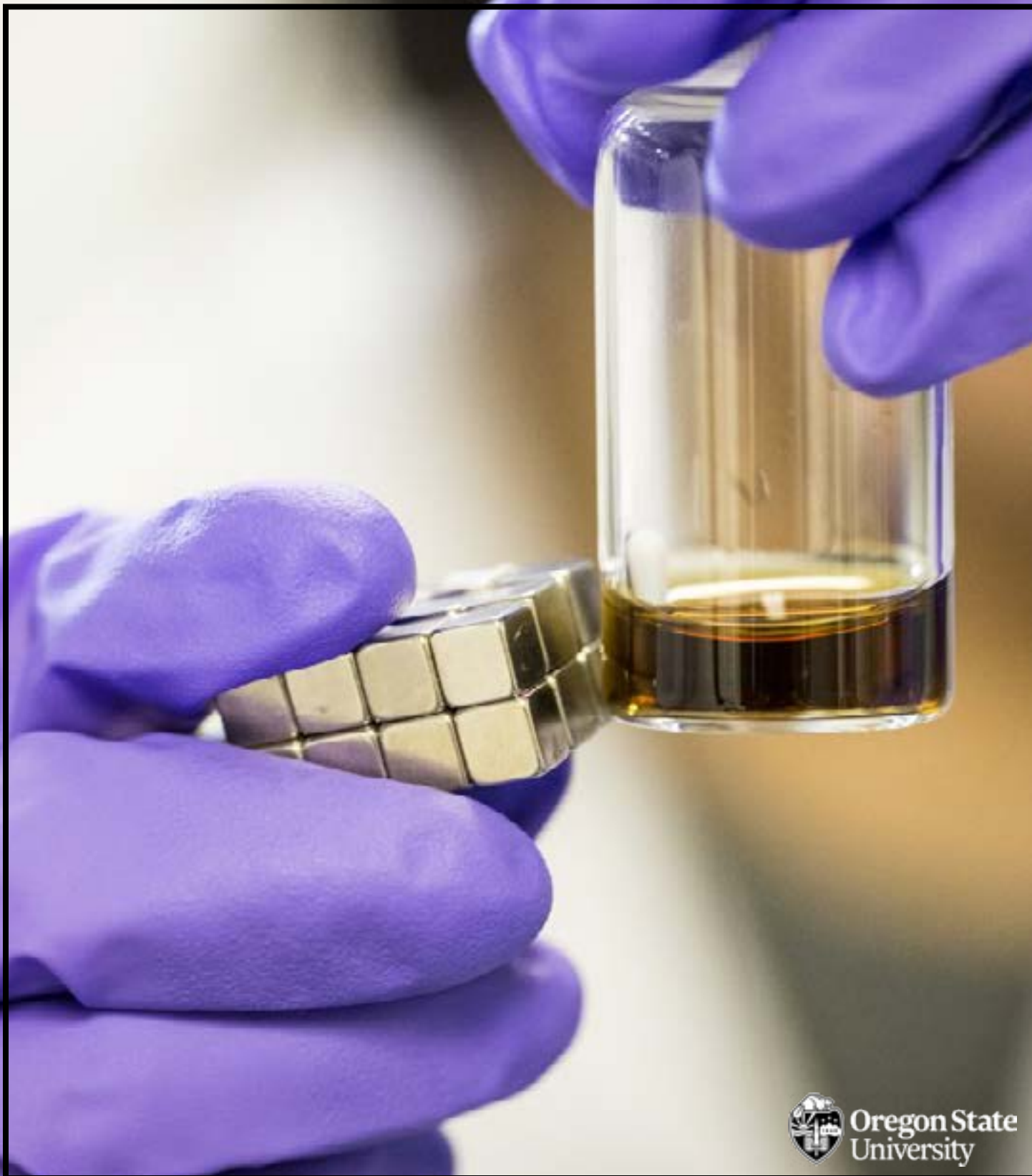


Department of Chemistry

# Chemistry Newsletter

Summer 2024



Oregon State  
University

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**On the cover:** Testing the

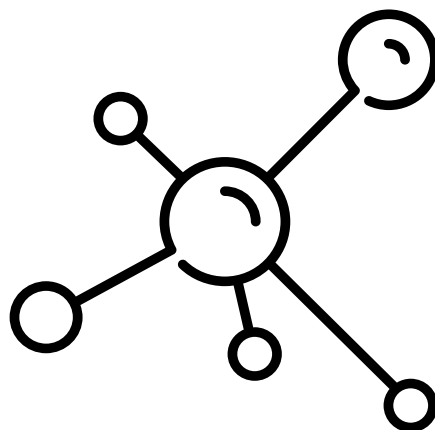


magnetism of nanomaterials during the Ignite in STEM Summer Camp. Learn more on page 20. Photo credit: Karl Maasdam

**Expanded stories available online:**  
[blogs.oregonstate.edu/erlenmeyer](https://blogs.oregonstate.edu/erlenmeyer)

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# A MESSAGE: From The Department Head



Congratulations to Prof **Kyriakos Stylianou** on his promotion to Associate Professor with tenure, and to Dr **Dennis Drolet** to Senior Instructor I. Additionally, Dr **Artiom Skripka** will join us in Fall 2024 as an Assistant Professor, bringing with him synthetic methods for core-shell nanostructures used in optical computing, bioimaging, and sensing. With these new promotions and recruitment, we will have 10 Full Professors, 4 Associate Professors, and 5 Assistant Professors, with a total of 19 Tenure-stream faculty members. We have just succeeded in recruiting Dr **Jun Li**, a long time research associate in Professor Subramanian's research group, as our newest instructor for general chemistry. Dr. Li will help us meet our teaching demands for the expanding classes in all three flavors of general chemistry, to handle the challenges related to the new core-education requirements, and to develop and re-develop our courses to better serve the growth of new on-campus and online students.

We have also had a very successful year of graduate student recruitment, thanks to the efforts of the committee led by Prof **Chong Fang**, with the help of Prof **Alison Bain**, Prof **Addison Desnoyer**, and Prof **Marilyn Mackiewicz**. This is going to be an amazing class, with 9 out of the total 29 incoming students awarded with fellowships and scholarships. The number of awards received by chemistry students is also astounding, since there are only 30 available awards altogether from OSU and COS.

The department has also had another year of success with awards for our colleagues at the college level. Seven faculty members from the department received awards, out of a total of 13 awards across 7 departments in the college. This is a remarkable achievement, not only in terms of excellence in teaching (3 awards), research (3 awards), and service (1 award), but also in terms of our department's reputation as a productive member of the college. A job well done colleagues, and a job well done the faculty award subcommittee!

Speaking of positive publicity, we have had several new major news-worthy events. Distinguished Prof **Mas Subramanian** has been elected a Fellow of the Neutron Scattering Society of America. His Magenta pigment, resulting from the discovery of divalent chromium  $\text{Cr}^{2+}$ , showcases an artful synthetic pathway. Remember the story of the blue pigment? It is already being included in undergraduate textbooks – check out the 11th Edition of “Chemistry & Chemical Reactivity” by Kotz, Treichel, Townsend and Treichel. Bert and Emelyn Christensen Prof **David Ji**'s work on sustainable battery chemistry, for example, the recent iron-based cathode for Li-ion batteries in *Science Advances*, has garnered attention from public media such as Science Daily and OSU press. Did I mention the  $\text{CO}_2$  capturing projects from Terence Bradshaw Chemistry Prof **May Nyman** and from our newly promoted Prof **Kyriakos Stylianou**? Two different colleagues approaching the same challenge from two different perspectives! I am sure that there are many others that I am missing here, but you get the idea. Chemistry is already leading in the thrust areas listed from the Provost Office in the new strategic plan named Prosperity Widely Shared.

With new people and fresh energy, we are creating a collaborative and successful working team and breaking down the barriers of “divisions” in chemistry. A joint publication in *Nature Communications* involving three divisions of the department – Prof **Kyriakos Stylianou** from Inorganic/Materials, Prof **Chong Fang** from Physical, and Prof **Paul Ha-Yeon Cheong** from Organic/Computational chemistry – is just the beginning. A joint proposal by our newest member Prof **Thomas Osborn Popp** and Prof **Paul Ha-Yeon Cheong** has been submitted to the National Science Foundation. We wish them the best of luck! Tom was hired as a physical chemist with a goal in developing new techniques for solid state NMR, but he is also a synthetic material scientist and comfortable teaching non-major's organic chemistry. Our future member, Dr **Artiom Skripka**, a material scientist, is going to teach thermodynamics in his first year at OSU. The central theme here is that our new hires possess diverse skills, and they are taking us to uncharted territories. The excitement has just begun!

During the first week of the Spring term, we had our inaugural meeting of the new advisory board, coinciding with the second annual event named “Industry University Collaborative Conference Program” (IUCCP). The board received a briefing on the situation at Gilbert Hall, and has submitted a report emphasizing the need to address the inadequate laboratory spaces. Thanks to the monumental effort of Prof **Marilyn Mackiewicz**, IUCCP has had another successful year, attracting more industrial sponsors, securing additional awards, and most importantly, better preparing students for the future work force.

