College of Natural Sciences & Mathematics

Fall 2025

Earth Science Newsletter

Dear Alumni and Friends

It's been a year since our last newsletter, and we have a lot to share! This letter provides a glimpse at what the students and professors in the Department of Earth Science at CSULB have been up to.

If you haven't joined our alumni group on LinkedIn yet, check it out! The group cite is used to foster connections between our alumni and current students and professors. If you haven't seen it yet, we have >125 members, anyone can post information relevant to the CSULB Earth Science community including job opportunities, alumni updates, and more.

To join, search for "CSULB Geology & Earth Science Alumni" on LinkedIn.

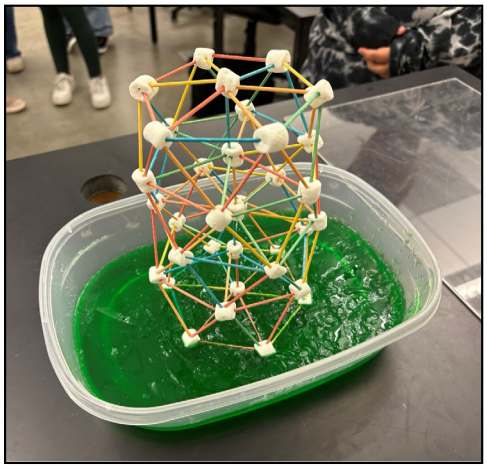
We hope that you and yours are safe and well.

If you have news you'd like to share in these eNewsletters, please let us know by emailing Dr. Alyssa Abbey (alyssa.abbey@csulb.edu).

Sincerely, Dr. Alyssa Abbey, Assistant Professor & Graduate Student Advisor

Shaking Things Out For The Great Shake Out!

Students in the evening section of Earth 106 (Earth Science for Teachers), taught by alumnus Joseph Guttierez (CSULB B.S. 2018; CSUF M.S. 2020), commemorated this year's Great California ShakeOut with a delectable, earthquake-themed technical challenge. Much like the technical challenges in the hit reality TV competition series The Great British Baking Show, students were given a simple task to demonstrate the science and engineering practices introduced throughout the week – construct a building that can withstand 20 seconds of shaking without collapsing, using only toothpicks and marshmallows. Students researched earthquake-resistant structures and drafted blueprints, which were presented and justified in order to obtain construction materials. After obtaining their construction materials, students assembled their structures, and - keeping with the GBBO theme - brought their finished products to the Jell-O shake table at the front of the room for judging. Each team's research, teamwork, and execution resulted in successes across the board. Time was then set aside for students to reflect on their technical challenges and how they may incorporate similar demonstrations in their K-12 classrooms. The stakes of the competition made for an exciting evening, and with the inaugural shake-off being well-received by our prospective teachers, it is likely that The Great Long Beach Shaking Show will return in future iterations of the course, bigger and better than before.



A hexagonal tower that withstood strong shaking beyond the required time.

News From Our Department Lab Tech.

We welcomed our new lab technician Regino Damacio to the department at the end of 2024!

Regino is a first-generation student who received his B.A. in Environmental Science and Policy here at CSULB. His passion for research led him to work at IIRMES for some years, assisting in various projects through his technical laboratory work in organics and total organic carbon analysis. He looks forward to assisting students and faculty on the various instruments and research projects in our department. During his free time, Regino enjoys spending time with his dog, trying to cook, and swimming.

Lechaion Harbor Environmental Project Lead by Dr. Lora Stevens

June 2025 was the first summer of the Lechaion Harbor Environmental Project. Funded by NSF, this project is a collaboration between the Departments of Earth Science and Comparative World Literature and Classics. Lora Stevens and alumnus, AJ White (2016, currently Assistant Professor at Indiana University-Indianapolis) took 8 students from CSULB and three partner CSUs for a month-long training expedition in geoarchaeology in Greece. Students conducted field work to explore the impacts of ancient Romans on the landscape of a major Mediterranean port. Upon return, the students have worked in the lab on individual research projects including identifying and dating charred wood, measuring stable isotopes of shell material to reconstruct climate, and analyzing sediment for fecal and bile biomarkers to reconstruct population changes.

More information on the project.

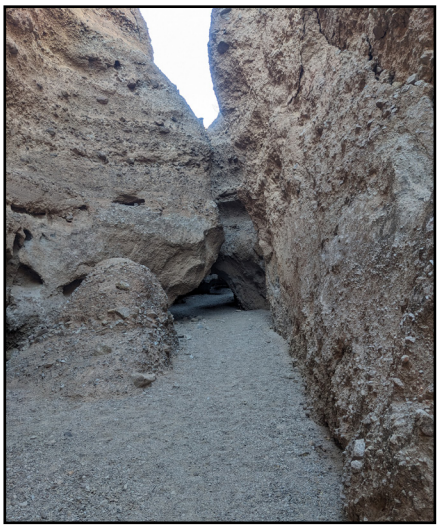
Geology major, Nathan Chan, Earth Systems major, Christine Solis, alumnus, Dr. AJ White, and Geology minor, Hayley Sartor vibracoring in Greece.

