

University of Arizona 52nd Annual Geosciences Symposium



March 21-23
Gould-Simpson and ENR2

Speaker
Dr. Tomas Capaldi
Assistant Professor, UCSD

Field Trip
Saturday, March 23

See GeoDaze.com for additional information

Welcome

Hello Attendees!

Welcome to The University of Arizona Department of Geosciences' 52nd annual GeoDaze Symposium! GeoDaze is an entirely student-run research symposium that has become a hallmark at the University of Arizona for its presentation of high-quality research from undergraduate and graduate students. Each year, GeoDaze is made possible by generous donations from individuals and corporate sponsors. We thank you for your continued support.

GeoDaze 2024 will have a hybrid format, with options to attend and present both virtually and in person! Students can record oral presentations and prepare digital poster presentations organized by presentation type and session on this website. These sessions cover a wide variety of topics including paleoclimatology, seismology, petrology, sedimentology, isotope geochemistry, structural geology, economic geology, and more. Presentations will be made available at the start of this year's conference. Alternatively, students can use the traditional symposium format with both in-person talks and poster presentations optional. Live Question-and-Answer sessions will allow student presenters to interact with viewers both present and over Zoom.

To conclude the GeoDaze symposium everyone is invited to join us in celebration at Crooked Tooth Brewery Tucson! We hope you take this time to network and congratulate all of the students for their hard work throughout the year. Last but certainly not least, we invite you to join the field trip led by Dr. Kaustubh Thirumalai to Coronado Cave and potentially Colossal Cave depending on time, on Saturday.

We want to thank everyone who helped support and organize GeoDaze this year. Your tireless efforts ensure the continued success of GeoDaze!

Anca Barla & Jim Bradford
Co-Chairs, 2024 GeoDaze Symposium

GeoDaze Keynote Address



**"Sedimentary Record of Andean Mountain Building and Magmatism"-
Keynote talk**

"The Earth Needs More Earth Scientists" - AWG breakfast talk

Dr. Tomas Capaldi

Scripps Institution of Oceanography, University
of California San Diego, La Jolla, California

**AWG breakfast: Thursday, March 21st 2024, 9:00–10:00
am (GS228A)**

**Keynote talk: Friday, March 22nd 2024, 9:00–10:00 am
(ENR2 S107)**

Dr. Tomas Capaldi is an Assistant Professor at the Scripps Institute of Oceanography, University of California, San Diego and will be presenting the keynote talk titled "Sedimentary Record of Andean Mountain Building and Magmatism" on March 21. His talk will focus on integrating the structural geology and sedimentary record to constrain the timing, style, and tempo of mountain building in this region. He then leverages existing arc magmatism datasets to speculate on the feedbacks and relationships among subduction, magmatism, and retroarc deformation along this segment of the Andes to understand the

drivers/causes of the high strain rates in the southern Central Andes from Miocene to present.

Dr. Capaldi's AWG breakfast talk titled "The Earth Needs More Earth Scientists" will explore the drivers and consequences of decreasing student enrollment in geoscience programs and will include some personal insights on how to engage the next generation of geoscientists.

GeoDaze Thursday, March 21st, 2024

Registration in ENR2 Courtyard All Day

9:00-10:00 **AWG breakfast with Guest Speaker**

Gould Simpson 228A

10:00-11:00 **Check-in / Department Meet and Greet**

11:00-12:00 **Oral Session I:**

Geochemistry/Petrology/Volcanology and Geomorphology

ENR2 S215

Moderator: Anna Mireia Rebaza Morillo

11:00-11:15 **Isaiah Spring (PhD. Student):** “Trace Element Analyses of Plagioclase from Troctolite 76535 and Implications for Mg-suite Petrogenesis”

11:15-11:30 **María Paula Marroquín-Gómez (Masters Defense):** “Geochemistry of the Northern Andean Volcanic Zone, Colombia”

11:30-11:45 **Tanner Johnson (Undergraduate):** “Prefire Assessment of Postfire Debris Flow Hazards near Flagstaff, Arizona: Insights from Debris Flow Runout Modeling and Climate Change Implications”

11:45-12:00 **Joseph Martinez (Masters Defense):** “Insights into temporal changes in debris flow susceptibility following fire in the southwest USA from monitoring and repeat estimates of soil hydraulic and physical properties.”