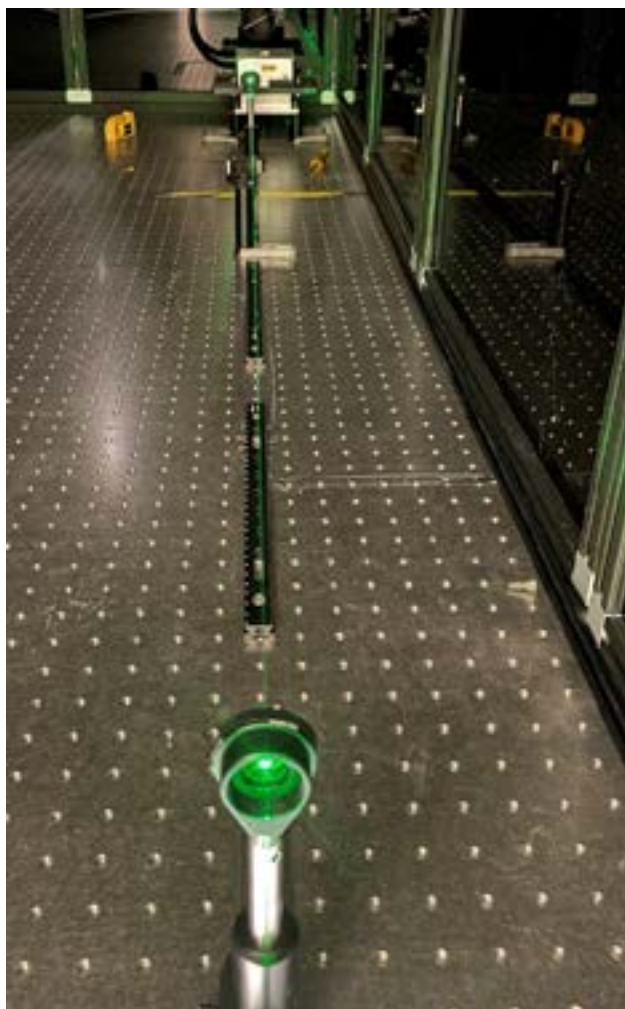
February 1, 2024 marked the two year anniversary of my tenure as head of the department. These past two years have been intense, as I navigated the intricacies of the department while striving to maintain my own research program. Mistakes were made, and valuable lessons were learned. With the support of the faculty, staff, and students, we managed to keep all the balls in the air! I led with “invisibility” – the wisdom from Tao De Ting – meaning that initiatives originate from the faculty and are executed through their collective efforts. To foster a sense of community, I have hosted weekly coffee hours with faculty, staff, and students, as well as donut hours three times per term with undergraduate students and all others. Additionally, I have had one-on-one meetings with anybody and everybody who is available and willing to chat. Our second annual summer party was scheduled for July 24, from 11 am to 3 pm, at the Avery Park's Townsend Shelter. We had a great turn-out, old friends, new acquaintances, family, and significant others. There was no agenda, just to have fun in the sun on a summer day in the quaint little town of Corvallis, Oregon.

# AEROSOL PARTICLES

## and how they impact our climate

By: **Prof. Alison Bain**

The overarching aim of the Bain Aerosol Research Group is to understand how the physical properties of aerosol particles impact our climate. Ambient aerosol droplets and particles exist suspended in a gas phase and are on the order of 10 nm – 10 µm in diameter. Due to this small size and contactless environment, aerosol droplets can have unique chemical and physical properties, distinct from their macroscopic counterparts, even when the large-scale chemical composition is the same (e.g. supercooled and supersaturated states as well as behaving as microreactors for accelerated and novel chemistry).



The aerosol in our atmosphere is a highly complex mixture of solid and liquid components. Solid-phase aerosol includes soot (formed from biomass burning), mineral dust brought aloft by the wind, and microplastics. There are also thought to be tens of thousands of unique molecules in the liquid phase. For example, aerosol formed by crashing waves (sea spray) contains sea salts as well as an array of fatty acids generated in the sea surface microlayer. The organic component of aerosol also contains highly oxidized molecules that are formed through the atmospheric oxidation of volatile molecules emitted by flora. As these volatile molecules are oxidized, their vapor pressure decreases, and they can condense onto existing particles. Aerosol in our atmosphere also goes through long-range atmospheric transport. During transport, aerosol from different sources can become mixed, increasing the complexity of each particle and the population. The properties of aerosol can also change due to atmospheric conditions (e.g., relative humidity and temperature).

To investigate the properties of chemically complex aerosol, we design and build optical traps capable of confining liquid droplets and solid particles in the micron size range, under conditions that mimic the atmosphere.

We can confine one or more aerosol particles in the air using a single-particle approach. Currently, we are developing holographic optical tweezers, which will allow us to trap multiple particles at a time, move them around, and bring liquid droplets to the point of coalescence. Before we could start on the optical alignment, we had to build a dark laser enclosure to house the instrument. This enclosure serves dual purposes. First, it contains the laser light inside, reducing the safety risk. Second, it keeps the room light out, which allows us to collect very low light signals without having to turn off the lights in the lab. Construction of our first enclosure was completed in Winter 2024, and construction of a second enclosure is now underway. We have also begun the alignment of the optical trap. Once the trap is built, we plan to begin measuring the surface tension and optical properties of aerosol droplets containing complex mixtures of salts, and organics with different surface activities.

In addition to our optical trap, we have been setting up a UV-aging chamber to mimic and accelerate the environmental aging of plastics in the lab and working on several bulk solution experimental protocols. Undergraduate researchers have been using our new force tensiometer, density meter, refractometer, and activity meter to measure bulk solution properties of complex mixtures containing surfactants. These results will later be used to help understand the results of droplet measurements.

Members of the Bain Aerosol Research Group have been busy with more than just research. This



spring, two of our group members presented posters at the IUCCP conference, and Dr. Bain traveled to France to participate in the biannual Molecular Understanding of Atmospheric Aerosol meeting. Additionally, one of our group members was awarded a Summer Undergraduate Research Experience (SURE) award, funding their research time for summer 2024. Lastly, as part of a team led by McGill University, the Bain Aerosol Research Group has received its first external funding. In this project, funded by the Simons Foundation initiative for Atmospheric Radiation Management, we will use a combination of single droplet experiments and modeling to understand the implications of injecting aerosol into the stratosphere as a radiative cooling strategy.



## CHEMISTRY GRADUATE STUDENT COLLEAGUES Reunite after 40 years

Twelve former OSU Chemistry graduate students, and three of their professors, reunited for a weekend in Corvallis in late August. The students, who joined the OSU Chemistry Department in the late 70's and early 80's, came with their spouses to renew friendships, and join a few professors for a delightful weekend. Professor Emeritus James Ingle and his wife Sara hosted a welcome dinner at their home on Friday, August 26th. Saturday, the group visited a couple Willamette Valley Vineyards and celebrated dinner at del Alma in downtown Corvallis, joined by Professor Emeritus (and former department chair) Caroll DeKock and his wife Gerry. Sunday the group met at Avery Park for a BBQ with a surprise visit from Professor Emeritus Michael Schuyler. Many of us have kept in touch over the years and decided a reunion in Corvallis was needed, noted organizer Suraj Hindagolla. Several of our former professors (Ed Piepmeier, Harry Freund, Steven Hawks, Hollis Wickman, William Fredricks) as well as a few fellow graduate students (Bill Pesklak, Monty Smith, Cecilia Yappert) have passed on. Students came from California, Florida, Oregon, Washington, and Wisconsin. A future reunion in Dana Point CA is under discussion. Those who wish to be included should send their email address to [artambrose@cox.net](mailto:artambrose@cox.net)

Students who participated:

- Art Ambrose, Ph.D. 1983
- Gerhard Beenen, Ph.D. 1981
- Sara Church, Ph.D. 1987
- Paul Collins, Ph.D. 1984
- Lamar Dewald, Ph.D. 1984
- Robert Eierman, Ph.D. 1985
- Colin Elliott, Ph.D. 1983
- Suraj Hindagolla, Ph.D. 1985
- Marcia Ikeda (Cayton), MS 1984
- Gary Miller, MS, 1981
- Socorro Montalvo, Ph.D. 1986
- Mary Ryan (Hotchkiss), Ph.D. 1980



## NEW FACES: Mak Ashton



By **Mak Ashton**

Mak Ashton was born in Lebanon, Oregon and lived in Sweet Home, Oregon for much of their life. They grew up exploring the PNW with their parents and younger sister. In high school Mak participated in Concert Band, Concert Choir, Track & Field, and Varsity Soccer. Mak's mother was a Social Worker for the Lebanon, Oregon youth and adult community, and their father is a Master Carpenter for G Christian

Construction. Mak's younger sister is a current Oregon State University Undergrad student. Mak has a nine-year-old three-legged tabby cat named Iyla who is full of sass and a spunky black lab shepherd mix named Ruby.

After graduating high school Mak went to Linn Benton Community College for the beginning of undergraduate and later enrolled as a DPP student with Oregon State University. Their passion for their undergraduate degree in Kinesiology (pre-therapy and allied health) stemmed from the desire to help others and to understand the body's functions, limitations, and regenerative abilities. When looking into the Chemistry Department Mak found the research missions related to human health and environmental improvements very inspiring. Thus, the prospect of working within the department was very enticing.

As an undergraduate and ECampus coordinator, Mak is responsible for working with faculty and the Department Head to manage the direction of OSU's chemistry undergraduate and

ECampus programs. This includes undergraduate chemistry program oversight, supporting students and faculty, interpreting transcripts for overrides, updating course schedules, assisting with award programs, and marketing for the program. After a few weeks within the position Mak's favorite part of the position so far is being able to assist students by troubleshooting issues with their registration.

Something that might surprise those that do not know Mak is that they have extensive knowledge on animal behavior. Through working at Safe Haven Humane Society for over a year and volunteering as a dog trainer assistant, they gained hands-on and observational experience with felines, canines, and various small animals.

Outside of work Mak has a multitude of hobbies and interests. Mak is a part of the Linn County Artist Guild in Lebanon and has a display of varying pieces. Primarily working with colored pencil, watercolor, and now gouache Mak's pieces tend to be of flora and fauna with a special interest in insects. In June 2024, Mak had an installation at Bombs Away Café on Monroe Ave.

Mak loves reading fiction; *The Book of Night* by Holly Black is their current favorite read of 2024. Recently Mak has gotten into cross stitch and really enjoys using the finished product as wall décor. Mak is a plant enthusiast with several varieties of Pothos, Haworthia, and *Dracaena Trifasciata*. They also have an herb garden with assorted species of sage, thyme, mint, oregano, and lavender. This summer Mak is committed to learning to skateboard and crochet. If Mak could have any superpower, it would be the ability to shapeshift so they could fly anywhere, swim across the globe, and relax in tree canopies around the world.

## NEW FACES: Alison Bain



By: **Brayden Tuers**

Welcome Dr. Alison Bain to the OSU Chemistry Department. As a new tenure track assistant professor,

Bain is teaching the CH 324 Quantitative Analysis and CH 421/521 Analytical

Chemistry courses and setting up her research lab. Bain joins the department with her first faculty position after finishing her postdoctoral research at the University of Bristol this past year.

Born and raised in a small town in the Southern Ontario region of Canada, Bain received her Bachelor's degree in Chemistry with a concentration in Nanotechnology from Carleton University located in Ottawa, Ontario. Following her undergraduate, Bain received her Master's Degree in

Chemistry from the University of British Columbia. Here, she took extensive coursework in spectroscopy, atmospheric science, and material science, all while devoting herself to the UBC marching band and the Chemistry Safety Committee. During this time, Bain also worked as a research assistant in the UBC chemistry department, specializing in the design of spectroscopy experiments for material applications and multivariate data analysis using Matlab code.

