

ALLISON N. CURLEY

PROFESSIONAL EXPERIENCE

2024- Postdoctoral Researcher
pres Institute of Geosciences (Institut Für Geowissenschaften)
Goethe-Universität Frankfurt, Germany

EDUCATION

2024 Ph.D. Earth & Environmental Sciences
Department of Earth & Environmental Sciences
University of Michigan, Michigan, USA

Dissertation: *Applications of Carbonate Clumped Isotopes in Paleoclimate and Paleophysiology: Demystifying Biologically Driven Isotopic Fractionations in Class Bivalvia*

2024 Graduate Teaching Certificate
Center for Research on Learning and Teaching
University of Michigan, Michigan, USA

2019 B.Sc. Earth Sciences (Summa Cum Laude; Honors in Earth Sciences)
Minors in Archaeology and Italian Studies
Dickinson College, Pennsylvania, USA

Thesis: *Investigation of Lead Isotopes and Trace Metals as Indicators of Terrestrial Contaminant Sources Associated with Browning in Lake Giles, PA.*

PUBLICATIONS

UG - undergraduate author

REFEREED FULL PAPERS

1. ^{ug}Lollos, D.; **Curley, A.N.**; Petersen, S.V. (2025). Regional variation in biologically driven isotopic fractionations in cosmopolitan bivalve genera *Dosinia* and *Mactra*. *PALAIOS*. v. 40 (11), p. 321–335.
2. Staudigel, P.; Bernecker, M.; **Curley, A.**; Meijer, N; Bayarjargal, L.; Dietzel, M.; Fiebig, J. (2025). Isotopic resetting of CO₂ in the presence of carbonate samples: implications for oxygen and clumped isotope analyses. *Chemical Geology*. v. 694, p. 123012
3. **Curley, A.N.**; Petersen, S.V.; Fricke, H. and Gleason, J. (2025). Insights into hydrology of the Late Cretaceous Western Interior Basin from clumped isotope paleothermometry and strontium isotopes. *Earth and Planetary Science Letters*. v. 651, p. 119180.
4. **Curley, A.N.**; Petersen, S.V.; Edie, S.M. and Guo, W. (2023). Biologically driven isotopic fractionations in bivalves: from palaeoenvironmental problem to palaeophysiological proxy. *Biological Reviews*. v. 98, p. 1016–1032.
5. Jones, M.M.; Petersen, S.V. and **Curley, A.N.** (2022). A tropically hot and salty mid-Cretaceous Western Interior Seaway (USA) spanning Oceanic Anoxic Event 2. *Geology*. v. 50, p. 954–958.
6. Kelson, J.R.; Petersen, S.V.; Niemi, N.; Passey, B.H. and **Curley, A.N.** (2022). Isotopically light headwaters revealed with clumped and triple oxygen isotopes of early Eocene estuarine oysters in Southern California. *Geology*. v. 50, p. 755–759.

7. **Curley, A.N.**; Kochtitzky, W.H.; Edwards, B.R. and Copland, L. (2021). Glacier changes over the past 144 years at Alexandra Fiord, Ellesmere Island, Canada. *Journal of Glaciology*. v. 67, p. 511–522.
8. **Curley, A.N.**, Thibodeau, A.M., Kaplan, E., Howe, E., Pearlstein, E., and Levinson, J. (2020). Isotopic composition of lead white pigments on qeros: implications for the chronology and production of Andean ritual drinking vessels during the colonial era. *Heritage Science*. v. 8, p. 1-12.

