Opening Message From Department Head, Mike Lerner

Predicting Optical Properties of Complex Systems: Some recent research in the Zuehlsdorff Group

Improved Chemstores to the (COVID) Rescue

In Memory: Of those we’ve lost...

Undergraduates of the Quarter

New Faces
Hi Chemistry Department members and friends,

It’s great to report to you that our Fall term has been a success – the return to campus went smoothly and faculty, staff and students were thrilled and grateful to be able to interact in person once more. There were no Covid outbreak clusters among our community members, and student learning and success seems to have benefitted from the re-introduction of face-to-face classes and activities. Some sad notes, however, were the loss of Professor Steven Gould and Distinguished Emeritus Professor and former Chair Darrah Thomas this year. In December, we had a memorial service to recognize Darrah’s life and contributions.

I have some faculty transitions to report. Doug Keszler and Kevin Gable retired at the end of December and will join our emeritus faculty. I retired at the end of January and will be starting a position at Ford Motor Company, focusing on their EV battery development. Following the search led by Professor Steve Giovannoni (Head of Microbiology), Wei Kong has been selected and has agreed to become our Chemistry department Head starting in February. We are in good hands! We are also in the midst of searches for tenure-track and fixed-term faculty in organic chemistry, and so we will soon welcome new faculty members.

It’s great to realize that our faculty research is highly interdisciplinary and we collaborate across traditional boundaries! To cite one example, Chong Fang and his research group have been collaborating with Oksana Ostroverkhova’s group (in Physics) and Seri Robinson’s group (in Wood Science and Engineering) on fungi-derived pigments, resulting in four joint papers this year. Additionally, Chong has an active collaboration with David Ji (at OSU Chemistry) and Alex Greaney (at UC Riverside Engineering) on a joint NSF CBET grant on new battery chemistry. It’s wonderful to note that Chong is the 2021 College of Science Milton Harris Awardee for Basic Research in Science.

Rich Carter has been working on policy at University level – specifically leading the movement to better recognize faculty innovation and entrepreneurship contributions in the promotion and tenure process. He’s the lead author on a recent paper in Science detailing the issues and outlining a pathway forward.

Our integrated lab instrument renewal project is closing in on a final phase. So far we’ve raised (and spent) about $400,000 towards new instrumentation that supports this innovative, capstone lab experience for our chemistry majors. This is about 80% of way to our ambitious target, and it’s a great pleasure now to walk through the labs in Gilbert Addition and see so many new tools for our students to learn about and then also use in their research projects. Thank you to all the donors, faculty and staff who made this happen, and I hope a few more donations will help us complete the “wish-list” purchases. A special thank you to students and friends of Joe Nibler, who, for his 80th birthday, surprised him with contributions to an endowed scholarship fund in his name. This will be used for a graduate scholarship to focus on laboratory experiment developments in the integrated lab, an effort which engaged Joe in much of his career.

Finally, I’m happy to share that Inpria Corp., founded by Doug Keszler, sold for an extraordinary sum of $514 M to JSR Corp. in November. The sale demonstrates well the value of the Department’s groundbreaking research.

Hopeing you all had a happy, healthy and relaxing Winter holiday and break, and a wishing you a wonderful year to come!

Regards,
Mike
PREDICTING OPTICAL PROPERTIES OF COMPLEX SYSTEMS: Some recent research in the Zuehlsdorff Group

Light-matter interactions are at the heart of a variety of physical processes, including solvatochromism, bioluminescence, the triggering of photoreceptor cells in vision and photosynthesis. Computational approaches capable of describing these processes have a wide range of potential applications, from developing novel biomedical imaging approaches to designing next-generation solar cells. In practice, however, predicting even relatively simple light-matter interactions, such as absorption or fluorescence spectra of solvated dyes, can be very challenging. The absorption spectrum is strongly influenced by complex interactions between the dye and its solvent environment (see Fig 1), as well as the complex interactions between electrons and nuclei that give rise to vibronic features, and modeling both effects with sufficient accuracy is computationally demanding.

In the Zuehlsdorff group, our aim is to develop the computational tools necessary to study light-matter interactions in a wide range of systems, from complex biomolecules to nanostructured materials[1,2]. A specific focus of ours is to understand how the immediate environment of pigments can change their optical properties, a problem that is relevant for understanding how light-harvesting complexes in plants convert sunlight into energy with very high efficiency. We address this problem by using approximate, highly efficient computational approaches to solving the time-dependent Schrödinger equation that run on Graphics Processing Units (GPUs), rather than conventional CPUs. This allows us to treat all electrons in our pigment and its surrounding environment purely quantum mechanically, which is vital for correctly modelling polarization effects.

