

Alex A. Quizon

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Education

- 2021–present** Ph.D. Earth and Environmental Sciences (expected May 2026)
Department of Earth and Environmental Sciences
University of Michigan
- 2017-2021 B.A. Chemistry (Cum Laude)
Concentration in Maritime Studies (Highest Honors)
Williams College

Publications

In prep

Quizon, A.A., Petersen, S.V., Winkelstern, I.Z., Wehmiller, J.F. Last Interglacial warmth and substantial ice sheet melt detected at Sankaty Head Cliff, Massachusetts.

Quizon, A.A., Scholz, S.R., Petersen, S.V. Vital (disequilibrium) effects in turrnellid gastropods - a case study with Colombian Mid-Miocene fossils.

In review

Gomes, L.D., **Quizon, A.A.**, Petersen, S.V., Winkelstern, I.Z. Estuarine salinity- $\delta^{18}\text{O}_{\text{water}}$ and $\Delta^{17}\text{O}$ mixing relationships along the U.S. Eastern Seaboard. Submitted to *Chemical Geology*.

Quizon, A.A., Gomes, L.D., Petersen, S.V., VanDeVelde, J. Seawater salinity and oxygen isotopes along the U.S. East Coast from 24°N to 44°N. Submitted to (*Nature*) *Scientific Data*.

Published

2025 **Quizon, A.A.**, Petersen, S.V., deWinter, N.J., Vellekoop, J. Clumped isotope thermometry (Δ_{47}) measurements in marine gastropods suggest equilibrium precipitation. *Geochimica et Cosmochimica Acta*, 410, 234-249.

2025 Winkelstern, I.Z., Petersen, S.V., Curran, H.A., Phillips, C., **Quizon, A.**, Glumac, B., Griffing, D. Cooling Climate Across Last Interglacial High Stands on El Salvador and Great Inagua, The Bahamas. *The Depositional Record*, 12(1), e70038.

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

Conference Abstracts (# = presenting author, * = session convener)

- 2025 Petersen S.V., Gomes, L., **Quizon, A.**, Kim, E.H. Applying clumped isotope paleothermometry in sclerochronological studies: a brief tutorial for Δ_{47} -curious sclerochronologists. *GSA Annual Meeting 2025* (oral presentation).
- 2025 **Quizon, A.A.**[#], Petersen, S.V., Gomes, L.D. Salinity and seawater oxygen isotope measurements along the U.S. Eastern Seaboard - implications for paleoclimate and paleoceanography reconstructions. *Goldschmidt 2025*, Session 13f-O2: Geochemical proxy development for paleoceanographic and paleoclimatic research (oral presentation).
- 2024 **Quizon, A.**[#], Petersen, S.V., Winkelstern, I., Wehmiller. Last Interglacial paleoclimate and stratigraphy along the U.S. East Coast. *AGU Fall Meeting 2024*, *Session PP53B: Everything Last Interglacial: Climate, Sea Level, and Ice (poster).
- 2024 Winkelstern, I., Petersen, S.V., **Quizon, A.**, Curren, A., Glumac, B., Griffing, D. New Last Interglacial Paleoclimate and Age Data from San Salvador and Great Inagua, The Bahamas. *AGU Fall Meeting 2024*, *Session PP53B: Everything Last Interglacial: Climate, Sea Level, and Ice (poster).
- 2024 Wraback, E., Lee, D., Lee, E., **Quizon, A.**, Cushen, A., Quartey, N-B., Colón Rodríguez, S.A., Hathaway, E., Rendfrey, T.S., Petersen, S.V., Flanner, M. Michigan Geophysical Union: Creating a Space to Empower Students in Earth and Space Sciences. *AGU Fall Meeting 2024*, Session ED33C: Fostering DE&I: Student-Led Initiatives to Empower Improved Higher Educational Experiences (poster).
- 2024 **Quizon, A.A.**[#], Petersen, S.V. The benefits of high-resolution Δ_{47} -sclerochronology - a case study with Last Interglacial-age *Mercenaria* fossil shells from Massachusetts. *9th International Clumped Isotope Workshop, 2024* (poster).
- 2024 **Quizon, A.A.**[#], Petersen, S.V., de Winter, N.J., Vellekoop, J. Preliminary insights into marine gastropod precipitation kinetics from dual clumped isotopes (Δ_{47}/Δ_{48}). *North American Paleontological Convention*, General Session: Mollusks (poster).
- 2023 Petersen, S.V., **Quizon, A.A.**, Curley, A.N., Zhang, J.Z., Witts, J., Phillips, C., Winkelstern, I.Z., Myers, C. Failures of the Modern Analog Mentality: Examples Relating to Thermal Tolerance of Mollusks, *GSA Connects* (invited talk).
- 2022 **Quizon, A.**[#], Petersen, S.V., Winkelstern, I.Z., & Wehmiller, J.F. 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. Last Interglacial Climate in the Coastal Western Atlantic Using Oxygen and Clumped Isotopes in Fossils Mollusks. *GSA 2022 Annual Scientific Meeting* (oral presentation).
- 2022 **Quizon, A.A.**[#], Petersen, S.V., Scholz, S., deWinter, N.J., & Vellekoop, J. 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. 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. 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 tours 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

