



CALIFORNIA STATE UNIVERSITY
BAKERSFIELD™

Geological Sciences

2025-2026 CSUB DEPARTMENT OF GEOLOGICAL SCIENCES NEWSLETTER

MESSAGE FROM THE DEPARTMENT

Dear Friends,

Welcome to the 2025-2026 edition of the CSUB Department of Geological Sciences newsletter! We are eager to share lots of exciting news and updates and want to hear from you as well!

With two faculty members on sabbatical—**Dr. Chris Krugh** in Fall 2025 and **Dr. Katie O'Sullivan** in Fall 2025 and Spring 2026—it was an all-hands-on-deck kind of year. Highlights include the successful navigation of CSUB's byzantine bureaucracy and now awaiting formal approval of our Environmental Science Bachelor of Science program from the Chancellor's Office; the first annual Geology Day; lots of community outreach (19 presentations and 7 media interviews!); and continued excellence in research (7 research papers and 17 conference presentations!) and funding (almost \$7 million!). We also made major changes in our department space on the third floor of Science II, updating displays (including new earthquake and Kern County Mineral Society displays on the first floor of Science II), adding prominent lights, and installing a new aquarium. Come visit us to check out the changes!

We hope you enjoy hearing about these accomplishments and more in this newsletter!

CSUB Department of Geological Sciences



CSUB geology students explore Badwater Basin in Death Valley during a multi-day spring 2026 field trip.

THE GEOLOGY TEAM

Our Administrative Support Coordinator, **Cecily Rink**, and our Instructional Support Technician, **Shauna Van Grinsven**, were extremely busy this last year keeping the department running. Among their many responsibilities, they organized department events, coordinated course activities and trips, managed student assistants, and handled a lot of paperwork. At the same time, Cecily made progress towards her bachelor's degree in geology, while Shuana continued working towards a master's degree in biology. Wow!

Lecturers handle most of the students enrolled in geology courses, taking on many packed sections of courses like California Geology, How the Earth Works, Water in the West, and more. The department is lucky to have so many incredible part-time instructors teaching our diverse course offerings: **Jason Cotton, Robert Crewdson, Larry Drennan, Scott Frystak, Greg Gordon, Alyssa Kaess, Pam Knight, Nick Moreno, Brian Pitts, Richard Ruiz, Gregg Wilkerson, and John Yu**. If you are interested in becoming a lecturer, check out the note below about CSUB's new lecturer pool.

If you wander through the third floor of Science II, you are likely to run into at least one of our tenure/tenure-track faculty (and their kids if you are lucky!): **Drs. Anna Cruz, Adam Guo, Matt Herman, Chris Krugh, Katie O'Sullivan, Tony Rathburn, and Liaosha Song**. They teach, they research, they sit on boatloads of committees. And on their free time they do outreach activities to teach the community about Earth science!

Donors, Volunteers, & Collaborators

Each year, many people from the community freely donate their time, expertise, and resources to help us with special events and guest lectures. Many of these folks are included in this newsletter, but there are a great many more that made significant contributions to the department, and we sincerely appreciate each and every one of them. If you are interested in getting more involved with the department—even if you do not feel you have the time to teach a full course—please consider volunteering to give a seminar talk or give a guest lecture. Please also consider being a financial or in-kind donor to provide much-needed support for students and CSUB Geology.

Join the Team! New Lecturer Pool

The Department recently set up a lecturer pool for last minute hires of part-time lecturers. With a 3-week delay in the hiring process due to background checks, the University established the ability to set up a lecturer pool so that if a part-time lecturer position opens at the last minute (not unusual), we can hire someone quickly. The pool also gives us an opportunity to see what expertise is available for courses that we may not otherwise have the capacity to teach. We have courses at night as well as during the day. If you are interested in teaching and the rewarding feeling of giving back and helping students, please apply using the link at the QR code.



Please note that we are not looking to fill any positions at the moment. Although there is no guarantee we can hire you for the fall or spring, the hiring process is much quicker for those in the pool if an opening becomes available.

STUDENT SUCCESS

International Meetings

GSA Connects 2025

In October 2025, CSUB geology undergraduate student **Elijah Swanson** traveled to San Antonio, Texas, to present his research findings at the international Geological Society of America Annual Meeting, *GSA Connects*. Eli gave an oral presentation on his finding that pressure solution at calcite-mica interfaces tends to leave a rough surface, rather than smoothing the boundary as was previously thought. This presentation was based on research he performed with an atomic force microscope during his summer 2025 internship at Lawrence Berkeley National Laboratory and at CSUB. His co-authors were his LBNL mentors **Dr. Melese Getenet** and **Dr. Benjamin Gilbert** and his CSUB mentor, **Dr. Liaosha Song**.

AGU Fall Meeting 2025

In December 2025, CSUB geology graduate students **Isaac Oyeniyi** and **Madison Tarpley** traveled to New Orleans, Louisiana, to attend the largest annual gathering of Earth Scientists in the world: the American Geophysical Union Fall Meeting. Madison presented geochemistry and nanostructure research on shale caprocks for potential underground hydrogen storage that she



Isaac Oyeniyi meets with international expert (and soon-to-be mentor), **Dr. Harrison Lisabeth** from LBNL in the poster hall of the 2025 AGU Fall Meeting.



Eli Swanson prepares to enter GSA Connects 2025 wearing an appropriate chapeau for San Antonio, Texas.

performed at LBNL and at CSUB with geology undergraduates **Tyler Garza** and **Maggie Izumi** and fellow geology graduate student **Jennifer Rubalcaba**. Their co-authors were LBNL mentors **Dr. Arun Bhattacharjee**, **Dr. Benjamin Gilbert**, and **Dr. Harrison Lisabeth** and their CSUB mentor **Dr. Liaosha Song**. Isaac, working on a similar project for his Master's degree under Dr. Song, traveled to AGU to discuss these findings and his preliminary results with experts in the field. These conference experiences are just some of the student-involved internships, collaborations, and presentations stemming from a \$2.25 million collaborative Department of Energy grant awarded to CSUB (led by Dr. Song) and LBNL for characterizing rocks for underground hydrogen and carbon storage.

Community Research Presentations

Kern County Mineral Society

In March 2026, geology undergraduate students **Maggie Izumi** and **Tyler Garza** gave an hour-long presentation to the Kern County Mineral Society about the different volcanic and tectonic systems that they learned about during their Hawaii field camp experience. Their presentation included photos from the field sites they studied and their work to understand the Hawaiian-Emperor seamount chain, hotspot volcanism, and active volcano hazards on the Big Island. They also talked

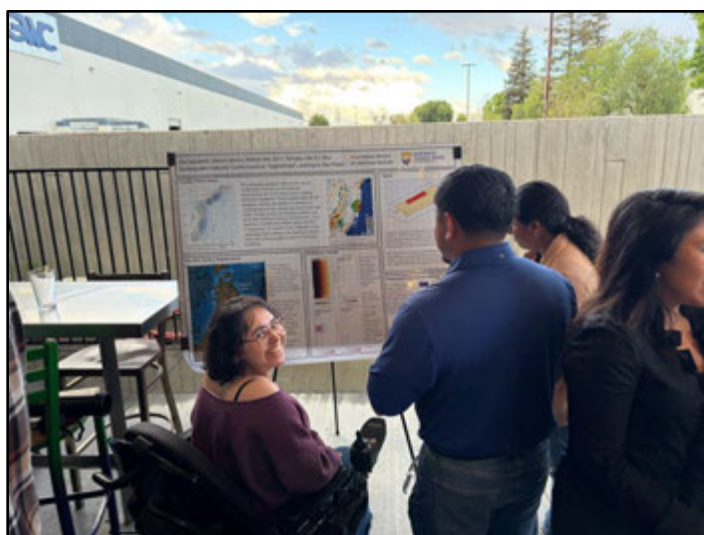


Tyler Garza, Garrett Cooper, and Maggie Izumi smile at field camp in Hawaii. This is one of many photos Tyler and Maggie shared in their presentation at the Kern County Mineral Society.

about the technical aspects of learning field mapping, GPS-based digital mapping, and their overall field camp experiences.

San Joaquin Geological Society Student Night

In April 2026, the San Joaquin Geological Society hosted its annual student night, this year at Lengthwise Brewing. Several CSUB geology students presented posters of their research for the event. Graduate student **Rosa Valdez** (mentored by **Dr. Matt Herman**) showed her preliminary numerical modeling results on the

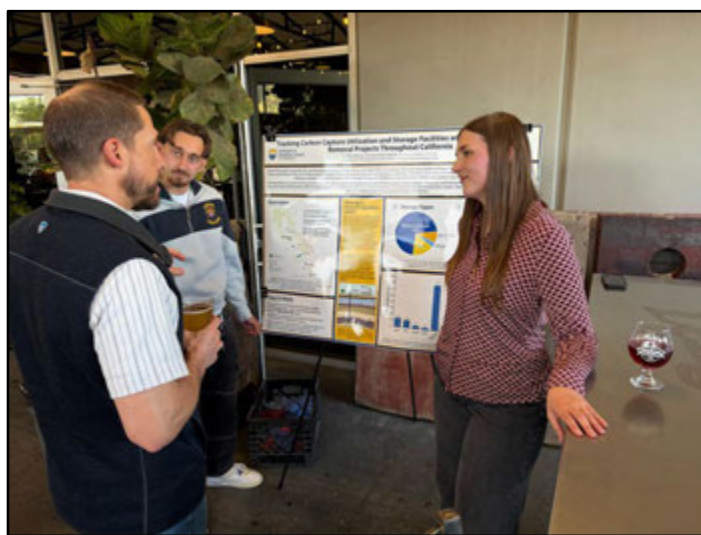


Rosa Valdez presents her research on the 2011 Japan earthquake to geology students **Jose Zaragoza** and **Elyssa Cazares** at SJGS Student Night.



Ryan Tengelsen presents his research cruise experience at SJGS Student Night.

patterns of frictional locking leading up to the 2011 great Japan earthquake. **Ryan Tengelsen** (mentored by **Dr. Tony Rathburn**) discussed his sample collection experiences on a 5-week research cruise from Canada to Iceland. Undergraduate students **Brooklyn Macross** and **Christian Herda** (mentored by Dr. Herman and Dr. Rathburn) showed off their comprehensive database of carbon capture and storage projects in California performed as part of a contract with the California Air Resources Board. **Salvador Osorio-Martinez** (mentored by Dr. Herman) discussed his project analyzing geophysical observations and



Christian Herda and **Brooklyn Macross** present their work compiling carbon storage projects to local geologist **John Porter** at SJGS Student Night.



Alessa Linares and **Virpal Kaur** present their research on marine microfossils to CSUB geology alum **Brianna Acevedo** at SJGS Student Night.

running numerical deformation models for the recent lava fountain eruptions at Kilauea. **Virpal Kaur** and **Alessa Linares** (mentored by **Dr. Anna Cruz**) discussed their research on selecting marine microfossils for geochemical analysis over the summer. Our students enjoyed in-depth geological discussions with the impressive professional scientists who make up the SJGS community.

Internships and Research Experiences

Summer at Lawrence Berkeley National Lab

A \$2.25 million collaborative Department of Energy grant between CSUB and LBNL supported CSUB student travel to Berkeley for intensive summer research under LBNL mentors at the lab. Graduate students **Jennifer Rubalcaba** and **Madison Tarpley** and undergraduate students **Tyler Garza**, **Maggie Izumi**, and **Elijah Swanson**, as well as engineering student **Giovanni Marquez** each spent two months of summer 2025 at LBNL working on aspects of rock characterization for underground hydrogen storage. Maggie, spending her second consecutive summer at LBNL, worked on electromagnetic characterization of rocks undergoing serpentinization, which can alter the mineralogy, porosity, and permeability of the rocks. She prepared serpentinized core samples and fractured them before taking electromagnetic measurements and comparing them to



Salvador Osorio-Martinez presents his research on Kilauea deformation during lava fountain eruptions at SJGS Student Night. Geology undergrad **Jose Gonzalez** pretends to pay attention while he snacks and chats with classmate **Javier Salomon** instead.



(Top) **Eli Swanson** works on the atomic force microscope at LBNL. (Bottom) **Madison**, **Giovanni**, **Maggie**, and **Tyler** pose in front of their LBNL research poster.

microscopic images of the samples. Eli worked on pressure solution of calcite using an atomic force microscope and profilometer to constrain mineral surface roughness. The coolest thing Eli saw was the transmission electron aberration-corrected microscope, which required its own building to produce images with resolution down to 0.05 nanometers!

Cruising the North Atlantic Ocean

In June 2025, undergraduate students **Josh Barnes**, **Garrett Cooper**, **Trace Hicks**, and **Ryan Tengelsen** embarked from Woods Hole Oceanographic Institute in Massachusetts on a 5-week research



The SEALS Expedition Team of researchers, students, and technicians smiling for a group photo on the ship.



The coring team posing on the multicorer with Greenland's ice-covered mountains in the background. (L-R, back row): **Trace**, **Ryan**, **Dr. Burkett**, **Dr. Rathburn**, **Kira**. (L-R, front row): **Amanda**, **Monica**, **Garrett**, **Josh**.