After receiving her master's, Bain moved

into a doctorate program at the esteemed McGill University in Quebec, graduating in 2021 with her PhD in Chemistry and having served three years as the Chemistry Graduate Student Societies treasurer. Subsequent to graduating, Bain completed over two years of postdoctoral research at the University of Bristol doing experimental work with aqueous aerosol-containing surfactants. Bain's chemistry story began during her undergraduate degree at Carleton University, where she initially matriculated as a biology major. However, after taking her first general chemistry course with a professor whom she felt was particularly effective at teaching, she realized that she enjoyed the problem solving core of chemistry more than the systematics of biology, and promptly switched her major to chemistry. While she wasn't entirely resolved about this particular path yet, she explains that she felt it was important for her to jump at opportunities and try new things during this era of her life—an attitude which ultimately served her well during her path through academia. "I feel like you need to not be afraid to jump in and learn something new. That's really important if you're gonna be successful in academia," she said.

Ultimately, Bain stuck with chemistry through the remainder of her bachelor's degree, graduating along with five other students from the program. Still not entirely sure how far she wanted to take this degree, Bain decided to apply to masters programs, knowing that—at least in Canada—it was easy for students to switch to PhD programs without finishing their master's, so long as their transcripts were reputable. After getting accepted into a program at the University of British Columbia, Bain embarked on her first avenue of post-undergrad research. Here, she was introduced to advanced technological implements like Raman spectroscopy, something which she swiftly developed an affinity for. Due to this exposure to new methods and avant-garde technology, Bain feels that her years in master's school were foundational for manifesting her specialized interests within the field. Furthermore, due to some rather discomposing hurdles she faced during this time in her life, Bain feels that these

years were crucial for her own character development, and taught her some very valuable lessons about the ups and downs of a path in academia.

"I learned a lot from that [master's program]," she said. "How to keep going when things suck. That just because things are not working out now does not mean that they will not ever work out." Bearing these lessons in mind, Bain explains that, as a new professor for students who might find themselves in similar positions of turmoil and uncertainty, she wants to be able to transfer this sentiment of embracing academic hardship to her own students.

"I think that, in general for science, the most important thing is to be persistent and keep trying, because it's okay if you don't understand something or get something the first time," she said. "You just have to keep trying."

Through this perseverance, Bain finished her masters degree and kept moving forward, hopeful that finding a meaningful doctoral program at another university would revive her spirits and cement her specialized interests. After moving to McGill University, Bain shares that, after a few years of toil, she found more fulfillment in her path. With more freedom and flexibility, Bain expanded more into analytical chemistry with an atmospheric focus, and found that she particularly enjoyed the environmental applications of this work.

"I really liked that research, because I had the opportunity to do a lot of different things," she said. "And all the questions that I was trying to answer are directly related to climate and how aerosols impact climate, so that makes it feel like I'm doing something important."

Feeling that she had finally found her niche in analytical chemistry, Bain continued with this atmospheric focus through the end of her PhD and carried it into her postdoctoral research. Once she began working with other students and assuming more of a mentor role in her own research, she began settling into the plan of remaining in academia to become a professor. Upon finding an analytical call from Oregon State University and putting her heart and soul

into the application process, Bain earned her current position in the department. While she shares that she would have been ecstatic to receive any position in academia at this time, Oregon State was a specifically enticing destination for her due to the prodigious diversity of its research activity and faculty composition.

Being her first position in academia as a professor, Bain shares that it has certainly been a dense period of adaptation, growth, and misgivings, but she has nevertheless enjoyed it immensely thus far. Her first goal of the year is to ensure that she is implementing the best practices in her classroom, and while the size of her lectures is not extremely conducive to one-on-one interactions, she looks forward to teaching her 324 course for this very reason.

As far as looking forward to her future in the department, Bain is hopeful that she will get the opportunity to teach a grad-level spectroscopy course in the upcoming years. Furthermore, she feels that technical computing is an immensely beneficial skill for any student looking to pursue analytical chemistry in the modern world, and she hopes that she may be able to advance the curriculum designated for this purpose.

"[Coming freshly out of academic myself], one of the things that I said during my interview here was that we need to be teaching technical computing, and not just computer science, to try to train the next generation of scientists to actually work on the kinds of problems that they're gonna be working on," she said. "So technical computing is one thing that I want to pass on to my students, and that goes for undergrad students and for my graduate students. I think that's a skill that everyone needs to have, and it's going to make you more employable to have this on your CV."

When she's not working tirelessly to establish her new journey in OSU's Chemistry Department, Bain can be found biking, hiking, skiing, paddleboarding, or anything else that the natural world has to offer.



# NEW FACES

## John Terhorst

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By: **Brayden Tuers**

Welcome Dr. John Terhorst to the OSU Chemistry Department. A new Ecampus instructor for the CH 12x General Chemistry series and the CH 33x Organic Chemistry series, he joins the department as a remote instructor working from Redlands, California. Redlands is a roughly Corvallis-size town located in the San Bernardino county of Southern California, roughly 60 miles east of Los Angeles.

Originally from Bellflower, California where he grew up, Terhorst attended the University of Redlands where he received his Bachelors of Science in Chemistry and Biology in 2006. There, he studied with an emphasis in organic and biochemistry, dedicating himself to the Phi Beta Kappa academic society as well as the university's Chemistry Club. Graduating Summa Cum Laude with Honors in Chemistry, he was accepted into a graduate program at the prestigious Yale University. Terhorst earned his Masters in Chemistry in 2008 and his PhD in Chemistry in 2011. His PhD dissertation was titled "Continuum

Solvation Models and Force Field Development for Computer-Aided Drug Design".

In Bellflower, Terhorst grew up alongside his older sister with an English teacher mother and an architect father. His personal entanglement with chemistry began in high school, when he took an honors chemistry course instructed by what he describes as a rather 'cranky' yet exceptional teacher who passively served as his first mentor in the field. While Terhorst explains that he has always been a STEM individual at heart, his primary involvement at that time was with music. Left to decide between his fervor for music and chemistry, he ultimately decided to pursue chemistry into college, fearing that making music a job would disfigure his personal relationship with it. Although this choice may have initially surprised much of his family and community, he shared that it was ultimately one of his most momentous life choices.

At University of Redlands, Terhorst describes his undergraduate experience as "tremendous", explaining that its size, location, and research environment all made for very auspicious conditions during his early academic path.

"I honestly thrived there, it was a tremendous experience. A small school with immediate and direct access to professor's research opportunities...you felt like people knew who you were and that you could stand out there," he said.

Sometime within these prosperous years of self-discovery and academic infancy, he decided that he was going to continue chasing chemistry into graduate school. While he was also partial to biology, he found that the camaraderie and personality of his chemistry department—in contrast with that of the biology department—was uniquely invigorating. With the help of a pristine transcript and the tenacity of passion, he landed a spot in Yale University's chemistry program.

An adept student in his chemistry courses, Terhorst worked as both a private and group tutor as well as a teaching assistant for one of Yale's organic chemistry courses. Here, he describes the nature of his job as the closest a student can get to running a course without actually instructing it, as the professor left the bulk of the course's content creation and lesson plans up to the assistants. Although it was certainly a rigorous job, Terhorst enjoyed it to such an extent that he believes it was his first impetus to eventually work in academia. One component of this position that he especially enjoyed was his interactions with students during office hours, a few of whom shared with him that it was his academic aid and advocacy that inspired them to pursue their own degrees in chemistry. A transformative experience for his morale, Terhorst began to discover that he not only loved chemistry and its pedagogy, but also the humanistic dynamics of academic mentorship. Near the end of his doctorate program at Yale, Terhorst suffered a sudden disability which has required him to use a wheelchair for mobility ever since.

"I went from being completely independent, you know, 28-year-old guy in the prime of his life—finishing grad school, ready to graduate with a doctorate and move on to teaching—to being utterly dependent on other people at the time," he said. While this was an immensely tumultuous hardship for him, Terhorst explains that it enacted a crucial shift in his perspective at the time, and served as the bedrock for much of the personal philosophies and life values that he now operates with in life. In particular, Terhorst explains that the eminence of intersectional pedagogy in his own teaching can be largely attributed to this experience.

"Certainly these big challenges in my life have taught me a lot about equity and inclusion and being considerate and adapting to challenges, like being able to find a job and a career that lets me use my education and use my talents, despite my physical limitations," he said.



Adding to this, he elucidates that the field of science holds a uniquely consequential relationship with equity and inclusion in the broader world. “I see science as being a universal language—a universal language that can bridge political, social, economic, cultural barriers. That is, in and of itself, an inclusive statement, like emphasizing the ability to transcend individual differences. That whether you are a white male, or whether you’re a minority by race, or a minority by disability, or a minority by economic status, everybody can contribute to science and everybody can participate in science—or should be able to,” he said. Terhorst adds that the OSU’s Chemistry Department’s own motto, “where diverse minds inspire endless innovation”, was especially heartening to that effect, and he hopes that he can now become a part of that mission.

For Terhorst, his new position as a remote Ecampus instructor for the Oregon State Chemistry Department is what he endearingly refers to as his “unicorn job”. Due to his physical limitations and transportation barriers, he spent the past 12 years working part-time positions as an adjunct professor for 3 different universities, as well as being a private tutor. These adjunct positions were the only positions that could accommodate for his constraints, and while he always had the intention of being a full-time professor, doing this remotely made for a dismal search in the past job market. After the workforce transformations of the Covid pandemic, more remote full-time positions opened up, one of these being Terhorst’s current place at OSU.

“The position that OSU gave me, that allows me to do what I want in the contexts, the time, the scheduling, and the location that I can do it most effectively, I’ve never had in the 12 years since I’ve been out of grad school. I’ve been looking at jobs, and I’ve never seen anything like this come up,” he shared. “So it was literally a ‘unicorn job’ and a life changing experience to be able to get it.” While he initially feared that the applicant interview process would be hindered by his transportation barriers, he shared that the department was exceedingly accommodating for this. After weeks of several hour-long remote interviews and presentations, to his exhilaration, he landed this ‘unicorn’ position. Terhorst shares his principal goals for the field of chemistry—along with its application—are green energy, battery storage technology, and environmental sustainability. The way he desires to advance these fields through the OSU Chemistry Department is, first and foremost, by inculcating the importance of these outcomes on his students and showing them why he believes they are so important.

