

Department of Earth, Environmental & Resource Sciences 2023-24

“DEERS in the Headlights”

<https://youtu.be/KCCI649CREw>

Alumni & Donors

Low Teal & Allen Gilmer donated funds to create the Economic Geology Research Fund.

Marisa de la Vega Fitzgerald contributed generously to the MJ Fitzgerald Economic Geology Fund on behalf of her late husband Michael (“Mike”) J. Fitzgerald.

Seabridge Gold provided funds to support two MSc student research projects.

James Cearley \$15,000 for the Geological Sciences Excellence Fund. \$6,500 for the Field Geology Experience Fund. \$10,000 for the Cearley Graduate Scholarships. \$5000 for the Cearley Undergraduate Scholarships, \$2500 for the Geology Dept Spring Colloquium, \$1,000 for the Carol Sue Kirken Memorial Scholarship Fund PLUS \$5000 match for “Raise Your Pick Day”.



Colloquium Keynote by Alumnus Dr. Jesica Urbina, Founder of Infinite Elements



Departmental Awards

Miners Leadership Awards Event of the year award – Earth Science Day – **Ben Brunner** and **Maryam Zarei** et al.

APO TCM Day Spirit Award – Best decorated office led by **Maryam Zarei** and a host of volunteers



Faculty Awards

Kate Giles - 2024 American Association of Petroleum Geologists Southwest Section Distinguished Educator Award

Laura Alvarez – UTEP Research & Innovation, Innovation Award - Early Career Innovator

Marianne Karplus – UTEP Research & Innovation Outstanding Researcher – Mid-Career award

Antonio Arribas - Brian J. Skinner Award from the Society of Economic Geologists for an outstanding paper published in the *Economic Geology* journal in 2022 and 'Top Downloaded Article' Award from the journal *Resource Geology*.

Student Awards

Frida Garcia-Ledezma – UTEP Top Ten Senior

Leah April and **Angie Cano** – APO Awards

Charles Igomu - AAPG Grant-in-Aid; AFS Climate entrepreneurship scholarship; AAPG southwest section scholarship; On To the Future (OTF) award, Geological Society of America (GSA), 2023

Jose Franco (PhD candidate) was elected a member of the Society of Economic Geologists' Student Committee and its South America Representative

Jose Franco & Luis Yagual (MSc candidate) won scholarships to attend the SEG Copper Flat Porphyry-Breccia System (MFJ-07) Mapping Course in New Mexico. Luis Yagual won a scholarship to attend the SEG Foundation field trip to mineral deposits in the Quadrilatero Ferrifero and Brasilia Belt, Brazil.

Katalina Salas - 2024 AGU Voices for Science



Claudio Araya - Travel scholarship from the SEG to attend the annual meeting in London

Lucia Gonzalez - Scientific Committee on Antarctic Research (SCAR) Travel Award to the SCAR conference in Pucon, Chile

Isabela Suaza - NASA Develop Fellowship for this Summer 2024

Fall 2023 Graduation Awards

- Academic and Research Excellence - Senior in Environment Science – **Ana Bencomo**
- Academic and Research Excellence - Graduate Student in Geology - **Rachel Phillips**
- Academic and Research Excellence - Graduate Student in Geophysics – **Kristina Sasser**
- College of Science Best Dissertation Award - **Rachel Phillips**

Spring 2024 Graduation Awards

- Academic and Research Excellence – Undergraduate Student - Environment Science – **Ximena Larrieu**
- Academic and Research Excellence – Undergraduate Student - Geology – **Frida Garcia Ledezma**
- Academic and Research Excellence - Graduate Student - Environmental Science – **Tristan Chavez-Poeschel**
- Academic and Research Excellence - Graduate Student - Geology - **Hao Pham**

Colloquium Awards



<https://www.utep.edu/science/geology/alumni/colloquium.html>

- Bruce Davidson Award: **Alan Espino**
- Professor Nicholas E. Pingitore Jr. Innovation Award: **Yeshey Sheldon**
- White Award Outstanding undergraduate: **Frida D. Garcia Ledezma**
- White Award Outstanding Graduate: **Isabella Sauza Sierra**
- White Award Outstanding Graduate: **Betul Aslantas**
- White Award Outstanding Graduate: **Santiago Hoyos Echeverri**
- White Award Outstanding Graduate: **Stephanie Marquez**
- Outstanding Structural Geology Student: **Leah April**
- Outstanding Sedimentology and Stratigraphy Student: **Angie Cano**

