

## Greetings from the Chairs

Aloha mai kākou!

We are delighted to present the 2024 edition of *Nuhou Kānaka Puka*. Thanks to the support of interim SOEST Dean, **Chip Fletcher**, we welcome new Assistant Professors **Alyssa Kamanu** (geoscience education and outreach) and **Sin-Mei Wu** (geophysics), and will be joined in the summer by **Alyssa Atwood** (paleoclimatology). Prof. **Greg Ravizza** is congratulated on his retirement after more than 20 years of exceptional service. With deep sadness, we saw the passing of **Paul Wessel** and **Craig Glenn**, two influential figures in the Department who guided us to where we are now.

EARTH is now the academic home of 150 majors in our BS in Earth Science and BA in Environmental Earth Science, and a thriving graduate program in Earth and Planetary Sciences. Graduate research in water-resources, coastal ecosystems, climate, volcano science, geophysics, remote sensing, and planetary sciences continues to thrive with funding via awards from national funding agencies as well as fellowships provided by alumni contributions to the UH Foundation. Undergraduate research is starting to take flight with students entering the revised BS degree, thanks to the creation and nourishment of the Undergraduate Research Fund. Your donations continue to enable once-in-a-lifetime field experiences on the Big Island, Kaua'i, O'ahu, and of course, the EARTH 305 capstone trip to the Mojave Desert.

It is a thrill to receive updates from 40+ alumni and friends for this newsletter. We are so thankful to be a part of this life-long 'ohana. Mahalo for staying connected and for your support!

**Garrett Apuzen-Ito**, Department Chair  
**Julia Hammer**, Graduate Chair  
**Scott Rowland**, Undergraduate Chair



Aloha mai kākou from **Julia Hammer** (new Graduate Chair, left), **Garrett Apuzen-Ito** (Department Chair, middle), and **Scott Rowland** (Undergraduate Chair, right).

Background photo is from the PhD research of **Natalia Gauer Pasqualon** on the Lāna'i Lookout tuff, the youngest phreatomagmatic deposits on O'ahu.

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**Keep in touch!**  
Send us a note of hello, news, and/or updated contact information by scanning this QR code.

# EARTH RESEARCH

## Marine and Environmental Geology

On August 8, 2023, a rapid and devastating wildfire swept through Lahaina, Maui, causing extensive destruction and environmental disruption. With the help of NSF funding, **Xiaolong “Leo” Geng’s** group aims to investigate groundwater flow and quality in the Lahaina beach environments impacted by wildfires. At Kamehameha Iki Park, they established two experimental transects in the affected beach area. This summer, they involved REU students in groundwater modeling sampling and modeling, as well as ERT measurements, with guidance from **Amir Haroon** and **Henrietta Dulai**.



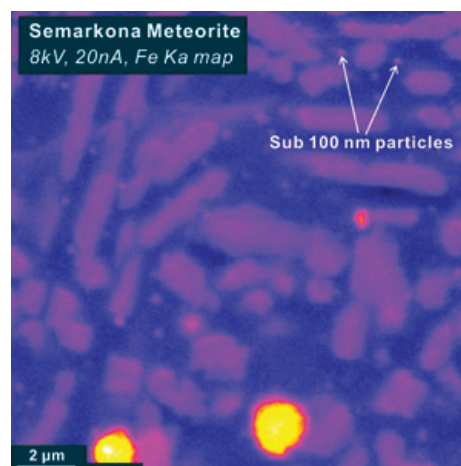
(Left to right) **Leo Geng, Amir Haroon, and summer REU students Maria Alvarez and Mishelley Low.**

The SOEST Stable Isotope Biogeochemistry Laboratory, directed by **Brian N. Popp**, installed a new mass spectrometer funded by a National Science Foundation Major Research Instrumentation grant. This new instrument replaced one purchased in 1991! In 2024, they had two graduate students finish their studies: **Ching-Tsun “Joyce” Chang**, who completed her dissertation research on ocean sunfish, and **Mario Kaluhiokalani**, who finished his Master’s thesis on coral nutrition in the Papahānaumokuākea Marine National Monument. **Chris Wall** and **Rita García Seoane** joined the lab in 2024. Chris is a SOEST Early Career Research Fellow, and Rita is a Marie Skłodowska-Curie Postdoctoral Fellow.

## Volcanology, Geochemistry, and Petrology

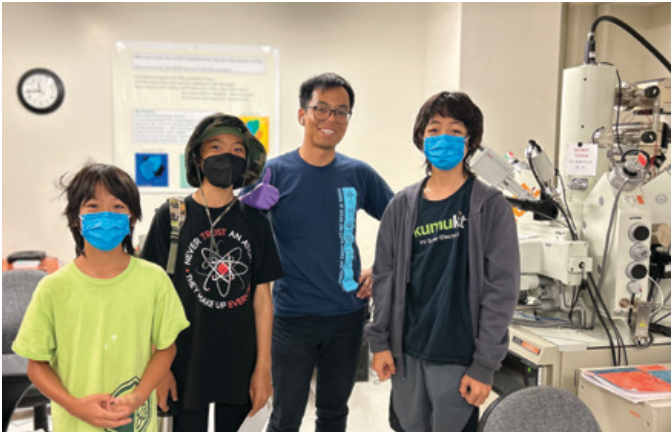
VGP investigators **Julia Hammer, Peng Jiang, and Tom Shea**, in collaboration with HIGP collaborators **Bin Chen** and **Sasha Krot**, are delighted to announce that their efforts in 2023 to secure funding for acquisition of a new electron microprobe were successful. NSF and NASA will be co-funding awards totalling \$1.51 million to acquire a state-of-the-art field-emission Electron Microprobe (EMP) (JXA-iHP200F). The EMP is the cornerstone of an analytical facility with a 30-year history in SOEST that has generated data for >134 peer reviewed papers and contributed to the graduate degrees of 54 students since 2008. The new EMP facility will advance scientific frontiers and enhance graduate and undergraduate training for students across UH in Earth and Planetary Sciences, Materials Science, and Anthropology.

The new EMP instrument will be managed by faculty specialist **Peng Jiang** who joined the Earth Sciences Department in October 2022. Jiang anticipates the facility will continue to advance research frontiers in volcanology, petrology, geochemistry, cosmochemistry, astrobiology, archeology, and planetary science. Enhanced functionality will extend disciplinary impact to material sciences, engineering, and biological sciences, and support curricular initiatives that broaden participation of undergraduates and continue to support graduate teaching and training. The new facility will be accessible by remote users, promoting engagement of students and faculty at community colleges, scientists at the Hawaiian Volcanoes Observatory, and researchers outside Hawai’i.



**A fine-scale x-ray intensity map reveals iron inclusions (<100 nm) in the Semarkona Meteorite. This image was acquired at Carnegie Institution using a FE-EPMA similar to the instrument UHM has been awarded.**



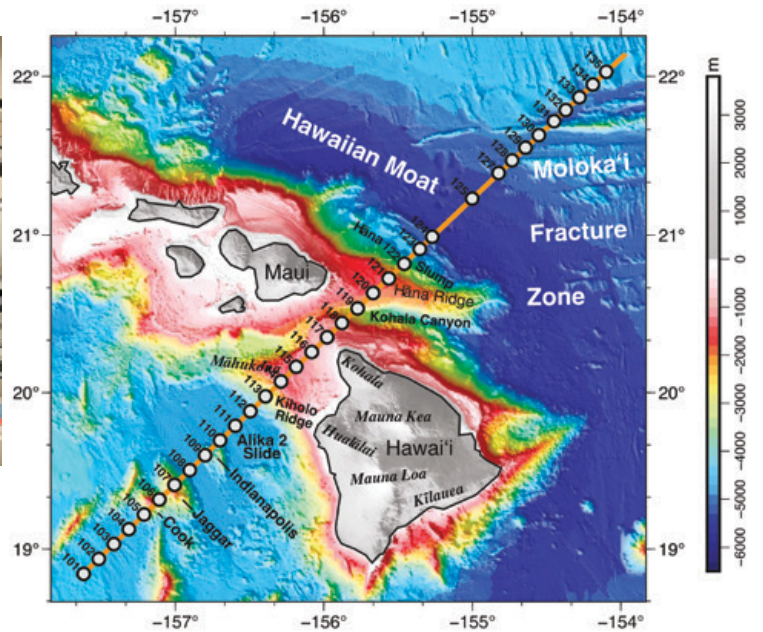


Dr. Peng Jiang gives a tour of the SOEST electron microprobe lab to K-12 students visiting during the 2023 Discover Mānoa Day.

