COLLEGE OF
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Eastern Washington University

“SEE” STEM NEWSLETTER

April 2025

Eastern Washington University College of STEM
Quarterly Newsletter

CSTEM Communication - working through shared successes and lessons. This edition is full of student engagement, publications, and celebrations!

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Dean's Team

Welcoming and congratulations to our new Assistant Dean for Student Success and Belonging and Director of the EWU MESA University Center - Dr. Melissa Graham! Melissa is amazing and continues to do amazing things in her new role.
Inside EWU Story

Associate Dean Dr. Jen Waldo continues to work with faculty, students, classes, and more fun tasks.

Dean's Team - Message from Dean Dr. David Bowman
April 2025

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I want to take a moment to highlight the incredible momentum we're building in CSTEM. While we continue to navigate a turbulent landscape, the strength and adaptability of our faculty, staff, and students have never been more apparent.

First, I want to call out some of the great student activities happening in the college. You can read about each of these later in the newsletter.

Our cybersecurity students recently competed in NCAE Cyber Games National Invitational Tournament. EWU is the only school to be represented four years in a row at the national finals competition, which made us target #1 for attack by the professional hackers who played the "red" team. Despite this, our team fought hard to end up with an incredible second place overall finish out of the 140 teams who competed in the regional and national tournament.

Our beekeeping students are also doing great work. The "EWU Busy Bees" club recently completed restoration of the bee hives in the 3rd floor courtyard of the PUB. The club is eager to make connections with students, faculty, and staff interested in supporting healthy bee communities in the region.

And finally, our Aerospace club is nearing completion of their project to launch a payload to 10,000' as part of the International Rocketry Engineering Challenge (IREC). The team is looking forward to the first flight of their rocket in early May, and will be heading off to Midland, Texas to join over 150 teams from 22 countries for the main competition in early June. This will be our first year returning to the IREC competition since 2016.

Closer to home, I'm thrilled to see progress on the Science building remodel. Although I'm not ready to offer any dunk-tank-bets on the timing yet, the project is moving along and on schedule.

Equally important is our deepening focus on student success and belonging. The recent MESA launch has allowed us to build much more focused student support strategies – although it is still early in the experiment, our first-year Math cohorts appear to be a smashing success. Our goal is clear: to ensure every student — especially those from historically underrepresented backgrounds — feels seen, supported, and empowered to thrive.

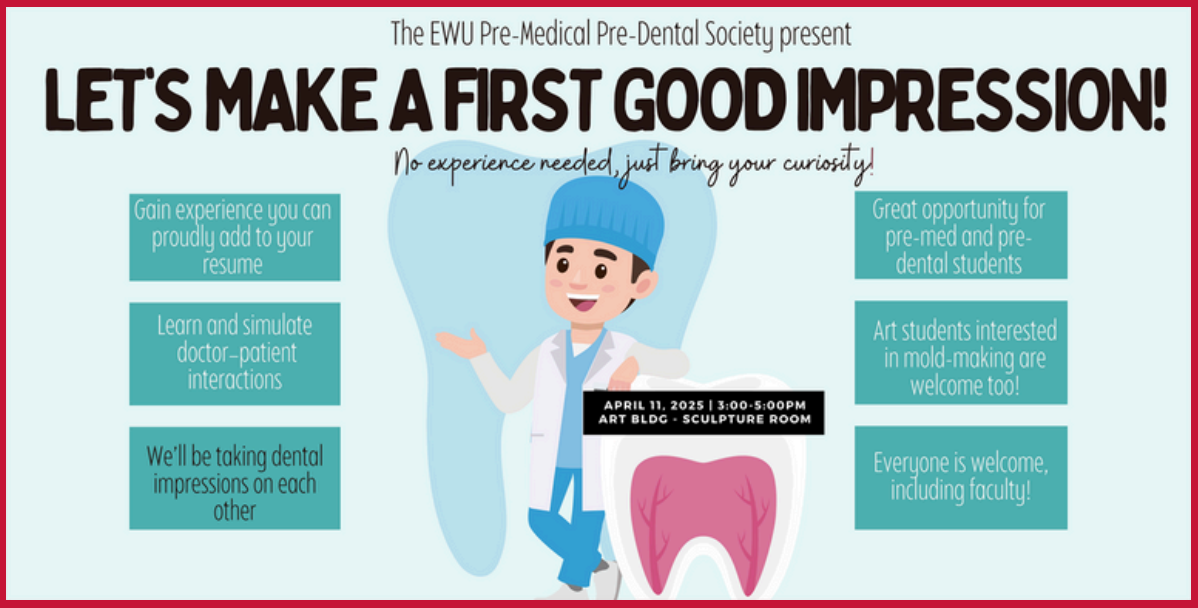
And of course, faculty scholarship remains a cornerstone of our mission. From securing major grants to mentoring undergraduate researchers, our faculty continue to distinguish themselves as both exceptional educators and engaged scholars. CSTEM is proud to support these efforts.