The entire Greece 2025 team

Drs. Jill Pearse & Alyssa Abbey At The Desert Symposium 2025

View from Zzyxx

Earlier this year, in April, Alyssa and Jill attended the Annual Desert Symposium. Graduate Student Logan Light, presented his preliminary geochemical data from the work he is doing in the Stewart Valley NV. The symposium, held at Zzyxz every year, is focused on any kind of desert research. There were talks about tortoises burrowing habits, fumaroles and the gases they emit, new geologic mapping projects, anthropology and archaeology studies being conducted in the SW, and so much more. The meeting was followed by a two day field trip where the group camped in the Valley of Fire State Park, looked at rapakivi granites and the great unconformity just outside of Las Vegas, walked on the Hoover Dam, observed the relationship between desert varnish and petroglyphs, and experienced a one-of-a-kind full length musical about the gypsum caves expedition, which lead to a false discovery of interaction between humans and Pleistocene mega-fauna.



Deadmans Canyon, AZ

Petroglyphs, Valley of Fire State Park, NV

Below: (left) Hoover Dam, (middle) exposed fault in new road cut on the east side of Las Vegas, (right) first official performance of gypsum cave musical, by Steve Rowland

GEMS Hydrogeophysics Bootcamp And Internships

This year, Dr. Becker's graduate students Hannah Fitzpatrick, Siena Oswald, and Lena Wilson partnered with Rutgers University-New Jersey to host the first Geophysics for Environmental Management Students (GEMS) Internship, a program funded by the U.S. Department of Energy. The internship consisted of a 2-week bootcamp where students got a crash course in hydrogeophysics, proceeded by a 6-week research project where some students worked with Lawrence Berkeley National Laboratory (LBNL).

The bootcamp curriculum covered basic hydrogeologic properties and 5 key geophysical methods: Electrical Resistivity Tomography, Ground Penetrating Radar, Nuclear Magnetic Resonance (NMR), Spectral Induced Polarization, and Frequency Domain Electromagnetics (FDEM). Fieldwork and data processing were a major focus of the bootcamp. In Milford, Delaware, students collected geophysical data to study saltwater intrusion into agricultural fields. At the New Jersey Meadowlands, they conducted borehole NMR surveys and performed slug tests to characterize aquifer properties. They then returned to Rutgers University and spent a week processing, inverting, and interpreting the collected data.

Building on this foundation, several students continued their training at LBNL as part of their summer fellowships. There, Hannah assisted U-GEMS Nathan Kim and Lucas Sotozono with their Distributed Fiber Optic Sensing research. Nathan worked with Distributed Strain Sensing to investigate how suction anchors respond to mass wasting and strain loading for offshore wind farm platform feasibility, while Lucas utilized Distributed Acoustic Sensing (DAS) to separate noise from whale call signals in a wave tank, exploring DAS as tool to assess the ecological impact of future wind energy infrastructure planned for the coast of Morro Bay, CA.

At another LBNL project in Crested Butte, CO, Siena Oswald and U-GEMS Micah Serna, Justin Phan, and Jake Haro joined the 2025 campaign for the Colorado Headwaters Ecological Spectroscopy Study (CHESS). They worked in conjunction with Rocky Mountain Biological Laboratory and LBNL Watershed Function SFA. They worked on the subsurface team led by Dr. Yuxin Wu (LBNL) and Craig Ulrich (LBNL) to investigate drought and climate-driven changes in the East-Taylor watershed. Fellows contributed to soil coring, geophysical surveys, and data analysis.

Back at CSULB, Lena and U-GEM Chloe Schaeffer worked with the IRIS Promis 10 FDEM system to map fault zones. Their fieldwork extended from the local Garden Grove Fault to the San Jacinto Fault in Moreno Valley. Chloe was trained in system setup, data collection, and one-dimensional inversion workflows. They also examined how FDEM data could be applied to calibrate groundwater models of contaminated fractured rock aquifers.

Through the bootcamp and subsequent internships, the GEMS gained experience applying geophysical tools to real-world challenges in groundwater management, environmental remediation, and climate research. This internship is the start of a continuing effort to train students in geophysical methods and to expand partnerships with Rutgers, LBNL, and other research institutions.

GEMS Bootcamp Group Photo. Pictured from left to right: (Bottom)Donald Pesonen, Justin Phan, Meagan Figueroa, Obson Joseph, Kaila Lewis, Jake Haro, Micah Serna, Lucas Sotozono, Chloe Schaeffer, Carolina Caro Cano, Raymond Hess, Nathan Kim, Himadri Shekhar, Alex Avelar.
(Top)Kristina Keating, Hannah Fitzpatrick, Matthew Becker, Siena Oswald, Andres Ospina Parra.
Unpictured: Lee Slater, Nuray Oncul, & Lena Wilson

GEMS Hydrogeophysics Bootcamp And Internships Continued

Lena and U-GEMS set up an ERT survey line in the Delaware Forest during the bootcamp

Left to right: Lucas Sotozono and Nathan Kim stir up mud cake for mass wasting model.