Scripps Institution of Oceanography research technician **Jeremiah Brower** shows students how to set up a gravity corer. (L-R) **Trace**, **Ryan**, **Josh**, **Kira**, and **Garrett**.

cruise with CSUB geology professor **Dr. Tony Rathburn** and 26 other scientists and students from 11 institutions. These included CSUB geology alum **Monica Hinson** (now a graduate student at Oklahoma State University), **Dr. Ashley Burkett** (Oklahoma State University), **Amanda Harding** (Oklahoma State University), and **Kira Sirois** (University of Tasmania), among many others. The research vessel *Roger Revelle* took this crew through the Labrador Sea and Arctic Ocean to collect a series of seafloor water and sediment samples for a project funded by the National Science Foundation. The goal of this project is to characterize ocean chemistry and circulation over time, which will be done by analyzing these samples in CSUB geology labs as well as at the facilities of collaborators across the country.

Scan or click the QR code to see more photos and read about the experience!



Sweltering Summer Geophysics

Alongside his geology teaching responsibilities as a lecturer in the department, **Dr. Bob Crewdson** runs a small consulting business that provides specialized geophysical services to the electric power constructor industry all over North America. In summer 2025, Dr. Crewdson and his field crew were on a remote and desperately hot job site in

the eastern Mojave Desert when one of the crew became ill. A number of students in his Spring 2025 hydrogeology course had asked to be considered if he had any job openings, so he thought he would find a student to help out. They were on the job site around 4:00 pm when Dr. Crewdson called undergraduate **Jose Gonzalez**. Despite Jose's insistence that he was not interested in a career involving field work, he arrived at the hotel near the field site about 280 miles from Bakersfield by midnight! It turned out to be one of the most difficult job sites Dr. Crewdson worked on over the last 20 years. The crew each had to repeatedly lay out 1,000 feet of resistivity wire in straight lines across dissected alluvial fans in 110°F heat. The resistivity of the bone-dry alluvium was so high that Jose and the crew spent hours each day digging in and watering the current electrodes to collect the resistivity measurements. After that, they spent hours each day digging 3-foot deep holes in the alluvium to perform thermal conductivity measurements. Jose did it all and did it well, learning quickly and filling in where help was needed. Dr. Crewdson emphasized that his crew looks out for each other in the field; Jose may still not want to do field work as a career, but he showed up, figured it out, worked hard, and filled in wherever needed during a week's worth of hard, hot days. He earned the thanks and the respect of the entire field crew.



Jose Gonzalez and **Dr. Bob Crewdson** keeping cool in the Mojave Desert with the field crew.



Ryan Tengelsen enjoys the view while assisting **Gregg Wilkerson** with field work.

Mapping Mines

During a weekend in February 2026, graduate student **Ryan Tengelsen** joined CSUB geology lecturer **Gregg Wilkerson**, who he met through the Geology Club at CSUB, to map mining claims in the Twin Oaks area about an hour east of Bakersfield. Gregg provided Ryan with an excellent opportunity to gain field experience and apply the skills he had been developing in the classroom as a geology major. Ryan's primary responsibility was using GPS equipment and mine claim maps to accurately locate and document the corners of mining claims. Ryan also applied his geological knowledge to identify and map features of interest, such as dikes and mineralized zones that could contain valuable resources like gold and silver, or even rare-earth elements. Over the course of two separate field days, Ryan hiked across rugged terrain to locate claim markers, map geological features, and collect rock samples for later analysis. The experience provided him with hands-on training in field mapping, navigation, mineral exploration, and geological observation. Ryan enjoyed applying his classroom knowledge in a real-world setting, working alongside an experienced geologist.

CalGem & Beyond

The journey for recent geology graduate and current Master's student **Eder Tavera** to becoming an engineering geologist at California Geologic Energy Management Division (CalGEM) was one

that his previous experiences prepared him for. From his time in the United States Army to working in the oilfields, Eder gained skills that would launch him into the geology program at CSUB. There, he enthusiastically took on the required courses in the major, challenging electives, and an internship at Lawrence Livermore National Laboratory, all while working at the CSUB Veterans Success Center. Now, Eder is working towards his Master's degree in geology at CSUB under **Dr. Chris Krugh** while he starts his career at CalGEM. The department is always excited for students like Eder to find lucrative, exciting jobs that engage all of the skills they developed in their degree. Scan or click the QR code to read more about Eder's journey!



East Coast Geochemistry Research

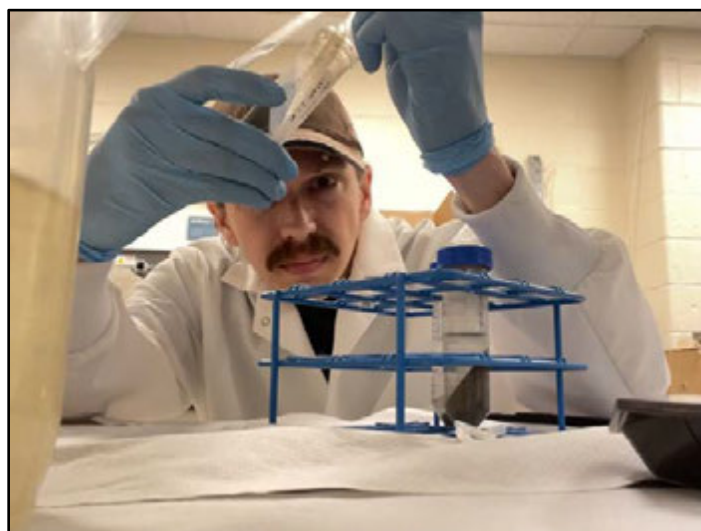
Through funding provided by an NSF grant awarded to **Dr. Tony Rathburn**, undergraduates **Alessa Linares** and **Virpal Kaur** spent summer 2026 conducting research at Woods Hole Oceanographic Institution (WHOI) in Woods Hole, Massachusetts. During the academic year, Virpal and Alessa worked with **Dr. Anna Cruz** at CSUB, learning geochemical and microscope techniques. In the summer, under the mentorship of **Dr. Sophie Hines** at WHOI, they processed and examined seafloor sediment samples that were collected the



Alessa Linares finds colorful and diverse research opportunities in and out of the lab at WHOI.

previous summer in the Labrador Sea (see the story about that voyage in this newsletter!). Their research includes using a microscope to remove microfossils from the sediment so that they can be used to determine the sample ages. Virpal and Alessa also analyzed the carbonate content of samples to assess changes in ancient ocean conditions. At the end of the summer, they presented the results of their research at WHOI.

After participating in the research expedition to the Labrador Sea in summer 2025 as an undergrad, **Garrett Cooper** conducted research on those



Garrett Cooper is excited to process deep-ocean sediment samples at the University of Delaware.

(Left) **Virpal Kaur** holds sediment samples at WHOI, the keys to understanding modern and ancient oceans.



Fossil enthusiast and CSUB undergrad **Esteban Soto** (right) posing with dinosaur bones and a fellow student in Wyoming.

samples as a grad student in the summer of 2026. He traveled to the University of Delaware to work under the mentorship of **Dr. Chandranath Basak** and his PhD students. During his internship, Garrett investigated sediment cores from both the Labrador Sea and the Okhotsk Sea using geochemical and microfossil analyses. His work on the Labrador Sea project built directly on samples he helped collect during the research expedition, while the Okhotsk Sea project, a collaboration among Dr. Cruz, Dr. Basak, and **Li Lo** (National Taiwan University), aims to reconstruct past sea ice extent and sediment provenance across multiple glacial cycles.

These research internships are part of collaborative research efforts between co-principal investigators Dr. Rathburn, Dr. Hines, and Dr. Basak.

Dinosaur Dig Field Course

Undergraduate **Esteban Soto** took advantage of an exciting opportunity to go fossil hunting for a week during summer 2026 in Wyoming as part of a CSU San Bernardino course called "Dino Dig." With a goal of becoming a paleontologist, Esteban said that this opportunity "was a dream come true." According to Esteban, he would have never known about this opportunity if he hadn't gotten to know his CSUB geology professors. Esteban strongly encourages students to get to know their professors because "they have an array of utilities and connections that only they have." He regards his experience as an incredible adventure with an impact that will stay with him for a lifetime.

Geology Students Achieve!

Thesis Proposal Defense

On April 29, 2026, Master's student **Rosa Valdez** defended her thesis proposal. Working under **Dr. Matt Herman**, Rosa is developing a suite of computational finite element models to investigate the patterns of frictional locking in Japan leading up to the devastating 2011 earthquake and tsunami. She presented her research plan to a crowded room, including many of her peers, her committee and other professors, several lecturers, and even a visiting scientist from Lawrence Berkeley National Lab!



Rosa Valdez presents her thesis proposal in a packed Science II 336.

ASI Director of Diversity and Inclusion

In May 2026, Master's student **Isaac Oyeniyi** was elected as the new CSUB Associated Students, Inc. (ASI) Director of Diversity and Inclusion. ASI is the student government body on campus at CSUB. Congratulations on your new role, Isaac!

Leading CSUB Veterans to Graduation

Geology major and US Army veteran **Jose Zaragoza** graduated in Spring 2026. Jose also served as the Vice President of the CSUB Veterans Club while working at the Veteran Success Center at CSUB. His commitment to the success of veteran students at the university has been inspiring. Also important for us in the department, Jose (along with previous veteran geology graduates **Eder Tavera** and **Braedon Scarry** who worked at the Veteran Success Center) directed many veteran students to the department to become geology majors!

Jose was the keynote student speaker at the CSUB Veterans Graduate Recognition ceremony, giving a speech in front of a room full of graduating veterans, their families and friends, and the faculty and staff who interacted with them at CSUB. Jose talked about how his background as a veteran ultimately set him up for success at CSUB, despite all the challenges college and life put in his path.

Jose liked geology so much as an undergraduate that he decided to stay in the department and work towards his Master's degree in geology. We are incredibly proud of Jose and all of our veteran geology majors!

DONATE NOW AND SUPPORT OUR OUTSTANDING STUDENTS!!

Scan or click the QR code below to donate today. Make sure to select "Geology Department" from the menu titled "I want to support"!



Isaac Oyeniyi looking fresh for his new job as ASI Director of Diversity and Inclusion.



Jose Zaragoza gives a speech at the Spring 2026 CSUB Veterans Graduate Recognition ceremony.

FACULTY SCHOLARSHIP

Grants & Funding

Department of Geological Sciences faculty continued their long and impressive record of securing substantial external funding (currently around \$7 million dollars) from a wide array of external sources. Each of these grants were written by faculty (not by external, contracted agencies). Thanks to another successful year of securing external funding, our faculty and students continue to get top-tier resources for the classroom and the lab, allowing them to advance exciting research. These grants provide students with invaluable opportunities to participate in cutting-edge science, develop technical skills, and collaborate with scientists from leading institutions.

New Grants

Dr. Liaosha Song and **Dr. Tony Rathburn** received \$8,800 from the U.S. Geological Survey as partners of the California Geological Survey to support operations at the California Well Sample Repository on CSUB campus. This 12-month award, titled *Modernization and preservation of the California Well Sample Repository to provide digital and physical access*, will provide resources to better access the repository. It is hopefully just the beginning of a transformation that will modernize the important facility over the next few years!

Dr. Matt Herman and co-principal investigator **Dr. Kevin Furlong** at Penn State received \$25,000 from the Statewide California Earthquake Center (SCEC) to constrain the tectonic structure in northern California. Their one-year grant, titled *Identifying potential seismogenic structures in the northern San Andreas plate boundary fault system*, has led to new understanding of tectonic transitions from subduction to translation and how the San Andreas Fault grows to the north. They presented their results at the 2025 SCEC Annual Meeting in Palm Springs.

This led Dr. Herman to several continuing scientific discussions with colleagues across the country. Over the past year, they put together a technical

activity group (TAG) for SCEC to comprehensively study all aspects of tectonics and seismicity in northern California. Dr. Herman is collaborating with scientists from University of Colorado Boulder, Scripps Institution of Oceanography, UC Davis, U.S. Geological Survey, and California Geological Survey. They received \$17,971 from SCEC in summer 2026 to support a workshop held at the 2026 SCEC Annual Meeting with the goal of bringing the community together to determine the future of northern California earthquake science.

Continuing Grants

The Department of Geological Sciences continued its contract with the California Air Resources Board to develop protocols for documenting carbon capture and storage projects across California. Mentored by co-principal investigators **Dr. Tony Rathburn** and **Dr. Matt Herman**, geology students **Brooklyn Macross** and **Christian Herda** collected data about carbon capture and utilization projects, underground carbon storage projects, and bioenergy projects. They gained valuable hands-on experience in environmental research, tracking down and documenting datasets, and database construction.

Dr. Anna Cruz received an internal grant from the CSUB Office of Research, Scholarship, and Creative Activity and the University Research Council to investigate past ocean dynamics in Southern California. The funding created hands-on research opportunities for students **Garrett Cooper** and **Nayeli Cerda**, who analyzed sediment cores collected from the Southern California margin and contributed to the generation of preliminary results. These findings played a key role in developing a larger proposal submitted to the National Science Foundation Marine Geology and Geophysics program in Spring 2026.