Yes, these are challenging times — but CSTEM is rising to meet them with purpose and innovation. We are well positioned to shape the future in our region and beyond.

Thank you for all you do to support our mission. Together, we move forward.

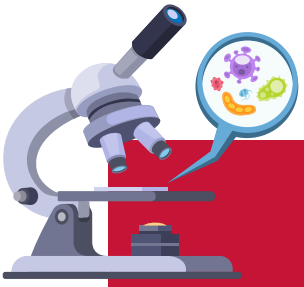
Go Eags!

Putting the A in STEAM!



Students attended a "Make a Good First Impression" Dental Skills Workshop!

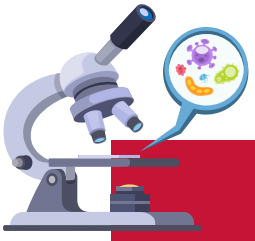
mp4 slideshow link



SEM Demonstration Day - April 4, 2024

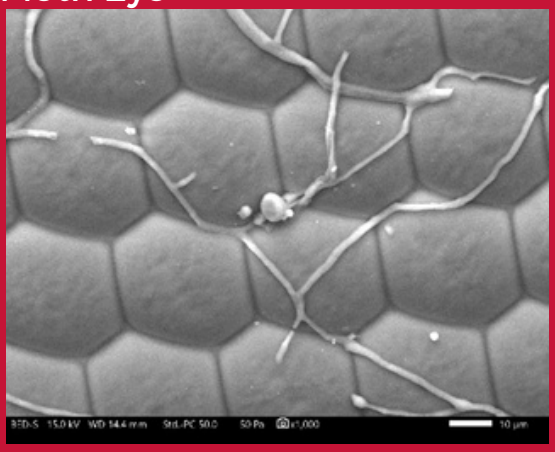
The EWU Electron Microscopy Lab held a demonstration on April 4, 2025 for faculty and staff interested in incorporating the JEOL field-emission scanning electron microscope (SEM) into research, teaching and service activities. The demonstration included surface imaging, 3D imaging, and elemental analysis of a variety of samples such as salt crystals, pollen, leaves, bugs, and minerals.

Two EWU students assisted Dr. Carmen Nezat with the demonstration. Marilyn Smith, an undergrad Geoscience student, is using the SEM to identify minerals in granites to understand tectonic processes that shaped our regional landscape. Katie Cole, a Biology graduate student, is using the SEM to investigate plant-fungal relationships.

