

Alex A. Quizon

Department of Earth and Environmental Sciences,
University of Michigan
1100 North University Ave.
Ann Arbor, MI 48109
aquizon@umich.edu

Education

- 2021–present Ph.D. Earth and Environmental Sciences
Department of Earth and Environmental Sciences
University of Michigan
- 2017 B.A. Chemistry (Cum Laude)
Concentration in Maritime Studies (Highest Honors)
Williams College

Publications

Published

2019 Subhas, A.V., McCorkle, D.C., **Quizon, A.**, McNichol, A.P., & Long, M.H. (2019). Selective preservation of coccolith calcite in Ontong-Java Plateau sediments. *Paleoceanography and Paleoclimatology*, 34(12), 2141-2157.

Conference Abstracts (# = presenting author)

- 2024 **Quizon, A.A.**[#], Petersen, S.V., de Winter, N.J., Vellekoop, J. (2024). Preliminary insights into marine gastropod precipitation kinetics from dual clumped isotopes (Δ_{47}/Δ_{48}). *North American Paleontological Convention*, General Session: Mollusks (poster).
- 2022 **Quizon, A.**[#], Petersen, S.V., Winkelstern, I.Z., & Wehmiller, J.F. (2022). Reconstructing Last Interglacial Paleoclimate and *Mercenaria* sp. Paleophysiology Through Stable and Clumped Isotope Analysis. *AGU Fall Meeting 2022*, Session PP028: Understanding Climate Change from the Late Pleistocene to Present (oral presentation).
- 2022 Petersen, S.V., Winkelstern, I.Z., Zhang, J.Z., Minnebo, L., **Quizon, A.A.**, Phillips, C.M., Wedel, S.J., & Lanker, S.L. (2022). Last Interglacial Climate in the Coastal Western Atlantic Using Oxygen and Clumped Isotopes in Fossils Mollusks. *GSA 2022 Annual Scientific Meeting*.
- 2022 **Quizon, A.A.**[#], Petersen, S.V., Scholz, S., deWinter, N.J., & Vellekoop, J. (2022). Calibrating the Clumped Isotope Paleothermometer (Δ_{47}) for Marine Gastropods. *8th International Clumped Isotope Workshop, 2022* (poster).
- 2022 **Quizon, A.A.**[#], Petersen, S.V., Scholz, S., & deWinter, N.J. (2022). Reconstructing Seasonality from Marine Gastropods Using $\delta^{18}\text{O}$ Sclerochronology and Seasonally Targeted Δ_{47} . *Virtual International Sclerochronology Conference, 2022* (poster).
- 2021 **Quizon, A.**[#], Cook, M.S., Ravelo, A.C. (2020). Nutrient utilization and the efficiency of the biological pump during late Pleistocene glacial-interglacial cycles in. *AGU Fall Meeting 2020*, virtual (oral presentation).

Honors and Awards

- 2024 Mark Robbins Innovative Teaching Award (University of Michigan, EARTH Dept.)
- 2024 Outstanding Graduate Student Instructor Award (University of Michigan, EARTH Dept.)
- 2023 National Science Foundation Graduate Research Fellowship (NSF-GRFP)
- 2021 Outstanding Teaching Assistant Award (Williams College, Chemistry Dept.)
- 2021 Sigma Xi Associate Member - Geosciences (Williams College)
- 2021 Class Musician Award (Williams College)
- 2020 ACS Division of Analytical Chemistry Undergraduate Award (Williams College)
- 2019 Dennis W. Nixon Prize for Marine Policy (Williams College)
- 2017 Stephen H. Tyng Scholarship (Williams College)

Research Experience

2021–present PhD research at University of Michigan in the SCIPP Research Group under the mentorship of Sierra V. Petersen). Analyzing clumped and stable isotopes ($\delta^{13}\text{C}$, $\delta^{18}\text{O}$, Δ_{47}) in seashell carbonates to reconstruct paleoclimate, paleoceanography, and paleophysiology.

