Sophia Bautista

sbautista@utexas.edu
(951) 255-4582

Education

University of Texas at Austin | Austin, TX *August 2022 – Present*
Ph.D. student, Jackson School of Geosciences

- Cumulative GPA: 3.89
- Expected Graduation Date: Spring 2027

University of Arizona | Tucson, AZ *August 2017 – August 2021*
Bachelor of Science degree, Geosciences (Cum Laude)

- Cumulative GPA; Major GPA: 3.58/4.0; 3.75/4.0

Research

University of Texas at Austin | Austin, TX *August 2022 – Present*
Advisor: Dr. Timothy Shanahan, Paleoclimate Geochemistry Lab

- Reconstructed the hydroclimatic history of the American Southwest using sedimentary leaf wax hydrogen isotopes and the MBT'$_{5ME}$ index derived from bacterial membrane lipids in Southern Rocky Mountain deglacial lake records
- Generated a record of southern hemisphere winds throughout the past 140,000 years using biomarkers reconstructions from Orakei Basin, New Zealand
- Generated a record southern hemisphere hydroclimate across the past 12,000 years biomarker analyses from Lake Surprise, South Australia

University of Arizona | Tucson, AZ *September 2019 – May 2021*
[Directed Research Project] Advisor: Dr. Diane Thompson, Tropical Climate and Coral Reefs Lab

- Completed loss on ignition tests for three extruded sediment cores and sediment digestions for two extruded sediment cores from Kiritimati Atoll in order to better understand the subsurface redox conditions that promote dissolved manganese availability
- Milled coral cores and measured analyzed Mn content; helped develop the use of coral Mn/Ca as a proxy to reconstruct past trade-wind patterns

University of Arizona | Tucson, AZ *February – August 2019*
Advisor: Dr. David Dettman

- Drilled and sampled land snail shells for oxygen and carbon isotopic variability analyses

University of California, Riverside | Riverside, CA *June – August 2018*
"Paleoecological Study of the Sclerobiont Borings and Encrustation of Fossil Hyotissa Hyotis Oyster Shells from the California Miocene"
Advisor: Dr. Mary Droser

- Catalogued the frequency and type of various boring and encrustation organisms on oyster shells
- Analyzed growth bands of oyster shells from California coast

Work Experience

UT Austin, Jackson School of Geosciences | *Teaching Assistant* | Austin, TX

- EVS311: Field Seminar for Sustainability *January – April 2025*
- EVS301: Introduction to Environmental Science *August – December 2024*
- EVS311: Field Seminar for Sustainability *January – April 2024*
- GEO303: Introduction to Geology *August – December 2023*

GeoForce | *Research Group Lead for 12th Grade Academy* | Austin, TX July 2024

- Lead research stations and provide one-on-one guidance to students as they complete research projects

Silver Mountain Mining Inc. | *Geologist* | Oro Valley, AZ *August 2021 – February 2022*

- Logged lithology, alteration style/intensity, and mineralization of carbonate rocks and porphyry-copper skarn deposits from Oracle Ridge Mine
- Oversaw multi-month projects and quality checked geology technician's logs
- Read and presented academic papers applicable to copper ore exploration and/or skarn deposits
- Navigated LeapFrog Geo to visualize/correlate drill holes

- Ordered core logging supplies and managed inventory

Silver Mountain Mining Inc. | *Geology Technician* | Tucson, AZ *September 2020 – July 2021*

- Oriented ~300-meter-long drill holes, measured core axis rotations, calculated core run drilling recoveries
- Measured magnetic susceptibility, determined core densities
- Marked, oriented, measured, and logged planar features that cross-cut core
- Photographed core boxes using Imago for future reference

Field Work

University of Adelaide, School of Physics, Chemistry, and Earth Sciences | South Australia *December 2024*

- 1-week coring trip in South Australia (Lake Leake, Lake Surprise, Lake Edward)
- Gravity corer, Livingstone corer, and piston corer