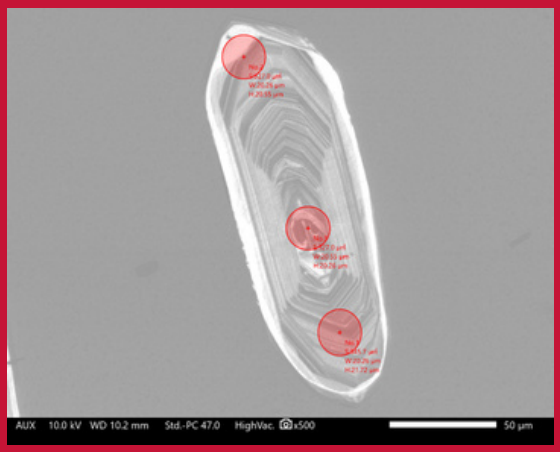


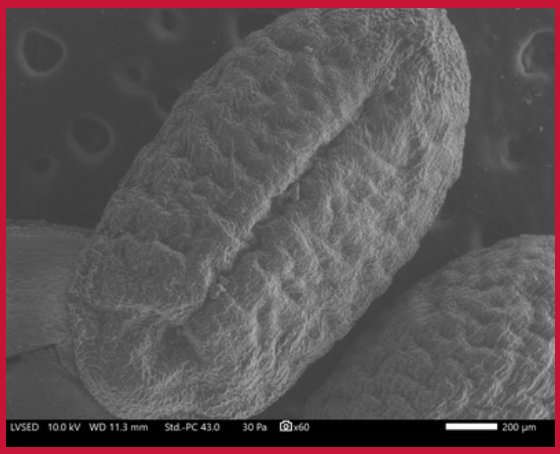
SEM Images!

Moth Eye



Zicon Crystal
- taken by Mariyn Smith





Seed - taken by Katie Cole

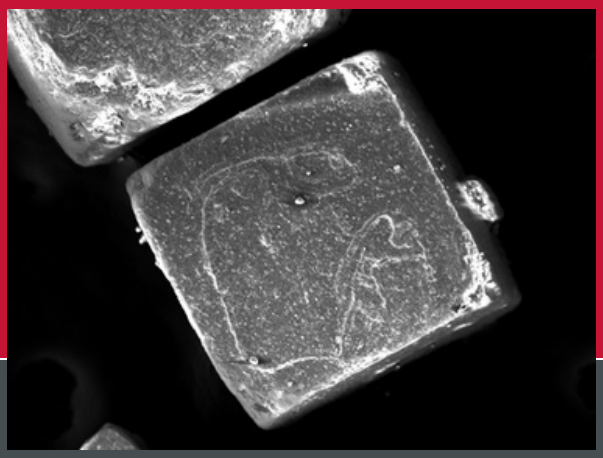


Table Salt

Busy Bees Hive Day!

You may notice our new friends buzzing around in the 3rd floor courtyard of the PUB. The EWU Busy Bees and West Plains Beekeeper Association revamped our beehives with a new crew of bees! The club will work on learning hive care and biology for anyone interested.

Busy Bees Hive Day!

Hive update as of April 21:
The hives couldn't be better! After three days had passed the queens were both successfully out of the cages and leading the hives. Both hives have done a great job getting pollen resulting in very little amounts of sugar water getting used. This is exciting news when bees are finding plenty of natural materials. For some fun information you might want to add, we decided to name the hives Eagle (the one that has an eagle on it) and Sync, with the queens being named Beetrice and Abbee.

Cheer team and Swoop get excited about Giving Joy Day at the Catalyst

Build our Future

Please consider making a gift to benefit the EWU College of STEM.
Jennifer Hicks would be delighted to provide you with personalized, meaningful opportunities to support EWU students and the College of STEM. We need your help to reach our $100M fundraising goal for the Build our Future Campaign!

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Build Our Future: The Campaign for Eastern https://www.ewu.edu/buildourfuture/about

Make a gift today at https://www.ewu.edu/give/

Novelis Aluminum STEM Scholarship Fund established February 18th

Novelis Aluminum is a leading sustainable aluminum solutions provider and a world leader in aluminum rolling and recycling.

Novelis Aluminum Spokane pledged $35,000 to the Eastern Washington University Foundation to establish a new STEM scholarship fund. The fund will be divided into five $1,400 awards per year, one for a Chemistry major, two for majors in Engineering and two for participants in the EWU MESA program.

Delaney Putnam, double major in Chemistry & Environmental Science EWU Class of '22 from Novelis Aluminum Spokane, and her colleagues, Megan Durfey and Jocie Cracroft toured the CSTEM building on January 9th with Jennifer Hicks, director of philanthropy and Melissa Graham PhD, director of MESA with the Dean of the College, David Bowman, PhD leading the way. They were impressed by the facilities and the outstanding faculty.

Delaney was excited to see former professors Nigel Davies, MS, Melissa Graham, PhD and Carmen Nezat, PhD while touring the college!

EWU CSTEM was awarded $7,666 for Classroom Fish Connections. These funds will pay for aquaria setup for four local middle school classrooms so that they can participate in WDFW's School Cooperative Program. Students will care for trout eggs until hatched and release juvenile fish into approved waters. The project adds an experiential element to what students learn as part of their science curriculum.

