



# Down to Earth

Department of Geology and Geophysics  
University of Utah



## Notes from the Chair:

As we head into the 2022-2023 academic year, we are thankful to Thure Cerling for his service as department chair during the past six years. Among many positive outcomes, our annual Open House was initiated during Dr. Cerling's first term as chair, and this energetic annual community event continued until the pandemic thwarted in-person indoor events. This new Open House tradition is professionally and creatively organized and executed by Shanna Futral, our departmental Administrative Manager. We'll pick it up again once we've begun to work our in-person meeting muscles in earnest, aiming for annual Open House events starting Fall 2023.

As we shift toward more in-person interaction, we'll strive to maintain the benefits of options for remote attendance in our classes, meetings, and events, aiming to optimize combined in-person and remote attendance, which still remains a significant challenge to our craft of creating and disseminating geoscience knowledge. Navigating this tricky landscape continues as increasingly infectious COVID variants emerge.

In this transitional year, we'll conduct various welcome and outreach events including (for details see [www.earth.utah.edu](http://www.earth.utah.edu)):

- Fall welcome barbecue (by existing students, staff, and faculty) for new graduate students on August 19th
- Houston SEG/AAPG in-person meeting, August 29th, 5:30-7:30pm
- Denver GSA in-person meeting, October 10th, 6:00-8:00pm
- Virtual alumni social, November 17th, 2:30-3:45pm followed by DLS lecture at 4:00pm

In the coming year we have many opportunities to develop related to:

- Phase 1 merging of our college (Mines and Earth Sciences) with the College of Science, which is opening new enrollment and recruitment opportunities
- Arrival of three new faculty members; Sarah Crump (July 2022), Juan Carlos deObeso (January 2023), and Chadlin Ostrander (July 2023), for whom new facilities are being developed for analysis of ancient DNA, serpentinization and carbonation alteration of exposed mafic and ultramafic rocks, heavy element isotope analysis applied to ancient and modern environments
- Hiring of two new operational staff positions to take on duties related to support of:
  - a) teaching in the field, classroom, and to the public (outreach)
  - b) laboratory facility development, maintenance, and evolution

We note the very recent (July 15, 2022) retirement of Quintin Sahratian, who served the department for nearly 30 years stewarding our collections and displays, and assisting in rock preparation. Many thanks to Quintin for his many contributions to the environment in our well-visited and well-regarded building.

We thank our alumni for their generous and sustained support of our program, which allowed us to award more than \$100,000 in scholarships to undergraduates for the upcoming 2022-2023 academic year. We look forward to reconnecting with you at events described above.

*Dr. William P. Johnson, Department Chair*





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The *Down to Earth* Newsletter  
is published by:

**Department of Geology & Geophysics**  
**University of Utah**

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Salt Lake City, Utah 84112

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**Front Cover:** When geoscience and art meet. What looks like a random scattering of rocks on the floor of a gallery in France is actually far from random. It's a faithful, painstakingly crafted replica of a part of the Grand Staircase-Escalante National Monument, created with the help of UofU faculty, Dr. Marjorie Chan. The exhibit by Amsterdam artist Irene Kopelman called "Here and Elsewhere," uses fired clay rocks to represent dark spherical concretions, resembling large marbles, that form as iron-rich water percolates through sandstone. With a color and texture like an avocado, the durable concretions erode out of the sandstone collecting like pebbles in naturally sculpted patterns.

**Down To Earth contributors:** Lauren Birgenheier, Marjorie Chan, Emily Cunningham, Shanna Futral, Paul Gabrielson, Santiago Jurado, Sarah Lambart, Stephanie E. Mills, Raul Ochoa, Jim Pechmann, Erich Petersen, Michelle Tuitupou

  
THE UNIVERSITY OF UTAH  
DEPARTMENT OF  
GEOLOGY & GEOPHYSICS

**SAVE THE DATE**

We look forward to having you join us at any and all of our upcoming events.  
Check [www.earth.utah.edu](http://www.earth.utah.edu), our Facebook page, and future emails for future details.

Aug 29 @ 5:30-7:30pm  
SEC/AAPC IMAGE Alumni Social  
Hilton Americas, Houston, TX

Oct 10 @ 6:00-8:00pm  
GSA Alumni Social  
Hyatt Regency Denver, Colorado Conference Center, Centennial Ballroom C

Nov 17 @ 2:30-3:45pm  
Virtual Alumni Social (Lecture by Dr. Jeff Moore @ 4:00-5:00pm)  
Zoom Details: [https://earth.utah.edu/events/ALUMNI\\_SOCIAL.php](https://earth.utah.edu/events/ALUMNI_SOCIAL.php)



*Artist Irene Kopelman and Marjorie Chan in the field where the ideas for an art installation got its start.*

## College Merger Announcement

Beginning July 1, 2022, the University of Utah's College of Mines and Earth Sciences merged with the College of Science in a move to unite programs, build cooperation between faculty, and create a much stronger base for science and mathematics education at the U. Phase 1 of the merger has begun which involves integrating non-academic functions such as advising, accounting, and marketing. The deans will work to support communication and collaboration in the united college and continue to work with all areas to streamline the merger.

"Both of these colleges are leaders in student enrollment and research, providing valuable direction on some of the most important issues we face today," said U President Taylor Randall. "I am confident this union will elevate both programs and provide more opportunities for collaboration and student access to classes."

The College of Mines and Earth Sciences will retain its name to make this the first "college within a college" model.

Read more about the merger at <https://attheu.utah.edu/facultystaff/cmest-to-merge-with-cos/>.



*Photo credit: Marie Jackson  
Brick faced concrete of the Munoz corridor in the tomb of Caecilia Metella.*

Marie Jackson, research associate professor, has found another example of the durability of Roman concrete by way of a tomb. Caecilia Metella, a first-century Roman noblewoman, was buried in a large cylindrical tomb. The volcanic aggregate the builders chose plus the unusual chemical interactions with rain and groundwater made for a lasting quality that exceeded her male contemporaries' monuments. "The construction of this very innovative and robust monument and landmark on the Via Appia Antica indicates that [Metella] was held in high respect and the concrete fabric 2,050 years later reflects a strong and resilient presence," says Jackson. Read more about Jackson's research and the life of Metella at: <https://attheu.utah.edu/facultystaff/caecilia-metella/>.



## GEO Undergraduate featured on The College Tour



Jenny Hambleton (B.S., Geoscience-Geology, 2021) was featured in Amazon Prime's original series, The College Tour hosted by Alex Boylan. Each episode of the College Tour tells the story of what life is truly like on college campuses around the country and around the world. Jenny's path is unique. She was a nontraditional student who went from a background in fashion design, project management, and art to geology and research. In her time as an undergraduate student at the U, Jenny participated in several research opportunities including imaging Allosaurus bones at the Natural History Museum of Utah, studying ancient Roman shipwreck cargo,

and doing top secret work for the Department of Energy. Jenny also assisted Dr. Jim Karner, research associate professor, with his "Meteorite, Meteor-wrong" tabling sessions at department outreach events.

Jenny's full story can be found on The College Tour link through Amazon Prime titled "The U – Changing Your Path" or at <https://vimeo.com/669647489>.

