ALYSSA SCHULTZ

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EDUCATION

2019 – Current **Ph.D. Geography (Paleoceanography)**
Texas A&M University, College Station, TX
"Geochemical Insights into the Resilience of Deep-Sea Corals in the Hawaiian Emperor Seamount Chain"
Chair: Dr. Brendan Roark
Committee: Drs. Debbie Thomas, Katie Shamberger, Michelle Lawing

2012 – 2017 **B.S., Wildlife and Fisheries Sciences; Minor: Oceanography**
Texas A&M University, College Station, TX
"The effects of volcanic ash on dissolved neodymium as a water mass tracer"
Research Advisor: Dr. Debbie Thomas

RESEARCH AND PROFESSIONAL INTERESTS

- Application of paleoceanographic reconstructions to understand natural and anthropogenic climate variability in marine and coastal environments, as well as ecosystem resilience
- Science-driven policy and conservation and management related to marine life, coastal and deep-sea habitats, and climate change
- Bringing together science and communication by creating interactive outreach activities that establish ocean connections and foster positive relationships with science, promoting stewardship and education

ACADEMIC AND PROFESSIONAL APPOINTMENTS

2022 – Current **Texas Sea Grant, Texas A&M University**
Texas Academy for Marine Policy, Graduate Director
Plan, direct, and coordinate the Texas Sea Grant Marine Policy Webinar, as well as various workshops and meetings for participants.

2020 – Current **Department of Geography, Texas A&M University**
Graduate Assistant Researcher
Participate in sea-going research cruises, manage and maintain databases and sample inventory, and oversee mass spectrometry analysis of deep-sea coral samples within the stable and radiogenic isotope laboratories

2019 – 2023 **Department of Geography, Texas A&M University**
Graduate Assistant Teaching
Responsible for multiple sections of Geography 213 (Planet Earth Laboratory), Geosciences 210 (Climate Change), and Geoscience 405 (Environmental Geosciences Capstone)

2019 – 2020 **SEAD Gallery**
Science and Special Projects Coordinator
Organize art exhibitions pertaining to varying subjects in science to generate community engagement and education

2017 – 2019 **AdventGX**
Project Coordinator
Manage resources and project planning, offer creative services such as website designing and development, manage media and marketing, assist in visioning and strategy workshops for clients, community outreach

Summer 2016 **Observing the Ocean NSF REU**
Student Program Aide
MATLAB mentor for Observing the Ocean REU students at Texas A&M University

RESEARCH EXPERIENCE

2019 – Current **Roark Lab,** Texas A&M University
Graduate Student, Advisor: Dr. Brendan Roark
Development of analytical methods for boron isotopes, trace elements, radiocarbon and U/Th dating of deep-sea corals for paleoceanographic investigation

2016 – 2017 **Phytoplankton Ecology Lab,** Texas A&M University
Student Worker, Advisor: Dr. Lisa Campbell
Manual classification of phytoplankton by use of flow cytometry and *in situ* imaging

2015 – 2017 **Undergraduate Research Scholars Program,** Texas A&M University
Undergraduate Research Scholar, Advisor: Dr. Debbie Thomas
Use of deep-sea sedimentary record to determine the effects of volcanic ash when using isotopic Neodymium as a water mass tracer

Summer 2015 **Galveston Bay Foundation**
Water Quality Research Intern
Conducted short-term research project over water quality in Galveston Bay, presented research findings, and assisted in public outreach events

FIELD EXPERIENCE

Experienced in ROV operations, seawater sample collection, team-based work, and leadership during field operations

AT SEA (140 days total)

Fall 2022 **R/V Kilo Moana (ROV Jason): Defying Dissolution**
Unraveling the Enigma of North Pacific Deep-Sea Scleractinian Reefs in Undersaturated Water. Honolulu – Honolulu. Science lead, Watch lead.
45 days at sea conducting CTD casts, ROV dives with ROV Jason, and multibeam surveys of seamount sites in the Hawaiian Emperor Seamount Chain.
Chief Scientist: Dr. Brendan Roark

Summer 2022 **R/V Roger Revelle: GO-SHIP Section P02**
Honolulu – San Diego. Science party, CTD Watchstander.
34 days at sea on a repeat hydrography cruise along 30°N
Chief Scientist: Dr. Andreas Thurnherr
Co-Chief Scientist: Dr. Sebastien Bigorre

Fall 2021 **R/V Kilo Moana (ROV Lu'ukai): Defying Dissolution**
Unraveling the Enigma of North Pacific Deep-Sea Scleractinian Reefs in Undersaturated Water. Honolulu – Honolulu. Science lead, Watch lead.
56 days at sea conducting CTD casts, ROV dives with ROV Lu'ukai, and multibeam surveys of seamount sites in the Hawaiian Emperor Seamount Chain.
Chief Scientist: Dr. Brendan Roark

Summer 2016 **R/V Pelican: Observing the Ocean REU Student Cruise**
Galveston, Texas. Science party, REU student mentor.
5 days at sea examining Texas shelf hypoxia and trace metals.

ON LAND

Summer 2015 **Water quality sampling in Galveston Bay, Texas**
Surveyed and sampled various sites weekly for 2.5 months assessing visibility, flow direction and magnitude, dissolved oxygen, salinity, pH, and bacteria.
Supervisor: Charlene Bohanon

CONFERENCES AND PRESENTATIONS

Experience communicating research to various audiences and stakeholders via scientific talks

February 2024 **Alyssa Schultz,** E. Brendan Roark, Amy Baco, Katie Shamberger, Brent Miller, Kourtney Higgins. Exploring elemental variations across three deep sea coral species from the North Pacific utilizing LA-ICPMS. Submitted. Ocean Sciences Meeting, New Orleans, LA.

