

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 *Macra*. *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 *Macra* 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 *Macra* 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
- 2016-2019 Dean's List
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