*In Spring 2022, Jenny was hired by Bartels and Stout as a microscope sales representative for the Pacific Northwest after her official graduation in Fall 2021.*

## The Accuracy of Hollywood's Dinosaurs

Mark Loewen, paleontologist at the Natural History Museum of Utah and associate professor in the department, was featured in Vanity Fair reviewing dinosaur movie scenes. He answers the questions about the accuracy of Hollywood when it comes to depicting dinosaurs. In the critique, he reviewed several movies including his favorite, Jurassic Park, other movies within the Jurassic Park franchise, King Kong, and Night at the Museum. Loewen helped create the World of Dinosaurs GEO 1040 course in the early 2000s at the university. He used that idea to expand and create another course, GEO 1000 Science in Cinema, that analyzes science in movies. A GEO 1040 alum works for Vanity Fair and suggested Loewen for the series which coincides with the release of "Jurassic World: Dominion." You can watch the full segment, "Paleontologist Reviews Dinosaur Movie Scenes" on YouTube at <https://www.youtube.com/watch?v=PJXrCtQA-YDs&t=3s>



The Matterhorn appears as an immovable, massive mountain that has towered over the landscape near Zermatt, Switzerland for thousands of years. A study published in the journal Earth and Planetary Science Letters now shows that this impression is wrong. An international research team, lead in part by Dr. Jeffrey Moore, has proven that the Matterhorn is instead constantly in motion, swaying gently back and forth about once every two seconds. This subtle vibration with normally imperceptible amplitudes is stimulated by seismic energy in the Earth originating from the world's oceans, earthquakes, as well as human activity.

<https://attheu.utah.edu/facultystaff/how-the-matterhorn-sways/>

*Photo credit: Jan Beutel  
Installation of a seismometer near the summit of the Matterhorn*



## Francis Brown Presidential Endowed Chair



Distinguished Professor Kip Solomon was approved by the university's President Taylor Randall to be the next Francis Brown Presidential Endowed Chair in the department from July 1, 2022 through 2025. Dr. Solomon received his PhD in Earth Sciences from the University of Waterloo and both his BS and MS degrees from the University of Utah in the Department of Geology and Geophysics. He joined the department in 1993 after a decade of experience with USGS and Oak Ridge National Laboratory. From 2009-2013, he served as chair of the department.

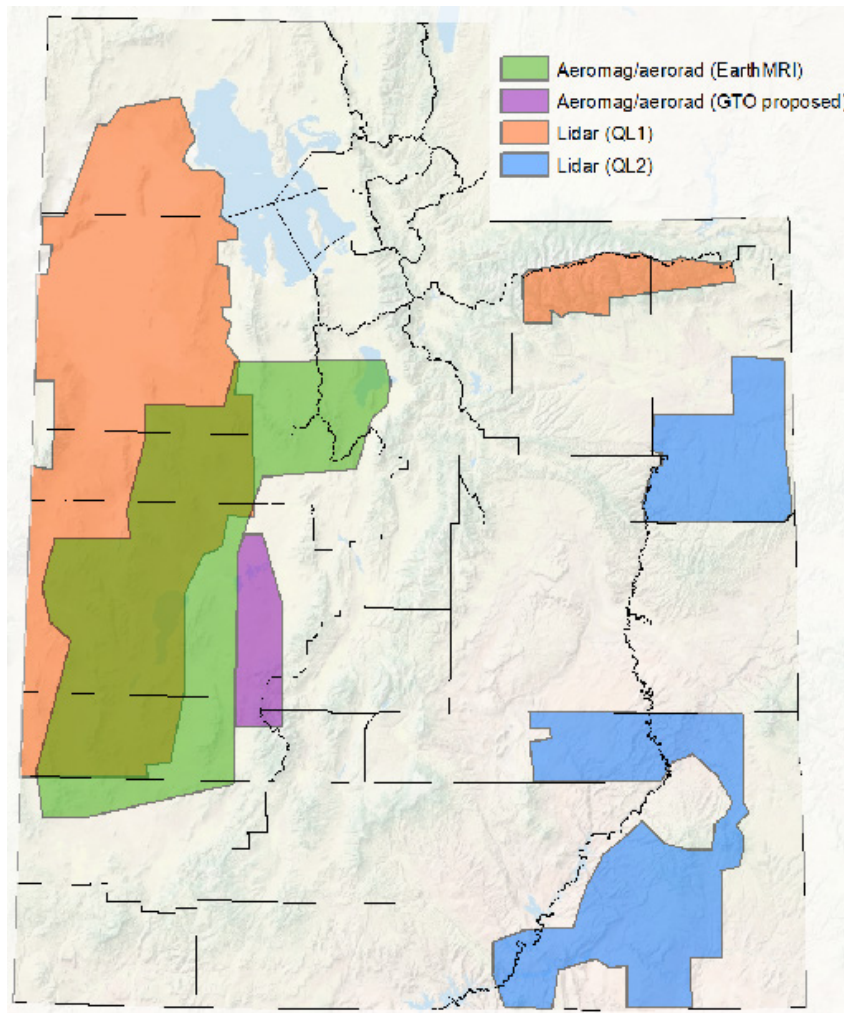
Dr. Solomon was also selected as a recipient of the UofU's Distinguished Research Award for 2022. His colleagues emphasized the important contributions he has made in research and scholarship in his field.

The endowed chair position is one of the university's most meaningful and prestigious honors given its legacy and connection to Dean Francis Brown who impacted the college in immeasurable ways over his career of nearly 50 years. Needless to say, Frank would be proud to know that Dr. Solomon will help carry on his legacy.

In a study published in *Nature*, Lowell Miyagi and colleagues have found a mineral that is 1,000 times softer than much of the rest of the Earth's mantle. The mineral davemaoite was important for understanding what happens to slabs of rock as they sink into the Earth, which in turn teaches us about how and why earthquakes and volcanoes happen on the surface. The research team which included scientists from Utah, California, Germany and the UK managed to study the mechanical properties of davemaoite. "Knowing the mechanical properties of this material gives us a better understanding of how slabs subduct and behave in the Earth's interior," Miyagi said. "So, this can give us a better understanding of the large-scale processes that drive plate tectonics and thus earthquakes and volcanoes. Read the entire article <https://attheu.utah.edu/uncategorized/embargoed-nature-study/> and link to the full study <https://doi.org/10.1038/s41586-021-04378-2>.



## New Lidar and Geophysical Coverage Coming to Utah



Over the next year, more than \$9 million worth of new, high-quality, publicly available data will be coming to Utah. In a huge step forward for data continuity, Utah will be getting complete lidar coverage, including quality level 1 (QL1) coverage over the entire West Desert. Additionally, a large rank 1 aeromagnetic and aeroradiometric survey will be flown over west central Utah, focusing on the eastern Great Basin. A map with proposed boundaries is given although there might be changes to the final survey designs.

These surveys are being funded through the USGS Earth Mapping Resource Initiative (EarthMRI) program and the DOE Geothermal Technologies Office (GTO) and have been planned in partnership with the Utah Geological Survey. These data will support a huge range of geologic studies, covering areas that have had very little study while also tying

together different basement, structural, and mineral domains with continuous data for the first time. These datasets are a first step in regionally integrated geologic models, particularly over the West Desert.

All researchers should think about projects that can take advantage of these new datasets and look for opportunities to create the high-quality geologic interpretations they can support. Data is anticipated to be publicly available mid-2023, so the time to start planning is now. If you have any questions or would like further information about these surveys or Utah's engagement with EarthMRI, please contact me at [smills@utah.gov](mailto:smills@utah.gov).

Stephanie E. Mills  
Senior Geologist, Utah Geological Survey  
Adjunct Assistant Professor, UofU, GEO



## Depositional Environments Spring Field Trip

From April 21-24, 2022, the Department of Geology and Geophysics (GEO) completed a student field trip as a part of the Depositional Environments class and the American Association of Petroleum Geologists (AAPG) student group, both of whom are taught and advised by Dr. Lauren Birgenheier. The trip was co-led by Birgenheier, Dr. Anton Wroblewski (adjunct faculty in GEO), Dr. Emma Morris (PostDoc), and Claire Atlas (MS Geology). AAPG student chapter officers, Atlas, Hannah Hartley (MS Geology), Raul Ochoa (PhD, Geology), and Jeremiah Bernau (PhD Geology), played key organizing and supporting roles in planning and carrying out the trip.

