threats to voting rights with the SAVE Act, and President Trump's attempts to extend his presidency beyond the two-term limit, many have noted parallels to the rise of past fascist regimes.

Marginalized populations face additional challenges. Three MSU students—including two graduate students, though none from chemistry—have had their student visas revoked. While MSU and the ACLU of Montana are supporting these students, such support should not be necessary. Transgender and gender non-conforming students must navigate shifting federal and state policies regarding their IDs and bathroom use. Students of color face increased discrimination and systemic violence. Rising inflation, expected to worsen with new tariffs, disproportionately affects those from low-income backgrounds.

While we gathered on March 7th to stand up for science, our protest encompassed much more. We stood in solidarity with those who have lost their jobs to DOGE cuts, had their visas revoked, their funding cut, and their support withdrawn. Together, we channeled our fear, anger, and frustration into action. Audrey Mosher says, "To summarize my current sentiment I'd like to cheesily quote the Lorax—'unless someone like you cares a whole awful lot, nothing is going to get better. It's not."

You can reach out to your representatives and elected officials in many ways—a speaker at the rally suggested 5calls.org to get started, but you can also look at the ACS Advocacy page (https://www.acs.org/policy.html) or the APS Advocacy and Policy page (https://www.aps.org/initiatives/advocate-amplify/policy).

5calls ACS Advocacy APS Advocacy

WORK-LIFE BALANCE

Living in Bozeman offers extraordinary opportunities for activities outside of the lab. In this "Work-Life Balance" series, we will be highlighting extracurriculars of some of our students and faculty. In this issue, Isaac and Isabelle Schomberg-Sanchez share their experience and advice for using community gardens for fun and food.

Community Gardens

By Isaac and Isabelle Schomberg-Sanchez

Imagine cooking dinner in April and using the potatoes and onions that you harvested last October to make a delicious and hearty meal. In the fall of 2024, we harvested potatoes, onions, basil, squash, and tomatoes that lasted into this year (2025), and we produced other, more perishable items, that lasted well into the winter. We have accomplished all of this while living in a small apartment with limited storage. By using the MSU garden plots for a small fee, anyone can grow your own food for the year. We have been using the garden plots since 2022 and have become more efficient at growing and producing food for ourselves.

Part of our 2022 garden plot.

Gardening Background

My name is Isabelle, and I grew up gardening. My family lives in the woods of northern Minnesota. My childhood was about working and playing outside, and I rarely spent a free day indoors. A big part of my outdoor experience was gardening. My father's family are gardeners, and I learned about gardening from him. However, as a kid, I regret not appreciating the simple beauty that was involved in growing and caring for plants that ultimately became a major food source for our family. The tasks involved in gardening felt like a lot of hard work! However, I look back on those memories with a deep fondness. I am glad my parents didn't give in to my complaining and they continued to create learning opportunities for me. It is because of those experiences growing up that I am now knowledgeable and capable of growing and preserving my own food. Moving away from Minnesota made me realize how I missed working outdoors and getting my hands dirty. I felt disconnected from the earth and my family, and I wanted to do something to bridge that gap. When I realized that MSU had community garden plots on campus, I immediately knew this would be a lifeline to feel connected again.

Squash stored in a free shoe rack. Use what you have!

My name is Isaac, and if you are like me, you grew up in a family that had very little gardening experience. Vegetables came from the grocery store, and there was no connection to growing the food. I started off quite reluctant to buy a garden plot due to my lack of familiarity with gardening. I thought this would be another responsibility to tend to after spending long hours at school. However, I soon realized that I deeply enjoyed caring for the garden after a long day in the lab. This outlet helps me turn my brain off and allows me to focus on something that has long-term benefits. It is also incredibly rewarding to watch your plants grow and to appreciate the benefits of hard work. Even though I started with very little knowledge about how to garden, I have learned many skills and techniques over the years, and feel much more confident in my abilities.

Community Spirit

The community garden is one of our absolute favorite parts of MSU. We love that they make plots available and affordable for students. The garden is also an excellent community-building space. Seeing so many people out in the garden every evening is awesome. People are always willing to answer questions and give advice (should you want it). We have also found wonderful resources at the Bozeman Public Library and at the local business, Happy Compost. The Public Library has many resources to learn about gardening, but it also has a seed library where you can get some free seeds. Happy Compost is a compost company we use and we have been very happy with it. Not only do they take care of your food waste, but they also provide you with some free compost when you are a subscriber, which is a fantastic bonus for gardeners!