CONFERENCE ABSTRACTS

* - ANC presenting author

1. ***Curley, A.**; Fiebig, J.; Sreenivasan, S.; Steuber, T. (2025). Application of Dual Clumped Isotopes to Last Interglacial Climate of the Persian/Arabian Gulf. *Geo4Göttingen*.
2. [INVITED TALK] ***Curley, A.N.**; Petersen, S.V.; Lollos, D. M.; Edie., S.; de Winter, N.J.; Peharda, M.; Fiebig, J. (2025). Frontiers for the use of $\Delta 47$ and $\Delta 48$ measurements to understand organism-environment interactions in bivalve molluscs. *Goldschmidt*.
3. Petersen, S.V.; **Curley, A.N.**; ^{UG}Lollos, D.M. (2024). Progress on Understanding Patterns in Biologically Driven Isotopic Fractionations (BioDIFs) in bivalves. *International Clumped Isotope Workshop*.
4. [TALK] ***Curley, A.N.**; Petersen, S.V.; Fricke, H. and Gleason, J. (2023). Continental climate and paleohydrology in the Campanian Western Interior Basin inferred from Clumped Isotope Paleothermometry. *Geological Society of America Annual Meeting*.
5. ^{UG}Lollos, D; **Curley, A.N.**; Petersen, S.V. (2023). Biologically driven isotopic fractionations in bivalve genera Dosinia and Mactra between 43°S and 53°N. *Geological Society of America North-Central Section*.
6. ^{UG}Lollos, D; **Curley, A.N.**; Petersen, S.V. (2023). Biologically driven isotopic fractionations in bivalve genera Dosinia and Mactra between 43°S and 53°N. *Michigan Geophysical Union*.
7. ***Curley, A.N.**; Petersen, S.V.; Fricke, H.; Gleason, J. and Blum, J. (2023). Climate and hydrology in the Campanian (~75 Ma) Western Interior Basin: Insights from clumped and strontium isotope measurements of freshwater unionid bivalves. *Michigan Geophysical Union*.
8. [TALK] ***Curley, A.N.**; Petersen, S.V.; Edie, S.M. and Guo, W. (2022). Biologically driven isotopic fractionations in bivalves as paleophysiological proxies. *International Clumped Isotope Workshop*.
9. ***Curley, A.N.**; Petersen, S.V.; Edie, S.M. and Guo, W. (2022). Diagnosing biologically driven isotopic fractionations in bivalve shells using clumped and bulk stable isotopic analysis. *International Sclerochronology Conference*.
10. ***Curley, A.N.**; Petersen, S.V.; Edie, S.M. and Guo, W. (2022). Investigation of biomineralization processes in Maastrichtian age (69-66 Ma) Antarctic bivalves using bulk stable and clumped isotopes. *Michigan Geophysical Union*.
11. Rivera, S.; Levin, N.E.; **Curley, A.**; Howard, C.; Kelson, J.; Cook, M.K.; Friedman, M.; Sheldon, N.D.; Smith, S.Y.; Johnson, J.E. (2021). URGE Outcomes from University of Michigan's Earth & Environmental Sciences. *American Geophysical Union Annual Meeting*.
12. Jones, M.M.; Petersen, S.V. and **Curley, A.N.** (2021). A tropically hot and salty Western Interior Seaway in the mid-Cretaceous. *American Geophysical Union Annual Meeting*.
13. Petersen, S.V.; **Curley, A.N.**; Edie, S.M.; Mohr, R.C.; Oliphant, E. and Tobin, T.S. (2021). Survivorship vs. Extinction at the KPg Boundary: An isotopic look at vital effects in bivalves. *Goldschmidt*.

14. Thibodeau, A.M., **Curley, A.N.**, Kaplan, E., Howe, E., Pearlstein, E., and Levinson, J. **(2021)**. Beyond provenance: interpreting the Pb isotope composition of lead white pigments found on Andean ritual drinking vessels from the colonial era. *Goldschmidt*.
15. ***Curley, A.N.**; Petersen, S.V.; Edie, S.M.; Mohr, R.C. and Tobin, T.S. **(2021)**. Isotopic and trace element vital effects as records of biological control over skeletogenesis in Maastrichtian (69-66 Ma) Antarctic bivalves. *Michigan Geophysical Union*.
16. ***Curley, A.N.**; Petersen, S.V.; Edie, S.M.; Mohr, R.C.; Tobin, T.S. and Oliphant, E. **(2020)**. Biological controls on the stable isotope and trace element composition of Maastrichtian age bivalve shells from Seymour Island, Antarctica. *GSA 2020 Connects Online*.
17. ^{UG}Hoffman, J.J.; Jones, M.J.; Petersen, S.V. and **Curley, A.N. (2020)**. Multi-proxy seasonality investigation of the mid-Cretaceous Western Interior Seaway using oyster macrofossils. *GSA 2020 Connects Online*.
18. Jones, M.J.; **Curley, A.N.** and Sierra V. Petersen. **(2020)**. A tropically hot and salty Western Interior Seaway (USA) spanning Cretaceous Oceanic Anoxic Event 2. *GSA 2020 Connects Online*.
19. ^{UG}Hoffman, J.J.; Jones, M.J.; Petersen, S.V. and **Curley, A.N. (2020)**. Multi-proxy investigation of the Cenomanian Western Interior Seaway using oyster macrofossils (~94.5 Ma). *Geological Society of America North-Central Section Meeting*.
20. Thibodeau, A.; **Curley, A.N.**; Bonsey, K.; Barber, D.C. and Strock, K.E. **(2020)**. Investigation of mercury burial in two small lakes undergoing browning in northeastern Pennsylvania. *Geological Society of America Joint Southeastern/Northeastern Section Meeting*.
21. ***Curley, A.**; Kochtitzky, W.H.; Edwards, B.R.; Bonsey, K. and Ritter, M. **(2018)**. Field and Remote Sensing Observations on Retreating Outlet Glaciers on the Northern Edge of the Prince of Wales Icefield, Central Ellesmere Island, Canada. *American Geophysical Union Annual Meeting*.
22. Bonsey, K.; ***Curley, A.**; Strock, K. and Thibodeau, A. **(2018)**. Investigation of Lead Isotopes and Trace Metal Fluxes as Particulate Contaminant Tracers and Chronostratigraphic Markers for Lake Sediments in Northeastern Pennsylvania. *Geological Society of America Annual Meeting*.
23. [TALK] Thibodeau, A.; ***Curley, A.**; Kaplan, E. and Howe, E. **(2018)**. Lead Isotopes as Chronological Markers for Colonial Period Ritual Drinking Vessels in the Andes. *Society for American Archaeology Annual Meeting*.
24. ***Curley, A.N.**, Thibodeau, A.M., Kaplan, E., Howe, E., Pearlstein, E., and Levinson, J. **(2018)**. Investigation of Lead Isotopes as Chronological Markers for Colonial Period Ritual Drinking Vessels in the Andes. *All-College Science Symposium, Dickinson College*.
25. ***Curley, A.**; Thibodeau, A.M.; Kaplan, E. and Howe, E. **(2017)**. Lead Isotopes as Chronological Markers for Colonial Period Ceremonial Drinking Vessels in the Andes. *Geological Society of America Annual Meeting*.