The Department of Energy Reaching a New Energy Sciences Workforce grant *Nanopore characterization for geological storage of H₂ and CO₂* continues to support student research and training opportunities in hydrogen storage under the leadership of **Dr. Liaosha Song** (PI), with co-investigators **Dr. Adam Guo**, **Dr. Matt Herman**,

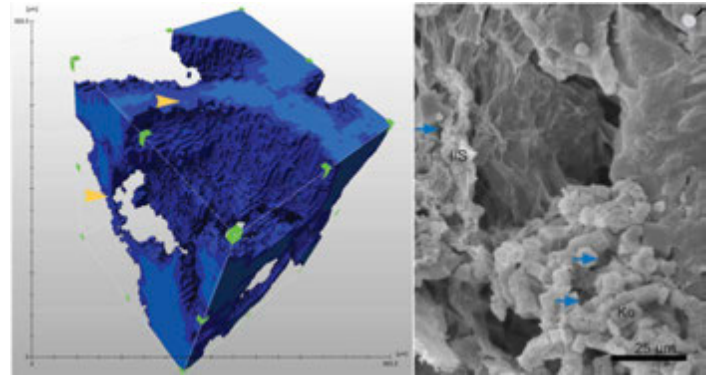
and **Dr. Tony Rathburn**. The program continues providing students with valuable summer research experiences at Lawrence Berkeley National Laboratory and supports their participation in professional conferences.

Ongoing research funded by a National Science Foundation Marine Geology & Geophysics grant awarded to **Dr. Tony Rathburn** and collaborators at Woods Hole Oceanographic Institution (WHOI) and the University of Delaware continues to provide CSUB students with hands-on research experiences and advanced scientific training. This year, the project supported three student internship opportunities on the East Coast. **Alessa Linares** and **Virpal Kaur** conducted research at WHOI under the mentorship of **Dr. Sophia Hines**, while **Garrett Cooper** completed an internship at the University of Delaware under the guidance of **Dr. Chandranath Basak**. These experiences allow students to work alongside leading researchers and contribute to ongoing investigations of past climate.

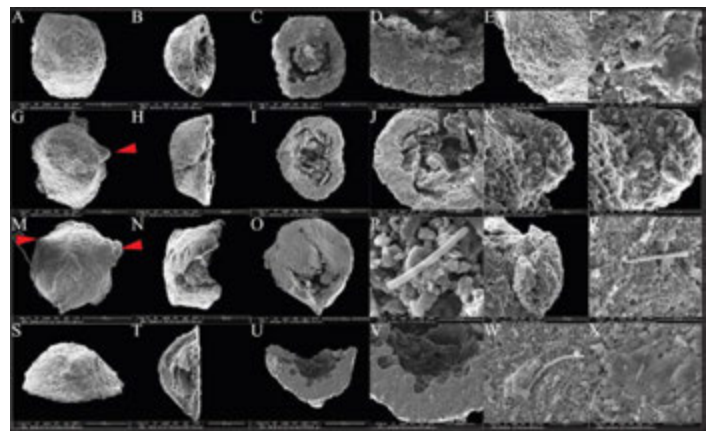
Publications

Over the past year, the department published their science widely. We had seven papers published in international, peer-reviewed journals, 17 conference presentations, many of which had students as first authors and co-authors, and contributed to several other peer-reviewed

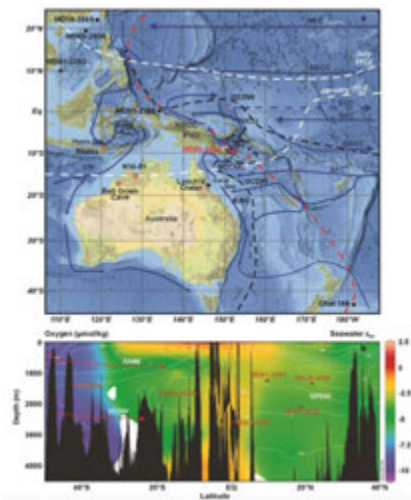
publications including U.S. Geological Survey open-file reports. Some figures from these publications are shown below, highlighting our global reach. Check out our website for more information about the cutting-edge, peer-reviewed science we are producing in the department!



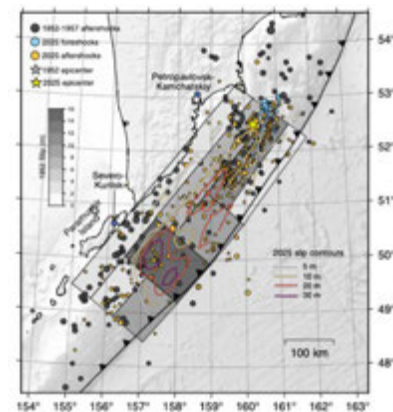
Dr. Liaosha Song published these micro-CT scans of the Stevens Sandstone in a journal article.



Dr. Tony Rathburn was co-author on a study of Pacific foraminifera, shown here under an SEM.



Dr. Anna Cruz led a published study using Nd isotopes to understand Pacific water cycles.



Dr. Matt Herman contributed to a journal article about the giant Russian earthquake in July 2025.



Dr. Herman receives the Promising New Faculty Award at 2025 CSUB University Day.

Awards

Dr. Matt Herman started the 2025-2026 academic year strong, winning the Promising New Faculty Award. He was honored at University Day with the other faculty award recipients. Dr. Herman's award claims, "With an exceptional ability to communicate complex geoscience topics, Dr. Matthew Herman stands out for his impactful research on earthquakes and plate tectonics, his commitment to experiential learning and student success, and community outreach." That sounds awesome and not AI-generated at all!

To celebrate excellence in acquiring external funding the CSUB Office of Grants, Research, and Sponsored Programs (GRASP) awards members of the community who received funding. This spring, five CSUB professors were honored: **Dr. Anna Cruz**, **Dr. Adam Guo**, **Dr. Matthew Herman**, **Dr. Tony Rathburn**, and **Dr. Liaosha Song**. Those who attended the spring ceremony received sweet grant-related swag, like mugs that read "Eat. Sleep. Write grant. Repeat."

Continuing the department's remarkable run of university-wide recognition, **Dr. Tony Rathburn** was also celebrated on University Day 2026 for receiving the 2026-2027 Faculty Scholarship and Creative Activity Award. However, there is no photo evidence from University Day because Tony was on a plane over the Pacific Ocean. But we promise he did win the award: look at the photo!



(Top) **Dr. Rathburn** and **Dr. Herman** receive GRASP awards for their external grants and contract with CARB. (Bottom) **Dr. Cruz** receives her award for her University Research Council grant.



Dr. Rathburn proudly displays his 2026-2027 Faculty Scholarship and Creative Activity Award.

GEOLOGY IN AND OUT OF THE CLASSROOM

First Annual Geology Day

The Department of Geological Sciences hosted its first ever CSUB Geology Day on October 17, 2025. With an eye towards inspiring young scientists to pursue a degree in geology, **Dr. Anna Cruz**, **Dr. Tony Rathburn**, **Cecily Rink**, and **Shauna Van Grinsven** put together an impressive itinerary, including a keynote address from NPR journalist **Kerry Klein**; a career panel with Kerry Klein and department alumni **Matthew Van Grinsven** (CalGEM), **Sade Haake** (CalGEM), and **Raj Dhillon** (California Resources Corporation); a discussion panel with current students **Maggie Izumi**, **Garrett Cooper**, **Ryan Tengelsen**, **Trace Hicks**, **Brooklyn Macross**, and **Tyler Garza**; a chance to get their hands on department equipment while talking to department faculty; and finally an address from **Dr. Matthew Herman** about why he thinks they should get geology degrees (not just because of the good-paying jobs that await graduates!). With over 150 dual-credit students attending the first ever Geology Day, we consider it a great success and hope to grow it even more this upcoming year!



Keep an eye out for the second annual Geology Day coming this fall!

Scan or click the QR code to read more about the event!



(Top) NPR journalist **Kerry Klein** talks to visiting students at Geology Day about the benefits of a geology degree. (Middle) Undergrad **Eli Swanson** guides students at the stream table. (Bottom) Undergrad **Tyler Garza** talks about his research experiences to the visitors.



(Left) (L-R) **Matt Van Grinsven**, **Raj Dhillon**, **Sade Haake**, and **Kerry Klein** answer questions about geology degrees on the Geology Day career panel.

New BS in Environmental Geoscience

We are very excited that the Department of Geological Sciences will soon offer a new Bachelor of Science Degree in Environmental Geoscience. It was submitted this spring to the CSU Chancellor's Office for official signature. We plan to offer the degree program in addition to our degrees in geology this academic year. Flexibility and choice are among many attractive aspects of this degree. Once students have completed the core environmental science courses (mostly science with a smattering of law and environmental management courses), they choose flexible pathways (not rigid concentrations) based on their interests and career goals. Course options include any combination of classes in geology, biology, chemistry, engineering, math, or public health. This interdisciplinary degree will provide exciting opportunities (and new challenges) for students, faculty, and advisors alike.



(Top) **Dr. Herman** talks to reporters **Kevin Charette** and **Elaina Rusk** in studio. (Bottom) Behind the scenes of **Jacob Clark's** interview with Dr. Herman in Science II.

After years of brainstorming, meeting with other departments, and exploring options, we were finally able to submit the Environmental Science BS degree proposal with signatures from NSME chairs and a unanimous endorsement from the NSME Curriculum Committee to the CSUB Academic Senate on September 3, 2025. However, due to numerous delays, the full senate didn't have a first reading of the proposal until March 12. **Dr. Chris Krugh, Dr. Matt Herman, and Dr. Tony Rathburn** dutifully answered questions from multiple senate subcommittees. **NSME Dean Jane Dong** and Dr. Rathburn argued in favor of the proposed degree in the first and second readings during full senate meetings. The senate eventually voted in favor of the proposed degree. The resolution to approve the degree was sent to the President to sign on April 10, who signed the resolution 17 days later. The proposal arrived on the CSU Chancellor's Office's summer list to sign the document.

Although we are excited that the degree will make the catalog this year, we plan to propose a few changes in the coming months to align it with our vision for the program.

Earthquake Interviews

Not everyone thinks of Bakersfield as earthquake country, but **Dr. Matt Herman** considers it one of his most important jobs to inform people in Kern County about the many types of seismic hazards in the region. Dr. Herman teaches courses about earthquakes at CSUB and reaches out to others in the community with media interviews. Through a few successful interviews since his arrival at CSUB in 2020, he has built a rapport with reporters at local television stations. Now whenever a significant earthquake happens around the world, he drops whatever he is doing to drive to the studio (or a reporter come to him on campus) to explain the science of earthquakes, their effects, and how to better prepare for them. Over the past year, he was interviewed eight times on KGET Channel 17, KBAK Eyewitness News, and 23ABC. He does hope to get back on CNN eventually, having had a taste of nationwide fame back in 2024!

Building Future Geologists

The Department of Geological Sciences frequently reaches out to local K-12 students to explain how a degree in geology or environmental science can lead to exciting, lucrative careers; teach them about relevant topics in science today; and show off the department's high-tech, cutting-edge equipment.

Cecily Rink and **Shauna Van Grinsven**, along with several student volunteers, managed "Science Fridays" almost every week, where children of all ages visited the department to participate in many hands-on activities. Students got to touch the stream table, the augmented reality sandbox, and different rock, mineral, and fossil samples! Science Fridays are organized by **Abel Nunez-Guerrero** and **Andrea Medina** from NSME Grants and Outreach. Students visited chemistry and the Fab Lab in addition to geology. Cecily and Shauna also organized and ran the department table at recruitment events like the annual CSUB Runner Day. Their smiling faces and the student volunteers' enthusiasm always managed to snag a new major or two!

The department hosted a hands-on workshop and career presentation event for the Harambe Program, a pre-admissions junior high program serving students primarily of color. During this event, students were "admitted" to the university and had the opportunity to explore a major of their



Shauna Van Grinsven shows off rocks and fossils to excited students during a Science Friday event.

choice, with geology being one of the four featured options. This workshop was facilitated through Abel and conducted with **Lorenzo Tafolla**, University Outreach Coordinator, **Angel Cantrell**, and the CSUB University Outreach team.

Dr. Tony Rathburn is the department's number one hype man, frequently taking time to talk to students across the region. He gave a career-oriented presentation for Mojave Junior High School, who was touring CSUB. He also borrowed **Dr. Matt Herman** to present about geology opportunities to over 200 students at the Stonecreek Junior High career day in the fall.



Students of the Harambe Program examine the stream table, thin sections under the microscope, and rock and fossil hand samples during their department visit.



Dr. Tony Rathburn gives a career-oriented presentation at CSUB to visiting students from Mojave Junior High School.

Lecturers Around Town

The Department of Geological Sciences is proud (and our students lucky!) to have so many talented, accomplished, and engaged lecturers. Lecturers teach many courses the department offers, from general education to major to graduate courses. They also help to improve the department, work with local professionals, and educate the public.

In February 2026, **Dr. Bob Crewdson** gave a talk about meteorites to the Kern County Astronomical Society. He gave a presentation and showed off some spectacular meteorite samples. The next week, he gave the CSUB College of NSME Teacher-Scholar Lecture Series talk on his career as a field geophysicist. He presented to an in-person and online audience, describing the science and importance of studying the electrical and thermal properties of the ground for construction projects like data centers.

In April 2026, **John Yu** led a short course at CSUB about oil and gas legislation. The day-long course, titled "California Oil Industry Legislative Statutes, Regulations & Applications," was part of the Pacific Section of the American Association of Petroleum Geologists/Society of Petroleum Engineers Western Regional Joint Meeting held in Bakersfield. In the course, John provided insights to industry experts about the status and future of oil and gas policy and regulations in the state.



Dr. Bob Crewdson talks about meteorites with the Kern County Astronomical Society.



John Yu leads an oil & gas policy workshop during the PCS-AAPG/SPE Western joint meeting held at CSUB.



