**Alexander J. Janelle – Curriculum Vitae**
Jackson School of Geosciences
The University of Texas at Austin
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## Education

Ph.D., Geosciences, Jackson School of Geosciences, The University of Texas at Austin, Advisors: Dr. Jay Banner and Dr. Daniel Breecker, expected completion May 2027.
B.S., Geology and Marine Sciences, University of Florida, August 2022.

## Research Interests

My research interests surround karst aquifers, cave processes, and climate, specifically for understanding past, present, and future water availability. Interests also include sustainability, environmental justice, high school and undergraduate education, community engagement, and science communication.

## Current Research Projects

1) Cave monitoring for the development of speleothem proxy models (growth rate, trace elements, stable isotopes, strontium isotopes).
2) Production of high-resolution speleothem climate proxy records and comparison to global climate models for the last deglaciation across the Edwards Plateau.
3) Surface and groundwater monitoring of karst landscapes to evaluate land-use change impacts to water quality and quantity.
4) Speleothem and fossil bone geochronology (U-Th).

## Work Experience

Graduate Student, Jackson School of Geosciences, The University of Texas at Austin, August 2022 to present.
Support Source:
-Teaching Assistant, UGS303: Sustaining a Planet, Fall 2023, 2024 (lead TA), and 2025.
-Teaching Assistant, GEO376L/GEO382C: Hydrogeology Field Camp, Summer 2025.
-Fellow, Independent Studies Support Program, Spring 2025.
-Research Assistant, Fall 2022, Spring 2023 and 2024, Summer 2023, 2024, and 2025.
Technician, Water and Air Research, inc., September 2021 to February 2022.
Staff, Science Diver Development Program, University of Florida, January 2019 to December 2021.
Intern, Suwannee River Water Management District, May 2021 to August 2021.
Student Assistant, Jonathan Martin Group, Dept. of Geological Sciences, University of Florida, September 2020 to June 2021.
Field Technician, Lone Cabbage Reef Restoration Project, Nature Coast Biological Station, University of Florida, September 2020 to June 2021.
Student Assistant, Valle-Levinson Group, Dept. of Civil and Coastal Engineering, University of Florida, January 2019 to July 2019.

**Publications** * denotes undergraduate mentee

**Janelle. AJ**, Rocha MS*, Banner JL, and Miller NR (in prep for GCA). Regionally extensive mineral-solution reactions in karst: Insights from modern cave monitoring for seasonal trace element variations during the last deglacial.

Flint MK, Martin JB, Oberhelman A, **Janelle AJ,** Black M, Barry-Sosa A, Christner BC (2023). *Hydrologic and organic carbon quality controls on nitrous oxide dynamics across a variably confined karst aquifer.* Biogeosciences. DOI: 10.1029/2023JG007493

**Presentations**

**Janelle AJ**, Siegel H, Castle G, Gary MO, Shanahan TM, McKinney T, Banner JL. Spatial Heterogeneity and Policy Impacts on PFAS Contamination in Urban Groundwater and Surface Water Systems. American Geophysical Union Fall Meeting, New Orleans, LA, December 2025.

**Janelle AJ**, Rocha MS*, Banner JL, and Miller NR. Geochemical evolution of drip water in semi-arid central Texas karst: Differentiating modern processes and implications for speleothem proxies. American Geophysical Union Fall Meeting, San Francisco, CA, December 2023.

**Janelle AJ**, Rocha MS*, Banner JL, Miller NR, Gunn H, Engleby M*, and Kegerreis L*. Modern hydrologic and paleoclimate research at Cave Without a Name, Hydrogeo Workshop, Boerne, TX, October 2023.

**Other Conference Abstracts**

Yin J, Dee S, Abella-Gutiérrez J, Breecker D, **Janelle AJ**, Miller NM, Loewy SL, Banner JL, He C. Changes in Texas Rainfall Characteristics During the Last Deglaciation in Speleothem Proxies and Water Isotope-enabled Model Simulations. American Geophysical Union Fall Meeting, New Orleans, LA, December 2025.

Eagle W*, Abella-Gutiérrez J, Banner JL, and **Janelle AJ**. Reconstructing Climate Variability in the Pedernales River Basin. Geological Society of America Connects 2025, San Antonio, TX, October 2025.

Castle G, **Janelle AJ**, Siegel HG, Gary MO, McKinney T, Shanahan T, Banner JL. Geologic and Urban Controls on Municipal Contamination in Springs and Surface Water in Austin, Texas. Geological Society of America Connects 2025, San Antonio, TX, October 2025.

Siegel H, Banner J, **Janelle AJ**. Towards a comprehensive understanding of urban cycling of PFAS in Texas and beyond. Texas Water Research Network Meeting, May 2025.

Eagle W*, Abella-Gutiérrez J, **Janelle AJ**, Banner JL. Reconstructing climate change in the Pedernales River Basin. Texas Climate Conference, Houston, TX, April 2025.

Yin J, Dee S, Abella-Gutiérrez J, Breecker D, **Janelle AJ**, Miller NM, Loewy SL, Banner JL. Changes in Texas Rainfall Characteristics During the Last Deglaciation in Speleothem Proxies and Water Isotope-enabled Model Simulations. Texas Climate Conference, Houston, TX, April 2025.