Thirteen undergraduate and graduate students made a 4-day transect from Salt Lake City to Moab. They visited outcrops of sedimentary rocks that were deposited in range ancient deposition environments including alluvial fans, river systems, lakes, shallow marine deltas, and eolian environments. Utah sedimentary rocks have so much to offer as examples of ancient depositional systems. Despite some intermittently rainy and cold conditions followed by sunshine, students were enthusiastic to get out in the field safely and see rocks, after a difficult couple of years of pandemic geology education.

A very special thanks to Dr. Wroblewski for his long track record of lending his time, energy, and expertise to students field experiences in the department.





## Back in the Field



Spring 2022 GEO 4500 Field Methods students on a field trip to Capitol Reef National Park with Drs. Brenda Bowen and Thure Cerling.



AAPG Student Club out at the Bonneville Salt Flats to check on one of the stations and inspect different depositional environments while fulfilling their geological duty to look at stuff!

*Photo credit: Raul Ochoa*



## Back in the Field (continued)

Dr. Jeff Moore's portion of field camp in Summer 2022. The majority of these photos are from South Fork Weber rock avalanche, the others are from Tanner Gulch debris flow.





# UROP Poster Presentations

## UROP Recipients

Fall 2021

Madeleine Festin  
 Brittney Hoskins  
 Rachel Jorgensen  
 Karrah Spendlove  
 Kayleigh Kirkpatrick

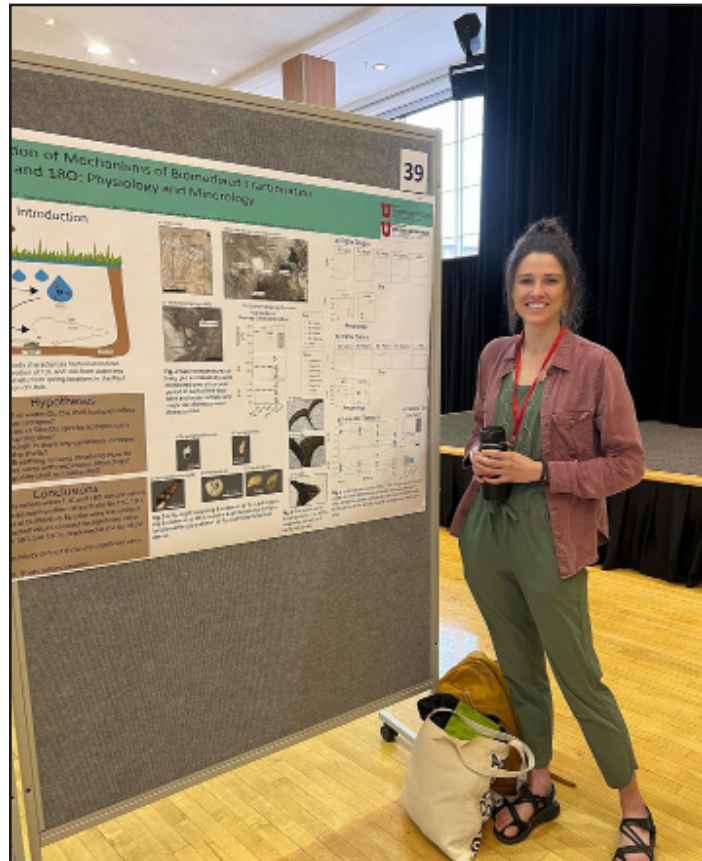
Spring 2022

Aiden Beukema  
 Margaret Lelonek  
 Mallory Scofield  
 Sarah Smart  
 Karrah Spendlove  
 Kayleigh Kirkpatrick

Summer 2022

Dewi Eagan

*Bottom left photo:  
 Mallory Scofield & Sarah  
 Smart*



## UROP Mentors

Fall 2021

Randy Irmis  
 Mark Loewen  
 Jeff Moore  
 Kathleen Ritterbush  
 Leif Anderson

Spring 2022

Randy Irmis  
 Cari Johnson  
 Pete Lippert  
 Susana Henriquez

Summer 2022

Leif Anderson  
 Kathleen Ritterbush

*Left photo:  
 Sam Bagge*

*Bottom right photo:  
 Kayleigh Kirkpatrick*





## Williamson Fellows Back in Person

The Williamson Fellows outreach and science communications program just completed its third year with great successes, finally getting back into the classroom after a virtual year due to Covid. This program put two of our advanced geology graduate students, Jeremiah Bernau and Sam Lopez, into Salt Lake City classrooms to work with 7th-12th graders from Salt Lake Center for Science Education (SLCSE) and Bryant-SLCSE Middle School. It was great to have these dedicated and experienced fellows share their understanding of environmental change in Earth's landscape. At the same time, the Fellows gained science communication experience while engaging youth, encouraging diversity in the geosciences, and working to increase public science literacy.

This year, alumnus Tommy Good (MS 2013), a science teacher at Bryant-SLCSE, mentored our Fellows with specific goals to develop and organize field trips around the Salt Lake City area. The field trips included the Great Salt Lake, the UofU campus (Sutton building), and the Jordan River. Faculty members Brenda Bowen and Marjorie Chan also provided advising and logistical support to the Fellows. Read more about the Williamson Fellows through the link below, along with the teaching resources that can be widely shared. We look forward to Mikelia Heberer and Victoria Pavlovics joining the program as the 2022-23 Williamson Fellows!

<https://cmes.utah.edu/outreach/Williamson%20Fellow%20Outreach.php>





## Student Awards

### Outstanding Undergraduate Student Awards:

<b>Geology:</b>	Karrah Spendlove
<b>Environmental Geoscience:</b>	Sam Bagge
<b>Geophysics:</b>	Andreas Cordova
<b>Geological Engineering:</b>	Dustin Gaines
<b>Terrill Award (Geological Engineering):</b>	Kali Braning
<b>Earth Science Composite Teaching:</b>	Edward Tang

### Outstanding Undergraduate Researcher:

Alex Dzubay

### Outstanding Department Volunteers:

**Department:** Riley Finnegan

**Graduate Student:** Meg Wolf

**Undergraduate Student:** Kayleigh Kirkpatrick

### Outstanding Teaching Assistant:

Emily Cunningham

### Outstanding Graduate Students:

**Masters:** Mark Radwin

**PhD:** Carl Beno

### Outstanding Graduate Researcher:

Jeremiah Bernau

### AWG Awards:

Lila Sorensen: Susan Ekdale Field Camp Scholarship winner

Riley Finnegan: Outstanding Graduate Student

**Kevin Mendoza** (PhD Candidate, Geology) was recognized with the National Association of Geoscience Teachers (NAGT) Outstanding Teaching Assistant Award in January 2022. NAGT recognizes outstanding teaching assistants in geoscience education with up to 30 awards annually. Award winners receive a one-year membership in NAGT, which includes an online subscription to the Journal of Geoscience Education and In The Trenches quarterly magazine. Kevin is also one of the recipients of the University of Utah's Teaching Assistantship program for the 2022-2023 academic year.

**Sam Lopez** (PhD candidate, Geology) is a recipient of the 2022-2023 University's Graduate Research Fellowship.

**Emily Cunningham** (PhD Candidate, Geology) has been awarded a Schlanger fellowship for the 2022-2023 academic year. This Program offers merit-based awards for graduate students enrolled in a Ph.D. program to conduct research related to the International Ocean Discovery Program (IODP). She is one of the five recipients in the United States this year. Emily will work on the samples collected during IODP expedition 396 last summer. She will couple geochemical modeling with in situ analyses of phenocrysts to determine the cause of excess magmatism during the Northeast Atlantic continental breakup.