Dr. Gregg Wilkerson and CSUB geology alum **Ariel Espindola** (now at the Golden Queen Mine in Mojave, CA) look for boulders to be displayed at CSUB.

The department has long been planning a "Walk Through Time" for the CSUB Environmental Studies Area, which would involve select boulders from across California carefully placed along a walking path. **Dr. Gregg Wilkerson** seems to know pretty much every option for boulders in California, so the department has been relying on him to help acquire those large rocks. Dr. Wilkerson worked with CSUB geology alum **Ariel Espindola**, who is an Ore Control Geologist at Golden Queen Mine in Mojave, CA, to find just the right boulder!

Students Get Hands-On

Touring Geology Instrument Labs

Graduate students in the Fall 2025 GEOL 5100 Research Methods course taught by **Dr. Tony Rathburn** had the opportunity to explore the department's cutting-edge analytical instruments. One session was focused on the Inductively Coupled Plasma Mass Spectrometer (ICP-MS) with **Dr. Anna Cruz**, another on the X-ray Diffraction and new X-Ray Fluorescence instruments with **Dr. Adam Guo**, and a third on the new Scanning Electron Microscope with grad student **Tyler Garza**. The visits introduced students to the principles of the instruments, the types of samples they can analyze, and their research applications. Students got to see the instruments in operation and learned about sample preparation procedures and supporting laboratory equipment.

Industry Experts Join Seismic Experiment

In March 2026, following up on the success of a Spring 2025 seismic imaging experiment, **Dr. Matt Herman** took his GEOL 3090 geophysics back to Don Hart East Lawn to run another seismic refraction survey. Returning to Bakersfield from Houston, TX, to support the experiment was **Nick Brooks** from SensorEra, a company that has developed cutting-edge ground motion sensors used by exploration geophysicists around the



SensorEra's **Nick Brooks** explains the principles of seismometers and seismic imaging to CSUB geophysics students (and some other interested visitors).



Dr. Anna Cruz demonstrates the ICP-MS operation and lab safety protocols.



Grad student **Tyler Garza** shows off the new Scanning Electron Microscope to fellow students **Rosa Valdez**, **Isaac Oyenyi**, **Raj Dhillon**, and **Abe Chavez**.

world. California Resources Corporation (CRC) geophysicists **Matthew Lee** and **Christopher Sine**, as well as **Gary Myers**, an independent contractor previously at Aera Energy, also joined and spent hours talking with the students about their backgrounds, training, and experiences. An appearance by **Katy Larson**, CSUB's California Energy Research Center Director with over 15 years of professional geophysics experience, let students interact with an expert from inside our own CSUB community.

Mojave Desert & Death Valley Field Trip

In March 2026, **Dr. Chris Krugh** led the CSUB Geology Department on a field trip to explore the geology of the Mojave Desert and Death Valley. Dr. Krugh was joined by **Dr. Tony Rathburn**, **Dr. Bob Crewdson**, **Dr. Matt Herman**, **Shauna Van Grinsven**, and **Cecily Rink**, who provided valuable commentary along the way. In addition to the many CSUB geology students who participated in the trip, several Bakersfield College geology students joined us on the journey. Over three days, the students visited Red Rock Canyon State Park, Boron, Rainbow Basin, Death Valley, Soda Lake, Cima Dome Lava Tube, and Kelso Dunes! The group was lucky to stay at the luxurious Zzyzx Desert Studies Center. Scan or click the QR code for more about the trip!



Dr. Chris Krugh (in the white hat) explains the geology and tectonics of Death Valley from Dante's View.



After a geology-filled day, students relax on their dorm balcony at Zzyzx Desert Studies Center.

Ernst Quarries Field Trip

In April 2026, GEOL 2040 Historical Geology students took a field trip to Ernst Quarries, led by **Dr. Tony Rathburn**. CSUB Provost **Dr. Deborah Thien** also joined the field trip, getting to see the type of hands-on work geology students are lucky to participate in during their studies at CSUB. The attendees were successful in finding fossil shark teeth, whale bones, and other marine fossils from the 10-15 million-year-old deposit.



CSUB Provost **Dr. Deborah Thien** poses with **Rob Ernst** and **Dr. Tony Rathburn** at Ernst Quarries. Photo courtesy of Abel Nunez-Guerrero.

Geochemistry Beyond the Classroom!

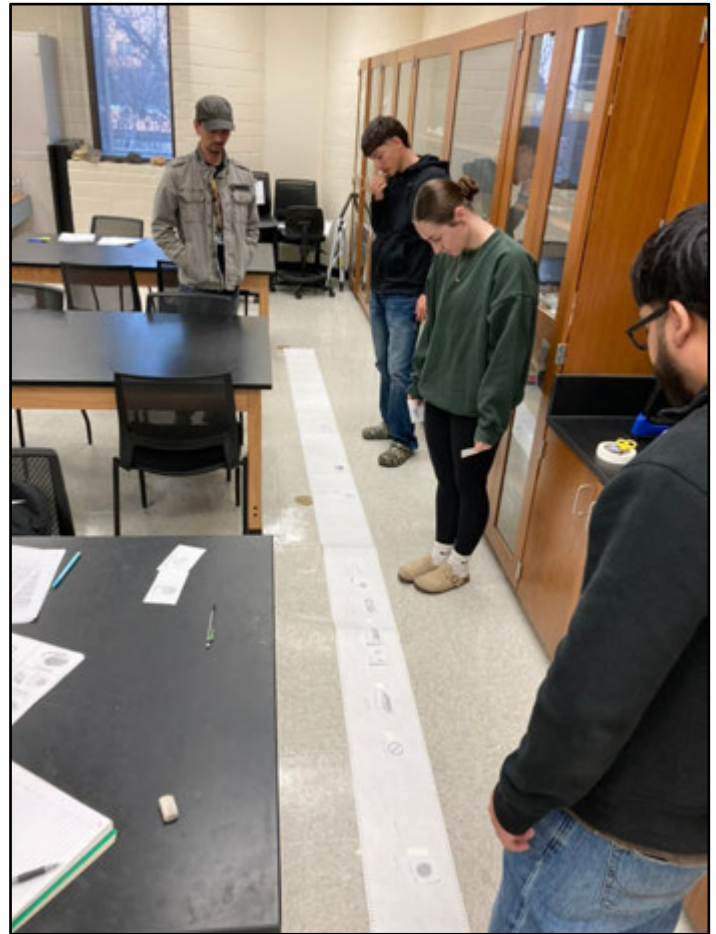
Students in the Spring 2026 GEOL 3060 Principles of Environmental Geochemistry course joined **Dr. Anna Cruz** for a hands-on field and laboratory experience at the Environmental Science Area pond. They collected samples to investigate water quality and ecosystem health. Working as environmental scientists, students used a multi-probe meter to measure pH, dissolved oxygen, conductivity, and salinity, while also analyzing chlorine, nitrates, copper, and other key water quality indicators. They learned filtration techniques used to prepare samples for dissolved nutrient analyses. Through this immersive experience, students gained valuable skills in environmental monitoring, data collection, and water quality assessment, while developing a deeper understanding of the factors that influence the health of aquatic ecosystems.

New 1-Unit Lab Courses

As a result of changes to CSU science requirements, incoming students need an additional 1-credit lab course not tied to a lecture. The department has developed three of these lab classes for non-majors so far: GEOL 1059 Environmental Science: Tools for a Sustainable Planet; GEOL 1069 Earth Science in the Movies; and GEOL 1049 Fossils: Clues to Prehistoric Life. This spring, the fossils course was the first of these 1-credit labs to be taught at CSUB. Among many activities, students created a 4.5-meter-long timeline to represent the 4.5 billion years of Earth's history. They predicted where major milestones would sit, such as the first evidence of life, the first dinosaurs, and the formation of the Himalayas, and were amazed to be off by up to billions of years!



Measuring the height of a *T. rex* is challenging even for CSUB volleyball players!



Students in the fossil lab course contemplate the meaning of time under the watchful gaze of teaching associate **Ryan Tengelsen**.

(Left) **Dr. Tony Rathburn**'s historical geology students look at microfossils while **Dr. Matt Herman**'s geophysics equations loom on the whiteboard in the background. (Right) But *T. rex* gets the last laugh in Dr. Herman's natural disasters course.



Invited Speakers

The Department of Geological Sciences partnered with the CRC Energy Transition Lecture Series, California Energy Research Center, and Pacific Coast Section of the Society of Exploration Geophysics to host three exciting speakers in 2025-2026. **Dr. Tony Rathburn** ran this lecture series.

On November 19, 2025, CSUB geology alum, Rising Runner Award winner, and department lecturer **Dr. Greg Gordon**, gave a talk titled "Paleogeographic, tectonic, and depositional controls on turbidite extent and reservoir quality: Examples from California." The talk was attended by a packed audience of over 80 people at CSUB.

On December 3, 2025, **Bruno Salomon**, Plant Director for the Lebec Manufacturing Facility of the National Cement Company of California, gave a fascinating talk, "Decarbonizing the cement industry." He discussed the strategies and techniques behind the Lebec Net-Zero Initiative. His

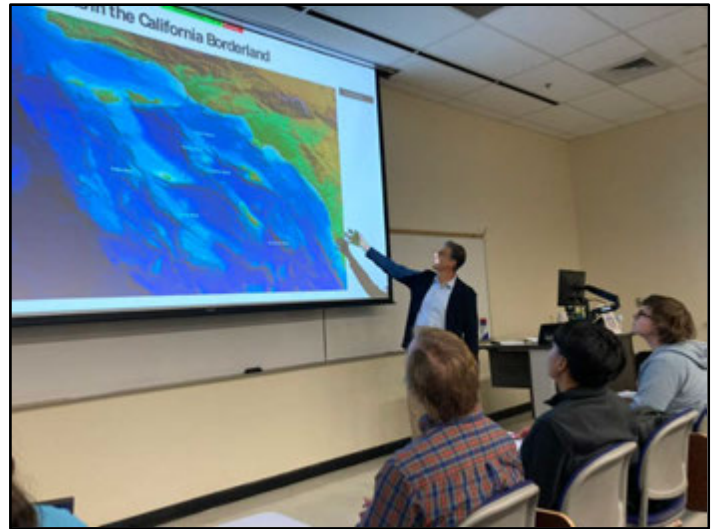


presentation attracted attention from industry, students, faculty and local media. Scan or click the QR code to read the article about the talk in the *Bakersfield Californian*!

On March 25, 2026, was a talk by consulting geologist **Dr. Jon Schwalbach**, entitled "The Monterey Formation as a geologic analog for other unconventional reservoirs." He discussed the history and geology of the Monterey formation, formed during California's evolution to a transform plate boundary and one of the state's first locations for oil and gas exploration. By including basic aspects as well as advanced concepts, his popular and enlightening talk was enjoyed by students of all levels, faculty and community members.

Alum Returns to ESA Board

CSUB geology alum **Kari Hochstatter** (Professional Geologist at Cornerstone Engineering and Past-President of the San Joaquin Geological Society) was elected to the CSUB Environmental Studies Area Advisory Board. The board provides oversight on the activities of the Environmental Studies Area,



Invited talks were very popular this last year! (Top) **Dr. Greg Gordon**. (Middle) **Bruno Salomon**. (Bottom) **Dr. Jon Schwalbach**.

which provide hands-on educational and research opportunities for our students.

New-Look Department

Although Science II is a little outdated at this point, members of the department are working hard to enhance and modernize the appearance of our space as much as possible. This effort has been spearheaded by **Dr. Tony Rathburn, Shauna Van Grinsven**, and **Cecily Rink**. Shauna and Cecily, along with a host of student assistants, worked tirelessly on projects big and small. These projects included new neon signs, updates to the third and first floor displays, new furniture and shelving, cleaning and reorganizing labs, and a new fish tank! Come visit us and check out the changes!



Dr. Chris Krugh tests whether the new rock saw blade can cut various objects. Spoiler alert! It can!



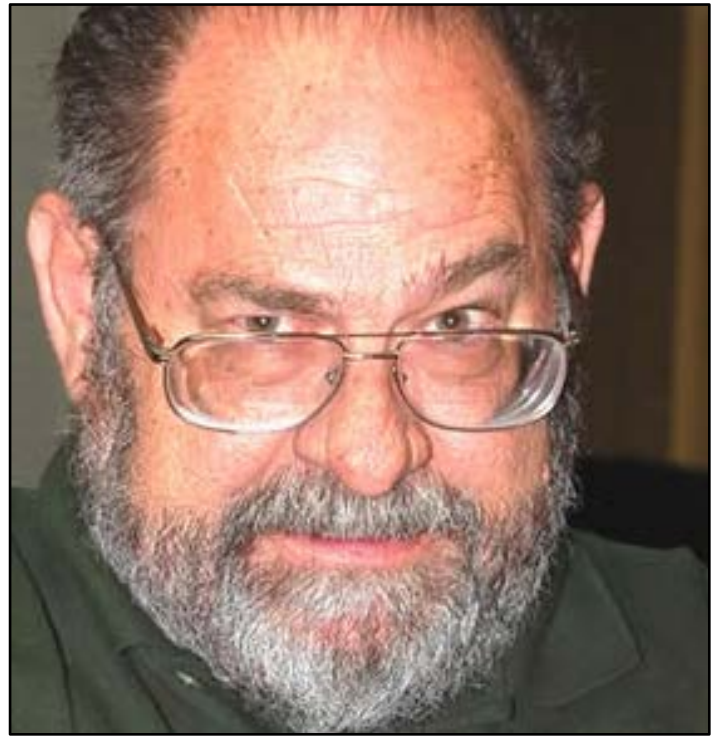
Dr. Anna Cruz' geochemistry students work with the new computers installed this year.