In his free time, Dr. Terhorst can be found playing chess or volunteering for the organization that provided him with his current service dog, Canine Companions.

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## NEW FACES

### Shrikant Londhe

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By: **Brayden Tuers**

Welcome Dr. Shrikant Londhe to the Oregon State Chemistry Department. Coming from University of Kansas in Lawrence,

Kansas, Londhe joins the department as a new instructor for General Chemistry CH 23x and the Experimental Chemistry I CH36x and CH36xH courses, as well as an e-campus instructor for Organic Chemistry CH 331.

Born in Mumbai, one of the largest cities in India, Londhe earned his Bachelor’s of Science in Chemistry from Ramnarain

Ruia College, also in Mumbai. After graduation, Londhe pursued a master’s program at the Institute of Chemical Technology, graduating with a M.Sc. in Chemistry in 2016. Following his masters, Londhe moved to the U.S. where he acquired his PhD in Organic Chemistry, all while working as a graduate teaching assistant for the entire seven year tenure. Londhe also worked as a graduate research assistant for over four years at KU, and in 2022, he worked briefly as an adjunct professor with Baker University in Baldwin City, Kansas.

In spring of 2023, Londhe began interviewing for an instructor position at OSU, and to his delight, he was hired to start Fall of 2023. Londhe was born into a middle class, nuclear family consisting of his father, his mother, and his older brother who now lives with his own family in New Jersey. Much like himself,

Londhe’s parents were highly educated in the science field, with his father working in the textile chemical industry for many years. Growing up, Londhe was trained in Indian classical music, and to this day, singing is still one of his greatest passions aside from chemistry. Interestingly enough, he has actually recorded a couple of songs for a children’s short film.

While chemistry has clearly impassioned Londhe for the majority of his life, he explains that his choice to pursue a career in chemistry can be largely attributed to some very prominent mentors he has met along the way. Namely, his teachers and mentors from his undergraduate years through his doctoral program were instrumental in solidifying his decision to pursue chemistry and remain in academia. Londhe also credits Dr. Marina Rubin and

continued from page 9...

Dr. David Benson from the University of Kansas, as well as the chemistry faculty at Baker University, for their contributions to his journey.

“[All these] fantastic educators and mentors have supported my growth as an educator and provided me opportunities to explore and hone my teaching skills,” he said. “I am here largely because of them.”

Londhe explains that his most meaningful experiences throughout his extensive path in academia have always occurred through interacting with students, and that these interactions are what first displayed his intrinsic passion for teaching and mentorship. Now that he gets to be an educator himself, these experiences have become the most personally rewarding part of his job.

“Interacting with students is the part I enjoy most about teaching,” he said. “Knowing that I’m able to reach out to a student audience and help them understand chemistry is very fulfilling. I thrive on these interactions in class and in office hours as I see my students grow and explore new concepts and ideas in chemistry.”

While Oregon State University certainly

isn’t Londhe first position in academia, it is his first job as an instructional faculty member. Londhe’s story with OSU began in Spring of this year, when he toured the university during his interview process. Here, he says that experienced an intense admiration for the chemistry department and its faculty members, and from his own perception, he felt that it was reciprocated.

“I was thoroughly impressed with the department and the prospect of working at OSU Chemistry,” he said. “When I came to interview with OSU Chemistry, I had a fabulous experience with the people in the department and left with a great impression of OSU and Corvallis overall. The department also really liked me, and it felt like a great match for both parties.”

Now that he can call it home, Londhe shares that his favorite quality of the department is the emphasis that it places on teaching, especially with the Integrated Lab courses for chemistry majors. As a sort of natural-born scientist himself, Londhe feels that science has a tremendously important role in not only academics, but the broader world as well.

“Science is often not appreciated by students to the extent that it influences our daily life. In my opinion, scientific literacy is absolutely necessary in today’s

environment and science needs to be pursued through a lens of curiosity,” he explained. “Science is not a belief that someone holds but rather a plausible explanation for the way the universe around us works, born out of rigorous experimentation and logically sound thinking.”

As such, these staunch values have shaped Londhe’s own teaching philosophy. Now that he has the opportunity to direct the learning environment of his classrooms at OSU and implement his own practices, Londhe explains that his foremost goal is to ensure that his courses embrace the inquisitive nature of science and engage students beyond externalized academic factors.

“In the process of teaching science, we often end up communicating facts but fail to inculcate the curiosity aspect,” he said. “An effective educator is one who makes the student develop this critical thinking, along with rousing the curiosity in them.”

In his free time, Londhe can be found singing or spending quality time with his partner, Chinmay, who is a senior software engineer for Archer, a company based out of Kansas. Together, the two live in Corvallis with their cat, Lily.

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## NEW FACES

### Thomas Osborn Popp

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By: **Brayden Tuers**

Welcome Dr. Tom Osborn Popp to the Oregon State Chemistry Department. Osborn Popp joins the department as a new tenure-track assistant professor for the CH 464 Experimental Chemistry II course, arriving from Rutgers University where he concluded a postdoctoral fellowship. Although it is Osborn Popp’s first faculty position at a university, he brings

with him a myriad of research experience from both industry and academia.

Born and raised in Chandler, Arizona, a larger suburb only twenty miles southeast of Phoenix, Osborn Popp attended

Arizona State University where he earned his Bachelors of Science in Chemistry from the University’s honors college. Early in his undergraduate path, Osborn Popp worked a brief intern position with First Solar, a solar panel and power plant company based out of Tempe, Arizona. Also during this time, Osborn Popp devoted himself to undergraduate research for nearly three years, primarily working with Nuclear Magnetic Resonance (NMR) in biochemical applications.

After finishing his undergraduate studies, Osborn Popp pursued a graduate program at the University of California, Berkeley, attaining his PhD in Physical Chemistry in 2019. Between his undergraduate and graduate paths, Osborn Popp had a brief venture into government laboratories working as a research intern with Sandia National Laboratories in Albuquerque. Here, he used NMR to study the diffusion of molecules within porous carbons. At Berkeley, Osborn Popp continued using NMR to study metal-organic frameworks (MOFs) and covalent-organic

frameworks (COFs), preparing himself for a swift transition into an international postdoctoral research position with ETH Zürich in Zürich, Switzerland. Here, Osborn Popp worked on the forefront of solid-state NMR and dynamic nuclear polarization (DNP) advancement. In 2021, Osborn Popp arrived at the most recent focal point of his research through an awarded postdoctoral fellowship with Rutgers University developing NMR instrumentation to address existing hurdles in biomolecular science and design.

Osborn Popp's science story began when he was a child in Chandler, living with his two parents and his sister. Osborn Popp describes that from the moment he could first read, he dug his nose into biological classification books, assimilating as much information as he possibly could about plants, animals, and fungi. In high school, Osborn Popp fell deeper into his entanglement with science, sharing that he had one teacher, Dr. Dennis Cates, who was a particularly instrumental feature of those years. According to Osborn Popp, Cates was a brilliantly devout and versatile academic, teaching just about every STEM subject that his high school offered.

"He was just one of these people who was so self consistent with their values, and so good at teaching that it was inspirational in a sense," Osborn Popp said. "I think he was an early role model for me and a lot of my other friends in that class that also ended up in science."

Witnessing this special teacher's virtue, Osborn Popp found himself motivated to approach science with a similar attitude, and by the end of his high school years, he had resolved to pursue science through higher education. At ASU, Osborn Popp initially began working towards a major in physics, as he was particularly drawn to the studies of electricity and magnetism. However, he soon began to feel that physics was becoming too abstract and mathematical in nature, and he preferred the tangible aspects of science which were more manifest in fields like chemistry and biology. Torn between these disciplines, Osborn Popp found resolution in his undergraduate research lab, where he first discovered his fascination with physical chemistry through the use of NMR technology. Due to the interdisciplinary nature of NMR's scientific process, as well as its diverse range of applications, Osborn Popp felt that this lab had led him right into the intersection of all his favorite studies.

"[I knew that] I like physics, chemistry, biology, and geology, and with NMR, I can study all of those things," he said. "So I felt like going into physical chemistry, and also into NMR, because it's sort of at the center of many different fields."

Having discovered the gold mine of his academic interests, Osborn Popp settled deeper into academic research, eventually reaching the conclusion that he wanted to attend graduate school—but not without the guidance of some memorable grad students in his lab. Reflecting back on this, Osborn Popp explained that attending grad school was one of the best decisions he's ever made. Yet, despite his unwavering passion in the field, these years weren't all smooth sailing. During his postdoc years, Osborn Popp explains that—like so many others

in place—he reached a point where he felt that the uncertainty and disillusionment of an academic trajectory had him doubting his destination. Wondering if he should try something different in order to diversify his skills, he took a brief interest in management consulting during his research fellowship in Switzerland. Although his analytical nature allowed him to excel in this field, Osborn Popp came to the conclusion that he belonged in science, and that he would persevere through all the juvenile hurdles if it meant he could chase his dreams.

"If work is always going to be hard, I would rather at least have agency and do things that are inspiring and interesting to me," he said. "Academia is that place where I can just explore scientific concepts and more importantly, help and support and inspire students to do that as well...and I think it's where I belong."

Besides facing doubts in the occupational realm, Osborn Popp described that his time in Switzerland was transformational in other regards, too. Here, cultural alienation, alongside geographical isolation from family and friends, made him realize the importance of these support systems. He also feels that it provided him with a very valuable perspective on international students, and the difference that some kindness can make in these individuals' lives.

After returning from overseas, Osborn Popp ended up at Rutgers University in New Jersey. Here, he feels that he was faced with his final reckoning with academia. After having the opportunity to mentor numerous students in his lab, Osborn Popp felt that his desire to become a professor crystallized, knowing that his ultimate goal was to leave an impact on his field. For Osborn Popp, leaving an impact doesn't merely mean making strides in research, it also means channeling his passion into the students of the next generation—enabling innovation to be fueled and reproduced for decades to come.

"We need to think more about how we help the people 100 years from now, because I think that's a very hard thing to do. It's hard work on something you'll never get to be a part of," he said. "[To confront this] I want to develop students who are successful, who care about the world, and who are kind to others," he said.