Purple Viking, Purple Majesty, and Amarosa fingerling potatoes in their storage box.

Harvest Time!

The best time of the gardening season is the harvest! There is nothing like the feeling when you finally get to see your bounty and know that your hard work has led to delicious, healthy, and cost-effective food. While there are many different foods you can grow and preserve, some easy-growing crops we have planted and preserved are potatoes, tomatoes, basil, and onions. Potatoes are a prolific, easy-to-grow, low-maintenance crop that is incredibly simple to preserve. All you need to do is dig them up (being careful not to nick the skin, but if you do, that is just a tasty meal you get to make in the next few days!), gently brush the excess dirt off with your hands, and stick them in a cardboard box in a dark closet. Provided they are kept dry and don't have any prior issues, the potatoes will keep for months! Tomatoes are our favorite crop to process! We typically use our tomatoes to make salsa, pasta sauce, and canned tomatoes. Since tomatoes are a high-acid food, they can be canned using a hot water bath (as opposed to pressure canning), a relatively simple process. This preserves your tomatoes for months, and there are so many delicious tomato-based recipes to try out. We canned so much salsa and tomatoes that we had to add extra shelves to our bedroom closet just to store them all. We are still enjoying them to this day, and we love knowing just how they were made. If you are a fan of pesto, then you know how pricey pesto is at the grocery store. Grow a whole bunch of basil and spend a day making a batch of pesto. Freeze it in portioned sizes and you have delicious, cost-effective pesto all year long! Onions are easy to grow, although some steps are required to preserve them and you need to have a space where you can lay them out for the leaves to dry. You can do this indoors or outdoors, either on a covered patio or on the floor of a guest room. Once the leaves are totally dry, you can braid them or tie them together to hang.

You may end up with unripe tomatoes that you have to harvest, but they don't have to be wasted. Separate them into levels of similar ripeness and place them in a paper bag with a banana. The tomatoes will steadily ripen.

Onions drying on the patio.

Securing a Garden Plot at MSU

If you are interested in gardening at MSU, it's simple to get started in the community plots. Plots become available for purchase through the housing portal in the spring, which typically have 20x20 ft plots ($20) and 10x10 ft plots ($10) available. However, the garden community will be using 10x30 plots ($10) this year. Typically, the garden plots open up near Memorial Day. Since you are not guaranteed the same plot you were assigned the previous year, it is a good idea to prepare soil with compost and/or mulch because you can't be certain of how the soil was used previously. Something to consider when starting in the garden is that young plants are vulnerable to deer and other animals like gophers and rabbits. It can be very discouraging to find your young plants nibbled on. Consider investing in some light fencing to discourage those who might find your plants a tasty snack.

Growing and preparing food that we will enjoy throughout the whole year is something that brings us great joy and a deep sense of fulfillment. We are grateful that we can share our gardening experiences, and we hope that you feel empowered to start your own gardening adventure!

Isabelle with freshly harvested basil.

Freshly washed carrots.

ALUMNI NEWS

MSU Graduate Raven Munson Accepts Offer At Los Alamos National Labs

By Alexander Flynn

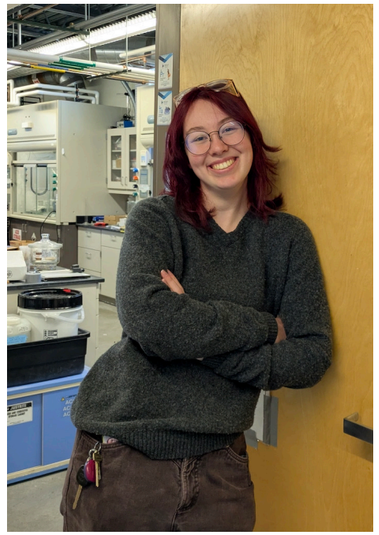
After graduating from MSU in May of 2024 with a Bachelor's of Science in Chemistry, Raven Munson worked with Research Professor Garrett Moraski for one year. Now, she has began a new position at the Los Alamos National Laboratory (LANL), where she will continue to put her organic and synthetic chemistry skills to use. As a teenager, she already knew the direction she wanted to take. Instead of beginning a traditional junior year of high school, she became a "running start" student at Pierce College in Washington, enrolling in an associate's degree program. While taking a chemistry class, she had an epiphany as she worked to synthesize hair dye, "If I can get paid to do this, I would do it for the rest of my life." This passion for chemistry would only grow as she worked through her undergraduate studies and subsequent research with Moraski.