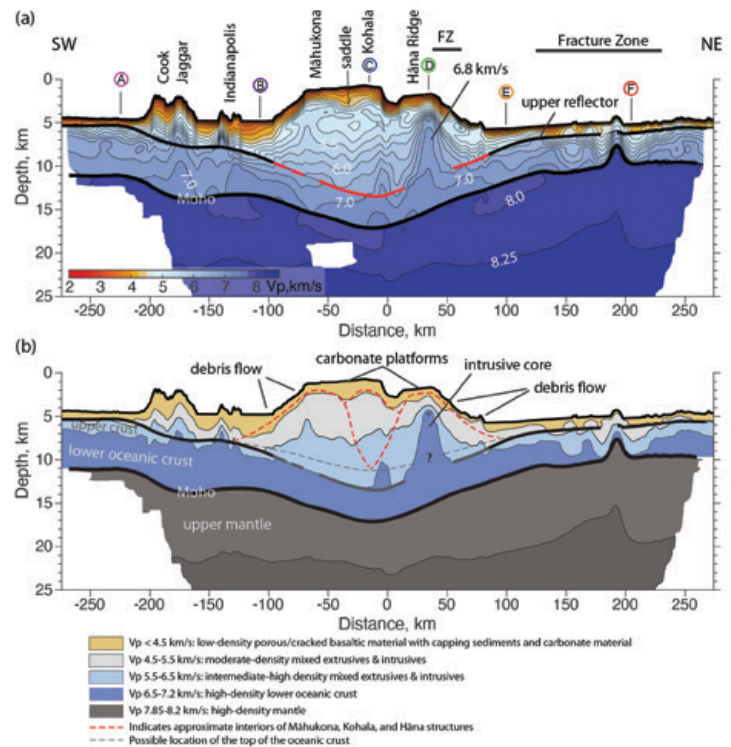
## Geophysics and Tectonics

Marine geophysicist **Robert Dunn**, along with graduate students **Megumi Fujimoto** and **Morgan Cryder**, study mid-ocean ridges, arc systems, and volcanic hotspots. They recently completed the initial phase of a landmark multi-year, multi-institutional study on the Hawaiian-Emperor Ridge, culminating in the publication of their fifth paper. This extensive work was based on geophysical data gathered during two oceanographic research cruises in 2018 (Hawai'i Ridge) and 2019 (Emperor Seamounts).

Graduate students Megumi and Morgan have now taken the lead on the second phase of this project. Megumi's research delves into the complex dynamics of seismic wave propagation across submarine volcanoes, and will use the knowledge gained to progress our ideas about magmatic underplating beneath volcanoes and volcanic core formation. Meanwhile, Morgan focuses on deciphering the physical properties of the seamounts and surrounding lithosphere by analyzing seismic P-wave and S-wave data, contributing critical insights into geological structure. In parallel, Robert continues to advance his O'ahu Gravity Mapping Initiative, now extending across southeastern O'ahu, with the support of Megumi and Morgan and students in his geophysics courses. Together, these efforts are pushing the boundaries of knowledge on volcanic and tectonic processes along the Hawaiian-Emperor Seamount Chain and the underlying forces shaping Earth.



Topography map of **McGregor et al. 2023** seismic tomography, gravity, and flexure study of the Hawai'i Ridge. White circles represent ocean bottom seismograph locations used in the study.



Tomographic image of Hawai'i and the Hana Ridge from **MacGregor et al. 2023**

**Download the PDF!**

Download *Nuhou Kānaka Puka* as a PDF by scanning this QR code.



# NEW FACULTY HIRES

## Alyssa Kamanu

**Alyssa Kamanu** returned to the Earth Sciences Department in January 2024 as an Assistant Specialist in Geoscience Education and Outreach. Alyssa is a proud alumnus of the Department (PhD in 2019). Her research background and interests focus on place-based geoscience education with a focus on Hawai'i, development and instruction of Hawaiian language geoscience courses, deformation and lava flow dynamics of Hawai'i volcanoes, and climate adaptation in the Hawaiian Islands. Her current work supports the Department's undergraduate program and curriculum, and outreach and pathway programs for local high school students. She looks forward to supporting the next generation of geoscientists in Hawai'i and contributing to the University of Hawai'i's research and academic community.



## Chris Wall

**Chris Wall** is a SOEST Early Career Fellow and physiological ecologist, with research foci on coral reefs, wetlands, forests, and alpine lakes. Chris uses stable isotopes and molecular techniques to study symbioses, food webs, and microbiomes. Working with faculty mentor Brian Popp, Chris uses cutting-edge molecular tools to understand the interactions between reef corals and macroalgae in the Main and Northwestern Hawaiian Islands. Chris's fellowship represents a unique opportunity for him to return to Hawai'i where he can pursue his passions for coral reef research, student mentorship, and community engagement. He looks forward to integrating the resources and experience of the SOEST community in his research program and applying his science to support the restoration and conservation of coral reefs in Hawai'i and abroad.



## Sin Mei Wu

**Sin-Mei Wu** joined the Earth Sciences Department as an Assistant Professor in August 2024. Wu's research centers on exploring geothermal, hydrothermal, and volcanic systems through subsurface seismic imaging and monitoring. She is also dedicated to studying the deep structure of Earth – inner core – with array seismology. Currently, her research focuses on investigating crustal thermal systems in Iceland, Utah, Yellowstone, and Hawai'i. Her particular interest in Hawaiian volcanism is the evolutionary processes of volcanoes during eruptions and between eruptive episodes. She is excited about the new research opportunities and looks forward to engaging with students at UH Mānoa.



## Sara Kahanamoku-Meyer

**Sara Kahanamoku-Meyer** is a SOEST Early Career Fellow and a specialist in place-based, 'Ōiwi-led paleoecology. Sara uses paleoecology to study how system change — including extreme environmental change and socio-environmental regimes — affects marine ecosystems over decades to millennia. Sara applies high-throughput morphometrics to fossils from “invisible timescale systems” (records with high temporal resolution that preserve entire populations) to understand how environmental impacts on short-term biological processes propagate into ecosystem translations. Sara also applies their experience in place-based and Indigenous science to co-produce research with resource managers and communities that support Pacific Islands climate adaptation.







**Chris Wall (right) and Mario Kaluhiokalani (see p. 2) preparing coral samples in the lab.**

## Rita Garcia Seoane

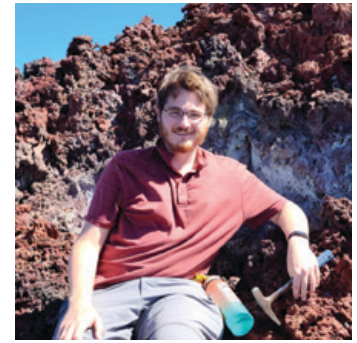
### Rita Garcia Seoane

joined the Earth Sciences Department in August 2024 as an Affiliate Graduate Faculty. Following a postdoctoral appointment at the Spanish Institute of Oceanography (IEO-CSIC), Rita was awarded a prestigious Marie Skłodowska-Curie Postdoctoral Fellowship funded by the European Commission to lead the project “PelCon: Disentangling processes controlling trophic connectivity between coastal and oceanic pelagic food webs”. Rita’s research at the Isotope Biogeochemistry Lab focuses on understanding the links between reef and oceanic food webs in Hawai’i, in terms of nutrient exchanges and trophic connections, using advanced stable isotope techniques combined with DNA analyses in zooplankton and micronekton. As a marine scientist with broad interests in ecosystems ecology and conservation, Rita is actively involved in a variety of studies related to the trophic dynamics of plankton, fishes, and mammals in the marine environment through the use of ecological tracers such as stable nitrogen isotopes and fatty acids. Her research program is multidisciplinary and also involves studies of coastal and atmospheric pollution using different organisms as biomonitors (e.g. algae, mosses). She looks forward to expanding her research interests while fostering collaboration with the research community at UH Mānoa and mentoring future scientists.