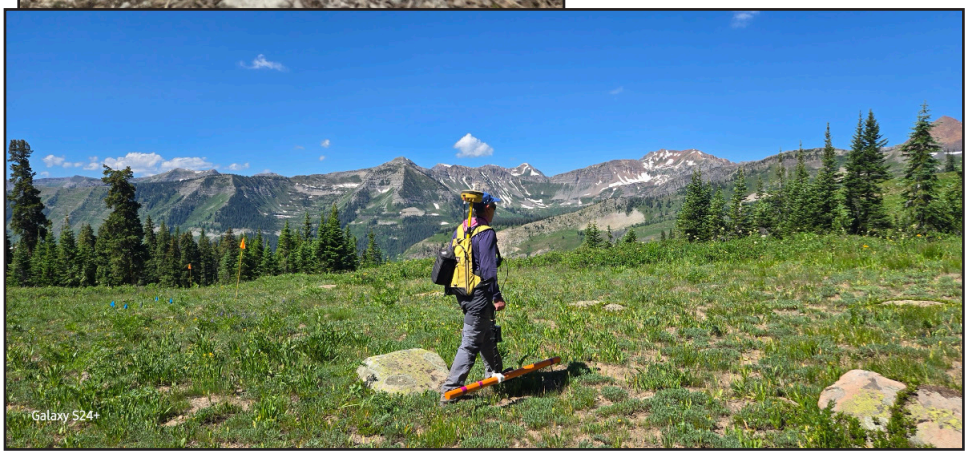
Hannah Fitzpatrick tapping the corners of the underwater speaker to prevent wave tank liner from being damaged.

Chloe Schaeffer collects FDEM data on the San Jacinto fault in Moreno Valley

The team spent 30 days doing field work in Crested Butte, Colorado.

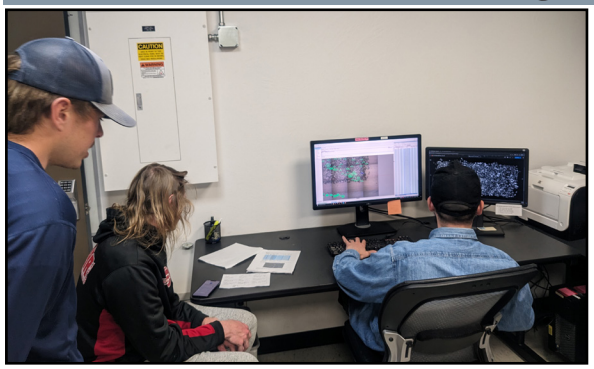
They collected Electromagnetic Induction (EMI) data, inverted that data, and collected over 130 soil cores.

Pictured from left to right: Siena Oswald, Justin Phan, Micah Serna, and Jake Haro



Matt Becker collecting Frequency-Domain Electromagnetic (FDEM) data in Crested Butte, Colorado

TASTe Lab Continues Cohort Based Research Projects In The Western US



Research with Dr. Abbey in the TASTe lab this year began with a trip to the Arizona LaserChron Center with four students from CSULB and three students from Utah Tech. The students learned about and analyzed detrital zircon grains for U-Pb ages to help determine sediment provenance in the northern Rio Grande Rift, CO. This group has been working together for over a year doing field work, lab work, zoom meetings, and now writing up their findings. Stay tuned for the publication in 2026!

Aidan, Hudson, and Brian picking zircons to date.

Then over spring break we ventured back to the Stewart Valley, NV where Logan Light is working on his MS thesis, mapping the Miocene volcanic and sedimentary rocks to determine their stratigraphic relationships and collecting samples for geochemical characterization and geochronology. Logan continued mapping in the area throughout the summer and traveled to Oregon State University to prepare his samples for Ar/Ar dating.

Turns out in early April the Stewart Valley gets a good amount of snow! A contrast to the 95+F heat of June and July. Left: CSULB Dept. truck at our camp. Middle: Logan and John collecting at Finger Rock. Right: Logan and Daiyan observing the extent of the Stewart Valley volcanic rocks.

Much of the summer field work was conducted in south-central NV in the Hot Creek Valley and Railroad, where MS student, Nick, is working on mapping intra-basin quaternary faults that offset alluvial fans and using fan morphology for relative dating along with cosmogenic nuclides for absolute dating, and Simon is using cosmogenic nuclides and Schmidt hammer rebound values to date exposed fault scarps..

Graduate student Nick Berry looking out over his field area in Hot Creek Valley

Nick digging a depth profile in the side of an alluvial fan to collect samples for cosmogenic radionuclide dating

Nick, Simon, and Asan, chisel away at a limestone fault scarp before we bought an angle grinder to help

TASTe Lab In The Field Continued

Asan acting as a scale before collecting Schmidt hammer data on a limestone fault scarp in Railroad Valley, NV

Alumnus and Beloved lecturer Charles Fair joined us in the field to help dig in alluvial fans. He seems far too happy after days of digging in caliche and boulders

Dr. Abbey Does Thermochron. In Japan

Every two years the international conference on thermochronology happens, and Dr. Abbey leads a workshop to start it off. This year the conference field trip highlights included exploring the Northern Japan Alps (world's youngest mountain range), where the group was able to touch the boundary between the North American plate and the Eurasian Plate and sample the youngest exposed granite on Earth (0.7Ma!).

Wall of Ahu-shiro glacial cirque

Kurobegawa Granite. Less than 1 million years old!

Shomyo Falls

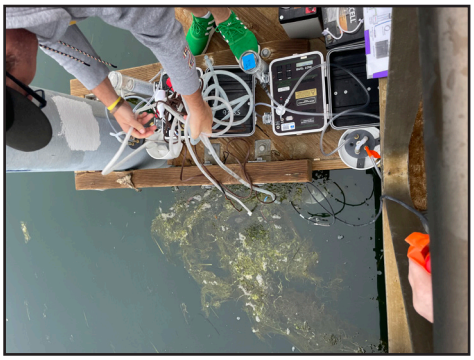
Tateyama Crater lake Midorigaike Pond

Itoigawa-Shizuoka Tectonic Line (ISTL). Boundary between the Eurasian and North American Plate!