Dean of CSTEM David Bowman pictured with Mark Haisch in Vancouver, WA on April 17th
Mark (2007 BS MET) is deeply involved in working on SNAP Spectacles, glasses that give users an augmented reality experience. Mark and his wife Lisa are supporting the new CSTEM Experiential Learning Fund with a generous donation of $10,000. Mark gave Dean Bowman and Jennifer Hicks an opportunity to experience the Spectacles and they were extremely excited about the technology and the possibilities for students to engage with it.

Jackie Coomes, Mark Coomes, Jennifer Hicks, David Bowman- The Spokane Symphony and EWU Symphony gave a stunning performance together on April 3 in Showalter Auditorium. Jackie and Mark are generous supporters of various funds in CSTEM.

Sanmeet Kaur, Stu Steiner, Swoop, David Bowman, Jennifer Hicks gather for a photo on Giving Joy Day at the Catalyst on April 2nd. Giving Joy Day highlights the opportunity to give to EWU to make good things happen. A record $910,554 was raised on Giving Joy Day in 2025.

Let's celebrate that the EWU team was the only team to solve two really hard challenges that no other team got! And that late in the day our team was 7th and they clawed back to get 2nd! That is quite an accomplishment.

See the inside EWU article: https://www.ewu.edu/news/ewu-cyber-defenders-take-2nd-at-national-cyber-games-invitational/

Computer Science and Electrical Engineering

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A group of Electrical & Computer Engineering (ECE) students had the pleasure to visit an electrical substation on Tuesday, April 8th. This even was another step in EWU's continuing collaboration with Avista, and it proved to be a raving success in connecting classroom to the real-world.

A substation is a facility that used in power systems as a central point in connecting transmission lines, those huge towers on the side of the road which carry electrical energy and which we all know not to touch, to an urban setting. These facilities control electricity and transform it from hundreds of thousands of volts to much lower levels so that they are better suited to be sent to residential and commercial areas in cities. One of the concentrations in Electrical Engineering EWU offers deals exactly with this field, and the field trip was a great complement to the experience our students get in our classrooms and laboratories.

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Student Devin Figart said that Avista engineers explained what their daily job entails and “gave us insight into the many complexities behind each part of the substation.” Senior ECE student Alissa Embert said that the tour provided “a great opportunity for us to see an applied power system” and that the working engineers “did an amazing job of not only explaining functionality but the laws behind each of their solutions.” Students were able to compare schematics to the physical system, and, as Alissa stated, presented “me a new perspective on the system's complexity and the technical processes that accompany it.” Student Lane Stockert added that seeing the relays in action was very satisfying, as they are the exact units that are currently used in the Power Lab the ECE program has in the Catalyst building in Spokane. Lane was impressed by the sheer size of the large transformers used in the field.

As interesting as a substation is from the technical perspective, there are interesting things associated with real-world implementation of engineering systems that may not always make into the classroom discussions. For example, Avista engineers detailed the design changes that had to be built into the project to help protect wildlife, such as marmots, which abound in the area.

The entire Electrical & Computer Engineering program would like to thank Avista and their engineers for generously donating their time for this experience.

Student testimonials

Devin Figart:

As an electrical engineering student at EWU, I interned over the summer at Avista through the Student Engineer Development Program as a Substation Intern in the Substation Design Department. I was able to learn more about what a substation is and see the process of how utilities design, build, and maintain their facilities. One of the most effective ways to learn about substations was to go on a substation tour, where I was able to see in person the elements depicted in the substation drawings and understand the purpose behind each part.

As I headed into senior year, I was able to reconnect with classmates and share experiences in our internships. Of interest was the tours we went on, specifically substation tours. Going through some of the 400-level power classes, I felt that I was able to better understand topics because of my internship, and more people seemed interested in a tour. That's when my classmate (Boris Godum) and I emailed an Avista Engineer, Brian Chain, asking if a substation tour was possible for the IEEE club at EWU. Avista generously said yes, and we were able to tour Avista's Millwood substation.