## Will Nelson

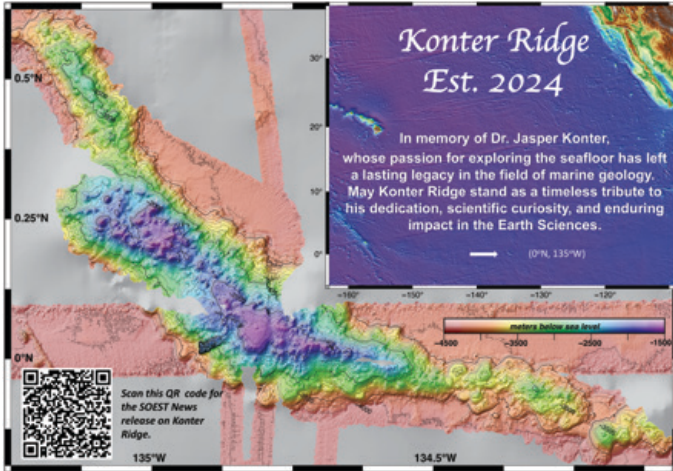
After earning his PhD with the Department of Earth Sciences earlier this year, we are excited to have **Will Nelson** join the Department research faculty. His research focuses on the combined use of micro- to nano-scale analysis, computer modeling, and experimental petrology to understand the crystallization history of volcanic rocks. Most of Will’s work has been on rocks that make up the lunar secondary crust, although he also studies a variety of other lunar rocks, terrestrial rocks, as well as meteorites. Will also studies how minor and trace elements occupy and diffuse through crystal lattices, which can be applied to understand samples throughout the Solar System.



**Sara Kahanamoku-Meyer is identifying sediment core sites in East O’ahu.**



# STUDENT AND FACULTY AWARDS



## **Konter Ridge (0°N, 135°W) named in honor of Jasper Konter (1977–2022)**

**Jasper Konter**, former professor of Earth Sciences, is recognized worldwide for his research in using isotope geochemistry and mantle seismology to confirm the deep origin of mantle plumes, to show that materials that were once subducted in the ancient geologic past are returned again to the surface by rising mantle plumes, and for establishing the role of long-lived, plume-fed hotspots in generating volcano chains across the Pacific over the past 100 million years.

**Konter Ridge** is an 89 km-long chain of seamounts on the ocean floor, straddling a zone across the equatorial Pacific about 35 km wide. At its tallest point, it stands 3 km above the surrounding seafloor, lying almost 1.5 km below the ocean surface. Thus far, Konter Ridge has been surveyed only three times by multibeam sonar expeditions: the first survey in March 1987 was aboard the R/V *Thomas Washington*; the second survey in 2009 was a transit of the R/V *Knorr*; and the third survey was in January 2024 aboard the UH vessel R/V *Kilo Moana*, where David Sandwell, Jake Perez, and Captain David Martin first proposed this name to honor their friend and colleague. *Click the QR code above to read more about it in the SOEST news article.*

Congratulations to Earth Emeritus Prof. **Greg Moore** as the recipient of the **Akiho Miyashiro Award** from the Geological Society of Japan, in recognition of his outstanding contributions to our understanding of the geological structures and tectonics of the accretionary prism in the Nankai Trough region.



**Kainalu Steward**, a PhD student from Lahaina, Maui, is one of three SOEST students to receive a **GA fellowship and research funds from the Hawai'i Pacific Foundation (HPF)**. The HPF fellowship will support Kainalu's work with Dr.



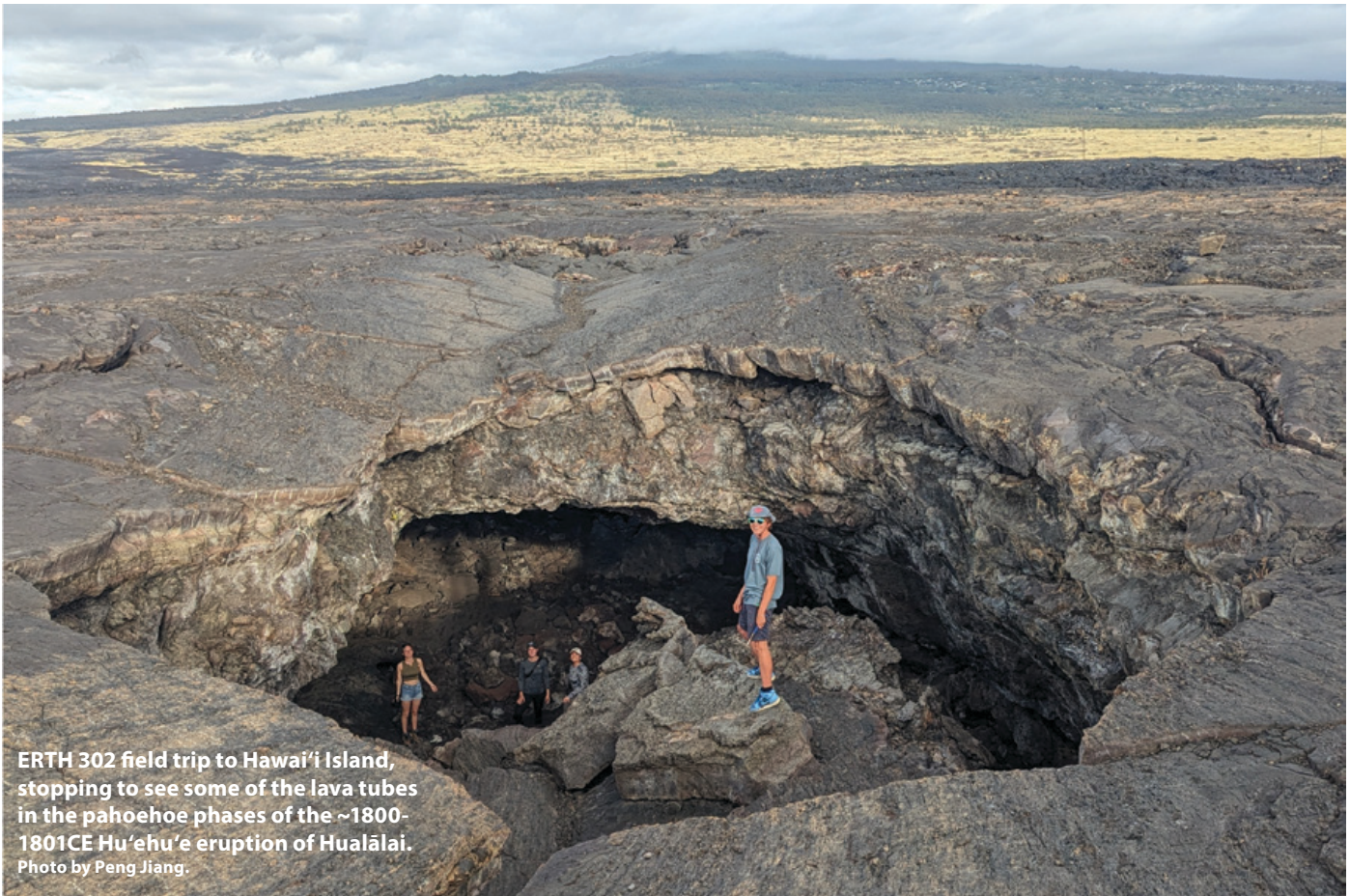
Kane in leveraging remote sensing techniques and 'ike Hawai'i (Hawaiian knowledge) to assess the resilience of sandy atoll islands and rocky shorelines impacted by storms and sea level rise. Kainalu recently led a study published in *Remote Sensing* entitled "Highlighting the use of UAV to Increase the Resilience of Native Hawaiian Coastal Cultural Heritage." HPF's mission is to enrich Native Hawaiians through partner-leveraged contributions supporting education, workforce development, economic stability, and community development. Mahalo nui e **Barbara Bruno** (HIGP; PhD in Geology and Geophysics) for working with our community to creatively envision fellowship opportunities for our students.