Fortunately for Osborn Popp, he now has the opportunity to do exactly that, and he is optimistic that the Oregon State Chemistry Department will be the perfect environment for him to implement his teaching philosophies.

"One of the goals I have here at OSU is to try and distill down what we should be teaching the students and how we can teach it more effectively," he said.

Osborn Popp explains that this starts at restructuring students' perceptions of science in order to change their attitudes towards the class. Primarily, this means having fun and lowering the stakes.

"My teaching philosophy is about having fun with learning and



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recognizing that there people learn in different ways. It's not meant to be about what grade you're getting. We're just here to enjoy this topic, and if it's not your favorite thing, that's okay, but maybe I can share with you my zest for it," he said. Besides working to develop his instructional practices, Osborn Popp is currently busy setting up his lab, which is based in

developing new methods and technologies for solid state NMR spectroscopy.

When he's not at OSU, Osborn Popp can be found playing musical instruments, watching anime with his friends, or spending time with his wife, Rachel.

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## UNDERGRADUATES OF THE QUARTER

### Fall 2023

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By: **Helen White**

Helen White grew up on Vashon Island, Washington where she attended Vashon Island High School. She chose to study chemistry because of her interest in radiochemistry, and because it paired well with her Radiation Health Physics degree.

Helen decided to go to OSU because of the campus and proximity to everyone she cares about. Compared to other schools, Oregon State had more to offer--academic and otherwise--so there wasn't a doubt in her mind when it came to choosing a university.

Currently, Helen is performing research in the radiation center on campus with Dr. **Alexander Chemey's** group. Last winter, she transferred projects from analyzing crystalline structures they were created in the lab to working on a radiochemical separations project. Previously, she worked on a computational project using a DFT program in order to simulate metal hexaboride structures and explore their capabilities in holding radioactive waste materials. To get into research, Helen emailed and asked around professors she was interested in working with. Since then, she notes it has been an incredibly enriching and rewarding experience. Helen plans on attending graduate school immediately after graduation, hoping to pursue a PhD in radiochemistry and focus on working in nuclear waste management.

Outside of school and work, she loves to be outside and enjoys going for walks, bouldering, running, and frolicking, all the things she says help keep her sane. Beyond that, she loves to read, which can be a much-needed break from chemistry. Right now, Helen's favorite book is *The Wall* by Marlen Haushofer. It is a short, devastating, dystopian fiction that was written in 1963 which talks about a woman's experience as a person in a way that is not normally explored.

Helen's favorite food is saltine crackers. She is the first in her family to go to college, which she adds is "an immeasurable privilege, especially in the state of the world now where a bachelor's degree may afford a person a well-paying job." She says that her biggest hope is to move into a financial place in her life where she can support those who have supported her in the past.

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By: **Carley Beeman**

Carley Beeman grew up in Golden, Colorado and attended Golden High School. She enjoyed high school chemistry classes, loved the puzzle and challenge behind the science, and thought she wanted to pursue a career in pharmacy or medical research.

Carley chose OSU for the strong academics and athletics present- coming to Oregon State allowed her to pursue Division 1 gymnastics while simultaneously getting an undergraduate degree in chemistry. She notes that the people here at OSU are also genuine and caring, and it felt like home. Carley joined Dr. **Kolluri's** lab and is researching pathways regulating cell cycle, cell death, and differentiation in relation to cancer cells. She was drawn to this research after taking part in the ASPET research fellowship at the University of Michigan, where she studied the respiratory depression pathway of opioids in mice brains. After graduation, Carley hopes to pursue her PhD in a biomedical science field.



Outside of school, she loves spending time in nature with friends, camping and hiking. Her favorite book is *The Giver*, and favorite food is tacos al pastor. She has two brothers, making her the only girl in the family, and loves springtime in Corvallis when everything is in bloom.

# UNDERGRADUATES OF THE QUARTER

## Winter 2024

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By: **Evan Park**

My name is Evan Park and I use she/her/hers pronouns.

I grew up in Bend, Oregon. Freshman and sophomore year I attended Bend Senior High School (Bend, OR). Junior and senior year I attended American Overseas School of Rome (Rome, Italy). I chose to pursue chemistry because I am very intrigued by the ability of chemistry to observe and predict reactions at the molecular level, and how widely this skill can be applied. After learning about the scientific explanations behind climate change and environmental disasters, I decided that it was my goal to use chemistry to solve these problems someday. I chose OSU because the environment and community are so welcoming and conducive to growth, and the science programs here are challenging and distinguished. I also chose to come here for the opportunity of trying out for the rowing team with no prior experience, which has proven to be an amazing experience. After three years of learning how to row, excelling within my team, and even competing at the international stage in the sport.

Post-graduation, I am planning on attending a graduate program to pursue a master's degree in chemistry. I will use my final year of NCAA athletic eligibility to continue rowing at the collegiate level, and potentially pursue athletics at the national team level after that.

Outside of school and rowing, I enjoy playing bass guitar with my friends, being in nature, and playing with my roommate's cat. My favorite book is *And Then There Were None* by Agatha Christie, because it leaves you with so many questions and ideas that you can read it over and over again! My favorite food is authentic Italian cacio e pepe pasta. I am proud to announce that I broke the OSU women's rowing 2000 meter erg record in February 2024, thanks to the support and encouragement of my coaches and teammates. The Oregon State women's rowing team has offered me an amazing environment to explore and exceed my own expectations of myself both physically and mentally, and I have learned countless lessons about grit, teamwork, and the rewards of raw, hard work. Last summer, I was accepted into the Under 23 National Team selection camp, where I made the top boat, the women's open weight 8+, and travelled to Plovdiv, Bulgaria for the Under 23 World Rowing Championships. After winning our first heat in a comeback race, my boat won in the finals by open water, taking home gold medals for the USA. My experience there is reflective of the daily hard work, time management, and effort that I put in at OSU, balancing my chemistry demands, 9 rowing practices per week, and holding an executive role on the Student-Athlete Advisory Committee as a Student Athlete Leadership Team representative.

By: **Emily Frechette**

Emily Frechette grew up in Portland Oregon, and after attending Saint Mary's Academy in downtown Portland, she came to OSU to remain close to family and to stay surrounded by nature. Emily has a great love for running, reading, listening to music and cooking. Since high school her favorite book has been Ovid's *Metamorphoses*.

Emily's passion for chemistry stems from the unknown of it all. She feels that it is a subject that will never be fully understood, and appreciates the broad and significant variety in real world applications, that the research can offer.

She got into research early on, and has been working with Zinc-based MOFs since her freshman year. She got in contact with Dr. **Kyriakos Stylianou**, who brought her into the lab that she works in today. After graduation she plans on continuing her education and going to medical school.



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Want to keep up with everything happening in the department? Check out our **social media!**



# UNDERGRADUATES OF THE QUARTER

## Spring 2024



By: **Matthew Gray**

Mathew grew up right here in Corvallis and chose Oregon State because of its great science program and so that he could stay close to family. He also received a scholarship to play violin in the Oregon State University Orchestra.

Matthew originally started out as a biochemistry and molecular biology major to fulfil the prerequisites for dental school. During his second year he was enjoying organic chemistry, because for the first time it felt like he could explain and reason his way to solutions at a more fundamental level. He ultimately decided to switch his major to chemistry so that he could continue pursuing it if he decided to abandon his dental school plans.

After graduation, Matthew plans to go to dental school. Due to the requirements for dental school, he has taken a wide variety of courses outside of chemistry that he has greatly enjoyed. The more he's learned in these classes, the more he's grown to love science (especially chemistry). More recently, Matthew been seriously considering graduate school instead of dental school to continue satisfying his passion for science.

If not in school you can find Matthew exercising, playing the violin, and video editing. He really enjoys Mixed Martial Arts and practices Brazilian Jiu Jitsu several days per week. His favorite book to read is the Bible because it has more significance in his life than any other book. Matthew's favorite food is the barbeque chicken and macaroni and cheese that his younger brother makes.

By: **Phoebe Lee**

Phoebe Lee was born in China, but immigrated young and grew up in Portland, OR where she attended Clackamas High School. She applied as a chemistry undergrad because she enjoyed the chemistry courses in high school. As she studied chemistry further in college, she loved it for its versatility and complexity.

Oregon State University has a strong research-oriented science program. Knowing she wanted to major in chemistry, accessible research experience is invaluable. Plus, the campus is beautiful, and allows her to stay close to her family and friends.

She is currently performing research in OSU's Mass Spectrometry Center with Dr. **Claudia Maier's** group under guidance from a graduate mentor. Currently, they are using mass spectrometry and imaging technology to analyze brain tissues of mice with Alzheimer's disease (AD). By characterizing the lipid profile of mice brains, they hope to identify significant lipid biomarkers for pre-symptomatic AD diagnosis. She got into research through OSU's STEM Leaders Program her freshman year. It matched her with Dr. Maier's lab, and she's been researching ever since! She wants to continue in higher education. Graduate school is the goal, but ultimately she plans to join industry.

Reading is her favorite past time. She also enjoys being outdoors, practicing music, and spending time with her friends and family. Her favorite book is All The Light We Cannot See by Anthony Doerr. With the weather getting warmer, her favorite food is tending towards cold, fresh fruit. Her favorite fruit during the summer is Hami melon (like a cantaloupe but oblong in shape, sweeter in taste, and crispier in texture).



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game vs. Washington State.

Prof **K Stylianou** has been promoted to Associate Professor with indefinite tenure

Prof **A Bain** is part of an international team that received a grant from the Simons Foundation to study the optical properties of aerosol for solar radiation management.

Prof **C Fang** won the 2023 OSU D. Curtis Mumford Faculty Service Award and Excellence in Postdoctoral Mentoring Award  
Oregon Lottery Graduate Scholarship selected **CH Kuan**, as an

awardee for the 2024-2025 academic year.

Dr **L Wojcinski** was awarded the Frank Whitley COS Faculty Scholar Award

Emeritus Prof **D Keszler** was elected a Fellow of the American Association for the Advancement of Science

Dr **A Liyanage** was awarded the Loyd F. Carter Award for Outstanding & Inspirational Teaching in UG Science, 2024

Dr **A Liyanage** was also recognized as a CoSCIES Fellow, 2023-2024



# INSTRUCTOR SPOTLIGHT

## Cassie Siler

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By: **Dr. Cassie Siler**

Dr. Cassandra Siler grew up in Colorado Springs, Colorado and chose a career in chemistry because of her high school chemistry teacher. Her teacher would write a new song for the beginning of every unit, had them make fun stuffed moles for mole day, and if you earned 100% on an exam, her teacher brought you a plate of homemade cookies! Her chemistry teacher also held the students to high standards and taught the class to embrace the challenge of learning chemistry.