Dr. Hagedorn And Students Keep Up Local And International Projects

Ben Hagedorn and students continue to conduct research in French Polynesia.
Learn more about their projects

Ben has also been working on some very local projects and taking graduate classes to our very own Colorado Lagoon to make geochemical measurements and assess change over time.



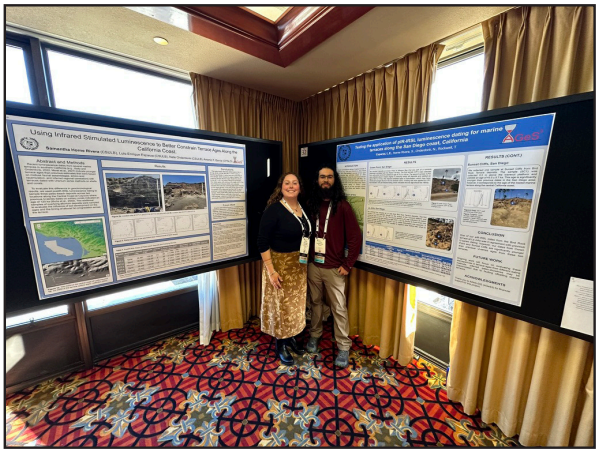
Students collecting data for Environmental Geochemistry (ERTH554)

Updates From Dr. Nate Onderdonk

Nate led two professional field trips to the Santa Ynez valley area this past year. The first one was in October of 2024 for the GSA Annual meeting in Anaheim, and the second was in August of 2025 for a group of private geologic consultants and government agencies focused on understanding earthquake hazards for the Diablo Canyon nuclear power plant near San Luis Obispo. Both trips visited sites along the Santa Ynez River and the coast of Vandenberg Space Force Base to see faulted and folded terraces that we used to measure deformation rates and uplift rates.

The department acquired a new RISO Luminescence reader for dating Quaternary sediment that was installed in May 2025 in IIRMES. This new instrument is in Onderdonk's Luminescence lab and will allow for a larger number of samples to be analyzed, and at greater accuracy than could be done with the existing 20-year-old instrument. The instrument provides research opportunities for faculty, graduate students, and undergrad students and enables external contract samples to be dated, which generates funding to support student research.

Samantha Horne-Rivera and Luis Esparza presented posters on their work on luminescence dating of marine terraces along the coast of California at the 2025 GSA Cordilleran Meeting in Sacramento in April.



Summer Field In California

This year our summer field course was shifted to three weeks. The first week, taught by Dr. Matt Becker focused on hydro-geology field methods with several local trips followed by lab and computational work.

The second week, taught by Dr. Alyssa Abbey focused on data collection methods in the field including using Schmidt hammers to collect rebound values on glacial boulders to map the extent of the last three glacial advances in the eastern Sierras, and using several structural geology apps to document and map extensional features in the volcanic table lands just north of Bishop, CA.

The third week, taught by Dr. Nate Onderdonk, explored the metamorphic units near Mammoth Lakes, CA.

The three week 1-week project structure is the new format for our summer field course, which will now be taken the summer before students' senior year. Spring field will now become the true capstone field course that students will take in their last semester to use all the skills and tools they have learned about and developed in their careers here at CSULB.

Dr. Stan Finney: "Are there kinematic indicators on the Roberts Mountain Thrust that provide evidence on direction of displacement?"

View to the north.

Gray mudstone of Devonian age (at base of Roberts Mountains allochthon) structurally overlies reddish-brown siltstone of Mississippian age along Roberts Mountains thrust. The Mississippian siltstone of the Webb Formation was deposited on an underlying autochthonous carbonate succession, which subsided to form a foreland basin in which accumulated the Webb before it was overridden by the RMA.

Deformed Webb a few meters below the thrust

View directly into thrust; perpendicular to strike, on

Professor Emeritus Rick Behl Just Keeps Going Like The Energizer Bunny

Professor Emeritus Rick Behl led the 2025 Spring Field trip for the Pacific Section Society for Sedimentary Geology to examine the stratigraphy, lithology and sedimentary structures of the Monterey Formation along the beautiful Santa Barbara coast. There were more than 50 participants from all over California. The field trip took place March 8-9. The trip used Rick's 2018 SEPM volume 14 "Stratigraphy, Diagenesis, and Structural Deformation of the Monterey Formation, Central California Coast" as a guidebook".

On the last day of the field trip, Rick was awarded the Pacific Section SEPM's Lifetime Achievement Award.

Rick also presented the results of the 2020 "Summer Field Geology" class (the first to take place during Covid lockdown) at the September Meeting of the South Coast Geological Society. Spectacular beach platform and cliff exposures between Crystal Cove State Park and Corona del Mar, California, were studied by the 2020 CSULB Field Geology class to unravel this complex history. The intrepid students braved tides and waves to make many 1000's of measurements of open and tight folds, primary and secondary fracture sets, deformation bands, instrastratal microfaults, and multi-layer cross-cutting thrust faults, normal faults and conjugate fault sets in Monterey dolomite, mudstone, chert and sandstone. They identified a succession of deformational events that partly meshed with the previously published regional sequence of extension, rotation and transpression of the LA Basin area.