The Avista engineers gave us insight into the many complexities behind each part of the substation and explained what they do as substation engineers at Avista. My favorite part of the tour was the direct correlation with the class my classmates and I are taking this quarter, Protective Relaying, and how we got to see some of the relays we use in class being used in that very substation. Thanks to Avista for this great opportunity to learn more about the role of utilities in communities and for taking the time to invest in the next generation of engineers.

Computer Science and Electrical Engineering

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Student testimonials

Alissa Empert:

- The Avista substation tour was a great opportunity for us to see an applied power system. A few of the engineers on the tour helped design the substation, so they did an amazing job of not only explaining functionality but the laws behind each of their solutions. I valued being able to compare the electrical schematics to the physical system, as it gave me a new perspective on the system's complexity and the technical processes that accompany it. Apart from the technical aspects of the tour, I enjoyed hearing about the substation's role in the community, like supporting the paper mill and implementing changes for the safety of wildlife like marmots.

Andrew Price:

- The substation tour provided a great opportunity to connect our academic knowledge with tangible, real life objects that are most often an afterthought, or are taken for granted by many people. Funny enough, the piece of information that stuck with me the most was the lead time on the main transformers. Can't believe those big boys take roughly 4 years to find their homes!

Computer Science and Electrical Engineering

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Student testimonials

Lane Stockert:

- The Avista Millwood substation tour was super informative. Seeing the SEL relays in action was especially cool since we're working with the same ones in our power systems lab—it helped tie classroom concepts to real-world systems. I was also impressed by the size and design of the large transformers; learning how they step down high transmission voltages and how they're protected gave me a much deeper appreciation for the complexity of the grid.

James Hicks:

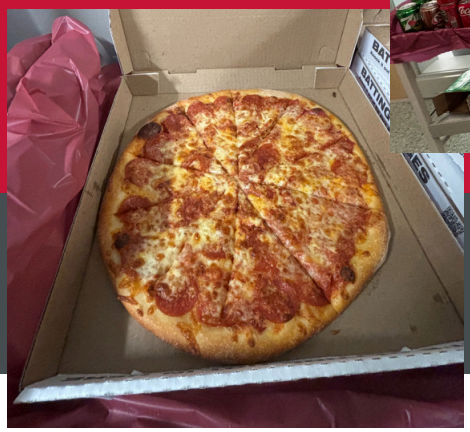
- It was very useful seeing an actual transformer up close and being able to talk to engineers about where the current transformers are, where the circuit breakers are etc. Additionally speaking to substation engineers about the way the station was organized and looking at the schematics for the station and breaking up each piece was a valuable experience.

Aidian Burright:

- It was very helpful to see how electrical engineering theory is applied to real-world problems

Celebrating Pi day!

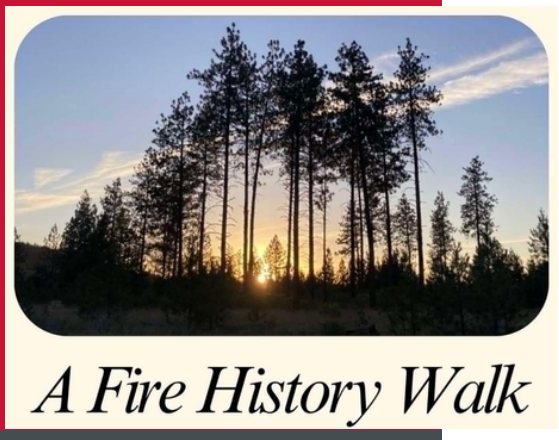
March 14, 2025, the EWU Chemistry, Biochemistry, and Physics Department celebrated International Pi Day and the End of the Winter Quarter with a Pizza Party. Students, faculty, and staff gathered and enjoyed the food and drinks, as well as made great conversations



Geoscience and Environmental Science undergraduates joined Dr. Lauren Stachowiak in the field to collect fire history data from pine trees in Riverside State Park. The data are located within "catfaces" or the blackened triangles you can see at the base of trees in fire-prone landscapes, and are preserved in the years in which the past fire occurred.

Photograph by Ty Rhoades

The annual fire history walk with Dr. Lauren Stachowiak took place this spring at Riverside State Park and was open to the Spokane community. Dr. Stachowiak led folks through the location of the 1994 high severity fire that happened in Riverside and they taught how to recognize evidence of past fire on the landscape. The picture above is a cluster of pines missing lower limbs, which is evidence of self-pruning and in this case, a past high-intensity fire.