**(Left to right) Ian Wynn, Casey Wandasan, and Dr. Helen Janiszewski at the Seismological Society of America 2024 Annual Meeting in Anchorage, AK, where both Ian and Casey presented posters on their research (Casey's poster on right).**

Congratulations to Earth PhD student **Ian Wynn** as a 2024 recipient of a **National Science Foundation Graduate Research Fellowship!** This prestigious five-year fellowship provides three years of financial support, including an annual stipend of \$37,000. Ian's research focuses on geophysics and seismology. His current interests include seismic and geophysical imaging techniques of volcanoes at subduction zones. Advised by Dr. Helen Janiszewski, Wynn's research aims to develop novel seismic receiver function techniques to identify magma storage at Alaska-Aleutian volcanoes. He is also concluding a Graduate Degree Fellowship at the East-West Center, where he plans to continue active involvement in initiatives pertinent to the Asia-Pacific region. Congrats, Ian!

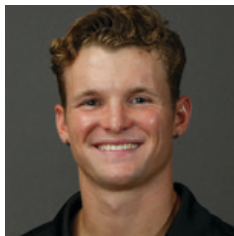




ERTH 302 field trip to Hawai'i Island, stopping to see some of the lava tubes in the pahoehoe phases of the ~1800-1801CE Hu'ehu'e eruption of Hualālai. Photo by Peng Jiang.

Recent Earth B.S graduate, **Casey Wandasan**, received the **Agatin Abbott Memorial Award**, presented to the outstanding senior, annually, in memory of department faculty Agatin Abbott. Casey recently participated in a marine geophysics research cruise to study the Moloka'i Fracture Zone and also works with Dr. Helen Janiszewski studying seismic characteristics of Alaskan volcanoes. Casey is now pursuing a PhD at the University of California, Davis with Dr. Magali Billen. Congratulations, Casey, well done!

Congrats to recent EARTH graduate **Mackaby Pennington** on being named UH Student Athlete of the Year. We are proud of you, Mackaby!



**Liam Felix**, recent Earth graduate and employee of the UHM Office of Systems Integration, won UHM Student Employee of the Year award, beating out 24 other undergraduate and graduate nominees! Congratulations, Liam! We are so proud of you!



## Retirements

All good things have a beginning and must come to an end. The close of the Department's good thing is the retirement of Professor **Greg Ravizza**.



Greg served the Department and SOEST for over 20 years. His research involved using trace-element and isotope geochemistry in sediments to tease out key parts of the chemical evolution of the atmosphere and ocean, and characterize catastrophic geologic events including those caused by extraterrestrial impacts. Prof. Ravizza brought enthusiasm and deep care for student success in his teaching of Earth History and in creating highly relevant courses in Energy and Mineral Resources and what has become a very popular course in Quantifying Global and Environmental Change. He was also an invaluable undergraduate advisor for many years.

Mahalo and congratulations, Greg. We wish you all the best in your new beginnings!



# The O'ahu Gravity Mapping Initiative

Despite Hawai'i's status as one of the most geologically active regions in the world, little work has been done with gravity field surveys, which are valuable for investigating island formation and the role of subsurface structures in shaping aquifers and landscapes. Initial gravity data collection on O'ahu probably began in the early 1900s and by the 1950s several pendulum-design bases had been established by the U.S. Coast and Geodetic Survey (Duerksen, 1943; Woolard, 1951). Some of these data formed the basis for the first and only large-scale gravity survey of O'ahu (Strange et al., 1965). Whereas that survey provided an overall assessment of gravity anomalies across O'ahu, many data points were widely spaced and primarily concentrated on the Ko'olau and Waianae volcanic cores.

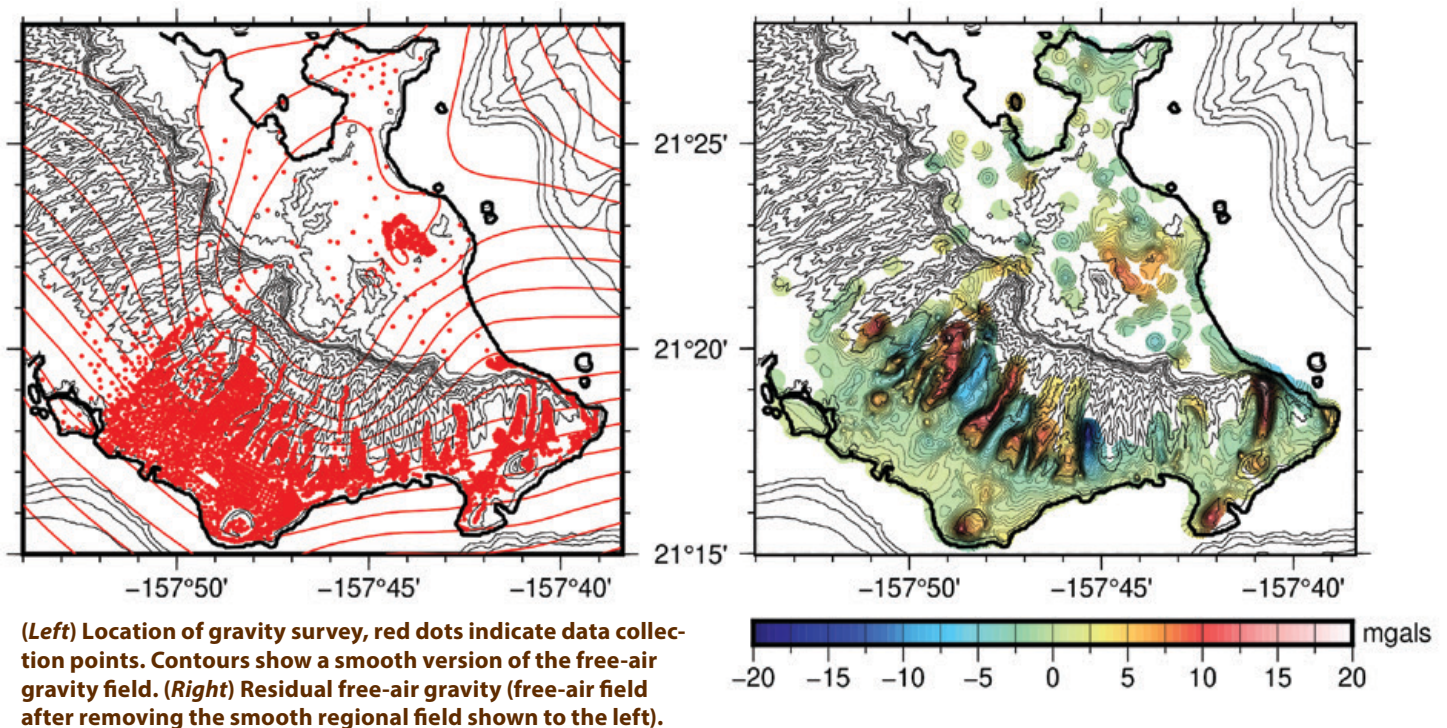
In 2017, Professor **Robert Dunn** saw upgrading O'ahu's gravity field as a valuable research opportunity for students and set a long-term goal for geophysics students to conduct a detailed gravity survey across the island. The intention would be to provide students with a real-world research experience that includes field-based



**High-above Metro O'ahu, Morgan Cryder leads her first gravity survey.**

data collection and lab-based data processing. Starting in early 2018, University of Hawai'i students began mapping across southeastern O'ahu, but the global pandemic quickly put a stop to operations during the 2019 field season. Thereafter, the program progressed slowly. But by 2022, the program was moving forward again and received a loan of two additional gravimeters from the National Geospatial-Intelligence Agency (adding to the one UH instrument already in use).

To date, ~60 students have been involved and ~3500 data points collected. The program has covered metro areas, neighborhoods, and forested trails, and continues to expand across eastern O'ahu.



**(Left)** Location of gravity survey, red dots indicate data collection points. Contours show a smooth version of the free-air gravity field. **(Right)** Residual free-air gravity (free-air field after removing the smooth regional field shown to the left).



# I N M E M O R I A M

## Craig Glenn



**Craig Glenn (left) and the submarine-groundwater discharge team in Kailua-Kona, Island of Hawai'i, 2007.**

**Craig Glenn** (8/6/54–9/5/24) joined the Department of Geology and Geophysics in 1988, starting what has become a fruitful 36-year career. He was known world wide for his pioneering research on submarine groundwater discharge in Hawai'i, especially in applying remote sensing techniques. His work on the Kona coast of Hawai'i Island is a career highlight. He is also well known for research that contributed to the U.S. Supreme Court recognizing submarine groundwater discharge as a point source of pollutants to be regulated under the Clean Water Act.