Congratulations To Our Master's Students Who Finished This Year

Daniella Balassa finished her MS with Drs. Lora Stevens and Donald Prothero: What Is a Giraffe-Like Camel? A Taxonomic Revision of the Miocene Camel, Oxydactylus.

Vural Burc Cakir finished his MS with Dr. Greg Holk: Delineation of the Origin of Fluids that Infiltrated a Dextral Transpressive Shear Zone in the Eastern Central Sierra Nevada by Comparing B, O, and H Isotope Data from Different Populations of Tourmaline Occurring Along the Study Area

Spencer Cooper finished his MS with Dr. Nate Onderdonk: Evaluating the Relative Influence of Rock Strength and Uplift Rate on the Geomorphic Expression of a Mountain Belt: Case Study From the Western Transverse Ranges of California

Linda Pineda finished her MS with Dr. Lora Stevens: A Comparative Analysis of Holocene Monsoon Precipitation in the Central Highlands of Vietnam Using Compound-Specific Isotope Analysis of Leaf Wax n-Alkanes

Bedig Charkhutian finished his MS with Dr. Rick Behl: Lithostratigraphy, Sedimentology, and Petrography of the Siliceous Lithofacies in the Upper Modelo Turbidite System, Eastern Ventura Basin, Southern Lake Piru, California

Eduardo Martinez finished his MS with Dr. Matt Becker: Pulse Interference Testing Conducted at the Frontier Observatory for Research in Geothermal Energy Near Milford, Utah and Its Interpretations

Vincent Ruiz finished his MS with Dr. Alyssa Abbey: Geochronologic Analysis of the Fold-Thrust-Belt Growth Within the Argentina Precordillera

Department Awards

Rick Behl awarded A. Eugene Fritsche Lifetime Achievement Award from the Society for Sedimentary Geology, Pacific Section: Conferred yearly on high-profile nominees (professionals in industry and academia) for years of committed service and contributions to PS-SEPM and the geologic community in terms of teaching, research and publications, public service, and field trips.

Rick Behl awarded SEPM's Lifetime Achievement Award

Hudson Cockroft awarded the second Darren Westby Spirit Award, in honor of alumni Darren Westby.

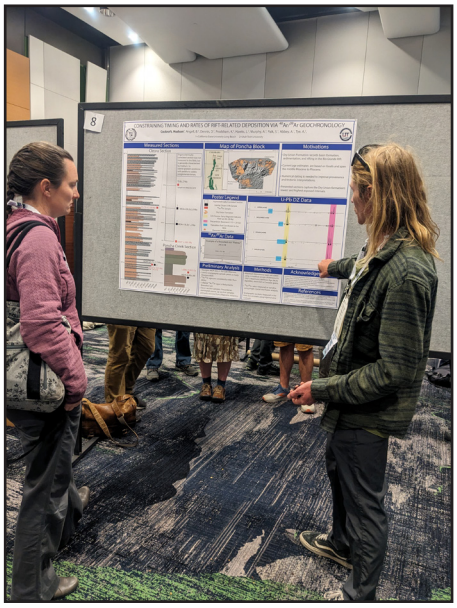
Spencer Cooper awarded Richard D Green Graduate Scholar award and Outstanding Thesis Award!

Dr. Finney's photo of the Roberts Mountains thrust was selected as winner of the photo competition for the 2027 Geological Society of Nevada Symposium (held about every 4 years), which attracts hundreds of mining geologists from throughout the world. The photo will be used on publications, announcements, and posters for the symposium.

Roberts Mountain Thrust

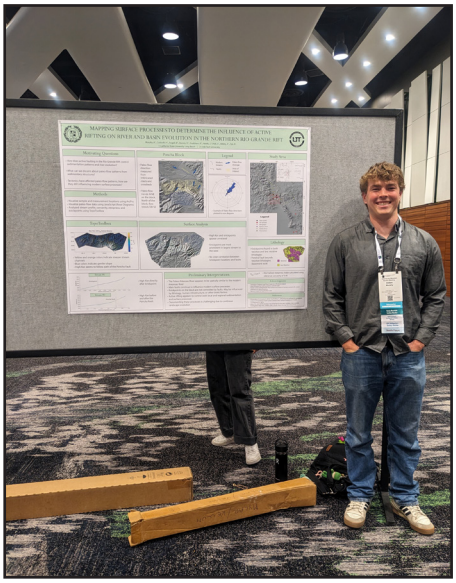
Students & Faculty At Conferences!

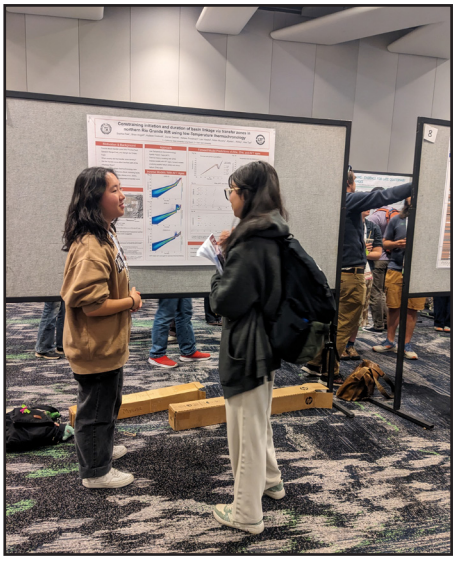
Several of our graduate and undergraduate students attended and presented at national conferences this year!