Still, even using fast GPUs, calculating optical spectra requires thousands of individual calculations to model how the nuclear vibrations of the molecule couple to the electrons to create the spectral shape. To address this problem, we aim to make use of machine-learning (ML) techniques: Training a ML model on a small set of possible configurations of the dye in its complex environment can be used to accurately predict the excitation energy of other configurations, dramatically reducing the computational cost associated with predicting spectra[3].

Recently, we have focused on addressing another challenging problem when attempting to predict absorption spectra in solvated dyes, that results from a breakdown of the Born-Oppenheimer approximation. This approximation asserts that, because nuclei are much heavier than electrons, their movement can be treated separately. However, in certain instances, specifically when two excited states of a molecule are very close in energy, this approximation can start to break down. The breakdown can cause specific spectroscopic features in the absorption spectra of simple organic chromophores, such as intensity-borrowing between excited states.

In our recent study in collaboration with the Chin group [4], we demonstrated that a strong shoulder in the absorption spectrum of Methylene Blue was caused by the mixing of a bright (dipole-allowed) and a dark (dipole-forbidden) excited state. Only by going beyond the Born-Oppenheimer approximation, fully accounting for the coupling of electronic states to each other and to nuclear degrees of freedom, both in the chromophore and the solvent environment, could we reproduce a spectrum in close agreement with experiment (Fig. 2). Specifically, we also found that the amount of mixing between the two excited states...
Want to keep up with everything happening in the department? Check out our social media!

Office Manager & Assistant to the Department Head, Paula Christie presents a retirement gift from the Department to outgoing Department Head, Mike Lerner at the Departmental Holiday Party.
IMPROVED CHEMSTORES TO THE (COVID) RESCUE!

Over the last several years, we have been on a continuous improvement mission with the Chemistry Department, and the store, we were functional but not fulfilling our Customers' needs or the Chemistry Department's budgetary goals for the store.

Keeping products in stock
The number one complaint when addressing our customers' needs was that we were habitually out-of-stock on certain items. We did not have a matrix to measure our outs, so Paul Weatherford and I started tracking the number of SKUs with zero stock. We found that of the 2100+ items ChemStores stocks, we were "out" of 100 products. Now we had something we could focus on. We immediately focused on ordering "on time" according to our reorder points for each product. This focus immediately impacted the stores product availability; we had previously been out-of-stock on certain items, and our inventory was not on time. The program looks at the entire inventory on hand, reports which items are at the below reorder point set by store management, along with which items are already on order, and prioritizes those items that need to be ordered. The use of the reordering tools dropped the "out-of-stocks" to the teens. Our customers were pleased.

Another area of improvement was the appearance and layout of the store. The store is a warehouse-style operation. But that did not mean it had to look like a warehouse. We grouped like items for easier shopping and convenience. We have spent a lot of work on updating the signage and the aisles, and product labels to assist the customer in locating items and determining what the product is.

Reaching solvency
ChemStore's goal is to be a breakeven work center. That means, it would be financially self-sufficient, not necessarily needing to make a profit, but not costing the Department funds to operate either. The Arts and Science Business Center (ASBC), monitors and reports the financial status of the ChemStores for us. This reporting was initially done on an annual basis. Once a year, we would hold our breath and see how we did. The news was not always good. We would make changes, but we had no way of knowing if we were making progress till it was too late. So we started collecting our own financial data and, with the assistance of ASBC, began reviewing the results quarterly. The quarterly reports gave us a better chance to adjust mid-year, but the granularity was limited. There was financial information outside of inventory purchases and sales that we just didn't have. So we started gathering information from Banner through Core reports to add that missing financial information and compare our data to the main store to

into storage rooms. The store's layout has been a work in process, where we have grouped like items for easier shopping and convenience. There has been a lot of work on updating the signage and the aisles, and product labels to assist the customer in locating items and determining what the product is.
with what was being reported to Banner. The adjustments to our reporting process were not minor, but we're happy to say our financial situation has dramatically improved. We now reliably report to Department Head, Mike Lerner, to reduce any surprises at year-end.