(Top) **Shauna Van Grinsven** cooks rocks to make stone soup. (Middle) Just kidding! The rocks were cleaned for a new aquarium with fish, frogs, and of course cool rocks! New glowing neon signs beckon visitors to the department. (Bottom) Shauna adjusts a bright new "Geology" sign at the end of the hall in Science II.

IN MEMORIAM: STEPHEN COLLETT

Steve Collett, long-time friend and supporter of the CSUB Department of Geological Sciences, passed away in July 2026. Steve worked closely with CSUB Geology Club students and geology faculty. We loved discussing field experiences, sample collecting, and endless stories with him. Steve was a member and leader of the Kern County Mineral Society (KCMS). He was a strong advocate of the KCMS Geology Student Scholarship. Together with **Dennis Huggins** and CSUB Geology Club students, Steve created and later updated the KCMS display on the first floor of Science II. This display shows off the types of rocks, minerals, and ores that can be found across Kern County. Steve and Dennis participated in all of our Emergency Preparedness events on campus, using displays to help convey their excitement about rocks and minerals to hundreds of community members. Steve made many rock, mineral and fossil donations to CSUB Geology, including rock spheres that he created. He also cut and polished a large palm fossil that is now on display on the third floor of Science II. Steve's wit, enthusiasm, funny geology T-shirts, and get-it-done attitude inspired us all. He will be sorely missed.



Steve Collett, long-time supporter of CSUB Department of Geological Science.

(Below) **Steve Collett** poses with **Dr. Tony Rathburn** (left) and **Dennis Huggins** (right) in front of the California mineral display in Science II. The display, designed by Steve and the Geology Club, is a collaboration between Kern County Mineral Society and CSUB Geology.



CALIFORNIA ENERGY RESEARCH CENTER

Energy Innovation Building Progress

Construction of the long-awaited Energy Innovation Building is finally underway! The new building will house CERC offices and laboratories, as well as a new auditorium, CSUB engineering departments, and the NSME Grants and Outreach offices. Completion of the Energy Innovation Building is expected late in fall 2027. Although the Department of Geological Sciences will remain on the third floor of Science II, geology faculty will no doubt play a major role in the use of CERC research labs. CSUB geology professors **Dr. Liaosha Song** and **Dr. Tony Rathburn** had significant influence in the initial design of the state-of-the-art CERC labs (but take no responsibility for the CERC office design).

2026 CERC Conference

With new CERC director **Katy Larson** at the helm, the annual CERC gathering of energy science, engineering, business, and policy experts expanded to a conference format with simultaneous sessions. CSUB geology professor **Dr. Matt Herman** gave a very popular presentation about earthquakes in southern California and the potential for induced seismicity caused by underground carbon storage. Geology professor **Dr. Liaosha Song** was chair of a session on critical minerals featuring a talk by California's Chief Geologist, **Jeremy Lancaster**. Geology alum and CSUB Alumni Hall of Famer **Ken Haney** was also a session chair, and geology alum and CSUB Rising Runner Award winner **Greg Gordon** was featured on a video on the CERC conference website gallery. Many geology students and faculty attended the conference. Geology graduate student **Isaac Oyeniyi** was invited to have lunch with CSUB provost **Dr. Deborah Thien**, CERC director **Katy Larson**, and California Energy Commission Lead Commissioner **Andrew McAllister**, among others. Scan or click the QR code to read more about the 2026 CERC Conference!



Preparing for construction of the new Energy Innovation Building on CSUB campus.



Dr. Liaosha Song chairs a session on critical minerals at the 2026 CERC Conference.

Message from the CERC Director

As I begin my role as Director of the California Energy Research Center (CERC) last summer, I was honored to join the university and deepen my partnerships with the Geological Sciences Department. I have long been aware of the excellence in education and research that CSUB Geology has to offer, and I had interacted with many of the faculty prior to my role at CSUB. Previously employed in geology adjacent applied science and leadership roles, I understand how geology provides the foundation for solving some of society's greatest energy and resource challenges.

Kern County has a rich history as an international leader in energy production and geoscience innovation. The region is currently being upheld by the traditional energy sector and further shaped by carbon management, renewable energy, critical minerals, and emerging technologies that are defining the state's and country's energy and resource future. CERC is uniquely positioned to bring together industry, government, faculty, and students to advance research while preparing the next generation of geoscientists and energy professionals to address these emerging sectors.

Many of these sectors were highlighted at the CERC annual event. With the momentum that the region is seeing across several energy sectors, CERC rebranded the Carbon Symposium into a Conference that included a keynote address from one of the State's five appointed Energy Commissioner's. The conference included a subsurface track with a focus on critical minerals, carbon management, and petroleum management as well as a power and energy track to appeal to the engineering and facilities students, faculty, and stakeholders.

As one of my greatest passions is creating meaningful educational opportunities for all and as CERC is an outward facing entity for energy programming for the university, region, and state, CERC is positioning to partner across educational opportunities for students, faculty, staff, the public, government, policy makers, and more. I am excited

to work alongside the outstanding faculty, staff, alumni, and supporters of the Department of Geological Sciences. Together, we will continue building a program that not only serves our region but also contributes to important conversations about energy, the environment, and the responsible stewardship of Earth's resources so that Kern County is positioned as a national and international leader.

Thank you for your continued support of our students, our geology department, and the California Energy Research Center. I look forward to meeting many of you in the coming year as we continue to grow CERC and strengthen CSUB's leadership in geoscience and energy innovation.

Katy Larson
CERC Director



Katy Larson, CERC Director. Find out more about Katy's vision for CERC and their ongoing projects at their website: www.csub.edu/cerc

CALIFORNIA WELL SAMPLE REPOSITORY

Message from the Curator of the CWSR

I joined the California Well Sample Repository at CSUB in April 2025 after spending more than 30 years working with core samples in the oil and gas industry. Since then, I've enjoyed helping the Repository continue to grow as a resource for students, researchers, and the community.

One of my favorite parts of the job is helping people find what they're looking for. Most requests come through word of mouth or the repository website, and I love connecting students and researchers with materials that help them complete a class project, answer a research question, or discover something new.

This past year has brought exciting growth to the repository. We hosted visitors during the 2026 AAPG conference, received a major donation of Los Angeles Basin archives, added new storage space, and continued providing hands-on learning opportunities for geology students.

Like any growing collection, we also have our challenges. While we have an extensive inventory of core materials, we're still working toward a better system for organizing our journals, books, and maps. Thanks to donations from CalGEM and the help of the CSUB 60+ Club, we're making progress toward creating a searchable library for future students and researchers.

I'd also like to thank **Ryan Tengelsen**, **Shauna Van Grinsven**, and **Elijah Swanson** for their hard work and enthusiasm this year. Their efforts helped improve storage and organization throughout the repository.

I feel fortunate to work with so many great students, volunteers, faculty, and researchers, and I'm excited to see what the next year brings for the Repository.

Rochelle Howard

Curator of the California Well Sample Repository



Rochelle Howard, Curator of the California Well Sample Repository.



Pouring the foundation for a new container.

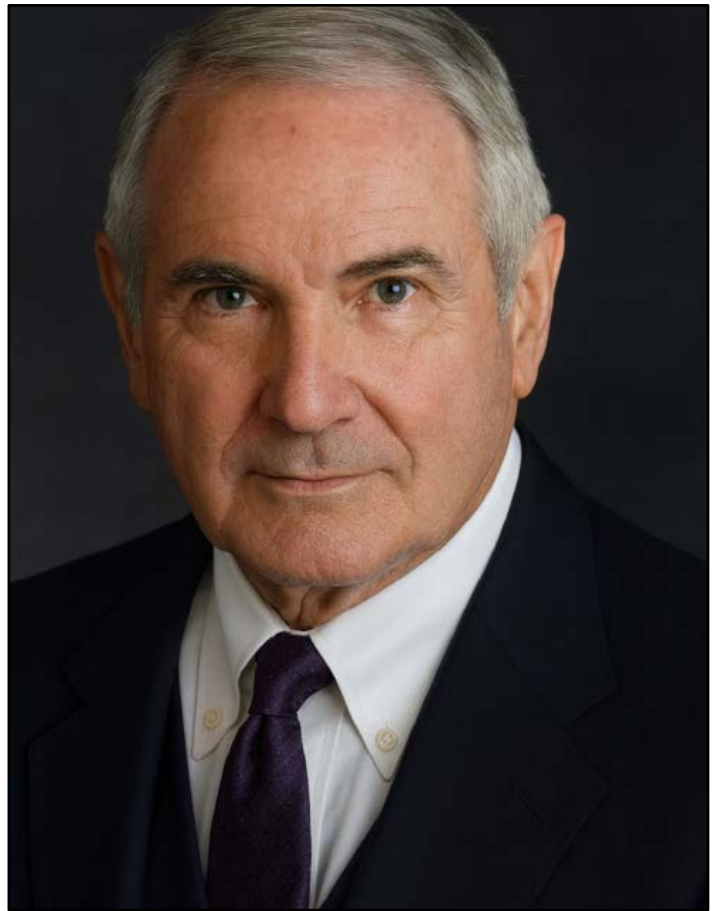


Shauna and **Ryan** pose in front of shelving they built. The old shelving was damaged in an earthquake.

CSUB FACULTY HALL OF FAME

CSUB Department of Geological Sciences faculty member **Dr. Edward Laskowski** was inducted into the CSUB Faculty Hall of Fame. This award was in recognition of his distinguished career in teaching, research, and service. A founding faculty member of the department, Dr. Laskowski's academic journey began with a bachelor's degree from Union College in Schenectady, New York, followed by a Master of Science from Rensselaer Polytechnic Institute. After working for Standard Oil Company of California in Bakersfield, he returned to academia to earn a Ph.D. from UCLA.

Dr. Laskowski's career is marked by numerous achievements, including election to the Sigma Xi scientific research society, selection as one of the scientists to analyze the first lunar samples returned by the Apollo 11 mission, and an appointment as Professor Emeritus at California State University, Bakersfield. His induction honors a lifetime of exceptional contributions to science and education.



Department of Geological Sciences Professor Emeritus **Dr. Edward Laskowski** was inducted into the CSUB Faculty Hall of Fame.



Dr. Edward Laskowski shows off lunar samples in front of a poster of the moon.



Dr. Laskowski was also added to the Department of Geological Sciences Hall of Fame wall on the third floor of Science II. The wall is such a hot attraction that we keep the fire hose handy!

FACULTY AND STAFF NEWS

Bob Crewdson

I have spent my time in a windowless cubicle performing the chores and duties of teaching and service, creating classroom work products that have their own kinds of rewards, while going weeks and months without ever really feeding the passion for my own pet projects. I've indulged in stolen moments of reading and writing or tinkering and experimenting but never seemed to get the chance for a deep dive. Until now.

I signed up for the 5th annual CSUB Winter Faculty Writing Retreat sponsored by the CSUB Department of Philosophy and Religious Studies, hosted each day by **Dr. Joseph Florez**. For an entire week in January 2026, I and a dozen faculty colleagues from most of the other departments on campus sequestered ourselves in the Walter Stiern Library from 9:00am to 3:00pm to work on our projects of choice. I spent my time preparing a slide show on meteorites and researching the thermal properties of unconsolidated granular materials.

The room was quiet, comfortable and without interruptions of any kind; there were windows to look out for those of us who stare aimlessly while thinking; and I was surrounded by like-minded colleagues who were all working on interesting things: the biography of composer Paul Hindemith, higher education in prisons, carrot pathogens, the Irish Father of Plants, and so on. Hour after hour I spent my week sequestered in this quiet, indulgent, pampered environment.

I was so relaxed, productive, and re-invigorated after the writing retreat that I signed up for the Summer Retreat that took place in May 2026. I did a deep dive into potential theory and the methods of measuring the electrical resistance of power plant grounding systems, something only a geophysicist could appreciate. It was every bit as rewarding as the winter retreat. If I have the chance to attend another retreat, I plan to figure out how and why our western culture deprives so many of us of the rich experience of spending large chunks of time quietly thinking.



Dr. Crewdson with fellow CSUB Faculty Writing Retreat classmates. Bob is not smiling in this photo, but his sense of humor is intact.

Anna Cruz

The 2025-2026 academic year was both exciting and productive, bringing new opportunities in teaching, research, and student mentorship. In the classroom, I introduced several new hands-on activities that gave students more opportunities to apply geochemical concepts through real-world investigations. I taught a diverse range of courses, including Geochemistry, Principles of Environmental Geochemistry, California Geology and Society, Paleoclimatology, and Research Participation. Each course offered unique opportunities to engage students through field activities, laboratory experiences, and research-focused learning.

Research was equally rewarding this year. Support from the CSUB Office of Research, Scholarship, and Creative Activity provided release time and funding to support two undergraduate researchers, **Nayeli Cerda** and **Garrett Cooper**. Their work on marine sediment cores from the Southern California margin generated the preliminary data needed to develop a proposal submitted to the National Science Foundation's Marine Geology and Geophysics program. As the lead Principal Investigator, I collaborated with **Dr. Adam Guo** and **Dr. Anthony Rathburn** on the proposal, titled "Hydrological and Oceanographic Responses to Pleistocene-Holocene Climate Shifts in Southern California." The project aims to reconstruct how

changes in climate during the transition from the Pleistocene to the Holocene influenced ocean circulation, stratification, and sediment transport along the Southern California margin. If funded, this project will create exciting new opportunities for students to participate in ocean and climate research while helping recruit and train the next generation of geoscientists.