- Outstanding Mineralogy Student: **Paola Salas-Rivera**
- Outstanding Petrology Student: **Loren Lind**
- Outstanding Processes Student: **Ryder Robledo**
- Outstanding Historical Geology Student: **Trinity Fushille**
- Outstanding Hydrology Student: **Anna Cervantes**

- Estwing Award for Field Geology: **Leah April**



- 1st place Undergraduate oral presentation: **Paola Salas-Rivera**
- 2nd place Undergraduate oral presentation: **Mya Valenzuela**
- 3rd place Undergraduate oral presentation: **Frida D. Garcia Ledezma**

- 1st place Undergraduate poster presentation: **Krysta Lynn Lehman**
- 2nd place Undergraduate poster presentation: **Limber Damaris Martinez**
- 3rd place Undergraduate poster presentation: **Leah April**

- 1st place Grad oral presentation: **Tara L. Sweeney**
- 2nd place Grad oral presentation: **Jessica Hartman**
- 3rd place Grad oral presentation: **Andres F. Monsalve**

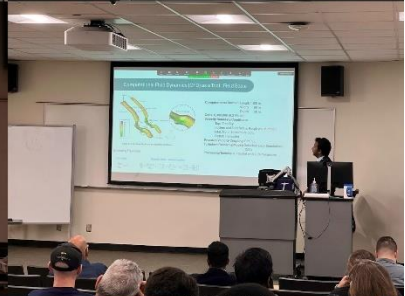
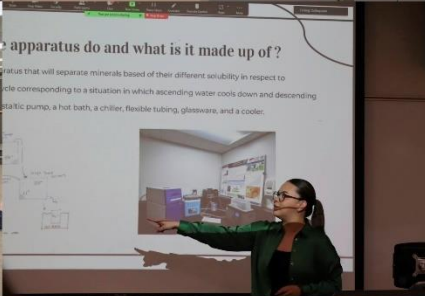
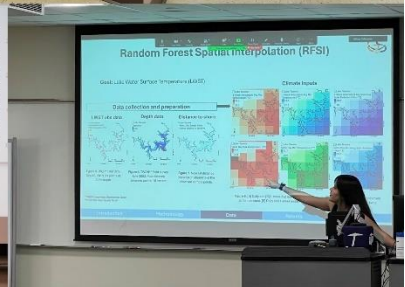
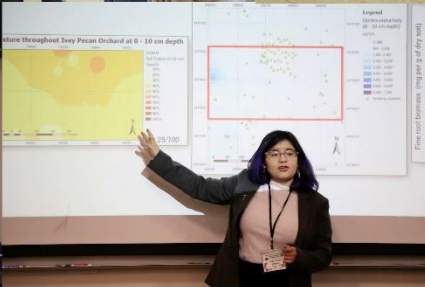
- 1st place Grad poster presentation: **Betul Aslantas**
- 2nd place Grad poster presentation: **Christian Lestat Leach**
- 3rd place Grad poster presentation: **Randall Walker**

Outreach Awards

- **Isabela Suaza Sierra** (21 hrs)
- **Jayanga Samarasinghe** (20 hrs)
- **Marc Garcia** (20 hrs)



Oral & Poster Sessions



New Grants

TAMEST Hill Prize to **Ben Brunner, Mark Engle & Eva Deemer** with **Herrmann Lebit** of Alma Energy



Jose Hurtado is part of the team that has been awarded \$5 million from NASA to develop the surface science plan for the first crewed lunar landing mission of the Artemis program. The team will also work on astronaut training, lead the execution of the mission science from Mission Control in Houston, do preliminary examination of returned samples, and author the mission science reports.



Laura Alvarez won an NSF CAREER Award to support her research in understanding how river landscapes and their ecological and economic values such as hydroelectric power generation, water storage and recreational resources respond to severe droughts, floods, climate change and human interventions.



James Kubicki part of team led by UTEP that has been awarded a \$4.9 million grant from the Department of Energy (DOE) to unlock Earth's subsurface for two potential climate change solutions: the storage of carbon dioxide and the generation of energy.

Lixin Jin, Jason Ricketts, Laura Alvarez, Jay Chapman & David Young awarded NSF grant "Improving minority advancement for geoscience equity nationally (IMAGEN)"

David Huber & Lixin Jin awarded an \$2M award "Dynamic Carbon SMART (Soil Monitoring, Assessment, Research, and Training) by Natural Resource Conservation Service, Soil and water Conservation, USDA.

Jason Ricketts & Lin Ma awarded a three-year NSF EAR research project "Investigating the nature and timing of development of the Eastern California shear zone (ECSZ) in southeastern California"

MS theses and PhD dissertations in Fall 2023 and Spring 2024

MS thesis: **Katya Esquivel Herrera**, "Evaluation of Evapotranspiration Estimates Using an Existing Hybrid Machine Learning Model in a Natural and a Managed Dryland Site". Primary advisor: Lixin Jin.