ChemStores to the rescue
Over the past couple of years, the number one topic has been the COVID-19 Pandemic. We've had work suspensions, campus close-downs, remote classes, cleaning, personal protection materials, including spray bottles, aloe, were in short supply. With the store's vendor network, ChemStores was able to minimize the product availability gap and keep production flowing. And yes, it was a lot of work. ChemStores manufactured almost 2,500 gallons of surface sanitizer and over 1,000 gallons of hand sanitizer. Most of the product was packaged into 2,400 16 oz and 4,000 32 oz spray bottles. Beyond sanitizer, we also purchased and stocked KN95 masks, nitrile gloves, disposable face masks, face shields, and Clorox surface wipes.

When the university closed, the ChemStores workers contacted the recipients about waiting packages. Because of Jak's hard work, if there was ever concern that a package had been “lost,” we could track the package from receipt at Gilbert to who and when it was picked up. There was no single instance of a lost parcel.

Current Economic impact
The current hurdle for Sierra Hansen and the ChemStores crew is the shipping delays and production shortages. There are currently 40 open purchase orders with 66 different products on order for ChemStores, with the oldest order being from April 13, 2021. In addition to the long delays, we've seen costs skyrocket. Nitrile Gloves have surged, vials now have lengthy delivery times, and pipette tips take forever. Sierra is searching for deals, finding new vendors, and working with existing vendors to get our customers the products they need.

ChemStores future
I still have a goal of taking the sales of ChemStores products online. A customer could shop from their desk and purchase their items. Staff would gather the items, and the customer would pick-up in store. Once that process is operational, the next phase is to offer delivery of said orders, for a nominal fee, of course.

While the ChemStores team has come a long way to improving our professionalism in maintaining and operating ChemStores, we are not done. There is a saying that continuous improvement is a journey, not a destination; we are on that journey.
IN MEMORY:
Of those we’ve lost...

T. Darrah Thomas

T. Darrah Thomas died at KRP$X$JRISDFQF$HDLWF cancer.

'DUUDKDZVDERUQLQ*OHQ5LGG1-WR:RRGOLHIQG-DHQ
'DUUDKD7KRPDV$SULO+LV
mother died when he was a young child and Darrah and his brother Woody were sent to stay with his PRWKHUVSDUHFWV7KRPDVQDG
'DUUDKLO3QPD*DUUDKTV$GKH
in Chevy Chase, Md., and graduated
'IURP6$OEDQV6FKRROLQ:DVKLO
&LQ

Darrah showed an interest in chemistry from an early age – trying WPRLNHH[SOLVLYHV$LV$KLVFVWKL$DQG
set in his parents' basement. He UHFLYHGYKLV%DFKORURI6FH6LGH
+DHYUIRUG$ROOHJHLQDGKHQKHPLVWUVWXGHOQVDW268
went on to graduate school at the
8QLYHV$LWIR&DOLIRUQLD%HUh
where he met and married the love of KLVOLI%DUEUD5DVZHLHOLUHL
$W%HUNOHY:DUUDKGLOHVHDVHDLQG
QXOFHDUKHFVLHUVWUZLWK1REH
ZLQQLQSDRIRIVVRU*OHQ9HDERL
UHFLYHGYKLV3K'IURP$HUNOHY:DUUDD1RUVKDUSVQHHKRIXPR
DQGVWDHQRQDVOQSVLWVWDQZ$TDVXLFLNZLWKKDQSKRULVPVXFDV
3URIRLVVRUXQWLOW$HUNOHYHUVWHP5W$WWRHDFKSL$VWRHP6L
'DUUDKZRUNRHGIRU%RRNKDYHQT
\DJRUDTXRVHVXFDVWKLVRQHURP
\NQHZ$HVH\)
QORZIDWKHURIRUXU*DUUDKEFDP3URIRHVURIR
&KHPLVWUJ\D3UOLQFRWHQRLQYLY
1HZ-HVH\)

Darrah also had many interests besides his research and
\DJRUDTXRVHVXFDVWKLVRQHURP
\NQHZ$HVH\)
QORZIDWKHURIRUXU*DUUDKEFDP3URIRHVURIR
&KHPLVWUJ\D3UOLQFRWHQRLQYLY
1HZ-HVH\)

many honors, awards and fellowships during his long career in science and ZDVQDHGD'LVLWQJXLVKHDG3UR
(PHULWXVLOQ7KRXKEDVHGLQ
Corvallis, he worked closely with scientists from Europe, Japan and
\DJRUDTXRVHVXFDVWKLVRQHURP
\NQHZ$HVH\)
QORZIDWKHURIRUXU*DUUDKEFDP3URIRHVURIR
&KHPLVWUJ\D3UOLQFRWHQRLQYLY
1HZ-HVH\)