2018-2021 B.A. research at Williams College under the mentorship of Mea S. Cook (Geosciences/Maritime Studies). Measured carbon and nitrogen isotopes ($\delta^{13}\text{C}$, $\delta^{15}\text{N}$) in sediments from the Bering Sea to reconstruct Late Pleistocene paleoceanography; determined that the biological pump in the Northwest Pacific high-nutrient low-chlorophyll region (HNLC) has become more efficient from the mid-late Pleistocene to the present.

2018 Summer internship research at the Woods Hole Oceanographic Institution under the mentorship of Adam Subhas (Marine Chemistry & Geochemistry). Measured wt%, $\delta^{13}\text{C}$, and ^{14}C in foraminiferal and coccolith calcite fractions from core top sediments; determined that coccolith calcite is selectively preserved and foraminiferal calcite is preferentially dissolved at the sediment-water interface.

2017-2018 B.A. ‘Winter Study’ research at Williams College under the mentorship of Jay Thoman & David Richardson (Chemistry). Used accelerated solvent extraction (ASE), solid phase extraction (SPE), and LC-TOF/MS to quantify concentrations of perfluoro-octanoic acid in vegetables from Bennington, Vermont.

Teaching Experience

2023 Graduate Student Instructor (University of Michigan), Earth 202: “*Introductory Environmental Science in the Rocky Mountain West*”. Responsible for assisting students during field trips and lectures, creating/leading/grading lab & project assignments, and helping organize miscellaneous in-person activities during lecture.

2023 Graduate Student Instructor (University of Michigan), Earth 222/223: “*Introduction to Oceanography (Lecture & Lab)*”. Responsible for assisting students during office hours, supervising lab experiments, attending lectures, grading problem sets & assignments, and helping organize miscellaneous in-person activities during lecture.

2022 Graduate Student Instructor (University of Michigan), Earth 222: “*Introduction to Oceanography (Lecture)*”. Responsible for attending lectures, grading problem sets & assignments, and helping organize miscellaneous in-person activities during lecture.

2022 Guest Lecture (Cabrillo College), Ocean10: “*Introduction to Oceanography*”. Gave a guest lecture on ocean acidification, carbonate chemistry, and marine paleoclimate proxies. Gave a subsequent interview-styled presentation on this research in Winter 2024.

2021 Teaching Assistant (Williams College), Chemistry 256: “*Advanced Chemical Concepts*” (Gen. Chem II). Responsible for attending and recording in-person lectures for remote students, answering student questions, and grading weekly problem sets.

2017 Teaching Assistant & Academic Counselor (Regis High School), REACH Program. Responsible for mentoring students from underserved communities in the New York City area and helping them with class assignments (Mathematics/English Language-Arts).

Funding

2023-present NSF Graduate Research Fellowship (NSF-GRFP) - 3-year

2024 Rackham Graduate Student Research Grant (Candidate)

2023 Rackham Graduate Student Research Grant (Pre-doctoral)

2021 EES Department Fellowship - 1-year

2021-2023 Graduate Turner Award (yearly)

Field Experience

2023 Field expedition to Plio-Pleistocene shell quarries in southeastern Florida.

2021 Field expedition to high-stand deposits in South Carolina from the early-mid Pleistocene.

2019 10-day educational expedition on the *SSV Corwith Cramer* in the lower Antilles.

Science Outreach & Related Work Experience

2024 Science Communication Fellow, University of Michigan Museum of Natural History (Winter 2024 Cohort). Helped design a hands-on demonstration of lab research (along with PI Sierra Petersen and labmate Lucas Gomes) to share with and communicate to public audiences.

2019-2020 Student Ambassador, Williams-Mystic Maritime Studies. Responsible for recruiting students for the Williams-Mystic program and contributing to the blog to raise awareness for maritime studies and interdisciplinary efforts.

2019 Education & Aquarist Intern, Save The Bay - Narragansett Bay Exploration Center & Aquarium. Responsible for daily upkeep of the aquarium (e.g., food preparation and feeding, tank cleaning), monitoring exhibits, collecting specimens from local beaches, assisting with educational programming (i.e., day camps).