In her own classroom, Dr. Siler tries to present chemistry as relevant, relatable, and digestible for students. She believes that it is her job to be as clear as possible and to provide resources to support students in their learning. It's the students' jobs to do the hard work of learning—practicing, contemplating, and asking questions. To Dr. Siler, excellent teachers are those who anticipate student questions and give students the tools and guidance to arrive at the answer themselves. She believes that teaching is an excellent way for students to learn as well. Additionally, she believes that we should

be equipping students for their future careers, but also to be informed as citizens. For example, even if students don't go on to do something directly related to environmental studies, knowing about climate change and how it is addressed is one of the biggest issues students will be tackling in their lifetimes. Even if students aren't going to be nurses or doctors, they need to be able to critically evaluate all of the health and medical advice that they hear and read about in order to care for themselves and their families well.

Dr. Siler chose to attend a small Christian liberal arts college for her undergraduate studies. This may not be the norm for someone considering going to graduate school in chemistry, but she made amazing friends there, and got to know her professors well. She values her faith highly, and while many people perceive science and Christianity to be in conflict, she doesn't think they need to be. Later, she chose to go to Harvard for graduate school, and then continually chose to stick with it even when it was really hard.

Dr. Siler is married and has three young kids (and a dog). Her husband is faculty in CEOAS. As a family they try to get outdoors as much as possible and their favorite activities are backpacking and skiing. Outside of the classroom, Dr. Siler loves cutting, coloring and styling hair. During high school, college, and graduate school, she would do hair for friends and family for fun. During graduate school especially, she would often be the wedding hair stylist for people that she knew. Additionally, she was a very into choir and sung in a choir all through college. She even met her husband singing in a choir in graduate school! Although she is not currently singing in any choirs, she does write chemistry parody raps for her classes. Dr. Siler is also a very active member of the local Corvallis community, where she have been volunteering as a member of the Board of Directors at the Corvallis Montessori School for the last three years.

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# GRAD STUDENT SPOTLIGHT

## Omar Farah

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By: **Omar Farah**

Abdikani "Omar" Farah's journey from East Africa to Oregon State University (OSU) was driven by a love for chemistry and a desire to contribute to science. Omar's decision to come to grad school at OSU was influenced by renounced organic chemists Dr. **Rich Carter** and the late Dr. **James White**.

His interest in chemistry began in high school, where he demonstrated a talent for the subject, often assisting his teacher and surpassing his classmates. Initially considering majors in engineering or pre-pharmacy in college, he didn't pursue chemistry until his sophomore year. However, it wasn't until his junior year, when he encountered organic chemistry, that ignited his passion for the field, leading him to change to a dual major in chemistry and biochemistry.

One highlight of Omar's time at OSU was CH631, a course taught by Prof. **Paul Blakemore**, which explored enolate-based carbon-carbon forming reactions and their practical applications. Omar appreciated this course for its insights into reaction mechanisms and their stereo-, chemo-, and regio-selectivities. The material he learned in CH631 proved invaluable when he later took the CH630 computational chemistry course.

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Omar's journey to science was influenced by his childhood experiences, particularly the need for medical professionals and resources in his community in Africa. After obtaining his master's degree, Omar got a job in the pharmaceutical industry. Despite having a fulfilling role as a research and development scientist, Omar recognized that he would need a Ph.D to be involved in the decisions that affect society, such as the cost and safety of drugs. In addition, Omar wanted to be an advocate for the ethical testing and environmental impact of drug production.

Omar attributes much of his academic success to the mentorship of his master's advisor, Prof. Timothy Beng at Central Washington University, and his Ph.D. advisor, Prof. **Paul Cheong**. He expresses gratitude to his family, teachers, and mentors who shaped his path, singling out his sister Sahra for her unwavering support and encouragement. Additionally, as Omar's Ph.D. advisor, Prof. **Paul Cheong** has played a significant role in his personal development. He also appreciates the friendship and mentorship of Prof. **May Nyman** and Prof. **Rich Carter** and his organic chemistry instructors Prof. **Paul Blakemore** and Prof. **Chris Beaudry**, who imparted valuable knowledge during his time at OSU.



Throughout his graduate studies, Omar faced challenges, including transitioning from synthetic organic chemistry to computational chemistry, which presented a steep learning curve. Despite initial frustrations, his dedication enabled him to excel, as evidenced by the numerous papers he has published, DoE-funded industry internship summer, and winning the Larry W. Martin & Joyce B. O'Neill Endowed Fellowship for the 2023–2024 academic year. Another challenge he faced was a health-related one. He tore his right Achilles tendon and needed surgery to repair it. He was not able to walk, drive, or do a lot of the activities he enjoyed for two months while recovering. This made him more grateful for his general health and taught him not to take his healthy limbs for granted. In addition, he gained much more appreciation for his wonderful friends (**Matt, Amy, Joachim, Jenna, Ebuka, and Erin**), colleagues (P.H.Y.C. group), and advisor (Prof. **Paul Cheong**) for their help, support, and accommodation during his recovery.

Beyond academia, Omar enjoys soccer, particularly supporting his favorite team, Liverpool FC, and has a passion for outdoor activities like hiking and camping. His diverse experiences, including living in multiple countries and states contributed to his adaptability and enriched his perspective on life.

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## IN MEMORIA: Peter Freeman



Peter Kent Freeman passed away with family by his side on January 12, 2024 after a brief illness. He was 92. His death occurred just 20 days after the death of his beloved wife Judith Walls Freeman.

Pete was born on November 25, 1931 in Modesto, CA to Russell and Helen Freeman. He grew up in Oakland, CA and graduated from the University of California at Berkeley with a bachelor's degree in chemistry in 1953. He received his PhD in chemistry from the University of Colorado in 1958. Pete was a professor of chemistry at the University of Idaho from 1959 to 1968. He joined the Chemistry Department at Oregon State University in 1968 and worked there until his retirement in 1997. Over his career, he taught organic chemistry to many undergraduate students and conducted research in physical organic chemistry in collaboration with many graduate students. After retiring, he continued to do research in computational organic chemistry until his mid-80s. Throughout his life, Pete stayed in contact with his former graduate students and followed their careers with interest. Pete married Marilyn Taber of Sebastopol, CA in 1955. They raised 4 children and were married 37 years until her death in 1992. Pete married Judith Walls Farrahi of Corvallis in 1995. Together Pete and Judy enjoyed traveling the world, supporting music education at OSU and rooting for the Beavers. An avid tennis player, Pete was one of the original members of the Timberhill Tennis Club in Corvallis and played at the club multiple times per week

until age 91. He also loved hiking and enjoyed many family trips to the national parks of the western United States. He had a lively sense of humor and a cheerful attitude. Pete is preceded in death by his first wife Marilyn, his second wife Judy and his sister Susan Schullstrom of Eugene, OR. He is survived by his children Diane McMurry (Kevin) of Seattle, Irene Freeman (Robert McDonald) of Evanston, IL, Ted Larson Freeman (Sandy) of Bainbridge Island, WA and Michael Freeman (Julianne) of Corvallis; his stepdaughter Shireen Farrahi of Portland, OR; 9 grandchildren and 3 great-grandchildren. He will be greatly missed. In lieu of flowers, his family suggests donations to the International Rescue Committee, [www.rescue.org](http://www.rescue.org).

# CLASS OF 2023

## Graduating Class

Ayala, Reyes, Ezequiel (Mat Sci)  
 Baumgartner, Trinity\* (Adv BioCH)  
 Bekbossynova, Marua (For Sci)  
 Belisle, Christopher (For Sci)  
 Berchtold, Julian (Env CH)  
 Bouchard, Madeleine (CH Ed)  
 Brown, Katrina (CH Ed)  
 Caleen, Owen (Adv CH)  
 Chiu, Nan-Chieh (MS)  
 de la Fuente, Phoenix (For Sci)  
 Deely, Lorelei (For Sci)  
 Dunn-Wall, Janak (MS)  
 Fitzgerald, Seamus (Adv CH)  
 Gandy, Benjamin (Pre-Med)  
 Gonzalez-Montiel, Gisela (PhD)  
 Gratton, May (Bus)  
 Gray, Matthew (Pre-Med)  
 Groening, Christina-Ann (Env CH)  
 Hardeman, Jayden (For Sci)  
 Jaeger, Lucy (Bus)  
 Herman, Lauren (Chem Eng)  
 Hunter, Kye (MS)

Huo, Sihang (MS)  
 Johnson, Alyssa (PhD)  
 Kim, Skylar (Bus)  
 Kim-Fu, Mitchell (MS)  
 Khorani, Mona (PhD)  
 Kmetz-Gonzalez, Gemma (MS)  
 Knaus, Clinton (MS)  
 Knox, Keaton (Adv CH)  
 Lachmann, Dietrich (Adv CH)  
 Lim, Lik Rong\* (Adv CH)  
 Lindsay, Taylor (Adv CH)  
 Loughran, Ryan (MS)  
 Ly, Eric (Env CH)  
 Mao, Zhiwei (MS)  
 Moser, Brooke\* (Adv BioCH)  
 Muensterman, Derek (PhD)  
 Munoz, Trenton (CH Ed)  
 Nguyen, Matthew (Pre-Med)  
 Nida, Aubrey (Adv CH)  
 Nieves Lira, Citlali (Adv CH & Env CH)  
 Opfer, Shawn (MS)  
 Palys, Lauren (MS & PhD)

Park, Evan (Env CH)  
 Persson, Andrew (For Sci)  
 Pogue, Nicholas (CH Ed)  
 Quiroz, Eliseo (PhD)  
 Reynoso-Canales, Destinee (Pre-Med)  
 Sandstrom, Sean (PhD)  
 Scherzinger, Sabrina (For Sci)  
 Shockley, Samuel (CH Ed)  
 Tome, Kudzaishe (MS)  
 Tran, Steven (MS)  
 Trejo, Marisol (MS)  
 Visaya, Samantha (For Sci)  
 Walz, Timothy (Adv CH)  
 Wheeler, Clara (MS)  
 White, Helen (Adv CH)  
 Williams, Taylor (Mat Sci)  
 Wise, Michael (Mat Sci)  
 Xiong, Binyi (Adv CH)  
 Zeigler, Olivia (For Sci)  
 Zhao, Haoxian (Biochem)





# SCIALOG: Negative Emissions Science

By: **Prof. Kyriakos Stylianou**

In January, the Research Corporation for Science Advancement and the Climate Works Foundation, made seven awards to teams participating in Scialog: Negative Emissions Science. Our very own, Prof. Kyriakos Stylianou, in addition to a cross-disciplinary team was one of those awardees.