His courses in Sedimentology & Stratigraphy and Marine Geology were core to the academic experience of majors in Geology & Geophysics and Earth Sciences. Craig was an incredibly dedicated advisor to more than 20 MS and PhD students. His advisees describe him as being a strong advocate for their interests and career advancement. He was caring and kind and had a great sense of humor, which brought light to the hard work he and his students shared. Craig was a strong team-builder and demonstrated great care in bringing together scientists and stakeholders to address tough problems in water resources.

Scan the QR code to visit his In Memoriam page on the Department website.



## Pål Wessel

**Pål Wessel** (8/31/59–3/26/24) — Paul to his American friends — was born and raised in Sarsborg, Norway. This began his time earning clout in the table tennis underworld, sharpening his piano skills, teaching geophysics, and coding by night. In 1990, he moved to Honolulu to join the Department of Geology & Geophysics, and was married within the year to his wife Jill. For the next 31 years until he retired, Pål worked like an American — 14 hours a day, six days a week — but still managed to share tight bonds with his family, including taking chunks of time off to go on numerous adventures.

Pål is known internationally for his research on absolute plate motions using “Hotspotting” and other clever methods of analyzing ocean island chains, characterizing Earth’s seamount populations, and lithospheric flexure at ocean islands and fracture zones. Since 1987 the data analysis and visualization software he developed with Walter Smith, Generic Mapping Tools (GMT), has supported the research and publications of tens of thousands of geoscientists. Within SOEST, Pål was a popular undergraduate and graduate instructor and a trusted, kind, committed, and all-around exemplary colleague. He was very generous with his time, he was the embodiment of integrity, and he genuinely cared about others.

As the Department Chair during 2000–2004 and again in 2018–2021, Pål brought clarity, wit, vision, and insightful leadership that transformed the look and feel of, and within, the Department. Pål was a treasured friend to many and a beloved and committed husband, brother, and father.



**Pål Wessel at the 2022 American Geophysical Union (AGU) meeting where he was the Earth and Space Science Informatics Greg Leptoukh Lecture recipient.**



ERTH 302 field trip to Hawai'i Island, stopping to see Lake Waiau, the only alpine lake in Hawai'i. Photo by Tom Shea.



# EP'IK Summer 2024

*Congrats to our 2024 EP'IK Summer high school student & teacher cohort! Ten students and one teacher from across the islands of O'ahu and Hawai'i came together for a one-week Earth Science summer camp.*

We learned about Hawaiian volcanoes, the Hawaiian water cycle, geology of Hawaiian beaches, ocean exploration, and the solar system. Field trips to explore the water cycle at Sumida Farms, the NOAA Inouye Research Center, Waikiki beaches, Windward O'ahu geology, and a tour of the UH/SOEST campus and laboratories, were a highlight of the summer program.

### Learn more about EP'IK Summer

Visit the EP'IK website by scanning this QR code.



# Earth Science on Volcanic Islands (ESVI) Research Experience for Undergraduates (REU)



**2024 ESVI REU cohort.**

Congratulations to our 2024 ESVI REU students on an inspiring nine weeks of summer research, team building, and exploring the islands of O'ahu and Hawai'i. Ten undergraduate students from across the state of Hawai'i and the mainland U.S., mentored by SOEST faculty and researchers, participated in cutting-edge geoscience research projects and presented their results at the 2024 UHM SURE Symposium.

### Learn more about the ESVI REU

Visit the ESVI REU website by scanning this QR code.





# DEGREES AWARDED

## Undergraduate Students

### Fall 2023

Benjamin Fein	BS	ESCI
Sophia Henandez	BS	ESCI
Long Le	BA	ESCI
Taryn Nakamura	BS	ESCI
Kayley Rolph	BA	EES

### Spring 2024

Kiriana Anderson	BS	ESCI
Ciara Bongolan-Aquino	BA	EES
Sophia Cleek	BS	ESCI
Philip De Waart	BS	ESCI
Liam Felix	BS	ESCI
Kathy Ho	BA	EES
Sierra Khani	BS	ESCI
Yan Shan Liu	EPET	Certificate
Dylan Miyashiro	BA	EES
Aidan Moseley	BA	EES
Mackaby Pennington	BA	EES
Chiara Siger	BS	ESCI
Abigail Suzuki	BS	ESCI
Marlon Velasco	BS	ESCI
Casey Wandasan	BS	ESCI Basic Science and Research

### Summer 2024

Morgan Misra	BS	ESCI
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## Graduate Students

### Fall 2023

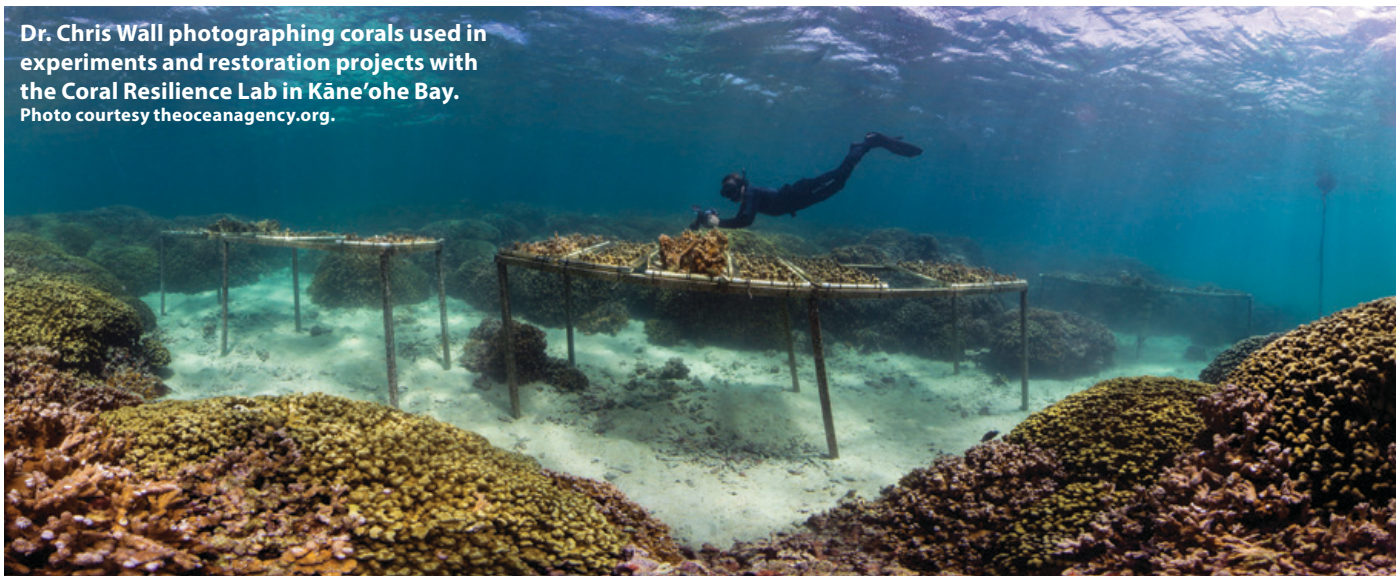
Krystal Arroyo-Flores	MS
Elizabeth Benyshek	PhD
Theodore Brennis	PhD
Sasithorn "May" Chornkrathok	PhD
Jade Comellas	MS en route
William Nelson	PhD
Jade Wight	MS

### Spring 2024

Jordan Ando	MS en route
Keng-Hsien Chao	PhD
Nina de Castro	MS en route
Tanner Hayes	MS en route
Kelly McCartney	PhD
Juliana Peckenpaugh	MS en route
Samuel Kei Takazawa	PhD
Ian Wynn	MS en route
Shirin Wyckoff	MS
Yunxuan Zhong	MS

### Summer 2024

Brian Gorberg	MS
Andrea Tonato Nacato	MS



Dr. Chris Wall photographing corals used in experiments and restoration projects with the Coral Resilience Lab in Kāneʻohe Bay. Photo courtesy theoceagency.org.

# A L U M N I ' O H A N A

I moved to Seattle in 1993 following in the footsteps of many former colleagues who have made the Pacific Northwest their new home and have loved living here ever since.