This year also brought two exciting publications. In December 2025, I published a first-author paper in *Geochemistry, Geophysics, Geosystems* in collaboration with **Dr. Chandranath Basak** (University of Delaware) and **Dr. Li Lo** (National Taiwan University). In March 2026, I was a co-author on a paper published in *Science Advances*, the result of an international collaboration involving researchers from the University of Delaware, the University of Massachusetts, Columbia University's Lamont-Doherty Earth Observatory, Kiel University, the Leibniz Institute for Baltic Sea Research Warnemünde, and the Alfred Wegener Institute.

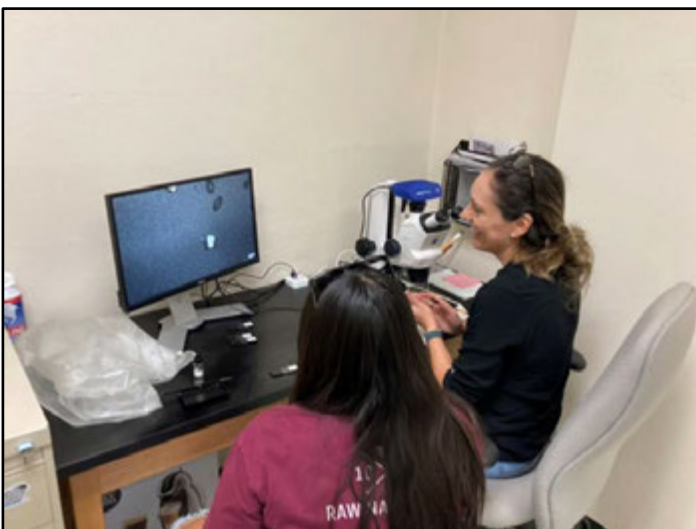
One of the most rewarding moments of the year was watching my students grow as researchers. After presenting his research at the Geological Society of America Cordilleran Section Meeting in Sacramento in Spring 2025, **Garrett Cooper** received the NSME Outstanding Undergraduate Paper Award in Spring 2026. Seeing Garrett's dedication and enthusiasm for research recognized



Dr. Cruz demonstrates metal reactivity during a geochemistry laboratory activity.

with this award was incredibly gratifying and highlights the exceptional undergraduate research opportunities available in our department.

Outside of work, I enjoyed making new memories with my family. Benjamin experienced snow in the Sierra Nevada for the first time, a trip filled with



Dr. Cruz works with undergraduate researcher **Nayeli Cerda**, teaching the identification and selection of foraminifera for Mg/Ca analyses used in paleoclimate reconstructions.



Benji proudly poses with the snowman he helped build during his first snowy adventure with Chris and Anna.

excitement, laughter, and plenty of snowy adventures. During spring break, we returned to one of his favorite places, the San Diego Zoo, where his curiosity about animals continues to grow. These family adventures have become treasured traditions, and Benjamin is already asking where our next trip will take us.

Adam Guo

It's been another busy and rewarding year across teaching, research, service, and family life. I taught How the Earth Works, Sedimentation and Stratigraphy, California Geology and Society, and Introduction to Soil Science. It has been a pleasure working with students in these courses and helping them build a stronger understanding of Earth systems and their connections to society and the environment. In research, the new X-ray Fluorescence instrument has become an important resource for both classroom teaching and research activities. It has been exciting to integrate this new capability into student learning experiences and ongoing projects. I also participated as a co-PI on an NSF proposal titled "Hydrological and Oceanographic Responses to Holocene Climate Shifts in Southern California." Outside of teaching and research, I remained active in university service. I served on the NSME Honors and Awards Committee, the NSME Equipment Committee, and chaired the Geology RTP Evaluation Committee.

Things are going well at home. Yan and the kids are all doing well. Yushan had a wonderful year—her school competed at the state Academic Decathlon and earned second place as a team, and she won a bronze medal in mathematics. Yutong will begin college this fall at UC Merced, majoring in chemistry and pursuing a path toward becoming a forensic pathologist. Belinda completed her first year of high school successfully, and Ryan will begin junior high this fall. The younger siblings are still enjoying their elementary school years.

Looking back, I'm grateful for another fulfilling year filled with opportunities to teach, conduct research, serve the university, and spend time with family.



Students **Jose Zaragoza**, **Garrett Cooper**, and **Jose Gonzalez** practice sample preparation techniques in Dr. Guo's laboratory activity.



Dr. Guo gives a lecture on X-ray fluorescence spectroscopy to attentive students excited to learn about this new instrument.

Matthew Herman

I started out the Fall 2025 semester strong by receiving the CSUB Promising New Faculty award. I am absolutely delighted to have been nominated by **Dr. Tony Rathburn** and selected by the CSUB Faculty Honors and Awards Committee for this award. It was surreal (and a little intimidating) to stand up in front of everyone on campus at 2025 University Day with the other impressive award winners. I hope it does not go to my head!

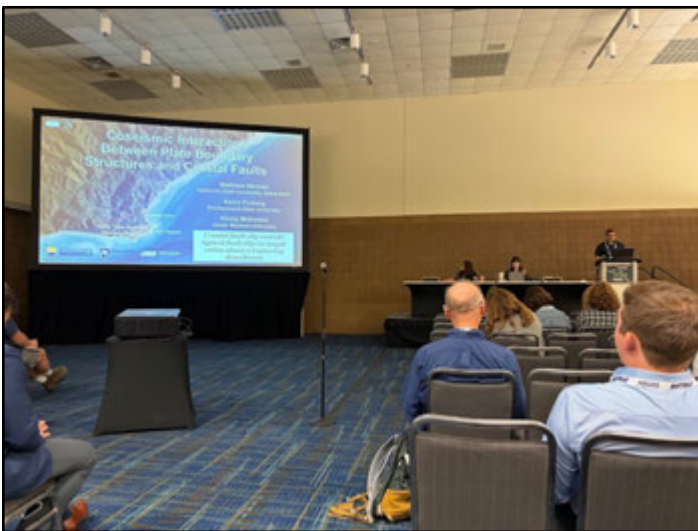
It was an earthquake-filled science year. Right before the fall semester started, a giant earthquake struck Kamchatka, Russia. I worked with the U.S. Geological Survey to study the event, eventually publishing a Story Map about the earthquake (which you can find on the USGS website), and co-authoring a study published in *The Seismic Record*. Closer to home, I became more involved with California earthquake science, and especially the Statewide California Earthquake Center (SCEC). I led CSUB in becoming a Participating Institution with SCEC, received a SCEC grant to study the newly developing northern San Andreas plate boundary, and presented research about northern California tectonics at the SCEC Annual Meeting in Palm Springs in September 2025. At the meeting, I networked like crazy and with a few new collaborators received additional funding to run a workshop at this upcoming SCEC Annual Meeting about northern California earthquakes! In the



Matt's face shows what he thinks of his award, while Kate humors him.

meantime, I continue to present research at meetings like the 2025 American Geophysical Union Fall Meeting in New Orleans and 2026 Seismological Society of America Annual Meeting in Pasadena.

I cannot do all the science I want to do by myself. Fortunately, the Geodynamics Lab at CSUB has been lucky to have many motivated students working on various projects. Master's student **Rosa Valdez** defended her thesis proposal to study patterns of frictional locking before the giant 2011 Japan earthquake. Undergraduate geology major **Salvador Osorio-Martinez** worked on modeling the ongoing lava fountain eruptions in Hawaii. Undergraduate geology majors **Brooklyn Macross** and **Christian Herda** are working with me and **Dr. Tony Rathburn** on a contract with the California Air Resources Board to document carbon capture, utilization, and storage projects throughout California. Undergraduate physics major and geology minor **Brock Suburu** disentangled competing tectonic signals from GPS observations in New Zealand. Undergraduate computer science major (and budding geology enthusiast) **Brooklyn Stitt** worked with me to develop visualization tools



Dr. Herman presents his research at the 2025 American Geophysical Union Fall Meeting in New Orleans.

for thermal-tectonic modeling software. And geology major **Gabriel Hajmohammad** started learning the ropes of seismotectonic research. I have also been working with Master's student **Ryan Tengelsen**, major **Elijah Swanson**, and our dedicated (and patient...) instructional support technician **Shauna Van Grinsven** to develop an earthquake display on the first floor of Science II.

In my free time, I taught a bunch. Typical courses like my Natural Disasters Geophysics. New-to-me courses like California Geology. And *finally* I put together my 4000-level Geodynamics course! It had 13 dedicated undergraduate and graduate students, all committed to the art of applying math and physics to geological and tectonic questions. Were they always happy? No.... I got A LOT of complaints about "too many symbols look alike" and "how could anyone come up with this?" and "When will I ever need to know about flexure?" But in the end, I think students learned a lot about quantitative tectonics despite their grumbling. They also built moral fiber and intestinal fortitude (as my undergraduate advisor always said)!

Those of you who know me know that I love to talk (about science). I feel lucky that I was invited to give a few research talks throughout the year, at the Northern Arizona University Geology Colloquium, the San Joaquin Geological Society, and the CSUB California Energy Research Center Conference. I gave a more general talk about earthquakes to the CSUB 60+ Club (one of my favorite groups to talk to!). And any time a newsworthy earthquake hits, I am the first person local news outlets call. I got to be on local TV to discuss earthquake hazards 11 times!

In miscellaneous news, I became the Geology Club faculty advisor, I was the chair of the CSUB Faculty Advisory Committee for Research, Scholarship, and Creative Activities (working with CSUB's grants office to enhance scholarship on campus), I continue to work on the department website, and I led the submission of our new BS in Environmental Science degree program to the Chancellor's Office. There is probably more that I forgot!



Geophysics students **Ronald Sanders, Brock Suburu, Trace Hicks, Josh Barnes, and Nick Nelson** (sitting) test a new spring-slider earthquake apparatus.

Saving the best for last, my family is amazing! Evie turned 5 last fall and is turning into a little me-clone. She loves science, math, and reading. Lou turned 3 this summer and is following in his sister's footsteps (sometimes to her great annoyance). They love visiting "daddy's work tower" and their best friends are **Shauna, Cecily, Tony, and Eli**. Kate is doing the impossible task of kicking butt at work and being an elite mom and partner. I really married up! We went on a big road trip this summer. The kids loved it, *especially* Zion, Bryce Canyon, Arches, and Grand Canyon National Parks. They are already asking to go back and see more dinosaurs. I cannot wait to take them on more geological adventures!



Matt, Kate, Evie, and Lou hike under the towering sandstone walls of Zion National Park.

Chris Krugh

This past year was great! I was on sabbatical during Fall semester and I spent my time taking ESRI training courses to update my Geographic Information Systems (GIS) skills, reorganizing the Tectonics and Earth Surface Processes lab, and finally getting around to processing some previously collected thermochron samples from the southern Sierra Nevada. I also attended a retirement event for my MS thesis supervisor, **Dr. Andrew Meigs** (Oregon State University). The event was held at the White Mountain Research Center and involved good food, adult beverages, and a live bluegrass band! I enjoyed reminiscing with former professors, chatting with Andrew's current and former students, and debating different interpretations for the Little Poleta field area (with cake... in the field). During finals week, **Dr. Crewdson, Dr. Herman**, and myself toured several trenches opened across Alquist Priolo-zoned faults potentially associated with the 1952 Kern County Earthquake and the White Wolf Fault. This study was being led by geoscientists from NMG Geotechnical, Inc. and it was fascinating to see the very high level of detail that goes into each trench log.

During winter break, Anna, Benjamin and I travelled to Brazil to spend Christmas with family and friends. One of the highlights of our visit was Chimarron Churrascaria near Nova Friburgo. This place was an amped up Brazilian steakhouse with



Cake is served at the retirement celebration for Dr. Meigs, Dr. Krugh's MS supervisor.

charcoal grilled meat served rodízio style (all you can eat...flip the chip... green = go, red = no). Great food with servers always stopping by the table... It was glorious!

I was thrown back to full-time teaching mode in spring semester with Structural Geology (usually taught in fall) and Senior Field Seminar. This made things quite busy, especially for the students taking both courses! We had field trips to Rainbow Basin and Poleta Folds with many students also serving as mentors on a department field trip to Death



Fault scarps loom in the distance at Deep Springs in Inyo County, California.



Camping at Poleta Folds hits a little different in the cold and snow.

Valley National Park and the CSU Desert Studies Center at Zzyzx. This field trip was led by **Dr. Crewdson, Dr Herman, Dr. Rathburn**, and myself and was organized for GEOL 2010 Physical Geology students and future/prospective students from local community colleges.

Katie O'Sullivan

This past year I was on sabbatical! While I was away from my teaching and service duties, I started a geology education YouTube channel called *Geologizing With Katie*. I wanted to do something totally different for my sabbatical project, something that would tap into my creative side and be a new type of challenge. I also wanted an excuse to travel! Each video is set in the field, from Poleta Folds to Disneyland, because geology is literally everywhere! Getting up on camera and talking about various aspects of geology was both embarrassing and enlivening. The goal of the channel was to make geology more fun and interesting, while recognizing that there is always something to learn. The channel is set to go live in the fall semester and new videos will be posted every week.