EXTERNAL PROFESSIONAL ACTIVITIES

REFEREEING ACTIVITIES

2024 *Biogeosciences*
 2024 *Palaeogeography, Palaeoclimatology, Palaeoecology*
 2023 *Geology*

WORKSHOP PARTICIPATION

2022 International Clumped Isotope Workshop

CONFERENCE SESSION ORGANIZATION

2023 Technical session co-chair, Geological Society of America Northeastern Section Meeting

INVITED SEMINARS

2025 *Curley, A.N. Making the Leap from Isotope Systematics to Biogeochemical Inference: Dual Clumped Isotopes and Biologically Driven Isotopic Fractionations in Bivalve Molluscs. *IsoNET Early Career Researchers Seminar Series*.

2023 *Curley, A.N. It's bigger on the inside: Going beyond paleoclimate to understand life, evolution, and survival of bivalves in prehistoric oceans. *Geosciences Seminar Series, Dickinson College*.

2022 *Curley, A.N. It's Alive! Reimagining "vital effects" in fossil bivalve shells as paleophysiological proxies. *Department of Paleobiology Biomineralization Seminar, Smithsonian National Museum of Natural History*.

2020 *Curley, A.N. and Thibodeau A.M. Isotopic composition of lead white pigments on qeros: Implications for the chronology and production of Andean ritual drinking vessels during the colonial era. *Department of Conservation Seminar, Smithsonian National Museum of the American Indian*.

2018 Bonsey, K., *Curley, A. Lead isotopes as chronostratigraphic markers for lake sediments in northeastern Pennsylvania. *Geosciences Seminar Series, Dickinson College*.

2017 Thibodeau, A. and *Curley, A. Using isotopes to trace the provenance of artifacts: Examples from the NMAI collections. *Department of Conservation Seminar, Smithsonian National Museum of the American Indian*.

HONORS, AWARDS, RESEARCH FELLOWSHIPS

2025 [Seal of Excellence] Marie Skłodowska-Curie Actions Postdoctoral Fellowship
Horizon Europe

2024 Rackham Outstanding Graduate Student Instructor Award
University of Michigan Rackham Graduate School

2024 Outstanding Graduate Student Instructor Award
University of Michigan Department of Earth and Environmental Sciences

2024 Outstanding Graduate Student Service Award
University of Michigan Department of Earth and Environmental Sciences

2023 Smithsonian Institution Predoctoral Fellowship
Smithsonian National Museum of Natural History, Paleobiology Division

2021 Ernest A. Novak Fellowship (PhD)
University of Michigan Department of Earth and Environmental Sciences

2020 [Honorable Mention] NSF Graduate Research Fellowship Program
National Science Foundation