Emily Cunningham



Lila Sorensen



Riley Finnegan



## Department Scholarships

*We thank the College, the Department, and our many friends who made substantial and important support possible for the following students:*

### **Charles B. Hunt Scholarship**

Brittney Hoskins

### **David & Hanne Duke Scholarship**

Kali Braning

### **Dorothy Goode Endowed Scholarship**

Autumn Hartley, Eva Shaw

### **Dr. Ricardo Presnell Memorial Scholarship**

Brooke Garza, Benjamin Rivera

### **Frischknecht Scholarship**

Madeleine Festin

### **G. Frank & Pamela Joklik Scholarship**

Finn Allred

### **GG Scholarship**

Nick Bailey, Ryan Cocke, Neo Hill, Erin Lofgran, Michael Terlaga, Lily Fogg, Sarah Kelley, Bennett Davenport, Constance Sauve, Alexander Kowalczyk, Yos Onwukeme

### **Hellmut H. & Gerda A. Doelling Scholarship**

Brennon Peterson

### **Hiromi Honda Endowed Scholarship**

Benjamin Rivera

### **Kenneth & Nedra Bullock Keller Scholarship**

Riley Ade, Aiden Beukema, Kali Braning, Rachel Jorgensen, Tyler Yoklavich

### **Kenneth W. Larsen Endowed Scholarship**

J.R. Murphy

### **M. Dane Picard Scholarship**

Autumn Hartley

### **Marta S. Weeks Legacy Scholarship**

Karrah Spendlove

### **Matthew P. & Katharine G. Nackowski Scholarship**

Madeleine Festin

### **Mikulich Endowed Scholarship**

Margo Lelonek

### **Mineralogical Society of Utah Scholarship**

Finn Allred, Brittney Hoskins, Michael Innocenti

### **University of Utah T53 Scholarship**

Chloe Barry, Ocean Tennant-McCubbin, Claire Cruz

### **William T. & Gayle W. Parry Endowed Scholarship**

Brennon Peterson, Eva Shaw

### **UGA Scholarship (Field Camp)**

Aiden Beukema, Karrah Spendlove

### **Orlo Childs Scholarship (Field Camp)**

Nick Bailey, Aiden Beukema, Nathan Nicolodemos, Brennon Peterson

### **Earls Family Scholarship (Field Camp)**

Kali Braning, Audra Tessman

### **Kenneth & Nedra Bullock Keller Scholarship (Field Camp)**

Ryan Cocke, J.R. Murphy, Sarah Smart

### **Mineralogical Society of Utah Scholarship (Field Camp)**

Megan Denney, Lila Sorensen

Please consider making a gift to the Department of Geology and Geophysics by going to [https://earth.utah.edu/gift\\_matters.php](https://earth.utah.edu/gift_matters.php) or send check to:

College of Mines & Earth Sciences  
Department of Geology & Geophysics  
ATTN: TJ McMullin  
115 South 1460 East, Room 205  
Salt Lake City, UT 84112

## Chapman Awards

### The 2021-2022 Recipients:

**Raul Ochoa:** AAPG short course on sequence stratigraphy

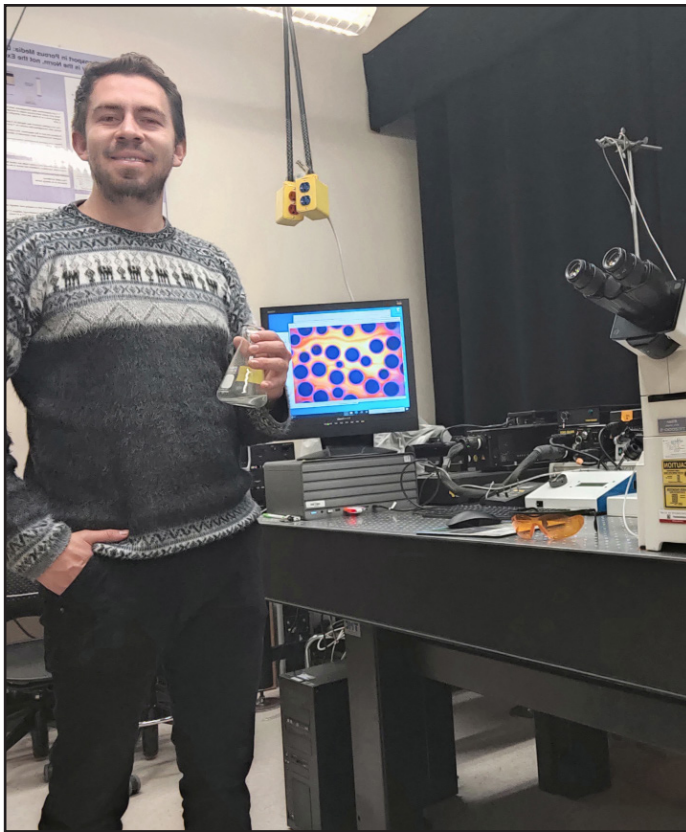
**Emily Cunningham:** Melting and Fluid/Melt-Rock reactions in the Mantle International School

**Santiago Jurado:** Research visit to the Swiss Federal Institute of Aquatic Science and Technology

**Sam Lopez:** Research and training visit to the United States Geological Survey Mercury Research Lab

**Patrick Bradshaw:** virtual Applied Geothermal Data Analysis, Simulation, and Technologies Workshop

**Kevin Mendoza:** Workshop in increasing Data, Math and Societal Relevance in Introductory Earth Science Courses



### **Santiago Jurado, PhD**

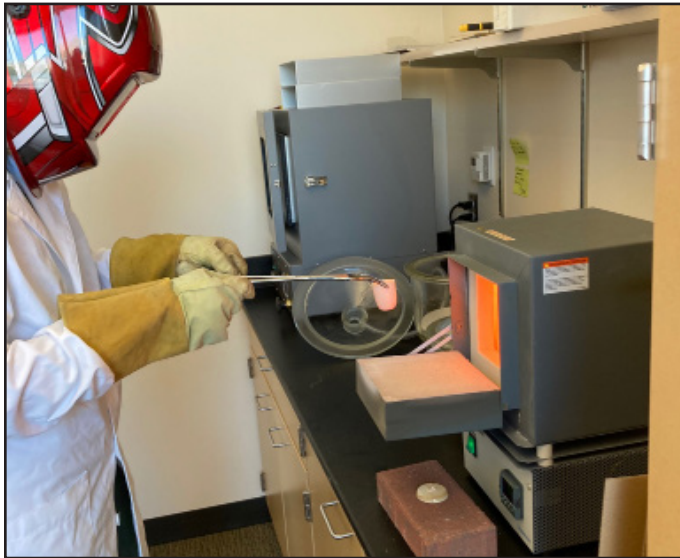
The main topic of my PhD research is colloid filtration theory which provides an underlying theory for the transport of nano- and micro-particles in different granular media. I am focused on understanding the role of incomplete mixing in colloidal transport and its role in predicting colloid deposition. There are open questions about the dynamics involved in incomplete mixing processes, the equipment used, and analytical methods to determine it. I want to explore these concepts in the laboratory EAWAG - ETH Zürich and make collaborative research with experts on transport and reaction phenomena in porous and fractured media, particularly in multiphase systems. Understanding the characteristics that affect the transport of colloids in unfavorable attachment conditions will increase and enhance my knowledge of my PhD research area, broaden my field of expertise with this collaborative work, and open opportunities for high-impact science publications. Once the concepts under the microscope analysis are done, we can study colloid transport and filtration at larger scales. For example, we are studying the viability and effectiveness lateral channels that act as filter, on impacted rivers for gold mining processes.