June 2023 Representative for Texas Sea Grant and Texas Academy for Marine Policy

March 2017 **Alyssa Schultz**, Deborah J. Thomas, Claire McKinley, Rachel Scudder. The effects of volcanic ash on dissolved neodymium as a water mass tracer. Poster. Texas A&M University Student Research Week, College Station, TX.

August 2015 **Alyssa Schultz**. The Impacts of flow rate, rainfall, and dissolved oxygen on bacteria concentration in Galveston Bay marinas. State of the Bay Meeting, Seabrook, TX.

COURSEWORK

Chemical Oceanography, Geological Oceanography, Physical Oceanography, Biological Oceanography, MATLAB Programming for Ocean Sciences, Python for Geosciences, Quantitative Methods for Geography, Past Climates, Stable Isotope Geology, Paleoecology

COURSES TAUGHT

Independently taught and/or mentored classes of 10 – 30 students while actively continuing my studies

GEOS 405 **Environmental Geoscience - Capstone Course, Texas A&M University**
Guided upperclassmen undergraduates in a research-intensive capstone course for problem solving and real-world environmental issues. This includes conducting field work in various locations, as well as leading students in operating laboratory instruments.

GEOS 210 **Climate Change, Texas A&M University**

Led discussions and problems based on real-world environmental and climate issues within an Earth systems science framework, including pollution, environmental ethics, politics and economy, and current climate projections and research.

GEOG 213 **Planet Earth Lab, Texas A&M University**
Prepared lecture materials and led laboratory courses that focus on understanding physical earth dynamics and the role of geography in these systems.

UNDERGRADUATE MENTORSHIP

Trained and guided undergraduate researchers through ship, lab, and computer-based research projects
Texas A&M University
Nichole Mendez, 2022 – Current
Undergraduate Research Thesis: *In progress*
Joanna Ross, 2022 – 2023
JiAnne Robinson, 2022 – 2023, now at Hays County Development Services
Bailey Skinner, 2020 – 2022, Texas Sea Grant Scholar, now at the Naval Oceanographic Office
Undergraduate Research Thesis: *A Multiple Linear Regression Model of Aragonite Saturation State in the Remote North Pacific*
Emily Edge, 2020 – 2022, Texas Sea Grant Scholar, now at Earthworks Environmental
Undergraduate Research Thesis: *Phytoplankton Behavior Analyzed Through a Stable Isotope Record of Deep-Sea Proteinaceous Coral in the North Pacific*

Managed undergraduate interns through community outreach events, media, and art gallery operations
AdventGX and SEAD Gallery
David Costanza, Gallery Intern, 2016 – 2017, now at Building Solutions
Claire Shenkir, Communications Intern, 2016 – 2017, now at WTW
Mackenzie Haran, Communications Intern, 2016 – 2017, now at Levy Restaurants

AWARDS

Recognition for academic and research excellence at local and national levels
2023 – 2024 Southerland Aggie Leader Scholarship, Texas A&M University
2023 – 2024 Association of Former Students Scholarship, Texas A&M University
2022 – 2023 Academic Excellence Award, Texas A&M University
2020 – 2021 MSC L.T. Jordan Fellowship for International Awareness
2017 Undergraduate Research Scholar, Texas A&M University
2012 – 2016 Fluor Foundation Scholarship

SERVICE AND OUTREACH

Established leadership record through participation in national organizations and development of university programs
2023 – Current Climate & Health Search Committee, Department of Geography, Texas A&M University
2023 – Current Deep Ocean Stewardship Initiative (DOSI) Biodiversity Task Force
2023 – Current DOSI Biodiversity Beyond National Jurisdiction Working Group
2023 Texas Junior Academy of Science, Judge
2022 – 2023 Project VICTORY, Scientists as Role Models and Mentors (SRM^2), Science Mentor
2022 – 2023 Texas A&M University Student Research Week, Judge
2022 – 2023 Vice President, Texas A&M University Association of Geography Graduate Students

2020 – 2021	President, Texas A&M University Association of Geography Graduate Students
2021	MSC L.T. Jordan Environment Impact Program, Graduate Student Guest Panel Speaker
2016 – 2017	Wildlife and Fisheries Curriculum Redesign Panel, Undergraduate Representative
2016	TAMU NSF REU Observing the Ocean Panel Speaker
2015	Galveston Bay Foundation Outreach events (Marsh Mania, crab trap removal, oyster reef restoration, and rain barrel workshops)

SKILLS

Instrumentation & Certifications: Mass Spectrometry (ICP, TIMS, EA), Texas Stream Team Certified Water Quality Monitor, Galveston Bay Foundation Certified Bacteria Sampler, Certified Texas Watershed Steward, Radiation Safety
Field Skills: PADI Open Water Diver, Basic Keelboat Sailing Certification (ASA 101), Basic to Coastal Cruising (ASA 103), Bareboat Cruising (ASA 104)
Programming & Software: QPS (Qimera and Fledermaus), ArcGIS, QGIS, MATLAB, Python, R, Markup, Adobe Creative Suite, Google Workspace
Technical & Scientific Writing: See Research Experience

PROFESSIONAL AFFILIATIONS

American Geophysical Union (AGU)
Deep Ocean Stewardship Initiative (DOSI)
The Oceanography Society (TOS)

REFERENCES

Available upon request.