Geosciences

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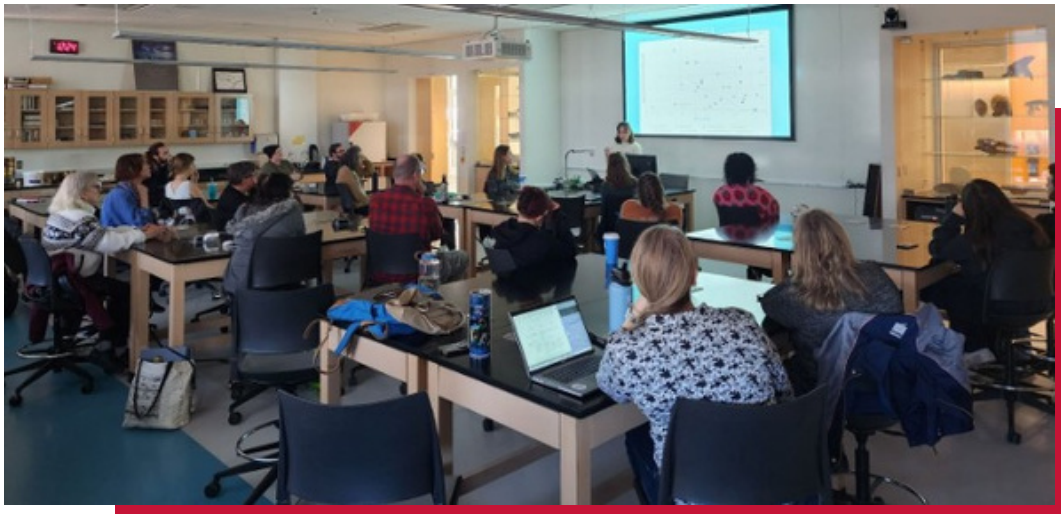

GEOS special Seminar with Cadence presenting on groundwater ages in the West Plains

Students working on the West Plains PFAS Fate and Transport study through EWU Geosciences and a grant to Dr. Chad Pritchard presented their independent research as a special seminar in the GEOS Department on March 10th, then presented to the local Society of Inland Northwest Environmental Scientists on March 12th, then to the regional groundwater community as part of the AGT NW Groundwater Conference. The students were amazing! It was also great to see so many alumni that graduated with a Geology or Geoscience degree in the last few years that are prominent and licensed geologists in our region. EWU also played a large role with presenting our PFAS research as part of a field trip before the conference started, including taking a sample for EPA Method 533 at Finch Arboretum with about 30 participants from all around the Pacific Northwest.

Alumni Brandon Kautzman, geologist for Spokane Environmental Services presents the SINES students scholarships for the great presentations at the March 2025 SINES meeting to: Natalie Potter, Cadence Meier-Grolman, Emerson Slanga, and Jerusha Hampson.

Geosciences

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High-Five from EWU Geology/Geosciences alumni and students at the AGT NW Groundwater Conference in Spokane, March17-19 2025. We made sure to keep our elbows bent!

On March 20th and 25th, multiple students joined Dr. Pritchard for PFAS and radiocarbon age determination sampling across the West Plains. Our research was highlighted on KXLY! These results will be presented on June 9th for a West Plains Water Coalition meeting and in the Technical Report for the grant that will be released by June 30th. On March 20th and 25th, multiple students joined Dr. Pritchard for PFAS and radiocarbon age determination sampling across the West Plains. Our research was highlighted on KXLY! These results will be presented on June 9th for a West Plains Water Coalition meeting and in the Technical Report for the grant that will be released by June 30th. https://www.youtube.com/watch?v=7TkDRauM18A

Picture from an Instagram Post of Amy Sumner (Spokane County Water Resources) about the NW GRoundwater Conference. It was cold and I wish that I had bent my arm when I was reenacting the megafloods.

Above, left: Cadence and Athena sample water from a well on the West Plains.

Above, right: Alex, a reporter with KXLY, recorded and interviewed students as they sampled groundwater for PFAS and radiocarbon age determination in the West Plains.