## **Steve Dang (BS 1970)**

MS. Geology and Geophysics (UH/HIG 1970), PhD. Geology and Geophysics (UH/HIG 1974). HIG Paleomagnetism Lab; Office of the Chief Scientist, NOAA National Ocean Survey; NOAA Pacific Marine Environmental Laboratory, Division and Program Director (Ocean Environment Research Division; Vents Program); Chief Scientist, NOAA's Office of Ocean Exploration; Oregon State University Courtesy (Adjunct) Faculty; Oregon State University Advisor for Collaborations and Marine Science. Retired in 2022. Currently Visiting Scholar (Emeritus) NOAA Ocean and Atmospheric Research, Office of Ocean Exploration.



## **Stephen Hammond (MS 1970; PhD 1974)**

Aloha, we went to Iceland in September '23 for several weeks and LOVED it! Had dinner with Thor two times, drove around the entire island, walked on glaciers, saw the aurora, stood on two continental plates, and saw the most spectacular rocks I have ever seen! Loved all of it!

## **Patty Lee (MS 1985)**

In December 2023 I was selected as Co-Investigator of a NASA Solar System Exploration Virtual Institute science team focused on studies of lunar samples and relating them to major lunar processes such as volcanism. In January 2024 I retired as Director of the Lunar and Planetary Institute in Houston. I've since returned to Flagstaff, AZ where I'm now a semi-retired planetary scientist.

## **Lisa Gaddis (PhD 1987)**

Still working with Yellowstone Volcano Observatory as an emerita; working mostly on hydrothermal explosions, especially very large prehistoric explosions (those with craters >100 m in diameter). My personal life is full with three grandbabies and my children and family. Recently visited Scottish highlands and Isle of Skye—hiked Ben Nevis!



## **Lisa Morgan (PhD 1988)**

Retired.

## **Dennis Lindwall (PhD 1988)**



Inventor of SeeRescueStreamer, Rob developed a military-approved/adopted emergency signaling technology that locates people when they are lost at sea or on land. It is used all over the world and has saved several lives both in the military and public sectors and is now on board all SpaceX flights to protect the astronauts! *Amazing work, Rob!*



Read more about it in the UH News article by scanning this QR code.



## **Rob Yonover (PhD 1989)**

I retired a year ago after almost 25 years as the Data Analyst for the Alaska Cancer Registry in the Alaska State Health Department. My wife Irene, who I also met and married during my time at UH Mānoa, and I have been doing various volunteer activities in our Anchorage AK community. Examples include ushering at our local performing arts center, helping out with our sons' old boy scout troop, and working on various committees at our Unitarian church. For the last two Falls, we have taken seven week vacations in our motorhome driving from Alaska, through Canada, into the lower 48 to visit various national parks and monuments. Last week we were in Yellowstone, a true geologist's dream! Today we are at Devils Tower, an amazing place and classic textbook example of columnar jointing. It is truly an amazing place!

Since I retired last year, I can now take longer vacations than I used to in the past. My wife Irene and I just returned home from a seven-week motorhome trip that was a geologist's dream! We live in Anchorage Alaska so we drove through Canada and first stopped in Waterton Lakes National Park in Alberta. Then we went to Wyoming and visited Grand Tetons and Yellowstone National Parks. Then we continued to Thermopolis to see its geothermal springs and dinosaur museum. Then on to Devils Tower National Monument. After that we parked in Custer to see multiple attractions: Jewel Cave National Monument, Wind Cave National Park,



Mount Rushmore National Memorial, Custer State Park, and The Mammoth Site. Then we continued to Badlands National Park, and north to Theodore Roosevelt National Park (the North Dakota badlands). All I can say is wow! We saw soaring mountain peaks, columnar jointing, thousands of pieces of obsidian of all sizes and shapes, the Grand Canyon of Yellowstone, waterfalls, geysers — thermal springs — fumaroles, hoodoos, petrified wooden stumps, cannonball concretions, badlands, dinosaurs and related fossils. Oh, and wildlife: bison, elk, moose, and bears. It was all very exciting! If anyone wants to plan a trip to any of these places I would be happy to give you some recommendations.



**David O'Brien (PhD 1990)**

Retired after 26 years teaching high school science.

**Lynn Johnson (PhD 1991)**



I've been Associate Director at Scripps Institution of Oceanography since 2007, in charge of Ship Operations & Marine Technical Support. I have executive responsibility for the management of the SIO fleet of research vessels (Roger Revelle, Sally Ride and Robert Gordon Sproul) and the scientific capabilities aboard them. This includes administrative and support activities at the Scripps Nimitz Marine Facility, expedition scheduling and planning, and oceanographic technical services. I also manage the UC Ship Funds program, and supervise the Scripps programs in Scientific Diving, Scientific Boating, the Marine Science Development Center. I'm the Scripps representative to the University-National Oceanographic Laboratory System (UNOLS), and will serve as UNOLS Chair in 2025–2026. Lisa and I live in Solana Beach, where I (sometimes) bike to work and she telecommutes to work (Lisa is Chief Environmental Engineer for Austin Tsutsumi & Associates in Honolulu). Eli is a project geologist for Frey Environmental in Newport CA, and Alison is in her first year of graduate school at Florida State University studying marine ecology.



**Bruce Appelgate (PhD 1995)**

Protecting the Jews at the Gordon Jewish Community Center in Nashville, TN. Armed guard. Practicing cryptology. Playing in the field of signals intelligence and ground electronic warfare. Was able to get a couple of truck bombs to detonate prematurely, saving a few lives. Still dabbling in software engineering, no longer working for Lockheed Martin, but still consulting (in the shadows). Teaching Defensive Pistolcraft.com. Two kids, two grand kids, two ex-wives.



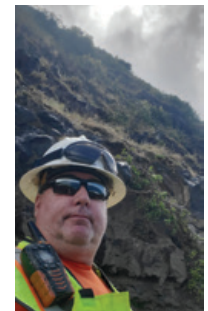
**Jonathan Low (MS 1995)**

I continue to work for the University of Hawai'i Sea Grant Program (21 years now!) as an extension agent. I specialize in coastal zone Management, coastal hazard mitigation and climate change adaptation with a focus on coastal land use and beach processes. I currently serve as an advisor and project manager to the Waikiki Beach Special Improvement District Association so am heavily involved with all things related to Waikiki Beach. I also am the project lead on the development of a beach management plan for the North Shore which is scheduled to start in 2025.



**Dolan Eversole (BS 1996; MS 2002)**

Working 25 years (with 23 years in Maui) as a Project Geologist and Office Manager for the Maui office of Geolabs, Inc. Along with drilling many borings to depths exceeding 200 feet, we have projects that include Rockfall Protection & Site Hazard Analysis, Slope stabilizations and laboratory analysis of rock materials.



**Nick Mitchell (BS 1998)**

This year brought many changes; I am back at the University of Hawai'i at Mānoa with the College of Tropical Agriculture and Human Resources as the 4-H Military Program Coordinator working with military-connected youth. In the Summer of 2024, I was part of the state-wide 4-H team in developing the curriculum for Camp Kau Kau, a new Hawai'i 4-H culinary day camp teaching campers to cook using electric pressure cookers and air fryers incorporating local Hawai'i culture, recipes, and crops for middle schoolers. I also worked to adapt a gardening day camp last summer at the Urban Garden Center called Seed Camp for K–2 graders. Being back

on campus felt like coming home. I stepped away from SOEST in 2010 to be the full-time caregiver for my mom with dementia; as an only child, I chose to spend time with my mom. It was the hardest thing I have ever done in my life. Those who are caregivers know what I mean. After 15 years of caregiving, my mom was promoted to the heavenly realms in 2019. I've been in a time of recovery over the last five years.

There were many blessings along the way. While I was a full-time caregiver, I trained myself to be a professional photographer. The highlight of my photography career was having her image of the 'Iolani Palace Throne Room featured in the exhibit *E Mau Ke Ea: The Sovereign Hawaiian Nation* at the Smithsonian's National Museum of the American Indian. The Smithsonian has relicensed my image for a traveling exhibit launching in 2025. In 2023, I was approached by local flippers to buy my childhood home in Kaneohe, I sold it to the Kalama's, and little did I know at the time our home would be featured in their HGTV show called *Renovation Aloha*.

You can find me as part of Season 1, Episode 4: "Restoring the Block." Never in a million years did I think I would end up on a reality TV show. I am settling into a new normal.