2024	Graduate Turner Award
2023-2026	NSF Graduate Research Fellowship (NSF-GRFP) - 3-year
2024	Rackham Graduate Student Research Grant (Candidate)
2023	Graduate Turner Award
2023	Rackham Graduate Student Research Grant (Pre-doctoral)
2022	Graduate Turner Award
2021-2022	EES Department Fellowship - 1-year
2021	Graduate Turner Award

Field Experience

2025, 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.

Outreach & Related Work Experience

2024 EARTH Camp: Staff Lead & Instructor. Responsible for running field trips (e.g., UM Biological Station, museums, educational tours, national park hikes) and introducing high school students from traditionally underrepresented backgrounds to fundamental concepts in geosciences.

2024 University of Michigan Museum of Natural History (Winter 2024 Cohort): Science Communication Fellow. 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 Williams-Mystic Maritime Studies: Student Ambassador. Responsible for recruiting students for the Williams-Mystic program and contributing to the blog to raise awareness for maritime studies and interdisciplinary efforts.

2019 Save The Bay - Narragansett Bay Exploration Center & Aquarium: Education & Aquarist Intern. 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 Mystic Seaport Museum: Education & Outreach Assistant. 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

2024-2025 Paleoclimate Reading Group. Created and led a group of EARTH graduate students to read and discuss papers on various topics in paleoclimatology (e.g., specific isotope systems, analytical techniques, paleoclimate proxies).

2024 SACNAS Graduate School Application Mentor. Responsible for proofreading grad school application writing materials, helping connect mentee (Sebastian) with potential research advisors.

2021-2025 Research Mentor for undergraduate Cecilie Phillips (former UROP). Currently working on reconstructing Last Interglacial paleotemperatures and growth shutoffs from *Mercenaria* spp. along the U.S. Eastern Seaboard.

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

2021-2025 EARTH ForALL Preview Mentor. Responsible for mentoring undergraduates from underrepresented and diverse backgrounds who are interested in graduate studies in the geosciences and answering questions about the application process.

Committee Work

2025-present GeoClub Committee Member: Co-President. Organize professional and social events for the organization and EARTH department (e.g., professional development and science communication workshops, career panels, alumni networking events, graduate student retreat, potluck socials, end-of-year banquet).

2024-present Community Support Committee - formerly the Diversity, Equity, & Inclusion (DEI) Committee: Grad Student Representative. Assist with development of initiatives

to create a welcoming environment in the EARTH department regarding aspects such as community building, departmental climate, curriculum, etc.

2024-2025, 2022 GeoClub Committee Member: Outreach & Communication (& career development). Organized/led professional development workshops (e.g., Excel/R softwares, academic funding, Zotero, poster prep) & career panels to introduce students to geoscience careers. 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.

2024-2025, 2022 Michigan Geophysical Union (MGU) Conference Organizing Committee Member. 2025 - EARTH department Co-Chair. Responsibilities included: coordinating oral and poster presenters, assigning judges and distributing awards, organizing registration forms, booking/scheduling spaces for program events, etc. 2024 - responsible for helping with presenter coordination and judging & awards. 2022 - responsible for organizing registration and student presenter forms and setting up for program events.

2023-2025 Unlearning Racism in Geosciences (URGE): Pod Facilitator. Responsible for leading curriculum discussions, organizing action items, 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 Committee Member: 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 (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 (Word/Excel/PowerPoint), ArcGIS Pro, Adobe Illustrator, Canva.

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