After earning her associate's degree from Pierce, Munson transferred to MSU to complete her bachelor's degree within three semesters. She had missed the traditional timing for taking the sophomore-level research seminar, and still needed to squeeze in both the junior and senior-level seminars. Her advisor suggested it would be reasonable to waive the sophomore research seminar requirement if she could instead start doing actual research ASAP. And so, after taking Prof. Thomas Livinghouse's CHMY 417 synthetic chemistry course, she began working in Livinghouse's lab. Munson says that this was an experience she wouldn't trade for the world. There she continued her journey through organic and synthetic chemistry, growing even more fond of the science while delving into the world of research in a more formal manner. After graduating from MSU and experiencing the research mindset in the Livinghouse lab, she knew where her career was headed.

Moraski's lab, in comparison, was much more fast-paced. As a post-bac researcher, she described the lab in Moraski's words: "as close to industry as you can get while working in academia." Munson paraphrased the industry-like mentality as "synthesize the compound, purify it, and send it out." As a research assistant in Moraski's lab, she continued to improve upon her chemistry skillset, teaching new students, all while loving it the entire time.

While working with Moraski, Munson prepared and submitted a cover letter to LANL with the help of one of Livinghouse's former PhD students, Dr. Heidi Koenig. It was a surprise to Munson when Los Alamos contacted her for her application. "They wanted to fly me out for an interview!" she remarked, "I didn't really know my audience, so I prepared a review of my work in chemistry, the goals we're aiming for, my skills…It was fun, I got to tell people what I do— and they couldn't run away."

When asked about how she's preparing for grad school, Munson laughed, "Don't hang all your expectations on becoming a graduate student. Lots of people take gap years, or don't go into grad



school right away…The best thing is not to be wrapped up in rejection, to be able to keep going. A lot of people forget that life, even as a chemistry major, is more than exam scores, publications, and grad school acceptance letters. More precious to me than any line on my CV are the connections I've made through science, and I daresay they've gotten me further, too."

Times are tough for undergraduates, graduates, professors, and all branches of academia— but Munson is an example of the perseverance and passion needed to get through and come out on top. Congratulations, Raven, on your new job at LANL!

An Update on Dr. Skyler Hollinbeck

By Rory Benedict

Skyler Hollinbeck has small-town roots, hailing from Norwood, Colorado- a town of about 500 people nestled away in the southwest corner of the state. Growing up in the Colorado Rockies, Hollinbeck developed an immeasurable passion for nature, participating in a plethora of outdoor activities such as climbing, camping, and hunting – undertakings all too common here in southwest MT. Finding himself desiring a change of pace, Hollinbeck later moved to Durango, CO where he pursued dual degrees in environmental biology and biochemistry at Fort Lewis College. Following the completion of his undergraduate studies, Hollinbeck found himself partaking in a wide array of unique employment endeavors such as bear trapping and the testing of rockets, building skills in many different areas.

After a few years out in the workforce, he found himself a position where he would begin the search for graduate school, believing it would improve his chances of landing his desired long-term career. He restricted his search to places that felt like home (i.e., easy access to the mountains and the great outdoors).

Coincidentally, Hollinbeck bumped into Prof. Erik Grumstrup during an ACS conference in New Orleans, where he was convinced to join the chemistry program here at Montana State, a university that was serendipitously already at the top of his list. After joining MSU as a graduate student, Hollinbeck found himself rotating through the research labs of Profs. Rob Walker and Nick Stadie, before ultimately joining the lab of the scientist who convinced him to join MSU in the first place. His thesis research in the Grumstrup lab focused on the photophysical behavior and structure-function relationship of molecular solids, hoping to better inform our understanding of how specific structural characteristics can influence a given material's functional properties.

Hollinbeck says he felt particularly fortunate during his PhD studies to have chosen an advisor that tactfully shielded him from some of the more stressful parts of graduate school, such as grant writing, worrying about sources of funding, or managing relationships with upper administration, truly letting his research flourish as the primary focus. He attributes his relationship with Grumstrup as the largest contributor to his positive research experience, stating that your choice of PI is one of the most important decisions you can make during your degree. Outside of research, Hollinbeck echoes an all-too-common sentiment among the graduate population in that housing can be a serious challenge on budget, especially here in Bozeman. Fortunately, Hollinbeck was able to procure his own property here in town, helping to alleviate those uncertainties. He says that if he not worked for a few years prior to joining the graduate program, he likely wouldn't have been able to make it work on graduate student stipend, advocating for more permanent solutions to the lack of affordable housing and ever-growing population here in the Gallatin Valley. Overall, he has really enjoyed his time spent in Bozeman, never looking back on the decision to move to Montana.