## Chapman Awards (continued)

### Emily Cunningham, PhD

The funds I received from the Chapman Grant allowed me to travel to Sestri Levante, Italy, this past October to attend the MERMEA school, a week-long international school on mantle dynamics. The material covered during the MEREMA school was highly interdisciplinary, with lectures ranging from petrology, geochemistry, geophysics, and geodynamics, all applied to the mantle. Lectures were given by leading experts in each subdiscipline invited from across Europe and the United States. The school is primarily for Ph.D. students and takes place every four years, meaning this past iteration was my only opportunity to attend. The knowledge that I gained from the lectures and the networking connections that I made will benefit me for the rest of my career.



The David S. and Inga M. Chapman Fund was established by former students to support educational and research opportunities beyond those possible through normal resources. Educational opportunities for students supported by this fund may include research visits to collaborative labs, attendance at focused workshops and conferences, opportunities that broaden a student's international experience, and opportunities to participate in major endeavors such as collaborative field studies and research cruises. Applications are received twice a year although special opportunities that require a rapid response are entertained outside of the normal schedule.



### Raul Ochoa, PhD

With the generous support of the Chapman Award, this allowed me to participate in a 3-day Uinta Basin field trip sponsored by the Utah Geological Association (UGA) in collaboration with the Utah Geological Survey (UGS). The focus of the Uinta Basin field trip included a half day core exercise and 2 days looking at Utah geology of the Green River Formation. I was able to build my network and meet with professionals from industry and private sector while developing additional skills as a geoscientist. The Chapman Award also allowed me to attend the international annual meeting of American Association of Petroleum Geologists (AAPG) in Denver, CO. I attended an advanced sequence stratigraphic course that is directly applicable to my dissertation at the University of Utah. I was also able to attend in person and present my research titled "Sedimentary and Stratigraphic Characterization of the Cretaceous Agrio Formation as an Unconventional Target: Neuquen Basin, Argentina" in September 2021.



*Emeritus professors David Chapman and Erich Petersen were able to get together for a brief visit in Vancouver, B.C.*

## 2021-2022 Guy F. Atkinson Distinguished Lecture Series

**Meghan S. Miller**, Research School of Earth Sciences,  
Australian National University

*Inherited lithospheric structures control arc-continent  
collisional heterogeneity –on the cusp of a tear*

**Katrina Twing**, Department of Microbiology, Weber State  
University

*Microbial ecology of subsurface serpentinite rocks*

**Gabe Bowen**, Department of Geology and Geophysics,  
University of Utah

*Dr. non-unique solutions, or: How I learned to stop being  
over-prescriptive and Love Bayes' Theorem*

**Gene Humphreys**, Department of Earth Sciences, University of  
Oregon

*How lithospheric instabilities made the Columbia River basalt  
eruptions big*

**Zhongwen Zhan**, Seismological Laboratory, Division of  
Geological and Planetary Sciences, California Institute of  
Technology

*Geophysical sensing on submarine cables: a cocktail for two  
communities*

**Derya Guerer**, School of Earth and Environmental Sciences,  
The University of Queensland

*From sea to summit –reconstructing the tectonic evolution of  
Gondwana*

**Kim Cobb**, Earth and Atmospheric Sciences, Georgia Tech  
*Science and solutions for 21st century changes in climate and  
weather extremes*

**Jamie Farrell**, UofU Seismograph Stations, University of Utah  
*A Multi-Scale View of the Yellowstone Volcanic System*

**Kamini Singha**, Earth and Society Programs, Geology and  
Geological Engineering, Colorado School of Mines  
*Quantifying solute transport processes with electrical  
geophysics*

**Karianne Bergen**, Data Science Initiative, Brown University  
*Big data for small earthquakes: Data mining, deep learning and  
explainable AI*

**Kathleen Ritterbush**, Department of Geology and Geophysics,  
University of Utah  
*Swimming with Ammonites: How New Technologies Bring  
Fossils to Life*

**Ananya Mallik**, College of Science Geosciences, University of  
Arizona  
*How hot and wet is the Moon: Insight from experiments*

**GEOSLAM: Tessa Czech, Patrick Bradshaw, Sean Hutch-  
ings, Cheng-Nan Liu, Ivan Gaichuk, Hannah Finley, Santi-  
ago Jurado, Baylee Olds, Mikelia Heberer, Emily Cunning-  
ham, Ashley Morris**

Department of Geology and Geophysics Graduate Students,  
University of Utah

**Catherine A. Macris**, School of Science, Indiana University,  
Mineralogical Society of America (MSA) Distinguished  
Lecturer Program

*Laser Beams and Levitating Lava Orbs: Science fiction or real  
tools for studying planetary science?*

**Susan Brantley**, Department of Geosciences, Penn State  
University

*Weatherability of rocks and minerals from the laboratory to the  
critical zone*

**Chen Zhu**, Department of Earth and Atmospheric Sciences,  
Indiana University, Henry Darcy Lecture

*How Are Geochemical Reactions in Aquifers Connected to  
Climate Change Mitigation?*

**Michael Zhdanov**, Department of Geology and Geophysics,  
University of Utah

*Geophysical Inversion: Seeing the Unseeable*

**Jeff Freymueller**, Department of Earth and Environmental  
Sciences, Michigan State University

*Megathrust slip budget and earthquakes along the Alaska P  
eninsula*

**Keith Koper**, UofU Seismograph Stations, University of Utah  
*New observations and interpretations of the fine-scale structure  
of Earth's solid inner core*

**Rolf Kipfer**, Department Water Resources and Drinking Water,  
Swiss Federal Institute of Aquatic Science and Technology

*The ballade of noble gases, paleoclimate, Black Smokers and  
Arsenic*

**Yemane Asmerom**, Earth and Planetary Sciences, University of  
New Mexico

*How will future warming impact the rainfall belt (ITCZ) of the  
Americas?*

A list of current and past lecturers can be found at  
[https://earth.utah.edu/events/lecture\\_series.php](https://earth.utah.edu/events/lecture_series.php).  
You can also nominate a speaker or link to our  
YouTube channel for recorded lectures.



## Faculty Highlights & Awards

### Outstanding Faculty Teaching Award: Sarah Lambart



### Outstanding Faculty Research Award: Brenda Bowen



**Marjorie Chan** received the 2022 American Association of Petroleum Geologists (AAPG) Grover E. Murray Memorial Distinguished Educator Award. The honor was awarded at the AAPG-SEG Image meeting in Houston in August 2022. Dr. Chan was also featured in the April 2022 Explorer publication article “Geoscience Education Is In Transition, in More Ways Than One,” discussing changes in teaching methods before and after the COVID-19 pandemic.



**Thure Cerling**, former department chair, has received a one-year extension as the Francis H. Brown Presidential Endowed Chair. Dr. Cerling was originally nominated and approved for a three-year term in 2018. He has now unanimously been approved for re-appointment through the academic year 2022. Dr. Cerling was also the recipient of the University’s prestigious Rosenblatt Prize for Excellence. The Prize is an endowed award, given annually to a member of the faculty of the University of Utah “to honor excellence in teaching, research, and administrative efforts, collectively or individually, on behalf of the University.” It is the highest University honor bestowed on any faculty member. Darryl Butt, Dean of the College of Mines and Earth Sciences, said, “Thure is an amazing teacher, researcher, and leader whose career has impacted hundreds of students, and through his research had real and lasting impact on our planet.”