The title of the project is: Understanding, Quantifying and Mitigating Adsorbent Degradation: From Fundamental Insights to Techno-economic Analysis

## THE WHO

Our team is participating in a collaborative, interdisciplinary project between Dr. Fani Boukouvala (Georgia Tech), Dr. Kyriakos C. Stylianou (Oregon State University), and Dr. Liang Feng (Duke University). Dr. Boukouvala is an expert in data-driven process systems engineering, specializing in modeling and optimization using hybrid machine learning and mechanistic models. Dr. Stylianou's group excels in the rational design and synthesis of porous materials, including MOFs, for the selective capture of CO<sub>2</sub> from dilute sources. Dr. Feng's group focuses on porous polymers and coordination networks for carbon capture, and their work has been recognized with the International Adsorption Society Award for Excellence.

**“The Scialog meeting was intense yet incredibly productive, as it encouraged us to collaborate with unfamiliar colleagues and advance our existing projects – think outside the box. The collaboration between Boukouvala, Stylianou, and Feng emerged organically. Once we shared our expertise with one another, we quickly began shaping our proposal. Through this project, we have developed a guideline for evaluating adsorbents for CO<sub>2</sub> capture, considering not only CO<sub>2</sub> uptake percentage but also stability, durability, and cost-effectiveness of adsorbents.” –Kyriakos Stylianou**



## THE WHAT

For the first time, we aim to systematically investigate the degradation pathways of porous sorbents for CO<sub>2</sub> capture through a combination of experimental studies, modeling, and technoeconomic analysis. This approach will result in a valuable database and a guide for the synthesis of stable and cost-effective adsorbents. Another significant outcome of this collaborative effort will be the design and economic assessment of innovative sorbents capable of autonomously repairing themselves when exposed to external stimuli or process control actions.

This is a brand new project currently underway in my Materials Discovery Laboratory (MaD Lab), with graduate student Ankit K. Yadav dedicated exclusively to it. Our primary objective is to investigate the sorption properties of ultramicroporous MOFs, MOFs with open metal sites, and those functionalized with Lewis basic groups (-NH<sub>2</sub>, -OH), acidic groups (-COOH, -SO<sub>3</sub>H), and hydrophobic groups for CO<sub>2</sub> capture. We will then explore various sorption behaviors of these porous materials, including: (i) hydrolysis of metal-ligand bonds leading to material collapse, (ii) poisoning of active sites, (iii) displacement of CO<sub>2</sub> by H<sub>2</sub>O, (iv) degradation of organic ligands, (v) dynamic structural changes (mechanical properties, pore environment changes), and (vi) defect/disorder generation upon capture.

As a final task, we will leverage our interdisciplinary expertise (in collaboration with the Stylianou and Feng groups) to create innovative self-healing materials using isomerizable functional groups integrated into their network backbones. Dr. Boukouvala will focus on capturing the effects of adsorbent degradation on the economic feasibility and operation of a scaled-up adsorption process. We will calculate: (i) process operating and maintenance costs, (ii) material synthesis and manufacturing costs, and (iii) process capital costs.

### THE WHY

The escalating levels of carbon dioxide (CO<sub>2</sub>) in the atmosphere highlight the urgent need for innovative materials capable of selectively capturing CO<sub>2</sub>. Several research groups are actively pursuing this goal, focusing on the study of CO<sub>2</sub> capture in porous materials such as metal-organic frameworks (MOFs), organic polymers, amine-functionalized porous silica, and composite materials. These investigations have examined their CO<sub>2</sub> capture capacities in the presence of competing gases (e.g., N<sub>2</sub>, SO<sub>2</sub>, NO<sub>x</sub>) and vapors (e.g., H<sub>2</sub>O), employing various spectroscopic techniques to explore host-guest interactions. Although these efforts allow us to understand the materials' CO<sub>2</sub> sorption behavior, discovering a material that meets industrial requirements—affordability, robustness, stability, ease of regeneration, and consistent CO<sub>2</sub> uptake under different conditions—remains a significant challenge. Addressing this challenge requires a multifaceted approach that integrates material and process design, a fundamental understanding of degradation, and techno-economic considerations.

Photos by: **Karl Maasdam**





# IGNITE INSTEM SUMMER CAMP

## Mentors underrepresented students in chemistry

Originally published by COS in IMPACT magazine: <https://science.oregonstate.edu/impact/2024/07/ignite-instem-summer-camp-mentors-underrepresented-students-in-chemistry>  
By: **Kaitlyn Hornbuckle**  
College of Science Marketing Writer  
Photos by: Karl Maasdam

In a chemistry lab at Oregon State University, high school students recently created tiny particles invisible to the naked eye. Clad in lab coats, these young students were also a part of something bigger — the vision of an associate professor aiming to make STEM fields accessible to all.

For five days, the students participated in the Ignite inSTEM summer camp, a groundbreaking initiative to diversify the biomedical workforce by engaging underrepresented youth in hands-on science for the first time and improving their retention in STEM.

Thanks to funds provided by her National Science Foundation CAREER award, chemist **Marilyn Rampersad Mackiewicz** launched the camp in 2022, partnering with STEM Academy Director Catherine Law. The camp aims to recruit local first-generation and low-income students from Black and Hispanic communities, giving them the opportunity to solve a challenge in human health.



This year's camp included 10 Latinx high schoolers who had never taken a science class before.

"The fact that the room was full of students that have gone through similar experiences made me less nervous to participate because I felt comfortable in the group. For the first time, I was in a science lab full of diversity," a student said.

This week-long program immersed campers in hands-on research, workshops, career coaching and professional development. Over five days, campers gained experience in the lab synthesizing a variety of nanomaterials, brainstorming and testing chemical reactions that changed the characteristics of the materials, learning how to make posters and attending professional development workshops.



### FIVE DAYS OF CHEMISTRY

In the lab, students quickly learned chemical safety and engaged in small independent research projects centered on nanomaterial synthesis.

Nanomaterial synthesis involves creating tiny materials through controlled chemical reactions. When their basic elements are small enough, nanoparticles take on unique characteristics that are vital for advancements in medicine and electronics.

A significant factor of the camp's success is the peer mentors, who are current undergraduate and graduate students from Oregon State. While encouraging and guiding the campers through each lab procedure, the peer mentors shared their stories and experiences along the way, creating an enriching and rewarding environment for everyone.

In camp, their mini-research experience included the Optical Coherence Tomography (OCT) imaging system. By using light waves to capture high-resolution images, this tool allowed students to visualize nanoparticles in gelatin. This gooey substance is an effective mimic material because it has similar characteristics to eye tissue.

Then, the campers embedded their nanoparticles in eye tissue samples. By doing this, they learned how to build nanomaterials that can be used as a contrast agent for eyes, which is a development that aids medical professionals in the field when monitoring eye diseases in their patients.

After hanging their lab coats up for the day, campers focused on building networking, negotiation and communication skills. This included how to pay for college and find opportunities with the Dreaming Beyond Borders center on campus.

By the end of the week, campers learned what it is like to be a scientist and what resources are available to help them succeed.

One camper happily reported, “The workshops and the stories that the peer mentors told us were the most valuable because they helped us relate to their experiences. This made me feel more confident because if they could do it, then I could do it too.”

Both the research and professional development activities set students up for success on the last day of camp, where they showcased what they learned with their very own poster presentations.

The poster session encouraged them to communicate what they learned, in English and Spanish, and build confidence while speaking with family, Oregon State faculty members, graduate students and undergraduate students.

“We aim to demonstrate how much the experience has meant to the scholars and what they have learned that could not be taught inside a classroom,” Mackiewicz said. “Even though this is their first time learning any chemistry, our students have shown great courage and effort in stepping out of their comfort zones to learn new subjects.”

### WHAT MADE MENTORING YOUNG PROFESSIONAL CHEMISTS POSSIBLE

The camp’s origin story began in a classroom at a completely different school. Before coming to Oregon State, Mackiewicz designed a community-based capstone class where fourth-year students at Portland State University led a symposium for high schoolers. The event aimed to empower and help advance women and underrepresented minorities in STEM.

“The impact on these high school students was immense. I wanted to extend this level of professional development by integrating it into some early research experiences in a camp,” Mackiewicz said. “The drive to do this came from my own experiences as a first-generation student, and all the students I encountered doing research in my lab asked how to build these skills.”

By 2022, Ignite inSTEM was born. Every summer since, the camp has provided opportunities that lend a helping hand to students facing various barriers, and cements a stronger path to developing diverse global scientific leaders early on. Its success is already evident with

positive results.

In a 2023 pre-camp survey, about 80 percent of the students expressed fear toward science classes due to language barriers and difficulties in vocabulary and math skills. When questioned about attending college, most students stated that family and financial constraints posed a significant barrier. They even indicated they’d never set foot on OSU’s campus because they believed they were not allowed to.

After camp, this improved significantly. Every participant said that the camp made them think about what they wanted to do after high school. Progress didn’t stop there — their skills in negotiation, building relationships with mentors and sponsors, and networking also grew.

“We are proud to say that one of the most significant things students discovered was that they belonged on campus,” Mackiewicz said. “Many students expressed an interest in staying connected and returning to the lab. The parents and teachers found the program to be incredible and are eager to find ways to involve more students.”

Ignite inSTEM’s student improvement findings were presented at the 2023 American Chemical Society meeting in San Francisco, CA. For more information about the camp and opportunities to partner, check out their website: <https://blogs.oregonstate.edu/mackiewiczresearchlab/outreach/#:~:text=Ignite%20in%20STEM%20Summer%20Camp>.