University of Alaska, Fairbanks Department of Geosciences | Fairbanks, AK *June – July 2021*

Department of Geosciences Field Camp

- 6-week field camp in remote Alaska (Healy, Red Rock Canyon, Limestone Gap)
- Final grade (6 units): A
- Completed three major mapping exercises, constructed kilometer-scale cross sections, and submitted professional field reports
- Hiked multiple hours every day collecting structural and sedimentological data in order to reconstruct the geological history of Alaska
- Camped in remote Alaska for multi-week trips and worked in pre-selected teams to gather data

Awards & Scholarships

National Association of Geoscience Teachers Outstanding TA Award *Awarded July 2025*
DeFord Field Scholarship | UT *Awarded October 2024*
Teaching Assistant of the Year Nomination | UT *Nominated April 2024*
Outstanding Student Presentation Award | AGU Fall Meeting *Awarded December 2023*
National Association of Geoscience Teachers Travel Stipend *Awarded April 2023*
Graduate School Mentoring Fellowship | UT *Awarded September 2022*
Best Undergraduate Poster | UA GeoDaze 2021 *Awarded March 2021*
Winslow-Ruben-Myron Shared Scholarship *Awarded Fall 2020*
George H. Davis Undergraduate Research Fund | UA *Awarded March 2020*
Winslow-Ruben-Myron Shared Scholarship *Awarded Fall 2019*
W. Voorhess Memorial Scholarship *Awarded Spring 2019*

Presentation

Bautista S.B., Ventura-Valentin, W., Brooks, T., Giblin, J.L., Scarpitti, E.A, Riggin, R., Scott, A.B. Field notes from the geoscience classroom from NAGT's 2024/2025 Outstanding Teaching Assistants. Poster presentation at Annual GSA Meeting, 2025.

Bautista S.B., Shanahan, T.M., Augustinus, P. Understanding the Orbital to Millennial-Scale Variability of the Southern Hemisphere Westerly Winds: Biomarker Reconstructions from the North Island of New Zealand. Poster presentation at Annual GSA Meeting, 2025.

Bautista S.B., Shanahan, T.M., Todd, V., Anderson, S.R., Jimenez-Moreno, G., Fawcett, P.J. A Hydroclimatic History of the Southwestern United States: Reconstructions from Rocky Mountain Deglacial Lake Records. Oral presentation at Annual GSA Meeting, 2024.

Bautista S.B., Shanahan, T.M., Augustinus, P. A 125,000-Year Long Record of Orbital to Millennial-Scale Variability of Southern Hemisphere Westerly Winds: Insights from Orakei Basin, New Zealand. Poster presentation at UT JSG Research Symposium, 2024.

Bautista S.B., Shanahan, T.M., Todd, V., Anderson, S.R., Jimenez-Moreno, G., Fawcett, P.J. Reconstructing the Hydroclimatic History of the Southwestern United States: Insights from Rocky Mountain Deglacial Lake Records. Oral presentation at Annual AGU Fall Meeting, 2023.

Bautista S.B., Chapman, A.U., Thompson, D.M., Carilli, J.E., Marchitto, T., Sayani, H., Cobb, K. Diving Deeper: Replication of Mn/Ca Anomalies Across Abaiang Atoll. Virtual poster session at UA Geosciences GeoDaze Symposium, 2021.

Bautista S.B., Chapman, A.U., Thompson, D.M., Carilli, J.E., Hlohowskyj, S. R., Gordon, G., Goepfert, T. Reinforcing the Coral Mn/Ca Trade-Wind Proxy: A Closer Look at Manganese Redox in Kiritimati's Lagoon. Virtual poster session at Annual AGU Fall Meeting, 2020.

Bautista S.B., Chapman, A.U., Thompson, D.M., Carilli, J.E., Hlohowskyj, S. R., Gordon, G., Goepfert, T. Diving into Lakes and Lagoons: Reinforcing the Coral Mn/Ca Trade-Wind Proxy. Virtual presentation at UA Geosciences GeoDaze Symposium, 2020.