While he enjoyed his time at MSU, Hollinbeck acknowledges that graduate school is a lofty endeavor that can feel particularly daunting to the average first-year student. He recalls that while he experienced this sentiment pretty strongly early on, his experience and confidence strengthened as he progressed through the program. But as his confidence increased throughout the years, his lofty responsibilities followed close behind. He recounts the immense amount of hours working during the writing of his dissertation, commonly starting as early as 7am in the morning and working well into the evening, not returning home until 10pm many nights. A very taxing process for all involved, which, he quickly discerned, required a fair amount of structure if he was ever going to make it through the final stretch. For anyone nearing the end of their degree, whether it is your master's thesis or doctoral defense, Hollinbeck echoes the advice: "start writing and preparing today." It's quite a demanding process where the importance of proper time management cannot be understated. Hollinbeck further reflects on the importance of having a good supporting cast as well as setting time away to regularly recharge the mental batteries: "burnout is very real."

Since defending his doctoral thesis a year ago, Hollinbeck has found himself adjusting to life in the transitionary period that is post-graduation. He had begun his inevitable job-search a few months prior to his graduation date, joking that it felt like a full-time job of its own within the months following graduation, sending an application out every other day. All of this effort soon paid off, but not before setting time aside for a well-deserved vacation, traveling to Europe and exploring the likes of England, France, Switzerland, and Croatia over the course of a month-long retreat. After returning to the country, he accepted a position at Spectrum Lab here in the Physics department of MSU, overjoyed at the opportunity to stick around the 406 for just a little bit longer.

STUDENT NEWS

Student Statistics at a Glance

numbers represent the time frame of January – June 2025

8
PhD Degrees
conferred in Chemistry and Biochemistry

2
MS Degrees
conferred in Chemistry and Biochemistry

34
BS Degrees
conferred in Chemistry and Biochemistry

Recruiting Weekend

By Balyn Muffley

On Thursday, February 27th, twenty graduate recruits from across the United States traveled to Bozeman to participate in the MSU Chemistry & Biochemistry department recruitment weekend. Packed full of amazing events planned by Dr. Doreen Brown, the visiting weekend offered recruits the opportunity to meet with faculty and current graduate students, to visit Yellowstone National Park, and to experience what life is like here at MSU.

While most recruits arrived late on Thursday night, a handful of them arrived in time for dinner with graduate students Clay Lince, Wil Janusz, and Balyn Muffley at Bourbon BBQ, which Muffley will argue is the best BBQ restaurant in Bozeman. After eating some delightful food and getting the first event jitters out, the recruits checked-in to the C'mon Inn, which served as all the recruits' home base for the weekend.

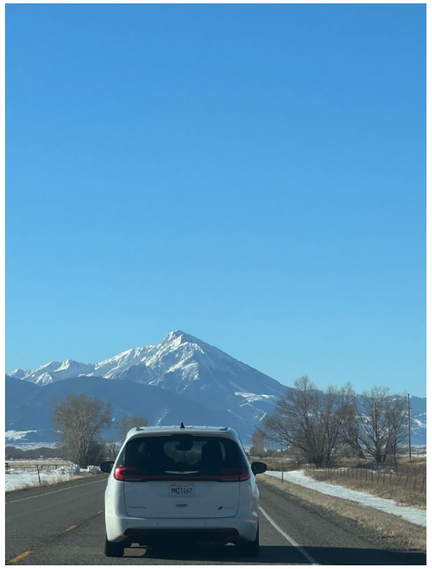
On Friday, graduate students gathered at the C'mon Inn to shuttle recruits to the CBB to start their busy days of learning all about the program. After a program overview presentation, the recruits shuffled around to five different meetings with our faculty where they got to tour labs, inquire about research, and ask questions. Lunch with current graduate students provided the recruits time to ask any questions and gain a graduate student prospective on the program. A department wide cookie and coffee time rounded out the afternoon before a quick campus tour ending at the SUB for a joint poster session with the MSU Microbiology & Cell Biology department, in which graduate students showcased the excellent research taking place here at MSU.

After the poster session, the recruits once again loaded up in the graduate student shuttles to Professor Mary Cloninger's house for dinner. Upon arriving at the house, Professor Cloninger's dog Rosie expertly and excitedly greeted every visitor by presenting her favorite toys and giving plenty of happy tail wags. The evening featured a delicious catered taco bar and vibrant conversation among faculty, graduate students, and recruits.