**Paul Brooks** was named a 2021 AGU (American Geophysical Union) Fellow. This is a prestigious honor awarded to a select few geologists each year. The AGU Fellows program was established in 1962 and recognizes AGU members who have made exceptional contributions to Earth and space science through a breakthrough, discovery, or innovation in their field. Fellows act as external experts, capable of advising government agencies and other organizations outside the sciences upon request.





## Faculty Highlights & Awards (continued)

**Cari Johnson** received the Dickinson Medal Award from the Society for Sedimentary Geology (SEPM). This award is given in recognition of a mid-career research geoscientist who is significantly influencing the sedimentary geology community with innovative work; with a track record of impactful publications, pioneering approaches, and the establishment of an influential research program. SEPM stated that Dr. Johnson was named the recipient in recognition of her tenacity in her pursuit of sedimentary geology innovation. She is skilled at solving basin-scale sedimentary and tectonic problems by combining basic field and observational skills with quantitative tools and methods across multiple sub-disciplines. Her work on sedimentary geology and its applications to tectonics is grounded in fundamental field-based science and has advanced understanding of complexities and architecture in nonmarine, tidal, and shallow marine depositional systems.



**David Applegate**, UofU adjunct professor in the department, was nominated by the White House to lead the U.S. Geological Survey. The agency was created in 1879 to oversee the country's natural resources and hazards. Applegate first joined the federal agency in 2004 as a science adviser for Earthquake and Geologic Hazards. He eventually moved up to the role of associate director for the USGS Geological Survey's Natural Hazard division.



**Lauren Birgenheier** is leading the geology portion of a \$1.5 million project to study the potential of transforming coal-associated mineral resources in Utah and western Colorado's Uinta Basin region into high-value metal, mineral, and non-fuel carbon-based products. The funding was awarded by the United States Department of Energy. The project includes 25 organizations and 30 team members led by Michael Free, Materials Science and Engineering department chair.



**Kathleen Ritterbush** achieved tenure and was promoted to Associate Professor in the department. Dr. Ritterbush was also featured in an @theU article in July 2021 for her 3-D printed cephalopod replicas "de-fossilizing" animals of the past to learn how they live. Along with fellow paleontologist David Peterman, Dr. Ritterbush used math and physics to put the 3-D replicas of the creatures into the water and see for themselves how their shell structure may have been tied to their movement and lifestyle.



## Emeritus Faculty Highlights

**Erich Petersen** (Retired Faculty) will be a leader on the MJF2 and MJF3 courses this year as well as on at least one SEG International Student Field Trip course and several SEG Student Chapter visits from other universities. Dr. Petersen's teaching team was featured in the SEG Discovery magazine January 2022 edition ([www.segweb.org/MichaelJFitzgerald](http://www.segweb.org/MichaelJFitzgerald)) regarding the second Michael J. Fitzgerald Student Mapping Course with 12 participants representing Canada, Colombia, Mexico, and the U.S. This latest field course involved detailed mapping of rock types and alteration associated with the Late Cretaceous-age Copper Flat porphyry-breccia system.



**Bob Smith's** (Retired Faculty) presentation about the Anatomy of Old Faithful Geyser given on March 25, 2021, was chosen as the Past Presidents' Award for Best Paper of the Year. The award is given by the Colorado Scientific Society which has a history of reflecting on previous year's lectures and choosing a presentation that deserves special recognition. Bob's name, title of paper, and year goes on a plaque that resides in their display case at Berthoud Hall on the Colorado School of Mines campus.





## Department Retirees

**David Dinter** retired from his position as Professor (Lecturer) on July 1, 2022. For 25 years, Dave was one of the most popular and effective teachers in the department. His teaching responsibilities ranged from large classes for non-majors to advanced classes for majors. One of his most important contributions to the department was his teaching of hundreds of undergraduate majors in the Geologic Field Methods and Summer Field Geology classes. The summer class required the students to synthesize what they had learned in previous classes and apply it to real geological problems, while camping for up to 12 days near each field site. Dave was selected twice by GG students for the annual Outstanding Faculty Teaching Award. In addition to teaching, Dave conducted research on faults beneath the Great Salt Lake and Utah Lake, did educational outreach, and served on department committees and in leadership positions in a continental drilling program. Dave has been appointed an Emeritus Professor (Lecturer).



**Quintin Sahratian** (BS 1994) retired from his position after over two decades of service as curator to the department. Quintin took care of many of the teaching needs for samples and equipment, thin sections, rock preparation, and more. One of his biggest jobs was moving the thin section lab and all the collections out of the old Mines building into the new Sutton building in 2009. He single-handedly came up with the idea to create and execute the Utah Room which is filled rocks and minerals specifically from Utah. The Utah Room is one of the most popular rooms to be visited in the Sutton building. We wish him well in his retirement!





## Alumni News

**Roy Adams and Janet Roemmel** (GG friends) are busy in the Washington DC area. Roy does energy analysis to provide important input on energy issues, and Jan enjoys many volunteer activities.

**Edith Allison** (MS 1979) lives in North Bethesda, Maryland and is a consulting energy geologist focusing on energy policy. At this AAPG-SEG Image meeting in Houston, Edie was awarded honorary membership in AAPG.

**David Andersen** (PhD 1973) has retired after 40 years as a fluvial sedimentologist at San Jose State University. Prior to his retirement, he enjoyed returning to Utah to work on Eocene fluvial deposits (above the Green River Formation) in the Uinta Basin, as well as other projects in Wyoming, California, and the Dry Valleys of Antarctica.

**Carl Beno** (PhD 2022) successfully defended his PhD, having his family out from New York to join in the celebration. Carl is now in a postdoc in Canada.

**Julie Bernier** (MS 2003) continues her USGS work for the St. Petersburg Coastal and Marine Science Center to understand barrier-island change at historic to geologic time scales.

**Cheryl L. Brown Manning** (ABD 1994) and **Andrew H. Manning** (PhD 2002) are proud of their eldest, Aidan (Graduate Program of Hydrologic Sciences, University of Nevada Reno), who recently published their first paper on the impact of bark beetle outbreaks on streamflow. Cheryl has long been an exemplary voice for Earth science teachers and geoscience education, and is now a PhD candidate in the Visualization & Geoscience Education Research Lab at the Department of Earth, Atmosphere, and Environment, Northern Illinois University. Andy continues his work with the U.S.G.S. studying mountain aquifer systems, mineral deposits, and climate using geochemical methods and modeling.

**Weiping Cao** (PhD 2009) is a Research and Development Geophysicist at TGS in Houston, TX.

**Jing Chen** (PhD 2000) works at BGP, CNPC in Houston, TX as a Geophysical Research Advisor.

**Roger Congdon** (MS 1987) and wife Lydia are enjoying life in Albuquerque, NM. Roger retired from the U.S. Forest Service over 4 years ago, but has taken up oil painting, enhanced by his geologic knowledge.



**Sean Conner** (BS 2009) enjoys his work as a geologist (lithology logger) at Rio Tinto Kennecott in Bingham Canyon, Utah.

**Wei Dai** (PhD 2012), joint degree with KAUST) is a research exploration imaging geophysicist with Shell in Houston. He and his wife have twin boys just under a year old, so their lives are pretty busy! Wei fondly remembers going up to Big Cottonwood Canyon and Silver Lake every weekend during the fall.

**Brittany Dame** (MS 2014) and **Mike Stearns** (MS 2009, Postdoc/Researcher 2014-2017) are proud parents of a baby girl in spring 2022. Brittney has been teaching science at SLCSE Bryant Middle School and Mike is on the faculty at Utah Valley University.