This year I spent a lot of time in the mountains, both for work and play, so I made it my side quest to find as many fulgurites as I could. Fulgurite is a rock that has been melted or metamorphosed by lightning, and they occur in high places like ridges and



A glassy fulgurite found at the top of a ridge in Montana. The fulgurite is the white and black glass coating on the surface of the basalt.



Feldspar phenocrysts along the John Muir Trail in the Cathedral Range, Yosemite. Note the 24-day-old trail hand for scale.



Katie admires an enclave swarm along the John Muir Trail near Mather Pass.

mountain tops. Fulgurite can be anything from little blobs of glass to a metamorphic rock that looks like a tree branch, kind of like fossilized lightning. In this year's travels I found many examples of the glass-blob type, and I hope to one day find a branched example. The department has an excellent branched example on display on the third floor of the Science II building if you want to see one for yourself!

Because igneous rocks are my favorite, last fall I decided to embark on an immersive, 30-day journey through the plutons of the Sierra Nevada. Known as the John Muir Trail to non-geologists, this 211-mile trail traverses plutons, active volcanoes, and funky contacts that have been excavated and exposed by glaciation. The glaciation formed

numerous cirques and U-shaped valleys that had to be traversed, resulting in 40,000 feet of elevation gain and loss over the 211 miles. I kept my spirits up by hunting for fulgurites (didn't find a single one!) and searching for large feldspar phenocrysts (some as big as my hand!). Hiking the John Muir Trail in its entirety has been a life-long dream of mine, and I got to complete it because of sabbatical.

My sabbatical year has left me feeling refreshed and energetic. I have some exciting projects lined up for this coming year, including opportunities for both students and professionals. I am thrilled to be back on campus in the fall and cannot wait to catch up with students and the broader geology department community. Please stop by my office to say hello!

Tony Rathburn

This academic year passed quickly, with activities and deadlines coming up one after another. I was happy to give up my role as interim Director of the California Energy Research Center last fall, but I remained chair of the department, and co-director of the California Well Sample Repository. My job would be impossible without the teamwork, dedication, and support from everyone, including **Cecily, Shauna, Chris, Adam, Liaosha, Katie, Matt, Anna, Alyssa, Jason, Larry, Pam, Bob, Brian, Bill, Maria, Rochelle, and Andrea.**

In summer 2025, CSUB geology students and I participated with international scientists on a very successful, month-long research voyage to collect seafloor sediment cores in the Labrador Sea and Arctic Ocean. It was a gratifying trip because we were able to collect many times more samples than we anticipated and because three of my previous students (a graduate student and two professors) were also on board. This voyage is part of my collaborative NSF-funded project with colleagues from Woods Hole Oceanographic Institute (WHOI) and University of Delaware (UD). The focus of the project is to study the geochemistry and microfauna of seafloor sediments for applications in paleoceanography. After the voyage we spent some time looking at geological features in Iceland.



Three academic generations. L-R: **Dr. Ashley Burkett**, Oklahoma State University (Tony's former PhD student), **Amanda Harding** (Ashley's PhD student at Oklahoma State University) and Tony (academic grandfather) pose on the marker for the edge of the Arctic Circle on Grímsey Island, Iceland.



Tony grabs the bull by the horns in Iceland.

In the summer of 2026, my NSF funding sent two CSUB geology undergraduates, **Virpal Kaur** and **Alessa Linares**, to subsample Labrador Sea gravity cores archived in Oregon, and then to WHOI. Under the guidance and mentorship of my colleague, **Dr. Sophie Hines** (research geochemist and paleoceanographer) at WHOI, these students spent the summer examining microfossils from these samples, measuring carbonate content in sediment samples, and generating samples used to date the cores. Another CSUB geology student, **Garrett Cooper**, spent the summer at UD working with my former student, **Dr. Chandranath Basak**, on seafloor microfossil geochemistry. All of these students will present their research results at more than one venue.

In the 2025-2026 academic year, I taught Research Methods, and Professional Engagement (both graduate level), a new GE lab course entitled "Fossils: Clues to Prehistoric Life", and Historical Geology. The outreach talks that I gave included career-oriented presentations to visiting students from Mojave Junior/Senior High School and to about 200 students at Stonecreek Junior High career fairs. I was also in charge of the Geology and CRC Energy Transition Lecture Series, with speakers from a range of organizations (see stories about these events in this issue).

My collaborative grants include a 2023-2026 NSF grant ("Collaborative Research: A porewater perspective on benthic sources of neodymium to the North Atlantic") co-funded by Marine Geology & Geophysics and Chemical Oceanography. I am co-PI with **Dr. Sophie Hines** (WHOI) and **Dr. Chandranath Basak** (UD). My budget is \$349,919. Another is a 2023-2026 DOE grant. I am co-PI with **Dr. Liaosha Song**, **Dr. Tathagata Archarya**, **Dr. Matthew Herman**, and **Dr. Junhua Guo** (CSUB), **Dr. Benjamin Gilbert**, **Dr. Harrison Lisabeth**, **Dr. Yuxin Wu**, **Dr. Abdullah Cihan**, **Colette Flood**, and **Dr. Laleh Cote** (Lawrence Berkeley National Laboratory). CSUB's total budget is \$1,687,500. Finally, Dr. Herman and I are working with CSUB geology students **Brooklyn Macross** and **Christian Herda** on a contract with the California Air Resources Board (CARB) to develop protocols to

track carbon capture, utilization, and storage projects in California, with a budget of \$188,582.

Since the last newsletter, I co-authored a paper in an international journal and published five conference abstracts. The paper, published in *Journal of Eukaryotic Microbiology*, describes a new genus and species of benthic foraminifera that we discovered attached to our plastic experiments at 4000m water depth off the coast of California. Co-authors of the paper include researchers from Oklahoma State University, the University of Geneva, Switzerland, and CSUB. Scan or click the QR code to check it out!



Tony poses next to a trophy boulder chained down to prevent escape.



The world-infamous Neil the Seal doing his thing to disrupt traffic in Tasmania.

The abstracts summarize research that was presented at conferences including the Goldschmidt 2026 Conference in Montreal, Canada; the annual American Geophysical Union Fall Meeting in San Francisco, CA and the 2025 Geological Society of America Annual Meeting in San Antonio, TX.

I am on a PhD dissertation committee at University of Queensland, Australia, and I continue my collaborations with the colleagues listed above as well as researchers from Australia and Cambridge University in the UK. Summer and winter breaks find me in Tasmania. I often meet world renowned scientists during my visits to Tasmania. This year I encountered the world-famous Neil The Seal who has been featured in international media, including CNN.

Cecily Rink

This past academic year has been one of growth, achievement, and new experiences both inside and outside the classroom. Academically, I earned a place on the Dean's List during both semesters and successfully completed my first 4000-level geology courses. Reaching junior standing has been an exciting milestone, and these upper-division classes have given me the opportunity to deepen my understanding of geology while preparing for future coursework and career opportunities.



Cecily takes great photos of herself (right) and of her geology adventures, like this one of Zzyzx Desert Studies Center.

One of the highlights of the year was becoming more involved in departmental activities. I had the opportunity to help plan and execute the first annual Geology Day, an event that brought together students, faculty, and members of the community to celebrate geology and showcase the department. It was rewarding to be part of a team that helped launch what will hopefully become a long-standing tradition. I also unexpectedly found myself serving as the master of ceremonies for the Geology Club BBQ when a last-minute need arose. While stepping into the role on short notice was a little intimidating, it turned out to be a fun experience and a great way to contribute to the club.

I attended my first overnight geology field trip to Zzyzx, which provided valuable hands-on learning opportunities and a chance to explore geologic features outside the classroom. The experience reinforced how important fieldwork is to learning about geology.



Outside of academics, I continued to pursue personal goals and hobbies. I completed two 5K races this year, challenging myself physically and enjoying the sense of accomplishment that comes with crossing the finish line. I also completed four quilts, a hobby that allows me to express creativity and unwind from the demands of school. One of those quilts was donated to the Geology Club BBQ, combining my love of quilting with my desire to support the department and its activities.

Looking back, this year has been filled with opportunities to learn, contribute, and grow. From academic achievements and field experiences to departmental involvement and personal accomplishments, each experience has helped shape my journey as a geology student. I am grateful for the support of my professors, classmates, and the geology community, and I look forward to the opportunities and challenges that my senior years will bring.

Liaosha Song

I continued research this year on the geologic storage of hydrogen and carbon dioxide. This research characterizes the nanoscale pore structure and mineral alternation of the subsurface rock formations, and investigates the coupled geochemical-petrophysical processes and their impacts on storage security.

The year also brought new funding from the U.S. Geological Survey to begin renovating the California Well Sample Repository. The award launches what is planned as a multi-year effort to modernize both the repository's physical facilities and its digital infrastructure, making one of the state's most important collections of subsurface samples more accessible to researchers, students, and industry.

Two invited presentations on hydrogen storage rounded out the year. In October 2025, I spoke at the Olympic Hydrogen & LA28 Sustainability Workshop, co-hosted by UCLA and UC Irvine, which focused on accelerating clean hydrogen technologies in preparation for the Los Angeles 2028 Olympic and Paralympic Games. The visit also included a tour of the SoCalGas Hydrogen Home, a



Dr. Song presents his research results at Lawrence Berkeley National Laboratory.

residence powered entirely by hydrogen. In June 2026, the work traveled east to the Geo-Solutions for Energy Conference at MIT.

During 2026 Summer, I brought geology Master's students **Tyler Garza**, **Maggie Izumi**, and **Isaac Oyeniyi** to Lawrence Berkeley National Laboratory on a DOE-funded research internship, working alongside national laboratory scientists on subsurface energy problems. This experience turned coursework into a career direction.

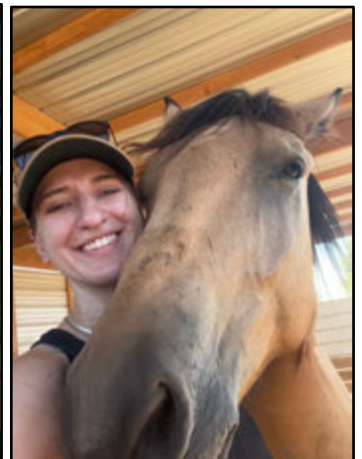
Shauna Van Grinsven

Hello again! This past year has flown by, and I can't believe how much has happened. It has been so great getting to know and collaborate with everyone, and I always look forward to coming to work every day. I have continued to reorganize and catalogue the department, hoping to make things more efficient and hands-on, with both students and faculty in mind. I have also started my journey as a Master's Student within the Biology Department (but don't worry, my priority is always with our department!). It has been a transition going back to school while working, but I am excited to continue my quest for knowledge.

This year, I helped organize the department's very first Geology Day in the fall. It was a lot of work, both in planning as well as moving all of the equipment, but extremely successful thanks to the help of our wonderful faculty and students. I also helped Dr. Krugh organize the Zzyzx Desert Studies Center trip

to the Mojave National Preserve and Death Valley National Park. It was a great time; I was happy to return to areas that I had previously visited in my time as an undergraduate, as well as new locations that are specific to our geology trips, including Rainbow Basin. I cannot wait for more field opportunities next academic year!

Outside the department, I have been very active within the community. I have been running around California, traversing new hiking trails and climbing trees in the Central Valley, working with horses at a rescue just outside Bakersfield, and going back in time exploring Renaissance Faires throughout the state. I have had such a great time ever since becoming a part of this amazing department and am excited about what the future will bring! Until next time!



Shauna's adventures took her from the desert to the snow (towing demanding family members), armored in a tree to hugging a horse.

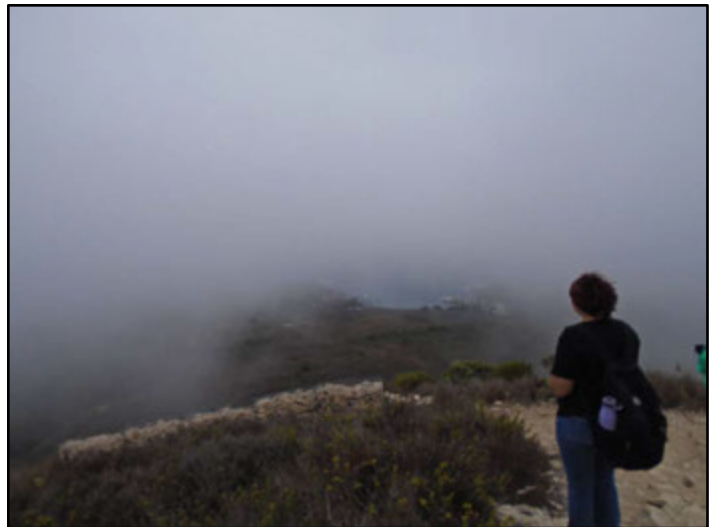
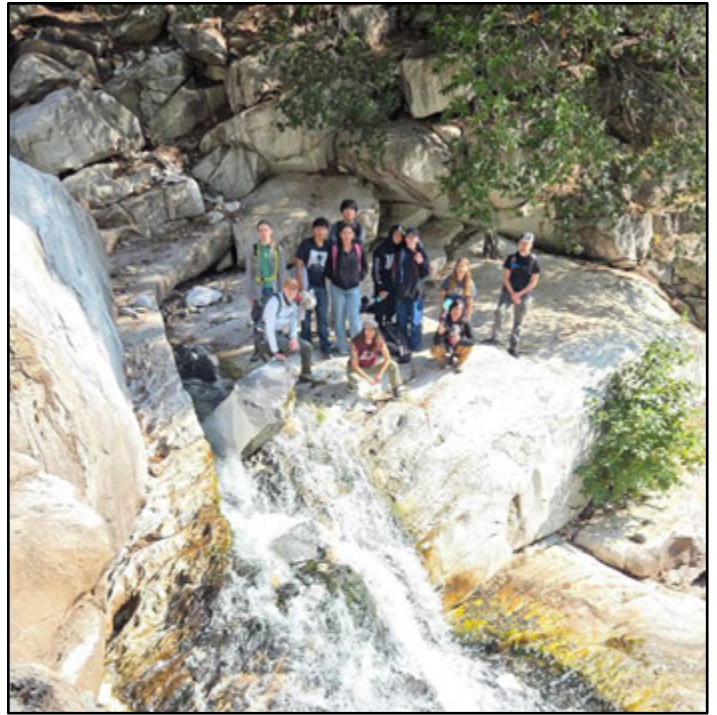


(Right) It is amazing what you can order on Amazon these days! Shauna arrived in less than 24 hours and **Ryan** unpacked her. No assembly required!