Eagle W*, Abella-Gutiérrez J, **Janelle AJ**, Banner JL. Reconstructing climate change in the Pedernales River Basin. Jackson School of Geosciences Student Research Symposium, Austin, TX, February 2025.

Yin J, Dee S, Abella-Gutiérrez J, Breecker D, **Janelle AJ**, Miller NM, Loewy SL, Banner JL. Changes in Texas Rainfall Characteristics During the Last Deglaciation in Speleothem Proxies and Water Isotope-enabled Model Simulations. American Geophysical Union Fall Meeting, Washington DC, December 2024.

Lazrul B*, **Janelle AJ**, Banner JL, and Miller NM. Controls of Cave ventilation and physical flow paths on the geochemical evolution of drip water on the Edwards Plateau. American Geophysical Union Fall Meeting, Washington DC, December 2024.

Dayananth K*, Miller NR, **Janelle AJ**, and Banner JL. Assessment of Trace Element Incorporation Between Paired Drip Water and Plate Calcite Samples in Seasonally Ventilated Caves. American Geophysical Union Fall Meeting, Washington, DC, December 2024.

Miller NR, Gunn H, Engleby M*, Banner JL, and **Janelle AJ**. Visualizing the Secret Lives of Stalagmites Through High-Resolution LA-ICP-MS 2D Elemental Mapping. American Geophysical Union Fall Meeting, San Francisco, CA, December 2023.

**Janelle AJ**, Miller NR, Kegerreis LE*, and Banner JL. Benefits of a large format 2-volume laser cell for in situ analysis of speleothem calcite formed monthly on 10x10cm monitoring plates. North American Conference on Laser Ablation, Notre Dame, IN June 2023.

**Research Funding**

National Cave and Karst Research Institute Seed Grant, $24,881.12. September 2025.
Jackson School of Geosciences Off-Campus Research Fellowship. $2,180. Fall 2025
Jackson School of Geosciences Analytical Fees Award. $5,000. Summer 2024.
Jackson School of Geosciences Off-Campus Research Fellowship. $1,773. Summer 2024.
Jackson School of Geosciences Analytical Fees Award. $4,680. Summer 2023.
Jackson School of Geosciences Off-Campus Research Fellowship. $2,001. Summer 2023.
Jackson School of Geosciences Off-Campus Research Fellowship. $1,345. Fall 2022.

**Outreach and Service**

Field Trip Lead, Cave monitoring in central Texas: Insights into paleoclimatology, karst vadose zone hydrogeology, and cave geomorphology. GSA Connects 2025, San Antonio, Texas, October 18, 2025.

Interviewee, Studying Ancient Climate Through Stalagmites & Stalactites | GEO GIRL, published August 2025.

Convener, Water, Climate, and Environment Seminar, Jackson School of Geosciences, August 2024 to August 2025.

Graduate Representative, Department of Earth and Planetary Sciences Faculty, Jackson School of Geosciences, August 2024 to August 2025.

Graduate Representative, Graduate Studies Committee, Jackson School of Geosciences, August 2023 to August 2025.

Outreach Participant, Hot Science Cool Talks Event: Biodiversity in the Hill Country, October 2023.

Science Judge and Question Developer, Alumni Ocean Sciences Invitational, February 2023 to May 2023.

Outreach Participant, Hot Science Cool Talks Event: Climate Change and Solutions, February 2023

Coach, Gainesville 4-H/Gainesville High School National Ocean Sciences Bowl Team, August 2018 to April 2022.

**Professional Societies**

Member, Texas Speleological Association, 2023 to present.
Member, American Geophysical Union, 2023 to present.
Member, Geological Society of America, 2021 to present.

Member, National Speleological Society, 2021 to present.
Member, National Speleological Society – Cave Diving Section, 2020 to present.
Member, Florida Speleological Society, 2021 to 2022.

**Certifications and Trainings**
paleoCAMP.
Small Party Assisted Rescue, National Cave Rescue Commission.
Level 1 – Task Force Member, National Cave Rescue Commission.
Geologic Field Camp, Judson Mead Field Station, Indiana University Bloomington.
Cave Diver II and Advanced Full Cave, National Association of Underwater Instructors and National Speleological Society – Cave Diving Section.
Divemaster, National Association of Underwater Instructors.
Scientific Diver, American Academy for Underwater Sciences.
First Aid/CPR/O2 Administrator, National Association of Underwater Instructors/Divers Alert Network.

**Graduate Coursework**
Spring 2025: Vadose Zone Hydrology (GEO398W), Ice Sheets: Sediments/Sea Level (GEO391).
Fall 2024: Soil Gases (GEO391).
Fall 2023: Applied Karst Hydrogeology (GEO 391K), Paleoclimatology (GEO 391), Long-term Climate Change/History (GRG383F).
Spring 2023: Aqueous Geochemistry (GEO 476M), Environmental Isotope Geochemistry (GEO 391).
Fall 2022: Isotope Geology (GEO 388L), Fundamentals/Applications of ICP-MS (GEO 392F).

**Other Activity**
Player, Austin Sol, April 2025 to present.
Member, University of Texas at Austin "TUFF" Men's Ultimate, August 2022 to May 2024.
President, University of Florida Men's Club Ultimate, August 2021 to August 2022.
Captain, Florida Ultimate, August 2021 to August 2022.
Treasurer, University of Florida Men's Club Ultimate, August 2019 to August 2021.
Member, Florida Ultimate, August 2018 to August 2022.