**Aubry DeReuil** (PhD 2020) recently moved back to Utah after a few years working for Chevron in Houston, TX. She is now working as a Structural Geologist for Zanskar Geothermal & Minerals, Inc.

**Casey Duncan** (BS 2014, PhD 2022) successfully defended his PhD via zoom, and was briefly in Cortez, Colorado where he was working at a winery and thinking about the impacts of the geologic setting for the best wines. He is currently in a short term instructor position at New Mexico State Las Cruces.



## Alumni News

**Perry Eaton** (MS 1984, PhD 1987) had a busy year taking on a bit of consulting and balancing his many other activities and projects in retirement.

**Todd Ehlers** (MS 1996, MS 1997, PhD 2001) and wife Mirjam continue to work in the Geoscience department at the University of Tubingen. Todd enjoyed a semester sabbatical as a Moore Distinguished Fellow at CalTech. One of his daughters joined him for that stint and they also got to enjoy exploring geology of southern Utah.

**Paul Eubanks** (BS 2021) was a student employee in the department office for two years while earning his degree. During his final year, he worked under Dr. Jim Karner. Dr. Karner noted Paul's help in "numerous ways as a science assistant. He took four months' worth of temperature logger data that we had from Antarctica, organized it, synthesized, and made it into useful plots that summarize the findings." Paul also assisted Dr. Karner with other tasks ranging from polishing meteorites specimens to taking good megascopic and microscopic pictures of specimens for teaching and outreach. Paul is now working full time as a field geologist at Cone-Tec doing cone penetration testing.

**Shihang Feng** (MS 2018) is a Postdoctoral Researcher at Los Alamos National Laboratory in New Mexico.

**Peggie Gallagher** (MS 1984) is still living in Anchorage, and is planning two adventure cycling trips in Slovenia and Croatia with friends. She got to briefly visit with **Thom Little** (MS 1985) when he was vacationing in Alaska.



*Roger Congdon (MS 1987) oil painting.*

**Tommy Good** (MS 2013) and wife **Kelly Sullivan Good** (MS 2013) enjoy being back in Salt Lake City, close to family and topography, after living in Chicago for 5 years. Tommy teaches science at SLCSE Bryant Middle School and is the on-the-ground mentor for the Williamson Science Communication Fellows that puts a few of the department's graduate students in the K-12 classrooms helping young people get excited about science. Kelly is owner of Terrascribe, a proposal firm working in the renewable energy and heavy civil construction industries. Their two-year-old daughter, Abby, is already making her parents proud by shoving rocks into her pockets whenever she goes outside.



**Jenny Hambleton** (BS 2021) was successful in the fashion industry, but soon found a passion in geology. She became involved in many outreach and Inclusive Earth activities, as well as serving as both undergraduate and research assistant roles. Upon completion of her degree, she took a job with Bartels & Stout as a microscope sales representative for the Pacific Northwest, based out of Seattle.

**Sherif Hanafy** (former post-doc and adjunct associate professor) continues to enjoy his position as Associate Professor at King Fahd University of Petroleum & Minerals University in Saudi Arabia.

**Sherie Harding** (PhD 2014) has enjoyed recent adventures; a Labyrinth Canyon river trip pondering the Mesozoic section, and camping in wilderness areas in noise free dark sky areas.



## Alumni News

**Rob Harris** (MS 1992, PhD 1996) started phased retirement at Oregon State University, but with two research cruises over the summer, he is still as busy as ever.

**Sonja Heuscher** (MS 2007) and **Abraham Edmond** (MS 2007) keep busy with their two girls and enjoyed a bit of family time visiting Salt Lake City in early 2022.

**Jacqueline E. Huntoon** (MS 1985) left her position as provost and senior vice president for academic affairs at Michigan Tech University. As of July 1, she started a new adventure as the director of the Division of Graduate Education (DGE) at the National Science Foundation (NSF).

**Jenny Joyce** (MS 1996) is working at ExxonMobil as Senior Principal in Geoscience. She reports that her company is hiring again and would love to have more Utah alumni join her at ExxonMobil. She lives in Houston and enjoyed catching up with other alumni at the IMAGE meetings.

**Emily Kam** (BS 2019) is enjoying her program at UC Santa Cruz and was able to host **Prof. Brenda Bowen** (PhD 2005) as a distinguished guest lecturer in May 2022, also at Brenda's alma mater.

**Rip Langford** (PhD 1988) and his students have taken on a wide range of project, with recent studies covering playa deposits of eastern Oregon, to bibliometric and piosphere (grazing on vegetation and soils) analyses of Iran.

**Emily Larson** (BS 2021) made preparations in the noble gas lab where she worked as an undergraduate student with lab manager Wil Mace.



**Hao Li** (MS 2008) is living in Texas and working as Software Development Advisor at Sinopec Tech Houston.

**Thom Little** (MS 1988) currently works at Texas Instruments as a program manager for quality, and is part of the strategic program management team in Lehi, Utah. For fun, he has been looking at ichnofacies and vertebrate fossils at his Arizona Ranch and playing blues music in clubs around Salt Lake City. He hopes to soon be doing more travel including the Bourbon Trail in Kentucky, fishing in Alaska, and touring South and Central America.

**Zhaojun Liu** (MS 1998) is an Advising Research Geophysicist and Research Manager at TGS in Houston Texas.

**Jessica Moore** (BS 2002, MS 2005) and husband Ark were working with Chevron in Angola for 4 years and are now back in Houston. Jessica focuses on the strategy side of the business, in addition to being the Enterprise Carbon Reduction Advisor.

**John Naranjo** (BS 2005) recently returned to Houston after some time living in Utah. He is working for BP as a Senior Engineer Geophysicist.

**Tamas Nemeth** (PhD 1996) is working as a Research Scientist, Machine Learning and Earth Sciences at Chevron in Houston, TX.

**Steffen Ochs** (MS 1988) and wife Barb are the ex-pats still enjoying life in Panama. They got in a few trips, including a favorite week in the Dolomites of N. Italy amongst spectacular Upper Triassic limestone reefs.

**Dawn Porter** (friend of GG) fondly remembers her days as a Utah undergraduate in the geological engineering program. After her short time at the U, she received a BS in Geological and Earth Sciences/Geosciences, and Fire Science from Utah Valley University, and her MBA from WGU Texas. She is now lead sales manager for Suez Water Technologies & Solutions in Midland, TX.

**Jonathan Primm** (MS 2016) is working for Amazon Web Services as a solution architect but is still using his geoscience skills that look at all kinds of different data and integrate across multiple scales.



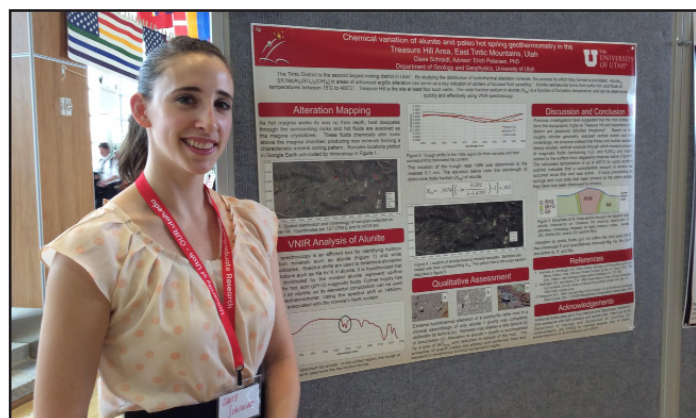
## Alumni News

**Aksel Quitus-Bosz** (MS 1992) continues to enjoy his career at Chevron where he works as Regional Play Evaluation Manager, Global New Ventures.

**Ellen Reat-Wersan** (PhD 2021) finished her PhD in 2021 and joined Chevron in Houston, TX where she works as a Research Geologist.