2019 Education & Outreach Assistant, Mystic Seaport Museum. Responsible for helping the programming director identify local businesses for engagement with museum programming.

2014-2015 Exhibit Volunteer, Liberty Science Center (Summers). Responsible for teaching and helping visitors with interactive exhibits.

Mentorship

2023-present Paleoclimate Reading Group. Leading a group of EARTH graduate students to read and discuss papers or various topics in paleoclimatology (e.g., specific isotope systems, analytical techniques).

2022-present Asian Americans and Pacific Islanders in Geosciences (AAPIiG) Mentee.

2021-present Research Mentor for undergraduate Cecilie Phillips (former UROP). Currently working on reconstructing Last Interglacial paleotemperatures and growth shutoff temperatures along the U.S. East Coast from *Mercenaria* spp.

2022 EARTH Camp College Application Mentor. Responsible for proofreading college application writing materials, answering questions about the application process.

Committee Work & Departmental Service

2024-present DEI Committee Member (Grad Student Representative). Assist with development of initiatives to promote diversity, equity, and inclusion (DEI) in the EARTH department regarding aspects such as community building, departmental climate, curriculum, etc.

2024-present, 2022 GeoClub Committee Member: Outreach & Career Development. Ran a workshop in March 2024 to teach undergraduates about fundamental skills in Microsoft Excel and R. Helped organize a Q&A panel in March 2024 with local recruiters in sectors related to earth & environmental sciences for undergraduate students to learn about future career paths in the field. Helped organize similar career panels (virtual) in Winter 2022.

2024-present, 2022 Michigan Geophysical Union (MGU) Conference Committee Member. 2024 - responsible for helping with presenter coordination and judging & awards. 2022 - responsible for organizing registration and student presenter forms and setting up for the event.

2023-present Unlearning Racism in Geosciences (URGE) Member. Previously pod facilitator - responsible for leading curriculum discussions, organizing action items for deliverables, delegating team member responsibilities, etc.

2022-2023 Foundational Course Initiative (FCI) Team Member. Responsible for assisting with the restructuring of Earth 222 (Intro to Oceanography) through incorporation of gameful design (i.e., 'GradeCraft') and new graded assessments, creation of supplemental resources (e.g., math resources and video tutorials), etc.

2021 GeoClub Faculty Meeting Representative (Grad Student Representative). Responsible for taking notes at faculty meetings and distributing the information to other graduate students in the EARTH department.

Relevant Coursework

University of Michigan

Geochemistry of Natural Waters (Aquatic Geochemistry)
Isotopes in Earth & Environmental Sciences (Isotope Geochemistry)
Determinative Methods in Mineralogical and Inorganic Materials (Analytical Geochemistry)
Data Analysis and Visualization for Geoscientists (Intro Statistics in Python)
Seminar in Paleoclimatology (Pliocene, K-Pg Western Interior Seaway)

Williams College

Chemistry
Principles of Modern Chemistry (Intro)
Organic Chemistry: Introductory & Intermediate Levels
Inorganic/Organometallic Chemistry
Instrumental Methods of Analysis
Quantum Chemistry & Chemical Dynamics
Environmental Organic Chemistry

Thermodynamics & Statistical Mechanics

Oceanic/Environmental Sciences & Related Coursework

Introduction to Environmental Science

Oceanographic Processes (Intro to Oceanography)

Environmental Observation (Methods)

Coastal Processes and Geomorphology

Hydrothermal Vents

General Physics I: Mechanics

Electromagnetism & The Physics of Matter

Multivariable Calculus

Math Methods for Scientists (Intro to Differential Equations)

Nature and Society: An Introduction to Environmental Studies

Environmental Justice

American Maritime History

Marine Policy

Skills

Programming languages: R, Matlab, Python, Java, Mathematica

Software: Microsoft Office, ArcGIS Pro (basic), Adobe Illustrator

Analytical Methods: IRMS ($\delta^{15}\text{N}$, $\delta^{13}\text{C}$, $\delta^{18}\text{O}$, Δ_{47}/Δ_{48}), SEM/EDS, Raman spectroscopy, GC/LC-MS