Kelly B.T., Hernandez, G.N., **Bautista, S.B.**, Droser, M.L. Paleoecological Study of the Sclerobiont Borings and Encrustation of Fossil Hyotissa Hyotis Oyster Shells from the California Miocene. Poster presentation at Annual GSA Fall Meeting, 2018.

Kelly B.T., Hernandez, G.N., **Bautista, S.B.**, Droser, M.L. Paleoecological Study of the Sclerobiont Borings and Encrustation of Fossil Hyotissa Hyotis Oyster Shells from the California Miocene. Poster presentation at North American Paleontological Conference Summer Meeting, 2018.

Bautista S.B., Astran, C., Dahl, R.M. A Mineralogical Analytical Investigation of the Box Springs Mountains. Poster presentation at GSA Cordilleran Section Spring Meeting, 2016.

Volunteer, Leadership, and Outreach Experience

Research Training Experience | *Research Mentor* | UT *June - August 2025*
- Mentored a visiting undergraduate student for a 2-month research project studying the hydroclimatic history across Eastern Australia over the last glacial cycle
- Assisted in lab work, data analysis, and poster presentation

Geological Society of America | *Student Volunteer* *October 2025*
Geoscience Education Faculty Position Hiring Committee | UT *Spring 2025*
Water for Texas Conference | *Student Volunteer* *January 2025*
Kindergarten Geoscience Outreach | *Volunteer* | UT *November 2024*
Geological Society of America | *Student Volunteer* *September 2024*
Water, Climate, and Environment Seminar Series Host | UT August 2024 – April 2025
- Organized, hosted, and publicized seminar series for WCE community and visiting speakers

Kindergarten Geoscience Outreach | *Volunteer* | UT *March 2024*
Graduate Student Executive Committee | *Social Chair* **|** UT *August – December 2023*
- Planned and hosted social events for departmental events, such as Happy Hours and Beverages on the Patio

Geoscience Ambassadors | UT *February – March 2023*
- Collaborated with graduate and undergraduate students in a two-day seminar working to change assumptions about who can be a geoscientist

Research Symposium | *Volunteer* | UT *February 2023*
Climate LEAP Group | *Volunteer* | UT *November 2022 – April 2023*
- Worked with undergraduate students, faculty, and staff to propose a plan of action to the Dean to reduce the Jackson School of Geosciences' carbon emissions

Work the Web Night, Texas Undergraduate Research Journal | *Volunteer* | UT *October 2022*
- Spoke in a panel to STEM undergraduate students about my experiences and recommendations regarding graduate school

Paleontology | *Preceptor* | UA Geosciences *Fall 2019*
- Helped students who needed additional help during lab periods

North American Paleontological Conference | *Volunteer* | University of California, Riverside *June 2018*
- Directed conference attendees to correct lectures
- Ensured a smooth transition between conference speakers in lecture sessions

Gem and Mineral Show, Tucson Convention Center | *Volunteer* | Tucson, Arizona *February 2018*
- Led interactive paleontology and volcanology booths at the kid's center

Additional Skills

Memberships: National Association of Geoscience Teachers (since 2023), Geological Society of America (since 2018)

Workshops: Facilitating Groupwork in the Geosciences (NAGT, 2025)
Certifications: Inclusive Classrooms Seminar Certification, First Aid/CPR Certification, Wilderness First Aid Certification, Shotgun Safety Certification
Computer skills: Python, MatLab, R, Strabospot, Microsoft Office, LogChief, Adobe Illustrator, InDesign, Imago
Technical skills: Sediment coring, water chemistry analyses via YSI/V3000/Ultrameter, operating GC-IRMS/LC-MS, biomarker purification via microwave and solid phase extraction, biomarker sample prep, rock/core mill, Niton XL3t/XL5 XRF, ASD TerraSpec Halo, magnetic susceptibility meter, forklift driving, Big-Joe forklift, high occupancy vehicle driving