**Eric Roberts** (PhD 2005) was on sabbatical this past year, but wasn't able to travel to Montana and Utah as he had hoped due to Covid. So instead, he and family travelled throughout the Outback collecting samples, doing geology, camping and seeing a spectacular remote landscape before spending a few months at the University of Tasmania in Hobart and exploring the island. Eric will be back into being Head of School of Earth and Environmental Sciences at James Cook University for another several years.

**Claire Schraidt** (BS 2015) took Erich Petersen's Earth Materials course in 2014-2015 and did an outstanding project in the Tintic District. She worked on calibrating and applying the alunite geothermometer using VNIR observations which was considered an impossibility by every scientist in the field. While at Utah she was a double major, B.A. Chemistry, B.F.A. (ballerina, emphasis). Claire went on to Purdue for her Masters. There she expanded her field area to the entire area of Lake Michigan. She developed new ways to sequence fish DNA and then learn about fish migration patterns. Claire has been admitted to the Ecology and Evolutionary Biology program at Yale. The program fits her aspirations as a scientist, teacher, and mentor. Her field area will expand to include an entire ocean!



**Winston Seiler** (MS 2008) is Director of Safety and Business Development at KCSI Aerial Patrol, Inc. and works in projects across the western U.S. including pipeline and oil field surveillance, mapping, and aerial methane detection. He lives in Salt Lake City with his wife and two young boys, who keep them busy.

**Katy Sementelli** (friend of GG) Principal II Geologist at Woodside Energy, Houston TX.

**Jianming Sheng** (PhD 2004) is Senior Advising Research Geophysicist at TGS in Houston, TX, one of the leading seismic data processing companies.

**Joshua Smith** (MS 2022) was inspired by his wife and young son to finish up his thesis- congratulations! Josh enjoys a thriving paleoconsulting business in Moab, Utah.

**Gabriela St. Pierre** (PhD 2022) joined Chevron full-time in March 2021 and enjoys her work there as an Exploration Geologist.

**Scott Starrat** and wife **Elmira** (Friends of GG) are still enjoying life and activities in the bay area of California. Scott is still wrapping up USGS-related projects including a research cruise with MBARI (Monterey Bay Aquarium Research Institute), and Elmira decided to retire the end of 2020!

**Ralph Stearley** (MS 1988) is enjoying his retirement from Calvin College even though he is still involved with teaching on a part-time basis, and paleo field-work (like being eaten alive by mosquitos at Malheru National Wildlife Refuge, OR). He also reports a lot of gardening efforts and stone landscaping, and babysitting grandkids that keep him extra busy.

**Peter Stifel** (PhD 1964) enjoyed winter in the warmth of sunny Vero Beach, FL and still keeps up the Maryland homestead.

**Yonghe Sun** (PhD 1990) is working for Chevron in Houston, TX.



## Alumni News

**Scott Tangenberg** (MS 2000) has worked for the USDA Forest Service since 2000, serving from the Black Hills of South Dakota, the Sierras of Northern California, and the Shasta-Trinity forest of Northern California, often dealing with wildland fire environments. He now leads the Cleveland National Forest in Southern California as the USDA Forest Supervisor based out of San Diego.

**Vaughn Thompson** (MS 2009) is VP Exploration & Production at Carbon Energy Corporation in Ventura, California.

**Jake Umbriaco** (BS 2001, MS 2004) continues his career at Chevron, where he is now working as Subsurface Digital Platform & Services Manager.

**Jonathan Voyles** (BS 2019) is at Stanford University and is excited about new innovations with fiber optic cables and seismology.

**Doug Wachtell** (MS 1985) is retiring soon after 24 years as an Engineering Geologist at the Fresno office of California's Central Vally Regional Water Quality Control Board. Previously, Doug worked for 5 years as a hydrogeologist in California for an environmental consulting firm from Albuquerque, NM. After graduating, Doug was a petroleum geologist for 7 years with Union Oil of California in Midland, TX.

**Xin Wang** (PhD 2014) is living in Houston, TX and working for Chevron as a Research Geophysicist.

**Michelle Weis** (MS 1988) is looking forward to retirement the end of 2022 and is looking to spend time exploring other countries!

**Xiang Xiao** (MS 2006, PhD 2008) is a Software Engineering at Chevron in Houston, TX.

**Ge Zhan** (PhD 2012) is working for TGS in Houston, TX.

**Min Zhou** (PhD 2005) works as a Research Advisor at Sinopec Tech Houston.

**Changxi (Joe) Zhou** (PhD 1996) is Senior Geo/Data Scientist at Studio X in Houston, TX.



### 2022 AAPG-SEG Image Meeting Houston, Texas UofU GG Alumni Attendees

Edith Allison  
Weiping Cao  
Marjorie Chan  
Jing Chen  
Wei Dai  
Aubry DeReuil  
Shihang Feng  
Sherif Hanafy  
Jenny Joyce  
Hao Li  
Zhaojun Liu  
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Tamas Nemeth  
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Yonghe Sun  
Vaughn Thompson  
Jake Umbriaco  
Jonathan Voyles  
Xin Wang  
Xiang Xiao  
Ge Zhan  
Min Zhou  
Changxi (Joe) Zhou



## Alumni News



Jerry Schuster (U of U Auxiliary Faculty) at center with a group of his many former students from Utah and Kaust days, shown here at the 2022 AAPG-SEG Image meeting in Houston, Texas. Jerry had a very international reach, and his students have had many successes, flourishing in their careers.



Three power women department alumni at the AAPG Alumni event: Gabby St. Pierre, Ellen Reat-Wersan, and Aubry DeReuil.



## In Memorium

### In Memoria

Our department celebrates the life of **Kurt Lawson**, who was a new geoscience graduate student this fall semester 2022, recruited to work with Dr. Sarah Lambart. Kurt died on Labor Day from a fall in Neff's Canyon (Mount Olympus). Kurt made many connections in our department during his short time here, especially within the cohort of graduate students. They fondly recount his love of plants and the outdoors. We are grateful for the opportunity to know him further through connections we've made with his family in the wake of a mutual tragic loss. Kurt was the youngest of four kids (sisters Abigail, Annika, and Aubree) of parents David and Abigail. From his sister Abby we know that Kurt was determined to follow through on decisions made, and that he was meticulous in his care of plants. In addition to Kurt's love of hiking, Abby shared that he was a talented photographer, and a lover of music (playing drums since age 5), going to many concerts by what Abby called "obscure bands that defy genre" while holding strong opinions regarding what constituted good music. She shared her confidence that he was headed toward a career as a professor inspiring students in exploration of volcanoes and mantle geochemistry. To us, this sounds just about right, given Abby's wonderful description of Kurt.



### In Memoria

**Phil Wannamaker** (PhD 1983) sadly passed away unexpectedly in August 2022. He was a University of Utah Research Professor in Civil and Environmental Engineering (aligned with the Energy & Geoscience Institute), and an Adjunct Professor in Geology and Geophysics. As a world-renowned expert in magnetotellurics of thermal systems, he was key member of the FORGE Leadership Team. He led international teams of investigators in large research projects in U.S. Cascadia, Basin and Range, Southern Appalachia, New Zealand, and Antarctica. He was a regular and active participant in GG department activities, from DLS to student graduate advising. Phil published 50+ papers, served as associate editor for several journals, and advised 23 graduate student theses. He was Trustee and Treasurer for the Gerald W. Hohmann Memorial Trust for Teaching and Research in Applied Electrical Methods. Phil will be dearly missed.





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*We sincerely apologize if we have inadvertently left anyone off this list.*

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- 801-581-4414 (TJ McMullin)

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