The next morning, Professors Roland Hatzenpichler, Chris Lemon, David Fialho, and

Martin Mosquera, joined by graduate students Will Robinson, Matt Sandin, Charlie Pollock, Stavros Trimmer, and Balyn Muffley, led the minivan caravan to Yellowstone National Park. After a quick lunch at the Mammoth Hot Springs Hotel, Hatzenpichler led the group on a tour of the nearby terraces and hot springs, explaining the fascinating geochemical processes and microbial life responsible for the salt-like deposits and vividly colored waters. The mildly snowy and icy wooden pathways made for an entertaining minigame of skating along the paths, with only a few stumbles along the way.

After the hot springs tour, the group split up to either go on a hike or to go wildlife viewing. The hiking group went from Tower Junction along the Grand Loop Road to a scenic overlook. Sandin noted that they saw "some pretty spectacular views of the river and mountains," and "two baby bulls headbutting in the road." Robinson also learned the hard way that the rental car company does not put snow tires on the minivans, as he recalled "I did get one



of the minivans partially stuck, because I thought I could make the turn without hitting the snowbank, but as soon as the tires hit powder, they lost traction, and it was screwed." A few recruits in the hiking group had the value-added Montana experience of pushing the van out of the snowbank.

The wildlife viewing group went through Lamar Valley. In Fialho's van, the recruits got to see plenty of bison, big horn sheep, elk, and coyote, with the highlight being a bison leaping (and failing to clear) a high snowbank on the side of the road leading to a laughable faceplant into the ground.

After a full day of exploring the park, everyone filed back into the minivan caravan, led by Trimmer's minivan which he named Sheila, to return to Bozeman for a pizza dinner at Professor Valérie Copié's house. Although the recruits were entirely exhausted from a long weekend by this point, they mustered up the energy to enjoy the last event as a group, sneaking in last minute questions and conversations with faculty and graduate students. As the weekend was coming to a close, the recruits said their goodbyes and returned to the C'mon Inn for one last night before departing in the morning.

A couple months later, I reached out to a few of the recruits to hear what stuck with them from the weekend.

Claire Charvet noted that "[Her] favorite parts of the visit weekend were being able to have dinner at the professors' houses and the trip to Yellowstone."

Caleb Swain said, "It kind of felt like going to summer camp, in a good way." He went on to explain that "Becoming friends with the other recruits was a big highlight for me, but the overall most impactful aspect was probably going to dinner at the professors' homes. That intimate setting made the whole weekend feel more personal and welcoming."

Hannah Higgins commented "What stood out most to me was how welcoming everyone was. From the graduate students to the faculty, you couldn't turn without seeing a friendly face."

These comments confirmed that the hallmarks of our recruiting weekend are the Yellowstone trip and the dinners hosted at professors' homes. These hallmarks showcase what I think makes our program so special: the beautiful Montana scenery and a tight-knit, friendly group of people who do amazing science. We are very excited to welcome in another cohort of students (including Charvet and Higgins) this fall.

Undergraduate Awards Ceremony

By Samantha Walker

The Department proudly awarded 40 exceptional Chemistry Majors with scholarships, summer research awards, and other special recognitions on April 24, 2025. Additionally, two remarkable graduate students were acknowledged for their exemplary contributions to undergraduate lab instruction.

The event kicked off with impressive senior research presentations by Makayla Sanderson, JD Petersen, and Liam Shores. Department Head Joan Broderick then warmly welcomed attendees, followed by an inspiring talk from Professor Heather Callaway about navigating a career in Chemistry. Professor Callaway skillfully illustrated her educational and professional journey to MSU and urged students to discover their Ikigai—the intersection of passion, skill, societal needs, and financial viability.

Dr. Steve Holmgren, alongside other faculty members, presented awards to the undergraduate students. These accolades included scholarships and summer research grants funded by the department's generous benefactors, recognition of achievements in various chemistry disciplines, and special honors for the outstanding freshman and graduating seniors. The atmosphere was charged with excitement and a sense of renewed confidence and determination.

From left: Liam Shores and Makayla Sanderson accepting Outstanding Graduating Senior awards from Prof. Joan Broderick.

Professor Broderick concluded the ceremony by congratulating the awardees and expressing gratitude to the generous donors.

These awards significantly impact students—not just financially but by imparting a renewed sense of purpose and achievement upon them.