Darrah was passionate about his research and continued to be DFWLYHLQKLV$DHOGQDLQYROY268ZH0OSDVUWHLURPOQH+LVQ
5RWWLUEXWLRQSSEXOLVKHGQHP
addresses precise measurements and accurate calibration, a topic that goes back to his early interest in spectroscopy. His long time colleagues, Caitlin Miron and Leif ADHV$KRUHRWRHKLQ"*DUUDK

Darrah showed an interest in chemistry from an early age – trying WPRLNHH[SOLVLYHV$LV$KLVFVWKL$DQG
set in his parents' basement. He UHFLYHGYKLV%DFKORURI6FH6LGH
+DHYUIRUG$ROOHJHLQDGKHQKHPLVWUVWXGHOQVDW268
went on to graduate school at the
8QLYHV$LWIR&DOLIRUQLD%HUh
where he met and married the love of KLVOLI%DUEUD5DVZHLHOLUHL
$W%HUNOHY:DUUDKGLOHVHDVHDLQG
QXOFHDUKHFVLHUVWUZLWK1REH
ZLQQLQSDRIRIVVRU*OHQ9HDERL
UHFLYHGYKLV3K'IURP$HUNOHY:DUUDD1RUVKDUSVQHHKRIXPR
DQGVWDHQRQDVOQSVLWVWDQZ$TDVXLFLNZLWKKDQSKRULVPVXFDV
3URIRLVVRUXQWLOW$HUNOHYHUVWHP5W$WWRHDFKSL$VWRHP6L
'DUUDKZRUNRHGIRU%RRNKDYHQT
\DJRUDTXRVHVXFDVWKLVRQHURP
\NQHZ$HVH\)
QORZIDWKHURIRUXU*DUUDKEFDP3URIRHVURIR
&KHPLVWUJ\D3UOLQFRWHQRLQYLY
1HZ-HVH\)

Darrah passed all these interests on to their children and grandchildren.

$WVKHDPLQSWU$HGDGRX\W around the world, Darrah and %DUEUDV$KRX$HLQ$RUDDOLQ$VHEFDPH the gathering point for the family. There were big family reunions, meticulously scheduled in Darrah’s VSUHKDVXK$HVNY%WWKHK7KRPDV home was also a place where the grandchildren knew they were always ZHDFPRWHGU$SOLQQGDOGDGDJ$RRG meal, interesting conversation, dry humor, thoughtful advice, and where they could always borrow some FDPSLQJHTXL$PHQWJIRUDELUG walk with Darrah in the Wetlands, or just read a good book on the sofa. Darrah’s son, David and brother Woodlief, preceded him in death. He is survived by his wife, GD3UOLD$KLV$RQ*DLYGV$ZLGR\DXUHODQWGH$HLFKULQG$HSLDLO (OL) DEHWKDQGA$GL$DLKLV$QR6WHYHQ DQGKLVLH$WUVL$DGQW$H$HLFKULQG$HFL0L3D3GHQDG6HEHFDQDG WKHLUHDQFGKLOG3XODKLVGDJXJ$WHU DQGHKOHQDGQKHXV$EDQGLOPDQG WKHLKFQKULQG$QVH$DFTXHLQHQ DGQPHVQDGQKLVGDJXJ$WHU6XVQDG QDGKHUXV$EDQG3W$HUH$LV$DOVR XLYLYHGEKLVLVW$WU%DUEUDDOQG many nieces and nephews.

His family would like to thank...
6WHY H*RXOG passed away on November 12, 2021 due to complications following a lung transplant.

Steve Gould was born in New York City to Robert and Ruth Gould, and lived in Washington Heights until he was 10. He had one brother, Jay Gould, who was 3 years older. The family moved to Los Angeles in January 1956, and Steve grew up a Southern Californian. He attended University High School, then graduated Cum Laude from UCLA in 1966 at the age of 20, majoring in Chemistry. He attended MIT from 1966-1970, earning a PhD in Organic Chemistry under the direction of Prof. George Buchi. Steve lived in Zurich, Switzerland, from 1970-72 as a Postdoctoral Research Fellow with Prof. Duilio Arigoni. He had a Fellowship from the American-Swiss Foundation for Scientific Exchange. He was married in 1972 and divorced his first wife in 1979. Steve had a long and rewarding scientific career. Following his Postdoctoral work, he was employed by Syva Research Institute in Palo Alto, California from 1972-74. In 1974, he was appointed Assistant Professor of Natural Products Chemistry at the University of Connecticut, School of Pharmacy, and in 1981 he was appointed Associate Professor in the same department. He was a member of The American Chemical Society.