Cockroft, H. et al., (2025). Constraining Timing and Rates of Rift-related Deposition via 40Ar/39Ar Geochronology. GSA Rocky Mountain section meeting. Abstract 24-8.

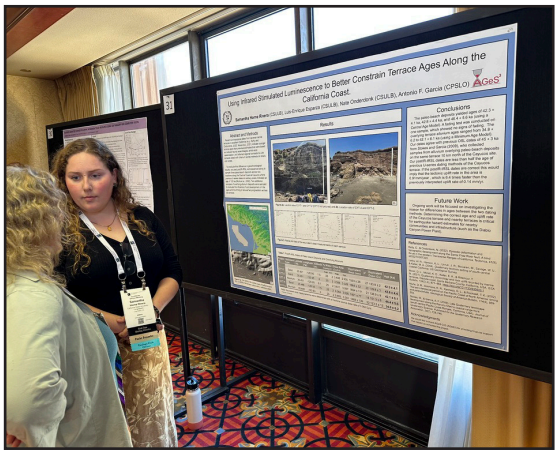
Murphy, A. et al., (2025). Mapping Surface Processes to Determine the Influence of Active Rifting on River and Basin Evolution in the Northern Rio Grande Rift. GSA Rocky Mountain section meeting. Abstract 24-10.



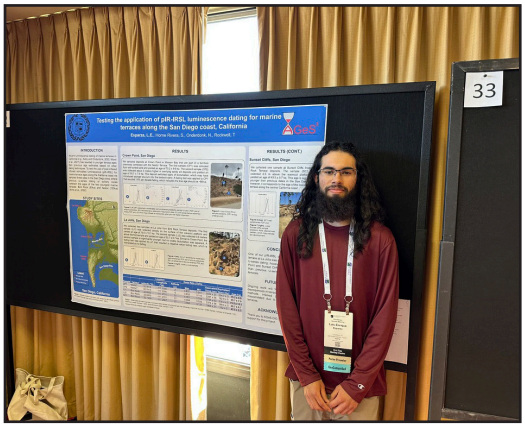


Paik, S. et al., (2025). Constraining Initiation and Duration of Basin Linkage via Transfer Zones in the Northern Rio Grande Rift Using Low-Temperature Thermochronology. GSA Rocky Mountain section meeting. Abstract 24-9.

Light, L., Abbey. A.L., (2025). Recent Geologic Mapping of the Stewart Spring and Adjacent Quadrangles Encompassing the Stewart Valley, Nevada, GSA Annual Meeting, Abstract T204-7096



Esparza, L.E., Horne Rivera, S., Onderdonk, N., Rockwell, T. 2025. Testing the application of pIR-IRSL luminescence dating for marine terraces along the San Diego coast, California: GSA Cordilleran Section Meeting, Sacramento, CA



Horne Rivera, S., Esparza, L.E, Onderdonk, N., and Garcia, A. F. 2025. Using Infrared Stimulated Luminescence to Better Constrain Terrace Ages Along the California Coast: GSA Cordilleran Section Meeting, Sacramento, CA

Students & Faculty At Conferences!

Edgar Villasano and Nicholas Januario presented their research with Dr. Hagedorn at the Western Groundwater Congress on fall 2025.

Abbey, A.L., O'Sullivan, P.B., Shuster, D.L., (2025) Modelling Complex Low-Temperature Thermochronology Data: A Case Study from the Argentina Precordillera. Thermo2025, Passive Margins & Sedimentary Basins (oral presentation).

Hawks, L., Angell, B., Cockroft, H., Dennis, D., Frodsham, K., Murphy, A., Paik, S., Abbey, A.L., Tye, A., (2025). Stratigraphic Insights into Tectonic and Sedimentary Evolution of the Rio Grande Rift. GSA Rocky Mountain section meeting. Abstract 24-7 (poster presentation).

Dennis, D., Angell, B., Cockroft, H., Frodsham, K., Hawks, L., Murphy, A., Paik, S., Abbey, A.L., Tye, A., (2025). Using Petrographic Analysis to Determine the Composition of Basin Fill Sources within the Rio Grande Rift. GSA Rocky Mountain section meeting. Abstract 24-5 (poster presentation).

Frodsham, K., Angell, B., Cockroft, H., Dennis, D., Hawks, L., Murphy, A., Paik, S., Abbey, A., Tye, A., (2025). New Detrital Zircon U-Pb Ages from the Santa Fe and Dry Union Formations, Colorado: Implications for the Provenance of Rio Grande Rift Sediment. GSA Rocky Mountain section meeting. Abstract 24-4 (poster presentation).

Angell, B., Cockroft, H., Dennis, D., Frodsham, K., Hawks, L., Murphy, A., Paik, S., Abbey, A., Tye, A., (2025). Conglomerate Clast Counts from the Cenozoic Dry Union and Santa Fe Formations, Colorado: Implications for Rio Grande Rift Sediment Provenance. GSA Rocky Mountain section meeting. Abstract 24-6 (poster presentation).

Light, L., Abbey, A. L., (2025). Geologic map resolution of the Stewart Valley, Nevada, utilizing x-ray fluorescence geochemistry. Desert Symposium 2025 Annual Meeting. (oral presentation).