**Tina Mueller (BA 2000)**

Currently serving as Operations Manager with CAPE Environmental Management Inc in Honolulu, HI.

**Jamie Anderson (BS 2001)**

I am now the department head of the Department of Biological and Earth Sciences at Arkansas Tech University. It is hard to believe it has been 23 years since my wife and baby left Hawai'i after getting a Masters degree. Since then I have worked as a consultant, got my PhD in 2013 from the University of Utah, and added three more kids. We have been in Arkansas since 2015.

**Michael Davis (MS 2001)**

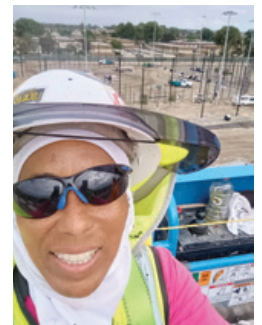
Our kids recently turned 15 and 13, time flies! Hannah is a sophomore in high school running cross country and track, and Sam is an 8th grader racing mountain bikes and playing lacrosse. This past summer our family got together for a multi-day raft trip down the Deschutes River in Central Oregon with other Earth alumni and friends, including Prof. Bridget Smith-Konter and her

boys (Arizona), Eden (Feirstein) Defendini (BS 2004) and her husband and their boys (Puerto Rico), and my sister Mary Engels (MS 2003), her husband Eric Mittelstaedt, and their girls (Idaho). So fun as always reconnecting with friends and family in the midst of some spectacular geology!



**Jenny Engels (MS 2001; PhD 2004)**

After facing and triumphing over my (and most people's) worst fear, nine months of homelessness, resulting from a divorce and failed business of 14 years, I have joined the Orange County, California Laborers Union Local 652 (LiUNA). To join this Union, I passed a rigorous three-day Physical Agility Test where I was the oldest person and only woman in my cohort. As a result of my recent transformation journey I have also changed my name from Ebitari Isoun Larsen to Nina Nahla Olaka.



Follow me on Facebook at [facebook.com/ABCsBuddha](https://facebook.com/ABCsBuddha).

**Nina Nahla Olaka (formerly Ebitari Isoun Larsen) (MS 2001)**

It's been a busy year! I transitioned from VP of Research at AltaRock Energy to VP of Operations at Quaise Energy, which brought about a move from Seattle to Boston. Fortunately, the timing worked out well, as Carolyn and I are now empty nesters—Carter has headed off to Drexel, Anna continues with rowing, and Kate is pursuing their music career in Nashville. I'm still focused on developing technologies to harness heat from super-hot geothermal reservoirs (> 400°C) to generate electricity, while Quaise is building a heat ray millimeter wave energy technology to drill wells without a mechanical bit. Star Wars tech!



**Geoff Garrison (PhD 2002)**



I am a Professor in the Department of Geology, University of Calcutta, Kolkata, India. I worked at UH as a Post-doctoral Fellow during 2003–2004. My mentor was the Late Professor J.J. Mahoney.



**Jyotiskar Ray (Postdoc, 2003–2004)**

After graduating in 2004, I was hired as a Geologist for Mountain Edge Environmental. In 2009 Mountain Edge Environmental merged with Element Environmental, LLC where I remain employed to this day as a Senior Geologist.

**Angie Peltier (BS 2004)**

After 16 years at the Hawai'i Commission on Water Resource Management, I left to become the director of the freshwater program at the Ulupono Initiative. As the first person to head this new program within the foundation my job is to develop strategy and goals to direct grants and investments that will improve the health and well-being of water in Hawai'i. A PSA to those of you who struggled or are struggling in school like I did: if you can make it out with a degree, life is ready to take you to all kinds of weird and exciting places.

**Jeremy Kimura (BS 2004)**

## Check out what our Alumni have been up to!

I am currently a Geology Instructor at Portland Community College in Portland Oregon. I love introducing all levels of students to all the wonderful things geology here in the Pacific Northwest.



**Mariah Tilman (BS 2005)**

I remain at the U.S. Army Corps of Engineers, Baltimore District, as a Geologist. I started with the USACE at the Savannah, Georgia District (2008–2014), then transferred to the European District in Weisbaden, Germany (2014-2016). I had the opportunity to work on a variety of projects in many European countries (Italy, Poland, Romania, etc.). I lived with my family off-base in a little town called Eltville on the Rhein, ~20 clicks west of Frankfurt. I then transferred to Baltimore District in 2016.



**Christian Gandy (MS 2006)**

In the past year, I spent over 200 days away from home supporting national parks all over the western US in Fire and Aviation Management for the National Park Service (NPS). The past 12 months have seen historic wildfires in Olympic NP (WA), Mojave National Preserve (CA), and all across the state of Oregon, where each time I went to these places, I spent multiple weeks helping the park deal with and message the impacts from these large-scale fires. My travels also included teaching a couple of national-level fire information officer classes, one hosted by Yosemite National Park and the other hosted in Anchorage, AK. During the spring of 2024, I served as the acting NPS Superintendent for John Day Fossil Beds National Monument in central Oregon, and at the time of this writing I'm the acting NPS Superintendent for the 22,000+ acre Tule Springs Fossil Beds National Monument in Las Vegas, NV. It's exciting that all these years later, I'm still using and referring to my degree, but now as the person overseeing an entire national park site. You just never know where life is going to take you.



**Mike Theune (BS 2007)**

I've spent over 16 years working for the USGS in three different water science centers, including Pacific Islands Water Science Center (six years), California WSC (three years), and Washington WSC (seven+ years). About two years ago I returned to Pacific Islands WSC and currently reside on the island of Maui with my wife, Jill, and three boys ages nine, seven, and three.



**Craig Senter (BS 2008)**

Moved to the United Kingdom in March 2022, gave birth to Sophie Brooke in May 2022, gave birth to Bradley James in Dec 2023, started work in the newly-created position of Commercial Coordinator at Walhamp-ton School (a private prep-school for day and boarding co-eds) in Lymington, Hampshire in July 2024.



**Alyson Joos (BS 2009)**

After seven great years with IODP I came home to O'ahu and now work in Environmental Geology. My wife, also a geologist, and I just had our first baby. Hoping to see some familiar faces around town.

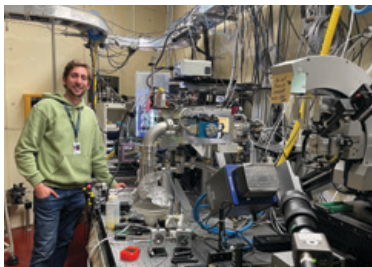
**Aaron de Loach (BS 2010)**

Nearly eight years in, I'm still enjoying my work at EnviroServices & Training Center as a storm water professional. We work with the Hawai'i Department of Transportation's O'ahu District Storm Water Management Program, where I help lead the Public Education and Outreach efforts, bringing storm water education to keiki across O'ahu. I am also the program's technical writer and editor. On the personal side, my family keeps growing—especially with our ever-expanding collection of pets! Our most recent addition is a leucistic axolotl named Butterscotch. My daughter, Raylin (6), has already informed us that her next pet will be a salamander.



**Katie Dungan Bunao (BS 2014)**

After finishing my degree at UH I went on to get my master's in geochemistry at UC Riverside. Following completing my masters I went on to work as a post-graduate fellow with the Materials Science Division at the Lawrence Livermore National Laboratory studying materials at high-pressure. I am now in my third year of my PhD at UNLV studying low-Z materials such as ammonia and ammonia-water mixtures at high-pressure/high-temperature to simulate the interiors of Uranus and Neptune.



**Logan Magad-Weiss (BS 2016)**

I've just completed my first year as a Course Development Project Coordinator at the National Disaster Preparedness Training Center (NDPTC), where I collaborate with FEMA to create specialized disaster preparedness training. My work primarily focuses on geologic and volcanic hazards and the unique challenges and opportunities faced by islands and territories. On a personal note, I also had the amazing opportunity to trek with gorillas in Africa and visit iconic sites in Egypt with my family this year!



**Amy Kitchener (BA 2016; MS 2023)**

In August 2024 Chris accepted a Maui-based tenure track position as the Community-Engaged-Research Specialist with the Water Resources Research Center at UH Mānoa. He is excited to expand his current and ongoing research with the center and plans to continue working closely with the Earth Department as an instructor and graduate and undergraduate student mentor.