12:00-13:30 **Lunch break**

13:30-14:30 Oral Session II: Geophysics

ENR2 S225

Moderator: Ken Gourley

13:30-13:45 **Sankha Subhra Mahanti (PhD. Candidate):** “Seismicity of the Southern Central Andes (~23-24° S) Recorded by the TANGO Seismic Deployment”

13:45-14:00 **Jim Bradford (PhD. Student):** “Receiver Function Analysis Across the Andean Cordillera at ~24°S from a Node and Broadband Seismic Deployment”

14:00-14:15 **Eric Cicero (PhD. Student):** “Improving GRACE Gravity Field Resolution with Altitude-Cognizant Slepian Functions”

14:15-14:30 **Aubrey Bennett (Masters Defense):** “A Model for Strain Accumulation in Zones of Distributed Faulting”

14:30-15:00 Coffee+Bagels

ENR2 Courtyard

15:00-16:15 Oral Session III: Economic Geology

ENR2 S225

Moderator: Alec Martin

15:00-15:15 **Eytan Bos Orent (PhD. Candidate):** “Implications of ore-related carbonates in the Paradox Basin”

15:15-15:30 **Sydney Acito (Masters Defense):** “Exploring the exhumation of Laramide porphyry Cu-related intrusions using multiple thermochronometers: new insights from the Ruby Star pluton, southeastern Arizona, USA”

15:30-15:45 **Elijah Mullins (Masters Defense):** “Peralkaline Sodic Metasomatism from the Wilson Ridge Pluton, Northwest Arizona”

15:45-16:00 **M. Camila Sojo (PhD. Student):** “Geochemical and textural characterization of Filo del Sol porphyry-epithermal mineralization, Central Andes of San Juan, Argentina”

16:00-16:15 **Jennifer Weiss (Masters Student):** “Imaging Geologic Time: The Catastrophist-Uniformitarianist Debate in 19th Century American Landscape Paintings”

16:30-18:00 Poster Session I:
Geochemistry-Petrology-Volcanology, Economic Geology
Gould Simpson Lobby

1. Jonathan Chappell: “Formation of the Diamond Joe Pluton and Associated Mineralization, NW Arizona, USA: New Geochronology and Mineralogical Constraints”

2. Alexis Wuertemburg: “Isotopic Constraints on the Origin of Mesoproterozoic Anorogenic Granites Across Arizona”

3. Sarah Alafnan: “Salt to Volt: Harnessing Power from Seawater Chemistry”

4. Mitchell Baird: “Assessing the Lithological Diversity of Lunar Meteorite Northwest Africa (NWA) 10203”

5. Angela Tatsch: “Petrologic comparison of high- and rare very low-titanium lunar basalt clasts derived from ANGSA core 73001.”

6. Students from GEOS 416: Applied Geophysics Field Studies: “Geophysical Survey of the Harshaw Creek Area in the Patagonia Mountains, Arizona”

GeoDaze Friday, March 22nd, 2024

Registration in ENR2 Courtyard All Day

8:00-9:00 **Coffee & Bagels**

ENR2 Courtyard

9:00-9:15 **Opening Presentation**

ENR2 S107

9:15-10:15 **Tom Capaldi Keynote speech**

ENR2 S107

10:30-11:30 **Oral Session IV: Climate and Glacier Studies**

ENR2 S107

Moderator: Holly Thomas

10:30-10:45 **Mudith Weerabaddana (PhD. Candidate):**

“Tropical western Pacific hydroclimate inferred from paired coral trace elements and $\delta 18O$ records from the Marshall Islands”

10:45-11:00 **Zoe Benson (Undergraduate):** “Leveraging coral

Mn/Ca records from Palmyra and Tabuaeran to reconstruct Pacific El Niño events”

11:00-11:15 **Asiya B.Sainudeen (PhD. Candidate):** “South

American Hydroclimate in High-Resolution Global Climate Model: Pushing Boundaries with Variable Resolution Simulations”

11:15-11:30 **Aniket Dhar (PhD. Student):** “Five centuries of

hydroclimate variability over the Indian subcontinent derived from speleothem archives”

11:30-12:30 **Lunch Break**

12:30-13:30 Oral Session V:

Tectonics-Thermochronology-Geochronology

ENR2 S107

Moderator: Jordan Wang

12:30-12:45 **Emilia Caylor (PhD. Candidate):** “The Southwest Trainwreck from Laramide Bulldozing in the SW U.S.A.”