GEOLOGY CLUB

It was a busy year for the Geology Club! In fall 2025, the club successfully hosted three field trips: Ventura Peak in Montana de Oro State Park, Marble Falls in Sequoia National Park, and a picnic at Tejon Ranch State Park. Members of the Geology Club volunteered to show off the exciting department equipment to visiting high school students at the first ever CSUB Geology Day in October. And to close out the semester, the Geology Club hosted the Kern County Astronomical Society at their first moon gazing party.

In spring 2026, the focus for the Geology Club was the Annual BBQ Fundraiser at Lengthwise. The prizes included fishing gear, a handmade quilt, books, camping gear, and more. Student Fundraising Day was also a hit on campus, where the club sold many items including stickers designed by their own secretary, **Salvador Osorio-Martinez**. The club hosted a second moon gazing party with the Kern County Astronomical Society, this time with student photographer **Raul Rico**. Finally, they elected new officers for the upcoming year. They are excited and proud to have the largest club board in years!



(Above) **Eli** looks at the night sky at the moongazing party. (Right) (Top) Geology Club poses at Marble Falls. (Middle) Ventura Peak is foggy and brooding. (Bottom) The annual Geology Club BBQ brings out the inner child in everyone. Especially with dinosaur masks to dress up in!



STUDENT AWARDS & SCHOLARSHIPS

Community Organization Awards

San Joaquin Geological Society and Pacific Section of the American Association of Petroleum Geologists Scholarship

SJGS raises funds throughout the year in large part to support students at regional universities. They provide generous scholarships to geology majors, many of whom use the funds to attend field camp, a requirement of the Bachelor of Science in Geology degree at CSUB.

SJGS Scholarship Winners (\$600-\$1,000 each)

Joshua Barnes
Elyssa Cazares
Jose Gonzalez
G. Trace Hicks
Andrew Jara
Brooklyn Macross
Salvador Osorio-Martinez
Javier Salomon
Jose Zaragoza

Society of Exploration Geophysicists Pacific Coast Section Outstanding CSUB Geology Major

The PCS-SEG award recognizes an outstanding geology major, which typically goes toward their summer field camp. The award demonstrates the commitment from PCS-SEG to encourage the educational development of high-performing students in the Department of Geological Sciences.

PCS-SEG Award Winner (\$500)

Jose Gonzalez

Kern County Mineral Society Field Camp Award

KCMS was established in 1935 by individuals who shared a common interest in collecting, displaying, and sharing their knowledge of rocks and minerals. Their award to CSUB geology students reflects the interest of KCMS in helping young people pursue careers in geology, and typically helps cover costs of their required field camp.

KCMS Award Winners

Tyler Garza
Maggie Izumi



PCS-SEG officers **Gary Myers** and **Catherine Thacher** present **Jose Gonzalez** with the PCS-SEG Outstanding CSUB Geology Major Award.

CSUB College of Natural Sciences, Mathematics, and Engineering Awards

Outstanding Graduate of Geology

This award goes to the geology graduate student who has demonstrated exceptional academic achievement, research excellence, and commitment to the geosciences.

Award Winner

Jennifer Rubalcaba

Outstanding Undergraduate of Geology

Each year, NSME proudly honors the top undergraduate students from each of its academic programs, celebrating their outstanding achievements and dedication to excellence.

Award Winner

Elijah Swanson

Outstanding Graduate Unpublished Paper

This award goes to a graduate student whose unpublished research paper demonstrates excellence in original research, scientific writing, and scholarly communication.

Award Winner

Prabhjot Singh Dhillon



Outstanding geology students are recognized at the NSME awards ceremony, along with their mentors and advisors and CSUB leadership NSME dean **Dr. Jane Dong**, CSUB provost **Dr. Deborah Thien**, and CSUB president **Dr. Vernon Harper**. (Top left) **Jennifer Rubalcaba** is recognized as the 2025 Outstanding Geology Graduate Student alongside her advisor, **Dr. Liaosha Song**. (Top right) **Garrett Cooper** receives the Outstanding NSME Undergraduate Paper award alongside his advisor, **Dr. Anna Cruz**. (Bottom right) **Elijah Swanson** is recognized as the Outstanding Undergraduate of Geology alongside **Dr. Tony Rathburn**. (Bottom left) **Raj Dhillon** received the Outstanding Graduate Unpublished Paper award alongside Dr. Rathburn.

Outstanding NSME Undergraduate Paper

Every year, NSME recognizes an outstanding undergraduate student paper. This award honors exceptional student scholarship, including work published in peer-reviewed journals or presented at professional conferences.

Award Winner
Garrett Cooper

Department of Geological Sciences Awards

The Department of Geological Sciences honors students with merit-based awards established through the generosity of donors with ties to CSUB and the local community. Students are selected for

these awards by an award committee consisting of the department faculty.

Herman W. Weddle Scholarship

This scholarship was established by James Weddle in honor of his father, Herman, a geologist with Standard Oil Company, to support CSUB students majoring in geology. Awards are given to geology majors who work on well core or well samples and/or make use of the California Well Sample Repository.

Weddle Scholarship Winners (\$1,000 each)

Garrett Cooper
Ryan Tengelsen

H. Victor and Virginia C. Church Scholarship

This scholarship was established in honor of Dr. H. Victor Church, a geologist and founding member of the Well Sample Repository at CSUB, and his wife Virginia C. Church, a former teacher, to support CSUB students majoring in Geology.

Church Scholarship Winner (\$1,431)

Jose Gonzalez

C.E. Strange Scholarship

This scholarship was established by Mr. C. E. Strange, a local geologist, who wanted to provide financial assistance to undergraduate students majoring in Earth Science.

Strange Scholarship Winners (\$809 each)

Elyssa Cazares

Jose Gonzalez

Andrew Jara

Salvador Osorio-Martinez

Brooklyn Macross

Javier Salomon

Elijah Swanson

Jose Zaragoza

Sam Gonzalez Memorial Scholarship

The family of Sam Gonzalez and friends funded this scholarship to honor their son and friend by supporting geology majors in pursuit of an undergraduate degree and a career in the field of geology.

Gonzalez Scholarship Winner (\$1,049)

Christian Herda

2025-2026 GRADUATES

Congratulations to our Fall 2025 and Spring 2026 graduates! We are excited to see what you will do next!

Fall 2025

Bachelor of Science in Geology

Garrett Cooper

Tyler Garza

Maggie Izumi

Spring 2026

Bachelor of Arts in Geology

Brooklyn Macross

Elijah Swanson

Bachelor of Science in Geology

Jose Gonzalez

Andrew Jara

Salvador Osorio-Martinez

Javier Salomon

Jose Zaragoza

Master of Science in Geology

Jennifer Rubalcaba



Graduating students **Jose Z, Jose G., Andrew, Eli, Brooklyn, Sal, and Javier** celebrate at 2026 Spring Commencement with **Dr. Herman**. Congratulations!



Graduating with her Master's degree, **Jennifer Rubalcaba** had no idea **Dr. Herman** was going to ambush her with a hug from his spot on the stage!

THANK YOU TO OUR DONORS!

Message to Our Donors

We are sincerely grateful for all of those supporters who have donated to the Department of Geological Sciences. In these times of shrinking budgets, inflated costs, and reductions in federal funding for education and research, students are in more need than ever. Field trip costs have increased dramatically in these past couple of years. Donations help us fund scholarships and enable us to continue to deliver the high level of educational experiences students need for success. We greatly appreciate your support and ask that readers of our newsletter consider making a donation. Financial support and in-kind donations of all sorts are needed to help students through these tough times. Please consider making monthly donations, and, if possible, consider following the Pitts Family lead and commit a portion of your estate for a lasting gift to ensure the future of geological sciences educational opportunities at CSUB.

List of Donors

Below is a list of the financial and in-kind donors to the department this year. Please forgive us if you donated and we omitted you from the list. If this is the case, please let us know and we will be sure to include you in the next newsletter!

Laura Bazeley
Steve Collett
Bob Crewdson
J. Adam Guo
Ken Haney
Marlene Hensley
Matt Herman
Destiny Horner
Rochelle Howard
W. Chris Krugh
Gary Myers
Nick and Anna Nelson
Jim O'Neill (Mrs. Beverley O'Neill and Megan Raymond)
Brian and Kay Pitts
Elizabeth Powers
Tony Rathburn

Katherine Richers
Cecily Rink
Yuri Sakamaki
Elijah Swanson
Alyssa Tafoya
Greg Wilkerson
John Yu
Buena Vista Museum
The Golden Queen Mine, Mojave, CA
Rusty's Pizza
Schlumberger
Society of Exploration Geophysicists Pacific Coast Section

Pitts Family Donation

We want to take this opportunity to profusely thank **Brian and Kay Pitts** for committing a percentage of their estate to the department. Brian and Kay are long-term supporters of CSUB geology and this promise helps secure the future of the department. We will use their thoughtful gift to support scholarships, field trips, and other activities that bolster experiential learning and student success. Their generosity will have a lasting, positive impact on students and our ability to deliver outstanding educational experiences in the lab and in the field. Scan or click on the QR code to learn how the Pitts are supporting CSUB geology!



Brian and Kay Pitts provided an extremely generous donation to the Department of Geological Sciences.

Donor Profile: Jim O'Neill

Jim O'Neill, respected Bakersfield petroleum geologist and independent exploration consultant, graduated from Stanford in 1948 with a degree in petroleum geology before working for several larger Bakersfield petroleum companies early in his career.

After high school, Jim joined the Marines to serve in the final year of World War II and then was recalled for the Korean War and sent to Quantico. In 1961, he co-founded Argonaut Oil & Gas Consultants with **Jack Clare**. Their partnership lasted over 30 years. He was a lifelong member of the American Association of Petroleum Geologists, serving as the Pacific Section president for the 1973-74 term. In 1962, he was considered for the position of Head Geologist for the Navajo Nation. He was widely respected by his peers and specialized in structural mapping, stratigraphic interpretation, prospect generation, oil and gas reserve evaluation and exploration drilling recommendations.

Jim passed away in 2016. His wife, **Beverley** (now 103 years old) and granddaughter, **Megan**, helped arrange for a donation to CSUB Geological Sciences. We greatly appreciate the donation!



DONATIONS TO THE DEPARTMENT

We are committed to preparing students to become successful, contributing members of the community. In addition to requiring field camp for the BS in Geology degree, the department offers outreach activities, field experiences, and other educational initiatives to recruit students and enhance student learning. These programs and the students involved in them depend on your support.

Please consider donating—every dollar makes a difference! As a result of budget cuts and changes in priorities, many geology departments across the country have lowered their standards, removed expensive field activities, and reduced experiential learning and skill development in their programs. Please support the department that is working hard to give our students the integrative, high-quality education they need to be successful geologists.

Donations allow us to maintain our high-quality curriculum and enrich student experiences beyond what state funding alone can provide. You can help students with their field camp expenses (thousands of out-of-pocket dollars not covered by CSUB tuition), donate to an established scholarship, start your own annual scholarship, or specify what you want donated funds to the department to be used for.

You can also visit the [NSME Giving site](#) by scanning or clicking the QR code below; just make sure to select “Geology Department” from the menu titled “I want to support” specifying that your donation will come to us!

If you have questions, please reach out to **Tony Rathburn** at arathburn@csub.edu.

Thank you for your support!



Name (if you wish to be identified):

Affiliation (if applicable):

Address:

City, State, ZIP Code:

Email:

Amount to donate:

\$20 \$50 \$100 \$500 \$1,000

Other: _____

Fund to support:

- ☐ **Specific Scholarship** (please indicate the name from the list earlier in this newsletter)

- ☐ **General Scholarship Funds** (to be added to the C.E. Strange Scholarship Fund)
- ☐ **Field Activities** (to be added to the Claude Fiddler Field Endowment)
- ☐ **Undergraduate Student Research**
- ☐ **Unrestricted** (to support needs identified by the Department of Geological Sciences)
- ☐ **Other**

Return to the address below:

Attn: Department Chair
Department of Geological Sciences
California State University, Bakersfield
9001 Stockdale Highway, 66 SCI
Bakersfield, CA 93311