# 2023-2024 Honor Roll

## Fall 2023

Enas Abo Al Haija  
Trinity Baumgartner  
Carley Beeman  
Goliano Bianco  
Parker Boone  
Brillig Branstrom  
Katrina Brown  
Madeline Coe  
Prongbaramée Colling  
Tyler Doyle  
Rachel Dunne  
Emily Fix  
Emily Frechette  
Emma Friesen  
Elise Fritz  
Audrey Garrison  
Matthew Gray  
Christina-Ann Groening  
Hannah Guilleux  
Ireland Hanson-McBride  
Jayden Hardeman  
Jack Henningsen  
Elliot Holden  
Nicholas Hounton  
Nikayla Jeffrey  
Marieke Johnson  
Michael Johnston  
Mitchell Kenny  
Seiji Koenigsberg  
Yulia Kondybko  
Rhyan Kucirka  
Phoebe Lee  
Andrew Loescher  
James Lovdokken  
Sydney Lowe  
Eric Ly  
Hailey Mashino  
Mollie McCarthy  
Emma Mcguire  
Brooke Moser  
Trenton Munoz  
Molly Murphy  
Isabella Nelson  
Mckenna Neubert  
Citlali Nieves Lira  
Evan Park  
Brandon Phan  
Catherine Qin  
Jianyao Qin  
Dhwani Ruparel  
Samantha Ryan  
Sabrina Scherzinger  
Hyunjun Seo  
Kayla Stanley  
Julia Stein  
Jonathan Tence  
Oakley Ward  
Owen Wasserlein  
Jackson White  
Nicholas Williams  
Michael Wise  
Samuel Wolfe  
Olivia Zeigler

## Winter 2024

Enas Abo Al Haija  
Alesanda Anderson  
Trinity Baumgartner  
Carley Beeman  
Giuliano Bianco  
Brillig Branstrom  
Gracia Bratland  
Katrina Brown  
Flora Crouch  
Tyler Doyle  
Rachel Dunne  
Alden Dupras  
Riley Fauth  
Emily Fix  
Matthew Gray  
Christina-Ann Groening  
Hannah Guilleux  
Jack Henningsen  
Elliot Holden  
Shaella Hubbard  
Lucy Jaeger  
Nikayla Jeffrey  
Marieke Johnson  
Michael Johnston  
Mitchell Kenny  
Deborah Kim  
G Kloster  
Seiji Koenigsberg  
Yulia Kondybko  
Matthew Koteskey  
Rhyan Kucirka  
Phoebe Lee  
Andrew Loescher  
James Lovdokken  
Sydney Lowe  
Vyna Luong  
Eric Ly  
Hunter MacLennan  
Haily Mashino  
Chase McCurry  
Brooke Moser  
Trenton Munoz  
Molly Murphy  
Isabella Nelson  
Mckenna Neubert  
Citlali Nieves Lira  
Damara Ortiz Ojeda  
Evan Park  
Aidan Pinson  
Kayla Pobuda  
Catherine Qin  
Jianyao Qin  
Dhwani Ruparel  
Sabrina Scherzinger  
Hyunjun Seo  
Isaac Sorrels  
Kayla Stanley  
Jonathan Tence  
Samantha Visaya  
Oakley Ward  
Roman White  
Nicholas Williams  
Michae Wise  
Olivia Zeigler

## Spring 2024

Enas Abo Al Haija  
Alesandra Anderson  
Trinity Baumgartner  
Dawson Beckstead  
Carley Beeman  
Giuliano Bianco  
Brillig Branstrom  
Noelle Chandler  
Lorelei Deely  
Tyler Doyle  
Rachel Dunne  
Alden Dupras  
Marielle Ellarma  
Emily Fix  
Emily Frechette  
Emma Friesen  
Audrey Garrison  
Matthew Gray  
Christina-Ann Groening  
Hannah Guilleux  
Makaila Hammond  
Hayden Hardeman  
Elliot Holden  
Gabriella Imura  
Lucy Jaeger  
Marieke Johnson  
Mitchell Kenny  
G Kloster  
Seiji Koenigsberg  
Yulia Kondybko  
Rhyan Kucirka  
Phoebe Lee  
Coral Lee  
Noah Lewis  
Andrew Loescher  
James Lovdokken  
Hunter MacLennan  
Brooke Moser  
Trenton Munoz  
Molly Murphy  
Isabella Nelson  
Mckenna Neubert  
Matthew Nguyen  
Hana Omrane  
Damara Ortiz Ojeda  
Evan Parj  
Brandon Phan  
Kayla Pobuda  
Nicholas Pogue  
Catherine Qin  
Jianyao Qin  
Alister Raymond  
Dhwani Ruparel  
Sabrina Scherzinger  
Hyunjun Seo  
Kayla Stanley  
Julia Stein  
Jonathan Tence  
Zoe Thompson  
Isabella Vedro  
Owen Wasserlein  
Jane White  
Roman White  
Nicholas Williams  
Quinlyn Winters  
Michael Wise  
Olivia Zeigler

# AWARDS & HONORS

## Congratulations to all our winners!

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Careers in Chemistry - **H MacLennan**

Peter B Culter Memorial Scholarship - **K Evanchak, K McGowan, J Tence, & K Wiersma**

Carroll W & Gerry A DeKock Scholarship - **K Pobuda, & D Ruparel**

Linda Mae Oleson Scholarship for Excellence in Chemistry - **M Kenny & S Lowe**

Colleen Spurgeon Scholarship - **D Ortiz Ojeda & J White**

ACS-Hach Land Grant Undergraduate Scholarship - **M Bouchard, N Pogue, K Rodriguez, & Q Winters**

Keith McKennon Undergraduate Research Scholarship - **L Garske, M Koteskey & M Neubert**

James D Ingle Scholarship - **C McMurry**

JJ Stephenson Scholarship - **N Dunlap**

Jeff Fahey & Margaret Peterson Chemistry Scholarship - **D Garcia, & R Shepherd**

Larry & K'Sondra Frederichson Chemistry Scholarship - **V Vinod Menon**

Dorothy & Ramon Barnes Women in Chemistry Scholarship - **A Capodiecici**

Freshman Chemistry Achievement Award - CH 23X Series - **N Eddy, & P Hostick**  
- CH 23XH - **J Tepavich**

Phi Lambda Upsilon (PLU) Award - **J Lovdokken**

ACS PChem Award - **C Beeman**  
ACS AChem Award - **I Nelson**  
ACS IChem Award - **C Nieves Lira**  
ACS OChem Award - **J Lovdokken**

WIC Culture of Writing Award in Chemistry - **T Doyle**

OSU Chemistry Integrated Lab Series Writing Award  
- CH 462 - **O Ziegler & T Doyle**  
- CH 463 - **K Brown**  
- CH 464 - **R Jensen**

Chemistry Graduate Fellowship - **D Bashirova, Z Solabella, HC Hsu, C**

**Rummelhart, D Hoang**

Lab TA Awards

-Fall 2023

- **L Lancaster** (CH 464)

- **B Zhou** (CH 324)

- **MD N Alam** (CH 261)

- **M Nikpayam** (CH 261)

-Winter 2024

- **N Pogue** (CH 122)

- **A Yadav** (CH 462)

- **J Bustos** (CH 262)

- **J Solaris** (CH 262)

-Spring 2024

- **D Stephen** (CH 123)

- **H Wise** (CH 463)

- **S Yang** (CH 263)

- **C Wheeler** (C 263H & CH 273)

NL Tartar Research Project - **A Ebrahimi, P Prapapongpan, S Rumi, S George, A Nagar**

Milton Harris Graduate Fellowship - **J Lessard, Y Li, Z Mao, CH Kuan, & E Musa**

Bruce Graham Memorial Scholarship - **A Scida**

Dr. Sheng Chung Fang Fellowship - **J Liu**

Ken & Lise Hedberg Fellowship - **Z Cooper**

United Fellowship for Graduate Students - **J Etter**

Nibler Integrated Lab Development Fellowship - **B Hopewell**

David P & Clara B Shoemaker Memorial Fellowship - **KC Tran**

Keszler Graduate Fellowship in Inorganic Chemistry - **J Bustos**

23-24 Milton Harris Graduate Teaching Award - **K Bach, B Hopewell, E Kalbaugh**

Ingram Award - **J Lessard, C Rummelhart**

David T Wong Chemistry Research Internship - **A Ebrahimi, & D Stephen**

Daniel & Janis Kerrigan Internship Fund - **AT Nguyen**

Chemistry Internship - **M Nikpayam**

Prof **K Stylianou** as part of a collaborative

group received \$2M from the USDA to tackle organic potato sprouting.

Prof **W Kong** was awarded \$110K from the ACS for her project entitled, "Superfluid helium droplets as microreactors for studies of photochemistry of fossil fuel hydrocarbons: polycyclic aromatic hydrocarbons and the corresponding endoperoxides"

Prof **D Ji** was named a Highly Cited Researcher by Clarivate Web of Science for the 5th year in a row.

Prof **M Mackiewicz** was chosen as a Scialog fellow by the Research Corporation for Scientific Advancement.

**J Bustos** received the Student Presentation Award for her research and oral presentation skills at the 2023 National Diversity in STEM Conference coordinated by SACNAS.

Energy Daily, KATU and KTVZ covered Prof **M Nyman's** role in her discovery of a chemical element that shows strong potential as a carbon scrubbing tool. This study is part of a \$24 million federal effort to develop new methods for direct air capture.

Prof **K Stylianou** is a member of a cross-disciplinary team who received an award focused on advancing the science needed to make scalable technology that could capture and utilize greenhouse gasses. Stylianou's research is entitled, "Understanding, Quantifying and Mitigating Adsorbent Degradation: From Fundamental Understanding to Techno-economic Analysis."

Prof **W Kong** was awarded nearly \$2M for 4 years by the NIH. Her goal is to create a groundbreaking new tool with the potential to revolutionize drug development and enhance our understanding of disease mechanisms.

Dr **L Wojcinski** was named one of the OSU Men's Basketball's Most Valuable Professors! He and the other winners were honored on the court at the Feb. 8 continued on page 14...



# Oregon State University

Department of Chemistry  
153 Gilbert Hall  
Corvallis, OR 97331

Help us celebrate Chris Pastorek's and Emile Firpo's many years of service with a gift to the **Chris Pastorek and Emile Firpo Integrated Lab Fund**, ensuring that future students will have the same high-quality educational experience.



To make a gift, visit [www.beavsgive.org](http://www.beavsgive.org) or contact Hannah Hegerberg:

**HANNAH HEGERBERG**

*Associate Director of Development, College of Science*  
hannah.hegerberg@osufoundation.org | 541-223-3913



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