In 1982, Steve returned to the West Coast with an appointment as Associate Professor of Chemistry at Oregon State University, Department of Chemistry, advancing to Professor there in 1983. At OSU, Steve established a large research group studying antibiotic biosynthesis. In 1991, he was awarded the College of Science Milton Harris Award at OSU. He was a consultant to numerous pharmaceutical companies, including Lederle Laboratories and Novo Nordisk.

A blind date in 1986 brought Mary Marshall into his life. Steve introduced Mary to Judaism and SCUBA diving, and Mary introduced Steve to folk dancing. Steve and Mary were married under the chuppah in Corvallis, Oregon in 1988, and their wedding included Klezmer, Swing, and folk dancing.

From 1989-90, Steve took a Sabbatical funded by a Fulbright Fellowship at the John Innes Institute in Norwich, England, where he learned the molecular genetics of antibiotic-producing Streptomyces bacteria. He incorporated this work into his research group upon returning to OSU. In his time off work, Steve and Mary made the most of their year in the U.K. by traveling around the country, and making friends who remained close for the rest of Steve’s life. They returned to England many times in later years.

In 1997, Steve accepted a position as Executive Director of Natural Products Drug Discovery, Merck Pharmaceuticals, in Rahway, New Jersey. In 2002, he became Chief Scientific Officer of Mera Pharmaceuticals in Kona, Hawaii, and San Diego, California. Due to professional circumstances beyond his control, Steve retired in 2003 in San Diego.

Not content to be retired, Steve reinvented himself in 2004 with a very successful new career as a landscape and wildlife photographer, establishing Steve Gould Photography. He was active in the San Diego art community and showed his work in galleries and exhibitions. Some of his images can be viewed online at www.stevegouldphotography.com In 2015, he was the photographer for a book called “San Diego, California: A Photographic Portrait” which was published as part of a national series.

Steve was active in the San Diego Jewish community, and a member with his wife at Congregation Beth Israel. He and Mary were members of the Chavurah Shabbat there.

Steve loved to travel, and he and Mary went on many adventures, including three times to South Georgia and Antarctica, a safari in Africa, and tours in Alaska and Europe. SCUBA was a major love, and they went diving in many of the most beautiful locations around the world: the Galapagos Islands, the Maldives, Indonesia, the Caribbean, Palau and Yap Islands, the Red Sea, the Sea of Cortez, and Hawaii.

Steve is survived by his wife of almost 34 years, Mary Marshall, by his nieces Robyn Siers and Jamie Shatwell, Robyn’s husband, Bret, and his grand-nephews Bret, Tyee, Lukas and Jaxon Siers and Miles Shatwell, and by his cousins Deborah Krass, Stephanie and Don Bryan, Tamara Bryan Murphy, Nathan Bryan, Garrison Singer, Rita Philipson, Jill Philipson, Sue Bloom, and Warren Winn. Donations in his honor may be made to the Congregation Beth Israel Hunger Project.
The chromophores are within the ligands, so they typically use an amino functional group or a hydroxyl. But yes, you can incorporate photo-synthesizers into the MOF. The most common general characterization techniques for these materials are powder improvement.

Shortly after switching to chemistry, Samuel joined Dr. Kyriakos Stylianou’s lab. Dr. Stylianou works with metal-organic frameworks (MOFs). Samuel’s little niche in the lab is photocatalysis. Improving MOFs for photocatalysis is essentially the goal. The big thing about sustainable energy is that hydrogen gas is of course a promising source of sustainable energy. And if you want to improve the way MOFs produce hydrogen sustainably, you can use ultraviolet lights or stuff like that. A big parameter they focus on is red-shifting the absorption spectrum, to test for instance, how much light can they absorb (PXRD), thermogravimetric analysis (TGA), IR spectroscopy and surface area analysis. But to understand optical and electronic properties, we typically employ UV-Vis spectroscopy, photoluminescence spectroscopy, cyclic voltammetry and X-ray photoelectron spectroscopy.

Marilyn Mackiewicz

We’re proud to announce that Samuel Wolff has been named one of our Fall 2020 Undergraduates of the Quarter. Samuel has been named one of the Fall 2021 Undergraduates of the Quarter, and we couldn’t be prouder.

Samuel grew up all around the Portland Metro area, but graduated from Lake Oswego High School, home of the Lakers. He realized they didn’t focus enough on the fundamentals, so he switched to Chemistry. He chose Oregon State University because he didn’t want to leave Oregon and was pleased by the opportunities available here.