MS thesis: **Eduardo Zuniga**, "Preliminary Assessment for Critical Minerals In the Terlingua Quicksilver District and Tres Marias Mine". Primary advisor: Phillip Goodell.

PhD Dissertation: **Dr. Jenna Faith**, "Investigating Seismicity and Structure of the Pecos, Texas Region of the Delaware Basin Using a Temporary Nodal Network", Primary advisor: Marianne Karplus.

PhD Dissertation: **Dr. Rachel Phillips**, "Enhancing Our Understanding of Ancient Oceans Through the Investigation of Molybdenum Behavior Under Sulfidic Conditions", Primary advisor: Jie Xu.

PhD Dissertation: **Dr. Jessica Kelsch**, "Southern Rio Grande Rift Kinematics and Geochronology, Big Bend Fold Geometry, and Geoscience Education:

Contributions to the Understanding of Big Bend Geology and to Public Geoscientific Literacy”, Primary advisor: Jason Ricketts.

MS Thesis: **Claudio Araya Torres**, “Alteration and Mineralization of the Deep Extension of the Giant Chuquicamata Porphyry Copper Deposit, Northern Chile”, Primary advisor: Antonio Arribas.

MS Thesis: **Kristina Sasser**, “Using Shallow Electromagnetic and Magnetic Techniques to Map Soil Texture and Characterize Salinity and Water Dynamics Below Pecan Orchards, El Paso County, Texas”, Primary advisor: Mark Engle.

MS Thesis: **Tristan Chavez-Poeschel**, “Population Genetics and Dispersal Of *Euchlanis Chihuahuensis* Via Anemochory in the Chihuahuan Desert”, Primary advisor: Elizabeth Walsh.

MS Thesis: **Lindsey Dacey**, “Water Movement and Availability in Relation to Productivity and Carbon Cycling of Dryland Organisms”, Primary advisor: Anthony Darrouzet-Nardi.

MS Thesis: **Santiago Hoyos Echeverri**, “Microwave Emission Model Parameter Tuning for Surface Soil Moisture Retrievals Using UAV-Mounted Dual Polarization L-Band Radiometer”, Primary advisor: Hernan Moreno.

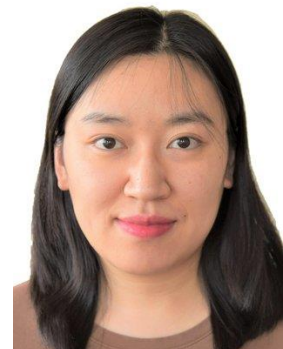
MS Thesis: **Hao Pham**, “Investigating changes in water chemistry across the Llano Uplift and the Balcones Fault Zone using Sr and U isotopes in Central Texas”, Primary advisor: Jason Ricketts.

MS Thesis: **Isabela Suaza Sierra**, “Predictive Understanding of Lake Water Temperature and Dissolved Oxygen Profiles Across the Red River Basin Through Interpretable Machine Learning”, Primary advisor: Hernan Moreno.

MS Thesis: **Rebecca Navarrette**, “Zebra Limestone - Gypsum Valley Limestone”, Primary advisor: Benjamin Brunner

New Faculty

Hongyu Sun was a postdoctoral scholar at the California Institute of Technology. Prior to her appointment, she was a Ph.D. graduate assistant at the Massachusetts Institute of Technology. Hence, she has flourished at two of our nation’s most prestigious institutions. Dr. Sun is an accomplished scientist with a strong research record. She is a geophysicist and a leader in development of machine learning and artificial intelligence for applications in geosciences.



Haitao Shang was a postdoctoral scholar at the University of Oregon under Dr. Stilianos Louca, and he collaborates with well-known researcher at MIT, the University of Chicago and the Georgia Institute of Technology. Prior to his postdoc, he received his Ph.D. in Earth, Atmospheric & Planetary Sciences at MIT under Dr. Daniel Rothman. He is a geoscientist who focuses biogeochemical cycles (e.g., carbon and oxygen) and the evolution of enzymes.



Department video - <https://youtu.be/KCCI649CREw>



Visit to Tyrone copper mine

“To Save the Earth, Know the Earth!”

James D. Kubicki

Chair

P.S. I am stepping down as Chair Summer 2024. It has been an honor to serve the students, staff and faculty of DEERS, and I appreciate how everyone contributes to the success of the team. The future looks bright for DEERS, UTEP & El Paso. I am happy to have been a part of all your efforts.