Ansari, S., Abbey, A. L., & O'Sullivan, P. B. (2024). Using Low-Temperature Thermochronology to Track Fault Activity in the Andean Precordillera, Argentina. AGU 2024 Annual Meeting. Abstract EP23B-1316. (poster presentation).

Abbey, A.L., O'Sullivan, P, Granger, D.E., & Shuster, D.L., (2024). Fault initiation, exhumation, and propagation in the Andean Precordillera, San Juan, Argentina. AGU 2024 Annual Meeting. Abstract EP23B-1315. (poster presentation).

Ruiz, V., Abbey, A. L., Granger, D. E., Ramos M., Smeenk, L., & Cadario, V. (2024). Geochronologic analysis of the Fold-thrust-belt Growth within the Argentina Precordillera. AGU 2024 Annual Meeting. Abstract EP13A-1325. (poster presentation).

New Department Publications

Balbas, A.; Konrad, K.; Onderdonk, N.; Castillo, P.R.; **Behl , R,** 2024. Oligocene through Miocene Blowtorch Volcanism within the California Borderland Preceded the Neogene Boundary Transition, Geology.

Edgeworth, M., Bauer, A. M., Ellis, E. C., **Finney, S. C.**, Gill, J. L., Gibbard, P. L., et al., 2024, The Anthropocene is more than a time interval. Earth's Future, 12(7).

Edgewood, M., Bauer, A.M., Ellis, E.C., **Finney, S.C.**, Gibbard, P.L., Maslin, M., Merritts, D.J., Walker, M.J.C., 2025, The Evolving Concept of the Anthropocene, Earth's Future: A Reply to Zalasiewicz et al., 13(9).

Finney, S.C., and Hilario, A., 2025, Chapter 15 Global stratotype section and points as international geostandards and as global geoheritage, p. 327-337, in Reynard, E. and Brilha, J., eds., Geoheritage:Assessment, Protection, and Management, 2nd Ed., Elsevier, Amsterdam, 798 p.

Hagedorn, B., Pratt, M., Sweeney, C., Becker, M., Bram, D., Chou, B., Gaines, A., 2025. Assessing risk of groundwater pollution exposure from sea level rise in California. Science of the Total Environment, 989, 179695.

Hagedorn, B., Becker, M.W., Silbiger, N.J., **Maine, B., Justis, E.,** Barnas, D.M., Zeff, M., 2024. Refining submarine groundwater discharge analysis through nonlinear quantile regression of geochemical time series. Journal of Hydrology, 645, Part A, 132145.

Holk, G. J., Francis, R. D., Toneva, D., & De Baun, D. (2025). Detachment fault–related mass transfer by meteoric-hydrothermal fluids in the shallow crust: Integrated field, petrographic, and stable isotope evidence from east-central Nevada.

Murad, C. A., **Pearse, J.**, & Huguet, C. (2024). Multitemporal monitoring of paramos as critical water sources in Central Colombia. Scientific Reports, 14(1), 16706.

Quiroga, D., Currie, C., & **Pearse, J.** (2024). Lithosphere Removal in the Sierra Nevada de Santa Marta, Colombia. Journal of Geophysical Research: Solid Earth, 129(1), e2023JB027646.

Silbiger, N.J., Donahue, M.J., **Hagedorn, B.,** Barnas, D.M., Jorissen, H., Kerlin, J.R., McClintock, R., Nixon, E., Sparagon, W.J., Zeff, M., Nelson, C.E., 2025. Terrestrial nutrient inputs restructure coral reef dissolved carbon fluxes via direct and indirect effects. Ecolological Monographs, 95, e70020.

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Tran, T. T., Stevens, L., Tierney, J. E., & Vu-Van, T. (2024). Biomarker reconstructions of temperature and hydroclimate variability in Vietnam during Marine Isotope Stage 3. Quaternary Science Reviews, 341, 108893.

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Alumni News & Stories

Doug Shumway (BS Engineering Geology 1970 and Dinah Shumway (First women to graduate with BS Geology met and married at CSULB. Doug spent 40 years in the mining business in all four corners of the US. Doug retired from Mitsubishi Cement Corp in Lucerne Valley, CA as Mining and Exploration Manager.

Dinah went on to a Masters Degree in Geology from Dartmouth College in New Hampshire. Dinah worked in the mining business and spent 10 years as CA State Geologist. She formed her own consulting company (TerraMins, Inc) which was successful in CA and NV for 20 years.

They have two sons and four grandchildren. The youngest son Wilson has a degree in Mining Geology from McKay School of Mines in Reno, NV. He currently is a mining manager for BHP in Tucson. His wife is a geologist working for Rio Tinto in Superior, AZ.

Geology runs deep in the Shumway family. We still do a little consulting.

We moved to Green Valley, AZ and enjoy the retired life.

All geology students and graduates are welcome stop by and enjoy some southern hospitality and a cold beer.