Gracie Gibbons, recipient of the ACS-Hach Land Grant Scholarship, expressed her feelings of "shock, honor, and gratitude" upon receiving the award, which she stated "helps push [her] to stay on track in [her] major." Reflecting on her time at MSU, she remarked, "[i]f you put in the hard work the rest gets better."

Shea Wadman, honored with the ACS Analytical Chemistry Award, was similarly surprised. Having never received an academic accolade before, he stated that this award "reinforced that [he is] on the right track." With aspirations to teach high school chemistry, Wadman is eager to bring more experimental learning and analytical skills into his classroom.

From left: Gracie Gibbons and Sydney Sandifer accepting ACS-Hach Land Grant Undergraduate Scholarship awards from Dr. Candace Goodman.

Marcos Camacho, the recipient of both the O.E. Sheppard Scholarship and the Outstanding Freshman Award, expressed his surprise at receiving not just one, but two prestigious honors. "I did not expect to get even one award, let alone two," he stated. Camacho described the recognition as "rejuvenating," fueling his excitement to excel further in his studies. He added, "I'm super grateful and excited" for these accolades, which motivate him to achieve even more.

The department extends its gratitude to donors for their support and encourages alumni, friends, and families to consider contributing to these scholarships or even starting their own to assist current and future students. Interested donors can make contributions at msuaf.org.

Janelle Bullis accepting Gordon Pagenkopf Research Award from Prof. Mary Cloninger.

PhD GRADUATES (Spring 2025)

Compton, Dalton (Stadie)
Thermodynamic Studies of Physisorption using Langmuir-Type Models

Current/Next: Postdoctoral Scholar at the University of Hawaii at Manoa; Prof. Craig Jensen (advisor)

Kania, Matthew (Neufeldt)
Computational and Experimental Investigations Into Oxidative Addition and Other Mechanisms of Transition Metal Catalysts

Current/Next: Postdoctoral Scholar at the University of Oxford; Prof. Michael Nedig (advisor)

Larson, Nathaniel (Neufeldt)
The Mechanistic Origins of Unconventional Selectivity in Palladium Catalyzed Cross-Couplings of Dihalo(hetero)arenes

Current/Next: Faculty of Science, White Earth Tribal and Community College, Mahnomen, MN

Montoya, Steven (Walker)
An Evaluation of the Thermal Stability of Cubic $Li_7La_3Zr_2O_{12}$ (LLZO) and Implications for LLZO as a Solid-State Li Ion Conducting Electrolyte

Orcutt, Emma (Grumstrup)
Elucidating Excited State Dynamics in Organic Function Materials Using Steady-State and Time-Resolved Spectroscopies

Current/Next: Russell L. Heath Distinguished Postdoctoral Research Associate, Idaho National Laboratory, Characterization Department; Dr. Daniel James Murray (advisor)

Sobolewski, Tess (Walker)
The Effects of Perfluorooctanoic Acid, Perfluorobutanesulfonic Acid, and Perfluorooctanesulfonic Acid on Model Biological Membranes and Monolayers

Current/Next: PFAS Scientist Enspired Solutions: PFAS Destruction Technology, Lansing, MI

Trousdale, Rhys (Walker)
Solute Bioconcentration Mechanisms in Biological Material

Current/Next: Postdoctoral Scholar at Penn State University; Prof. Ken Knappenberger (advisor)

Walls, William (Broderick)
Mechanistic Investigation into Post-Translational Modifications Catalyzed by Radical S-adenosylmethionine Enzymes

Current/Next: Postdoctoral Scholar at Montana State University; Prof. Joan Broderick (advisor)

MS GRADUATES (Spring 2025)

Adedoyin, Victoria
Lepeule, Jerome

BS GRADUATES (Spring 2025)

Adams, Sophia Kouko
Plans: grad school (virology)

Albin, Hattie Kate
Plans: job in medical field

Bruckhart, Kaylin Paige
Plans: grad school (chemistry, UT Austin)

Frisk, Zachary Richard

Green, Jared
Plans: job in biotech

Greene, Joshua P.
Plans: grad school (chemistry, Texas A&M)

Hemer, Owen Jacob
Plans: grad school

Headdress, Lane Donald

Horan, Danielle Mae
Plans: medical assistant (Billings Clinic)

Hoyt, Bailey Elizabeth
Plans: prereqs for nursing school

Jarman, Sarah Margaret
Plans: grad school (immunology)

Kimball, Alec Eleu Leonard
Plans: internship at tech startup

Krysiak, Nicole Diane
Plans: MS program (biochem, MSU)

Lake, Linnea Rose
Plans: osteopathic medicine (Des Moines University)

