

# Alexander J. Janelle – Curriculum Vitae

Jackson School of Geosciences  
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## Education

Ph.D., Geosciences, Jackson School of Geosciences, University of Texas at Austin, Advisors:  
Drs. Jay Banner and Daniel Breecker.

B.S., Geology and Marine Sciences, University of Florida, August 2022.

Geologic Field Camp, Judson Mead Field Station, Indiana University Bloomington, July 2022.

## Research Interests

My research interests surround karst aquifers, cave processes, and climate, specifically for understanding past, present, and future water availability. I am particularly interested in using isotope and metal fractionation in speleothems as paleoclimate proxies and to distinguish hydroclimate processes in epikarst and vadose zones. Interests also include sustainability, high school and undergraduate education, community engagement, and science communication.

## Current Research Projects

Cave and Karst Monitoring: Drip water, farmed calcite, and cave atmosphere samples are regularly collected at four cave and karst features in central Texas. This extensive dataset is used to evaluate changes in hydroclimate and calibrate speleothem paleoclimate proxies.

Speleothem Paleoclimate Proxies: Austin and other rapidly expanding metropolitan areas in Texas lie along the 100<sup>th</sup> meridian, an aridity gradient from the wet southeast to the dry southwest US. I am performing isotope and trace element analysis on several Texas speleothems to evaluate gradient changes during the last deglacial warming.

## Work Experience

Graduate Research Assistant, Jackson School of Geosciences, University of Texas at Austin, January 2024 to present.

Teaching Assistant, UGS303: Sustaining a Planet, Jackson School of Geosciences, University of Texas at Austin, August 2023 to December 2023.

Graduate Research Assistant, Dept. of Geological Sciences, Jackson School of Geosciences, University of Texas at Austin, August 2022 to August 2023.

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**

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

## **Conference Abstracts**

**Janelle, A.J.**, Rocha, M.S., Banner, J.L., and Miller, N.R. 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).

Miller, N.R., Gunn, H., Engleby, M., Banner, J.L., and **Janelle, A.J.** 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, A.J.**, Miller, N.R., Kegerreis, L.E., and Banner, J.L. 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).

## **Presentations**

**Janelle, A.J.**, Rocha, M.S., Banner, J.L., and Miller, N.R. 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, A.J.**, Rocha, M.S., Banner, J.L., Miller, N.R., Gunn, H., Engleby, M., and Kegerreis, L., Modern hydrologic and paleoclimate research at Cave Without a Name, Hydrogeo Workshop, Boerne, TX, October 2023.

**Janelle, A.J.**, Converting lessons from cave and science diving to recreational diving and implications for hyperbaric treatment. Physicians Training in Dive Medicine, Undersea and Hyperbaric Medical Society, San Diego, CA, October 2021.

## **Research Funding**

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**

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

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**

Level 1 Task Force Member, National Cave Rescue Commission.  
Cave Diver II, National Association of Underwater Instructors.  
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**

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).

**Non-Professional Activity**

Member, University of Texas at Austin “TUFF” Men’s Ultimate, August 2022 to present.  
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.