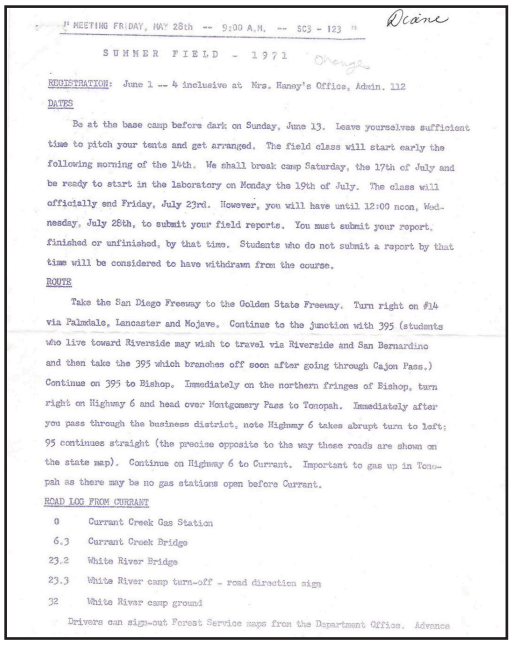
Alumni David Henry found this photo from field camp in 1971! He is the one sitting on the table with a head band, Diane Kasari is sitting next to him (they were married the following summer), Lee Dooley is seated next to her, he was their best man. Professor Walker was the camp leader. The photo was taken at the White River Campground about 50 miles southwest of Ely, Nevada--semi primitive camping with an outhouse but there was running water. No showers or even washing facilities and no electricity, we lived out of ice chests.

They spent six weeks there divided into four field parties each mapping an adjacent 10 square mile (2 by 5 miles) area. It was 6 days a week with Saturdays off. Each party spent every fourth day in camp, got up early fixing breakfast for everyone then that evenings dinner plus lunches for the next day.

for those who have recently taken summer field ... some things have not changed much.

"Unbelievably Diane somehow still had the handout from the pre-departure meeting. A couple of things stand out, we each put up $90 for food, that's $1080 for 12 people including Professor Walker. Doesn't seem like enough but we didn't spend it all and each of us actually got a small cash refund on the last day, it was like pay day for summer field. The handout references each party spending two days mapping and one day in camp, there were actually four field parties so it was three days in the field and one in camp. The reference to Camp Manager, a responsibility rotating weekly, was to the field party who's turn it was to buy a weeks worth of groceries in Ely. Another thing I noticed was that Professor Walker was still using the old Cal State College Long Beach (CSCLB) abbreviation at the top of page four."

The following summer David spent six weeks living in a tent in western Alaska for grad school at the University of Wisconsin and have had mixed feelings about camping ever since. Diane went to the University of Michigan for a year then finished her masters at Wisconsin. Lee Dooley went to UC Davis.



MEETING FRIDAY, MAY 28th -- 9:00 A.M. -- SCI - 123

Diane

SUMMER FIELD - 1971

REGISTRATION: June 1 -- 4 inclusive at Mrs. Haney's Office, Admin. 112

DATES

Be at the base camp before dark on Sunday, June 13. Leave yourselves sufficient time to pitch your tents and get arranged. The field class will start early the following morning of the 14th. We shall break camp Saturday, the 17th of July and be ready to start in the laboratory on Monday the 19th of July. The class will officially end Friday, July 23rd. However, you will have until 12:00 noon, Wednesday, July 28th, to submit your field reports. You must submit your report, finished or unfinished, by that time. Students who do not submit a report by that time will be considered to have withdrawn from the course.

ROUTE

Take the San Diego Freeway to the Golden State Freeway. Turn right on #14 via Palmdale, Lancaster and Mojave. Continue to the junction with 395 (students who live toward Riverside may wish to travel via Riverside and San Bernardino and then take the 395 which branches off soon after going through Cajon Pass.) Continue on 395 to Bishop. Immediately on the northern fringes of Bishop, turn right on Highway 6 and head over Montgomery Pass to Tonopah. Immediately after you pass through the business district, note Highway 6 takes abrupt turn to left; 95 continues straight (the precise opposite to the way these roads are shown on the state map). Continue on Highway 6 to Currant. Important to gas up in Tonopah as there may be no gas stations open before Currant.

ROAD LOG FROM CURRANT

0	Currant Creek Gas Station
6.3	Currant Creek Bridge
23.2	White River Bridge
23.3	White River camp turn-off - road direction sign
32	White River camp ground

Drivers can sign-out Forest Service maps from the Department Office. Advance

Scanned from the original which was mimeographed (purple ink)

From The Generosity Of Alumni And Friends Of The Department

All of the wonderful opportunities that we can provide for our students come from funding and support by YOU—our partners, followers, and alumni!

Kraft Earth Science Endowment. Richard Kraft (MS 1988) has generously provided the money to establish this endowment that will provide money each year to support students in the field and for their research.

Darren Westby Spirit Award. Through the generosity of Darren's family and friends, this award honors students who embody Darren's spirit of enthusiasm, ingenuity, and support. Darren Westby (BS 2023).

Earth Science Endowed Research Award we established this year! This scholarship provides money for both undergraduate and graduate students to support their research.

Summer field fund helps cover costs for students attending summer field. The generosity we have received in previous years has made it possible for students to attend with no extra fees!

Johnson-Conrey Scholarship Fund continues to provide support for graduate students each year as they pursue their Master's Degrees. Current scholarship holders are:

Logan Light (advisor: Alyssa Abbey) | Edgar Villasano (advisor: Ben Hagedorn) | Jasmine Ross (advisor: Matt Becker)

Richard D. Green Graduate Fellowship has been expanded to support a full 2-year MS degree program. Current Fellowship students are:

Nick Berry (advisor: Alyssa Abbey)

Please consider helping the Department of Earth Science with a contribution.

Postcards From The Field