Lucas, Breonna Raelynn
Plans: functional/naturopathic medicine

Mackin, Marie Elizabeth
Plans: med school, getting married

Manson, Eleanor Lyra
Plans: grad school (nutrition and integrative physiology, University of Utah)

McIntosh, Noah Thomas
Plans: med school

Mercer, Ara Kristine
Plans: moving to Miami, med school

Merkel, Karl David

Mickolio, Michael Raymond
Plans: research job, then grad school

Paralitici, Karess LeNay
Plans: EMT, then med school

Petersen, Jesse Dean
Plans: grad school (structural biology)

Puyear, Briana Lyn
Plans: medical assistant at SkinCareMT, then med school

Rausch, Keilen McKay
Plans: med school

Roth, Samantha Rae Minhe
Plans: grad school (chemical physics, UMN)

Sanderson, Makayla Elizabeth
Plans: med school

Shores, Liam O'Fallon
Plans: grad school (chemistry, U. Utah)

Smith, Nicole Lynn
Plans: 7-12th grade teacher

Solomon, Joseph Charles
Plans: grad school (MSU)

Vavra, Brian Joseph
Plans: CIA

Walsh, Camron Matthew

Webster, Logan Riley

Woolner, David Benjamin
Plans: grad school

GRADUATE STUDENT AWARDS

Demeritte, Amethyst
Gordon Pagenkopf Graduate Award

Kania, Matthew
PhD Completion Award

Kelly, Will
Harlen Byker Graduate Research Award

Larson, Nate
PhD Completion Award

Matos-Vega, Nicole
National Science Foundation Graduate Research Fellowship

Pollock, Charlie
Exemplary Undergraduate Lab Instruction Award

Schomberg-Sanchez, Isaac
A.R. Johanssen TA Award

Sobolewski, Tess
PhD Completion Award

Trousdale, Rhys
PhD Completion Award

Van Beek, Joelie
National Science Foundation Graduate Research Fellowship Honorable Mention

UNDERGRADUATE AWARDS

Allies, Bailey
John and Joann Amend Chemistry Scholarship

Arntson, Laini
B.L. Johnson Memorial Scholarship

Bicha, Peyton
E.E. Frahm Scholarship

Bitney, Katy
P.C. Gaines Scholarship

Buechsenschuetz, Aidan
Harold Urey Award

Bullis, Janelle
Gordon Pagenkopf Research Award & John and Joan Amend Chemistry Scholarship

Camacho, Marcos
O.E. Sheppard Scholarship & Outstanding Freshman Award

Castro, Jose
Geer Howald Callis Undergraduate Research Award & Lois Dale Thom Scholarship

Clark, Reagan
Harold Urey Award

Dicks, Aaron
Lewis H. McRoberts Scholarship

Finneman, Kate
Paul B. and Marie B. Davidson Chemistry Scholarship

Gibbons, Gracie
ACS-Hach Land Grant Scholarship

Hacket, Selwyn
Marie Curie Award

Harper, William
Ray A. and Margaret Woodriff Memorial Scholarship

Hertz, Rachel
Harold Urey Award

Jensen, Jordan
Fry Scholarship

Kay, Ivan
Geer Howald Callis Undergraduate Research Award

Luongo, Alexander
Lorna Copple Otzenberger Memorial Scholarship

Mainolfi, Bailey
Crowley Family Biochemistry Scholarship

Morgan, Hunter
Bradford Mundy Memorial Scholarship

ODonnell, Cedar Stellon
Chi-Tang Li Scholarship

Rich, Carson
Kekule Award, Frederick A.