We’re proud to announce that Elias “Eli” Henderson has been named one of the Fall 2021 Undergraduates of the Quarter and we couldn’t be prouder.

Eli said he wanted to get into doing science that wasn’t in the form of the normal courses. He wanted to be able to have a goal for a project that he could study on his own time. To that end, Eli is currently researching with Marilyn Mackiewicz in the Mack Lab. The Mack Lab focuses on making MOFs and other metal-organic frameworks, which are commonly used for their unique properties such as high surface area and porosity.

We’re very proud of our Undergraduates of the Quarter, and wish Samuel all the best with his future.

Eli says he’s really appreciative of this opportunity, and we’re so happy to be able to provide it for him.

Chloe Ramsperger

When asked why Chloe chose Chemistry, she said, “Ever since I was young, I have had a growing passion for forensic science. Having access to television, I would constantly watch crime shows such as Crime Scene Investigation and Criminal Minds, wishing I was the investigator or the forensic scientist solving the crime. I never thought that wish could become my reality. With my growing interest in forensic science, I started watching more shows about forensic science. Having access to television, I would constantly watch crime shows such as Crime Scene Investigation and Criminal Minds, wishing I was the investigator or the forensic scientist solving the crime. I never thought that wish could become my reality. With my growing interest in forensic science, I started watching more shows about forensic science. Having access to television, I would constantly watch crime shows such as Crime Scene Investigation and Criminal Minds, wishing I was the investigator or the forensic scientist solving the crime. I never thought that wish could become my reality. With my growing interest in forensic science, I started watching more shows about forensic science. Having access to television, I would constantly watch crime shows such as Crime Scene Investigation and Criminal Minds, wishing I was the investigator or the forensic scientist solving the crime. I never thought that wish could become my reality. With my growing interest in forensic science, I started watching more shows about forensic science.

Eli Henderson

We’re proud to announce that Elias “Eli” Henderson has been named one of our Fall 2020 Undergraduates of the Quarter.

Eli says he’s really appreciative of this opportunity, and we’re so happy to be able to provide it for him.

Chloe Ramsperger

When asked why Chloe chose Chemistry, she said, “Ever since I was young, I have had a growing passion for forensic science. Having access to television, I would constantly watch crime shows such as Crime Scene Investigation and Criminal Minds, wishing I was the investigator or the forensic scientist solving the crime. I never thought that wish could become my reality. With my growing interest in forensic science, I started watching more shows about forensic science. Having access to television, I would constantly watch crime shows such as Crime Scene Investigation and Criminal Minds, wishing I was the investigator or the forensic scientist solving the crime. I never thought that wish could become my reality. With my growing interest in forensic science, I started watching more shows about forensic science. Having access to television, I would constantly watch crime shows such as Crime Scene Investigation and Criminal Minds, wishing I was the investigator or the forensic scientist solving the crime. I never thought that wish could become my reality. With my growing interest in forensic science, I started watching more shows about forensic science. Having access to television, I would constantly watch crime shows such as Crime Scene Investigation and Criminal Minds, wishing I was the investigator or the forensic scientist solving the crime. I never thought that wish could become my reality. With my growing interest in forensic science, I started watching more shows about forensic science.

Chloe Ramsperger
We're very proud of our Undergraduates of the Quarter, and wish Samuel all the best with his future.

Outside school, Samuel likes to rock climb, hike, camp, and participate in other outdoor activities. He also enjoys reading when he has time. His favorite food is Sushi, and his favorite book is the Alchemist by Paulo Coelho.

Chloe was at a poster presentation session for careers in chemistry, Dr. Rich Carter asked her where she received, it could not have been done without the academic support from my mentors and encouragement.

In closing, Chloe stated, “though my academic career seems to be entrenched, by copious opportunities I have received, it could not have been done without the academic support from my mentors and encouragement.

NEW FACES
In the Chemistry Department

Josh Windham grew up in a small community southeast of Eugene called Fall Creek. He studied chemistry and microbiology at Oregon State. He's currently employed at and was more relevant to the degree he was pursuing. Welcome, Josh!
Your legacy. Our Gratitude.

With a few easy steps, you can create your legacy and transform the lives of future chemistry grads—while having a meaningful impact here in Oregon and around the world.

Contact us today to learn more about giving through your will, trust or retirement plan.

JEFF COMFORT
Vice President of Principal Gifts and Gift Planning
ForOregonState.org/GiftPlanning