The last weekend of March the Geosciences Club rocked the Spokane Gem and Mineral Show at the EXPO and Fairgrounds. The club president made a special, “Rocks of Minecraft” display that got a LOT of attention, especially from Dr. Pritchard’s twins:)

Jerusha Hampson, the Geoscience Club President, shows off an array or rock and mineral displays for the Spokane Gem and Mineral Show. EWU has been a large part of the show for years and the Spokane Rock Rollers have an endowed scholarship with the Geosciences to help offset the cost for students that take the EWU Geology Field Camp, GEOS 490G.

In preparation for a slew of STEM nights across the area, the Geosciences Club had an event to learn from Dr. Pritchard how to run a trashcano experiment and make liquid nitrogen ice cream. Of course they had to taste the ice cream at the end:)

Trashcano!

Emerson and Jerusha make liquid nitrogen ice cream for the Geoscience Club event on April 15, 2025

Mechanical Engineering & Technology

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Robotics & Automation Dr. Jennifer Leaf's winter Advanced Robotics class applied their skills to assemble custom dice boxes, incorporating felt lining, magnets, and logo stamping. Learn more about this project here.

Capstone Expos On March 13, our Technology students showcased their Capstone Expo projects, including a sauna, powered wheelbarrow, icehouse, mobile workbench, and doghouse. Check out the impressive work of our students!

Mechanical Engineering & Technology

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We are excited to invite you to our next Capstone Expo for Mechanical Engineering and Mechanical Engineering Technology students on Wednesday, June 4, from 2:00–4:00 p.m. in the CEB lobby. Featured projects include an off-road wheelchair rickshaw, an auto-saw, and an acoustic blow-off valve. We hope you can join us to celebrate our students' hard work and achievements.

Construction Management Advisory Board Our Construction Management Technology program is forming an advisory board to help shape the curriculum and work toward program accreditation. If you are interested in joining the advisory board, please email us at mechengineering@ewu.edu.

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PS: I learned not to stand behind a rocket. I risked my life taking this photos for you!

Aerospace Club has been accepted to compete at the Intercollegiate Rocket Engineering Competition in June in Midland, TX! This club has previous high-power rocketry experience, with four Level 1 and seven Level 2 certifications completed. Members design rockets in Fusion 360 & SolidWorks, simulate flights in Open Rocket, and engage in manufacturing using CNC and 3D printing. Key projects include supersonic-capable rockets with advanced recovery systems, fully 3D-printed rockets, and a high-altitude weather balloon.
These experiences have prepared the team for national competitions, with expertise in complex propulsion and recovery systems.
We are a student-driven team, with group experience beyond rocketry in the form of a high-altitude weather balloon project.

MESA

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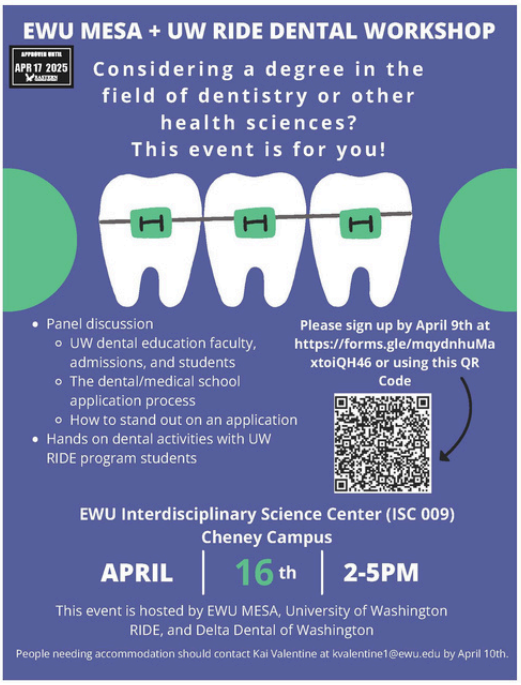
MESA hosted a workshop by UW RIDE and Dental Dental to engage with dentistry and career options.



Influencer geologist and LGBTQ+ advocat Dykanite Zoomed with EWU MESA and Geoscience students on April 18! We learned a lot about graduate school, volcanology, and advocacy in STEM.