Roth, Samantha
ACS Physical Chemistry Award

Sanderson, Makayla
Outstanding Graduating Senior Award

Sandifer, Sydney
ACS-Hach Land Grant Scholarship

Schrauben, Kyla
Fry Scholarship

Schutte, Bethany
B.L. Johnson Memorial Scholarship

Shea, Carson
Paul B. and Marie B. Davidson Chemistry Scholarship

Shores, Liam
ACS Organic Chemistry Award & Outstanding Graduating Senior Award

Shutsa, Bailey
Ray A. and Margaret Woodriff Memorial Scholarship

Solberg, Emma
Lorna Copple Otzenberger Memorial Scholarship

Summerhill, Peyton
Ralph A. Olsen Award

Thorson, Gavin
Fry Scholarship

Tulloch, Aubrey
Linus Pauling Award

Uter, Connor
Edna Tracy White Chemistry Scholarship

Vincent, Jack
Harold Urey Award

Wadman, Shea
ACS Analytical Chemistry Award

Wagner, Ryan
Edna Tracy White Chemistry Scholarship

Wold, Norah
Energy Laboratories Chemistry Scholarship

Woolner, David
ACS Inorganic Chemistry Award

GRADUATE STUDENT MILESTONES

Passed Qualifying Exam

Anselmo, Belle
Bonsuh, Lillian
Brenzel, Charles
Chennai, Blake
Das Sourab, Robin
Frometa, Magalee
Gracza, Gabe
Hutt Vater, Kian
Kamath, Vittal
Keller, Parker
Kelly, Will
Kwansa-Aidoo, Kenneth
Lerch, Bobby
Li, Nigel
Lince, Clay
Martoglio, Sal
Matos-Vega, Nicole
Molacek, Lea
Mueller, Tagert
Muffley, Balyn
Sandin, Matthew

Completed 4th Year Seminar

Benedict, Rory
Garner, Madeline
Hall, David
McDaniel, Charles
Nupp, Sylvia
O'Neill, Roark
Phillips, Austin
Reyes, Albert
Robinson, William
Wittkop, M

Passed Comprehensive Exam

Bailey, Maggie
Kothalawalage, Shani
Benton, Kendall

STAFF NEWS

Don Smith was the recipient of a 2025 Celebrating Excellence in Service Award. This award recognizes classified and professional staff that have demonstrated a strong commitment to fulfilling this mission of MSU. Dr. Smith, Manager of the Montana State Mass Spectrometry Facility was nominated for his dedication to the teaching and research mission of the university and his willingness to regularly go above and beyond when working with students, staff, and faculty. Congratulations Don!

Tricia Bailey joined the Department of Chemistry and Biochemistry in March as our new Academic Services Coordinator in the Gaines Hall Satellite Office, supporting students and faculty. With a background in real estate and experience in MSU's ATO programs, Tricia is charged with helping chemistry support needs from registration to exam printing, and answering chemistry program inquiries. Welcome aboard Tricia!

IN MEMORIUM

The department was saddened by the recent news of the passing of **Nicholas Goocey** BS 2016. We extend our condolences to Nick's wife and family. Nick's obituary can be found at https://www.dignitymemorial.com/obituaries/dayton-oh/nicholas-goocey-12435748

We want to hear from you!

Share your news, your current occupation, family updates, reminiscences of your time at MSU, etc. Contact Doreen Brown or send a note to MSUChemNews@montana.edu

FALL SEMINAR SCHEDULE

DATE	SPEAKER	INSTITUTION	HOST
August 29	Emmanuel Osuagwu	MSU (4th Year MTSI Seminar)	Nick Stadie
September 5	Brandon Greene	UCSB	Joan Broderick
September 12	Beverly Piggott	Univ. of Montana	Brian Bothner
September 19	Craig Nunemaker	Ohio University	Martin Lawrence
September 26	So Hirata	Univ. of Illinois	Martin Mosquera
October 3	Andrea Stierle	Univ. of Montana	Mary Cloninger
October 10	Isaac Schomberg-Sanchez	MSU (4th Year Chem. Seminar)	Christopher Lemon
October 17	*open*	--	--
October 24	Heather Callaway	MSU	Rob Walker
October 31	*open*	--	--
November 7	Martin Mosquera	MSU	Rob Walker
November 14	David Fialho	MSU	Rob Walker
November 21	Brett Sather	MSU (PhD Defense)	Brian Bothner
December 5	Miguel Soto	Univ. of Saskatchewan	Nick Stadie

THANK YOU TO OUR DONORS

We are grateful for the continued support of our alumni and friends of the department. Your donations help to support programs such as the following student awards and fellowships:

P. C. Gaines Scholarship
O. E. Sheppard Award
B. L. Johnson Memorial Scholarship Award
E. E. Frahm Award
Ray Woodriff Award
Fry Award
Energy Laboratories Award
Edna Tracey White Award
Paul B. and Marie B. Davidson Scholarship
E. W. Mares Undergraduate Student Award
Dr. and Mrs. Chi-Tang Li Scholarship
GHC Undergraduate Research Grant Award
Frederik A. Kekule Award
E. W. Mares Graduate Student Award
Gordon Pagenkopf Graduate Student Award
Harlan Byker Research Award
Heath Fryer Award

If you'd like to make a donation, please visit the Chemistry & Biochemistry website and click the "Giving to the Department of Chemistry and Biochemistry" link at the bottom of the homepage, or click here.

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