12:45-13:00 **Priscilla R. Martinez (PhD. Student):** “Controls on the late Miocene marine vertebrate death assemblage in the Atacama Region of northern Chile”

13:00-13:15 **Liam O'Connor (Masters Defense):** “Assessing the effects of fluvial hydraulic sorting on detrital zircon age spectra by coupling CT-measured grain morphology with U-Pb geochronology”

1:15-1:30 **Tshering Z.L Sherpa (PhD. Candidate):** “Evaluating role of fold-thrust geometry and development in dichotomous timing of exhumation in the Himalaya ”

13:30-14:00 Coffee & Bagels

14:00-16:00 Poster Session II:

Tectonics-Thermochronology-Geochronology,
Climate and glacier studies

Gould Simpson Lobby

1. Gigi Giralte: “Mechanistic Drivers of the North American Monsoon”

2. Trang Tran: “Biomarker reconstructions of 600,000 years climate variability in the Indo-Pacific Warm Pool”

3. Jory Alqahtani: “The Future of Using Ocean Currents to Generate Electricity ”

4. Benjamin Bucey: “Using Nsumbu Ostracode Taphonomy To Determine Human Impacts On Lake Tanganyika”

5. Kay Poonawala: “Is the Last Interglacial warm period a good process analog for future Greenland mass balance?”

6. Hayley McKenley: “Can stable isotopes of individual benthic foraminifera capture deepwater current variability?”

7. Caitlin Salanga: “Identifying tropical Pacific climate and hydroclimate changes through the transition from preindustrial to industrial time using coral skeletal geochemistry”

8. Hinad Aqeel: “Wave Hello to the Future: Harnessing Ocean's Endless Energy”

9. Daniel Conley: “Investigating the relationship between stable isotope measurements of precipitation and weather sound data in Tucson, AZ”

10. Tyler Byland: “Rio Grande Freshwater Influence on Gulf of Mexico Hydrography Over the Holocene”

11. Gabriel Sanchez: “Bisbee Turquoise Provenance Analysis”

12. Gabby Martin: “U-Pb and T/REE Analyses of The Coast Mountains Batholith in Southeastern Alaska”

13. Zoe Gineris: “Geochronology of the Rincon Valley Mountains”

14. Bennett Greenfield: ‘Geochronology of Detrital Zircon Crystals Collected from Tanque Verde Wash“

15. Eleanor McDonough: “U-Pb Geochronology of the McCoy Mountains Formation in Arizona: Evidence for deposition within the Cretaceous McCoy foreland basin”

16. Luke Basler: “Reconstructing the mechanisms of Cenozoic crustal thinning in southeastern Arizona using paleocrustal thickness proxies”

16:00-17:00 Break, Judges Convene

17:00-18:00 Awards Ceremony ENR2 Rooftop

- ❖ Outstanding Alumni Award
- ❖ Outstanding Faculty Award
- ❖ GeoDaze Presentation Awards

**19:00-21:00 GeoDaze Afterparty at Crooked Tooth Brewery
Tucson (228 E Sixth St Tucson, AZ 85705)**

GeoDaze Saturday, March 23rd, 2024

**9:00-4:00 GeoDaze Field Trip (must be registered in
advanced to attend!)**

Coronado Cave (and potentially Colossal Cave
depending on time)

**TRANSPORTATION: Be at the Gould-Simpson loading
dock by 8:30 AM for a departure by 9:00 AM sharp. We
will return to the loading dock between 2:00 - 4:00 PM.**