2019 Ernest A. Novak Fellowship (MS)
University of Michigan Department of Earth and Environmental Sciences

2019 Phi Beta Kappa National Honor Society
Dickinson College

2019 William Vernon Prize for Excellence in Geology
Dickinson College Department of Earth and Environmental Sciences

2016- Dean's List

2019 Dickinson College

2016 Alpha Lambda Delta National Honor Society
Dickinson College

2015 John Montgomery Scholarship
Dickinson College

RESEARCH FUNDING

2023 Smithsonian Institution Predoctoral Research Grant
Smithsonian National Museum of Natural History

2023 Graduate Student Research Grant (PhD candidate)
Rackham Graduate School

2022 Scott Turner Award
University of Michigan Department of Earth and Environmental Sciences

2020 Graduate Student Research Grant (MS)
Geological Society of America

2020 Graduate Student Research Grant (MS)
Rackham Graduate School

2019 Scott Turner Award
University of Michigan Department of Earth and Environmental Sciences

2018 Robert Allan Jansen Memorial Student-Faculty Research Grant
Dickinson College Research & Development Committee

2018 Stephen G. Pollock Undergraduate Research Grant
Geological Society of America Northeastern Section

2018 William W. Vernon Research Prize in Geology
Dickinson College Department of Earth Sciences

2018 Isabel and Arthur Watres Student Research Award
Lacawac Sanctuary

TEACHING EXPERIENCE

UNIVERSITY OF MICHIGAN

2023 Environmental Geochemistry

2021 Primitive Navigation and Wayfinding in the Natural World

2021 Introductory Oceanography

2020 Introductory Oceanography

2020 Primitive Navigation and Wayfinding in the Natural World

DICKINSON COLLEGE

2019 Structural Geology

2018 Geochemistry

2018 Reading and Writing Contemporary Italian Culture

2017 Humans and the Natural World

2017-19 Norman M. Eberly multilingual writing center

2016-19 Center for Advising, Internships, and Lifelong Learning

STUDENT SUPERVISION

2025 Master's thesis co-advisor

student name: Marlon Greim

Topic: Dual clumped isotope composition of terrestrial gastropod shells

2023 Bachelor's thesis primary advisor, High Honors in Earth and Environmental Science

Student name: Darya M. Lollos

Title: “Regional variation in biologically driven isotopic fractionations in cosmopolitan bivalve genera Dosinia and Mactra”

PUBLIC ENGAGEMENT AND OUTREACH

2021 Michigan Shakes! Seismology in Michigan Co-Organizer
Wolverine Pathways

2020- University of Michigan Science Olympiad Proctor
2023 UMSO.

2020 Young Scientists Expo Mentor
University of Michigan Association for Women in Science

2019 Capstone Day Host
Women+ Excelling More in Math, Engineering, and Sciences

2015- Citizen Science Watershed Programming Coordinator
2019 *Alliance for Aquatic Resource Monitoring*
Community Engagement Fellowship (2015-2017)

MANAGEMENT, ADMINISTRATIVE AND COMMUNITY SERVICE

2021- Unlearning Racism in Geoscience (URGE) Pod Member

2024 Co-producing and implementing deliverables from University of Michigan delegation to the American Geophysical Union’s URGE program

2021 Wellness & Inclusion Workshop Series Organizer
Co-organized 6 workshops on student mental health, engendering respectful communities, responding to disclosures of sexual misconduct, LGBTQ+ allyship, and civilian rights during law enforcement interactions.

2020- Michigan Geophysical Union Organizing Committee

2024 Committee Co-chair (2023); Chair of Presenter Coordination (2022)
Leadership of University of Michigan natural sciences symposium featuring 50-70 student research projects.

2020- Graduate Student Town Hall Organizer

2023 Coordinated town hall style meetings between graduate students and department leadership to set priorities and address grievances. Worked privately with department chairs and graduate chairs on implementation.

2016- Geology Club Officer

2019 President (2018-2019); Field Trip & Events Coordinator (2017)
Led educational outreach events promoting study of Earth sciences to town residents, children, and students. Organized funds, transportation, and itineraries for field trips and events.

PERSONAL DEVELOPMENT AND DEVELOPING OTHERS

MENTORSHIP FOR TEACHING

2021- Michigan Earth Graduate Student Mentor (GSM)
2023 Lead GSM (2022-2023); GSM (2021-2022)

OTHER MENTORSHIP

2023- Geosciences Education & Mentorship Program Mentor
2024 *National Association of Geoscience Teachers*

2020- Guidance, Perspective, and Support Mentor
2022 *University of Michigan Spectrum Center for LGBTQ+ Services*

2020- First Year Mentor
2023 *University of Michigan Department of Earth & Environmental Sciences*

PEDAGOGY TRAINING

2023 Leveraging Generative AI in Teaching
 University of Michigan Center for Research on Learning and Teaching

2020- Graduate Student Instructor Workshop attendance
2023 *University of Michigan Dept. of Earth & Environmental Sciences*

2020 SpeakOut Summer Institute on Social Justice in Academia
 The Institute for Democratic Education and Culture

2020 Classroom teaching observation & consultation
 University of Michigan Dept. of Earth & Environmental Sciences

2019 Teaching in Tumultuous Times
 University of Michigan Center for Research on Learning and Teaching

2019 Departmental GSI orientation & 2 practice teaching sessions,
 University of Michigan Dept. of Earth & Environmental Sciences

2016 Inclusive Leadership Student Training
 Popel Shaw Center for Race and Ethnicity