**Chris Shuler (MS 2016; PhD 2019)**

After UH Sebastian earned his masters in geology from Texas A&M University with a focus on petrophysics; in the interest of entering the oil industry. Unfortunately, 2020, his official graduation year, proved to be one of the worst job markets for oil. After doing some soul searching, he forged a brief stint in the environmental sciences industry. Although this afforded many unique and priceless experiences, Sebastian switched to the dark side. He now works for an electrical cooperative in South Carolina, providing data and drone services for the residents of the Upstate. Sebastian, often accused of being an engineer, is now basically an engineer. Outside of work, he enjoys endurance sports and exploring his interests in art to a degree not permitted in school.



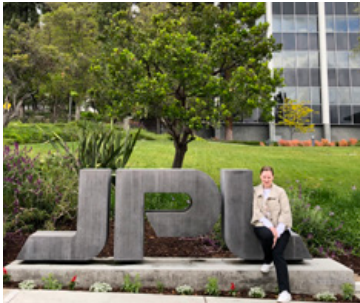
**Sebastian Smith (BS 2017)**

Since earning my PhD in Geology and Geophysics in 2022, I have been mostly involved in planetary science research, focusing on tectonic processes and surface modeling. I am deeply grateful to Sarah Fagents and Paul Lucey for their support and funding throughout the better part of 2023, which resulted in a publication on the initial landing site of NASA's Dragonfly mission to Titan. And with the kind support of Alumni Marissa Cameron, I had the incredible opportunity to be invited to JPL in Pasadena as a visiting scholar in May 2023 — a childhood dream come true. Since September 2023, I have been working as an Instrument Scientist at the University of Bern in Switzerland for ESA's BepiColombo mission's BELA (BepiColombo Laser Altimeter) instrument. In this role, I focus on the data acquisition pipeline and surface modeling for Mercury, contributing to the mission's goals of mapping and understanding the planet's surface dynamics and topography.

Besides all the planetary work, I am also continuing the research from my PhD project on the stress evolution and crustal dynamics of the San Andreas Fault System, where I conducted 4D simulations to analyze stress

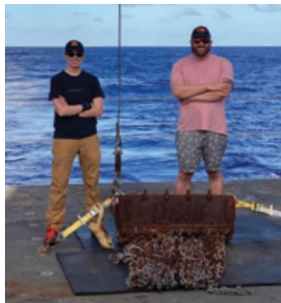


accumulation, advancing our understanding of fault systems and earthquake cycles. Bridget Smith-Konter and I are hopeful to publish our findings soon, though our progress was deeply affected by the heartbreaking tragedy that struck the Smith-Konter family in 2022. Despite all challenges, we remain committed to completing the work we started together. Overall, my work continues to focus on planetary tectonics and stress modeling, and I look forward to new opportunities for collaboration and discovery!



**Liliane Burkhard (BS 2017; MS 2019; PhD 2022)**

I'm currently working at University of Maryland in the Isotope Geochemistry Laboratory group. This has been a busy year of lab work, mentoring students, and field work. This year, I co-lead expedition TN435 with Chief Scientist Kevin Konrad (Oregon State University), during which we successfully dredged portions of the Mid-Pacific Mountains and Hess Rise. We're excited to learn more about these parts of the Pacific seafloor over the next couple of years!

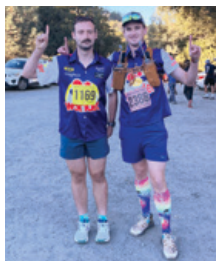


**Val Finlayson (PhD 2017)**

Dr Honniball is now an Assistant Research Scientist at the University of Maryland, College Park and contractor at NASA Goddard Space Flight Center. In July, she was awarded the NASA SSERVI Susan Mahan Niebur Early Career Award.

**Casey Honniball (MS 2017; PhD 2019)**

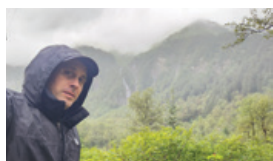
After spending years building hospitals on O'ahu I've relocated to the SF Bay Area building science labs. In my free time I've been running and racing my mountain bike vs other middle aged professionals. This fall myself and fellow GG Alumni Sebastian Smith used some field work insights to score two top five finishes in a California trail run.



**Zach Langdalen (BS 2018)**

FEMA Environmental Protection Specialist

**Eric Welch (MS 2019)**



I work for the State of Colorado as an air dispersion modeler where I am focused on starting up a new program in Colorado to regulate toxic pollutants from industries throughout the state. I also recently bought a dome house in the mountains!



**Olli Beucler (MS 2020)**

After over 15 years in Hawai'i working in tsunami warning and volcano monitoring, Brian moved to Colorado in 2020 to take a position as Deputy Director of the USGS Geologic Hazards Science Center. There, he oversees center operations, including the National Earthquake Information Center, the Albuquerque Seismological Laboratory, the Geomagnetism Program, and parts of the Landslide Hazards Program. He is currently a co-investigator on a USAID-Bureau of Humanitarian Affairs project through the USGS's Earthquake Disaster Assistance Team to expand seismic monitoring capacity in the South Pacific following the 2022 eruption of the Hunga Tonga-Hunga Ha'apai volcano. For that, he is re-establishing some seismic stations he originally set up there over 20 years ago. Brian is also excited to be co-teaching an undergraduate class on geohazards at the Colorado School of Mines next year. In his spare time, Brian enjoys trail running, skiing, and mountain biking in the Rocky Mountains.

**Brian Shiro (PhD 2021)**

Since I finished my PhD with the Department, I have done two postdocs: one in Bochum, Germany and another at Arizona State University. As of January 2024, I am now an Assistant Professor at the University of Missouri!

**Rebecca deGraffenried (PhD 2021)**





# ALUMNI AND FRIENDS 2024

The Earth Sciences Department is pleased to report on a very successful 2024 Earth Alumni and Friends event on May 3<sup>rd</sup> and 4<sup>th</sup>. We had over 50 alumni in attendance throughout the event! THANK YOU to everyone that was able to attend and celebrate our 37 graduates, and provide valuable feedback and guidance at the student research extravaganza, and early career panel.

We were ecstatic to host our own Dr. Frank Trusdell as a keynote speaker who presented over two decades

of expertise on Mauna Loa. Saturday's field trips led by **Julia Hammer** and **Scott Rowland** reminded many of us of our appreciation for Hawaiian geology as we visited the Waihe'e Tunnel, and explored the center of the Ko'olau volcanic rift zone at the Friendship Garden, and Kawainui.

We look forward to seeing you all at the next Earth Alumni and Friends event in 2026.

## Day 1: POST and HIG tours, then dinner







# Day 2: Field trip to Windward O'ahu





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ERTH 305 (Geological Field Methods): The Mojave

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ERTH 305 (Geological Field Methods): O'ahu

ERTH 306 (Work of Water): O'ahu

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ERTH 302 (Igneous Petrology): West Hawai'i Island

ERTH 100+ field trip: Kaua'i

ERTH 100+ field trip: Hawai'i Island

ERTH 305 (Geological Field Methods):  
The Mojave





# ERTH 305 (Geological Field Methods): O'ahu



# ERTH 306 (Work of Water): O'ahu





# ERTH 302 (Igneous Petrology): West Hawai'i Island



ERTH 100+ field trip: Kaua'i



ERTH 100+ field trip: Hawai'i Island





Rainbow on Hualālai.

## Your Donation Helps

*Remember when...*

*You held your first rock specimen in a class or took your first geology field trip?*

*You made your first map, learned about a useful isotope, or looked at a seismogram?*

*The Department of Earth Sciences/GG became your academic home, a place of learning with friends and colleagues?*

Help others have that experience with a gift to the Department of Earth Sciences. Your donation will help maintain and provide modern teaching infrastructure; support field excursions, research experiences, and fellowships for students; support out-of-state visits and in-house, TGIF seminars by world class Earth scientists; and foster continued connection with and among the Department 'ohana through this newsletter and gatherings such as our Alumni and Friends Days events.

Please contribute to any number of the Department of Earth Sciences funds at the University of Hawai'i Foundation and help make those geo-dreams come true for a new group of emerging geoscientists.

Consider giving online today  
to **UHM Earth Sciences** by  
scanning this QR code.



*Mahalo!*

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