

CURRICULUM VITAE

POSTDOCTORAL EXPERIENCE

2024- pres Postdoctoral Researcher
Institute of Geosciences and Geography
Goethe-Universität Frankfurt, Germany

EDUCATION

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

Thesis: “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, USA

2019 B.Sc. Earth Sciences[§] (*summa cum laude*; honours in Earth Sciences[§])
Minors in Archaeology and Italian Studies
Dickinson College, USA

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

[§]department renamed “Geosciences” in 2023

PUBLICATIONS

^{UG} - undergraduate author

REFEREED FULL PAPERS

1. **2025.** ^{UG}Lollos, D.; **Curley, A.N.**; Petersen, S.V. “Regional variation in biologically driven isotopic fractionations in cosmopolitan bivalve genera *Dosinia* and *Mactra*.” *PALAIOS*. v. 40 (11), p. 321–335.
2. **2025.** Staudigel, P.; Bernecker, M.; **Curley, A.**; Meijer, N; Bayarjargal, L.; Dietzel, M.; Fiebig, J. “Isotopic resetting of CO₂ in the presence of carbonate samples: implications for oxygen and clumped isotope analyses.” *Chemical Geology*. v. 694, p. 123012
3. **2025.** **Curley, A.N.**; Petersen, S.V.; Fricke, H. and Gleason, J. “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. **2023.** **Curley, A.N.**; Petersen, S.V.; Edie, S.M. and Guo, W. “Biologically driven isotopic fractionations in bivalves: from palaeoenvironmental problem to palaeophysiological proxy.” *Biological Reviews*. v. 98, p. 1016–1032.
5. **2022.** Jones, M.M.; Petersen, S.V. and **Curley, A.N.** “A tropically hot mid-Cretaceous North American Western Interior Seaway.” *Geology*. v. 50, p. 954–958.
6. **2022.** Kelson, J.R.; Petersen, S.V.; Niemi, N.; Passey, B.H. and **Curley, A.N.** “Looking upstream with clumped and triple oxygen isotopes of estuarine oyster shells in the early Eocene of California, USA.” *Geology*. v. 50, p. 755–759.
7. **2021.** **Curley, A.N.**; Kochtitzky, W.H.; Edwards, B.R. and Copland, L. “Glacier changes over the past 144 years at Alexandra Fiord, Ellesmere Island, Canada.” *Journal of Glaciology*. v. 67, p. 511–522.

8. **2020. Curley, A.N.**, Thibodeau, A.M., Kaplan, E., Howe, E., Pearlstein, E., and Levinson, J. “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.

FULL PAPERS IN REVIEW/REVISION

- a. **Curley, A.N.**; de Winter, N.J.; Oerlemans, B.; Peharda, M.; Fiebig, J. “Accurate equilibrium Δ_{47} - Δ_{48} values in bivalves despite bulk differences in inner layer.” *Geochemical Perspectives Letters*.
- b. Fiebig, J; Spötl, C; Moreno, A; Zhang, H; Bernecker, M; Staudigel, P; **Curley, A.N.**; Meckler, A.N.; Markowska, M; Schröder, J; Vonhof, H. “ Δ_{47} - Δ_{48} Systematics of Speleothem Carbonates.” *Geochimica et Cosmochimica Acta*.

NATIONAL & INTERNATIONAL CONFERENCE ABSTRACTS

* - ANC presenting author

1. **2026.* Curley, A.N.**; Sreenivasan, S.P.; Steuber, T.; de Winter, N.J.; Oerlemans, B.; Peharda, M.; Fiebig, J. “What’s in a Shell? Methods for Time-Resolved Sampling to Disentangle Climate and Physiological Signals in Bivalve Shells with Dual Clumped Isotopes.” *International Clumped Isotope Workshop*.
2. **2026.** Fiebig, J; Spötl, C; Moreno, A; Zhang, H; Bernecker, M; Staudigel, P; **Curley, A.N.**; Meckler, A.N.; Markowska, M; Schröder, J; Vonhof, H. “Mass Spectrometric Δ_{48} Precision Insufficient to Resolve the Subtle Negative Δ_{47} Bias that is Recorded along the Growth Axis of Most Stalagmites.” *International Clumped Isotope Workshop*.
3. **2025.* Curley, A.**; Fiebig, J.; Sreenivasan, S.; Steuber, T. “Application of Dual Clumped Isotopes to Last Interglacial Climate of the Persian/Arabian Gulf.” *Geo4Göttingen*.
4. **2025.*** [Invited Talk] **Curley, A.N.**; Petersen, S.V.; Lollo, D. M.; Edie., S.; de Winter, N.J.; Peharda, M.; Fiebig, J. “Frontiers for the use of Δ_{47} and Δ_{48} measurements to understand organism-environment interactions in bivalve molluscs.” *Goldschmidt*.
5. **2024.** Petersen, S.V.; **Curley, A.N.**; ^{UG}Lollo, D.M. “Progress on Understanding Patterns in Biologically Driven Isotopic Fractionations (BioDIFs) in bivalves.” *International Clumped Isotope Workshop*.
6. **2023.*** [Talk] **Curley, A.N.**; Petersen, S.V.; Fricke, H. and Gleason, J. “Continental climate and paleohydrology in the Campanian Western Interior Basin inferred from Clumped Isotope Paleothermometry.” *Geological Society of America Annual Meeting*.
7. **2023.** ^{UG}Lollo, D; **Curley, A.N.**; Petersen, S.V. “Biologically driven isotopic fractionations in bivalve genera *Dosinia* and *Maetra* between 43°S and 53°N.” *Geological Society of America North-Central Section*.
8. **2022.*** [Talk] **Curley, A.N.**; Petersen, S.V.; Edie, S.M. and Guo, W. “Biologically driven isotopic fractionations in bivalves as paleophysiological proxies.” *International Clumped Isotope Workshop*.
9. **2022.* Curley, A.N.**; Petersen, S.V.; Edie, S.M. and Guo, W. “Diagnosing biologically driven isotopic fractionations in bivalve shells using clumped and bulk stable isotopic analysis.” *International Sclerochronology Conference*.
10. **2021.** 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. “URGE Outcomes from University of Michigan’s Earth & Environmental Sciences.” *American Geophysical Union Annual Meeting*.
11. **2021.** Jones, M.M.; Petersen, S.V. and **Curley, A.N.** “A tropically hot and salty Western Interior Seaway in the mid-Cretaceous.” *American Geophysical Union Annual Meeting*.
12. **2021.** Petersen, S.V.; **Curley, A.N.**; Edie, S.M.; Mohr, R.C.; Oliphant, E. and Tobin, T.S. “Survivorship vs. Extinction at the KPg Boundary: An isotopic look at vital effects in bivalves.” *Goldschmidt*.

13. **2021.** Thibodeau, A.M., **Curley, A.N.**, Kaplan, E., Howe, E., Pearlstein, E., and Levinson, J. “Beyond provenance: interpreting the Pb isotope composition of lead white pigments found on Andean ritual drinking vessels from the colonial era.” *Goldschmidt*.
14. **2020.*** **Curley, A.N.**; Petersen, S.V.; Edie, S.M.; Mohr, R.C.; Tobin, T.S. and Oliphant, E. “Biological controls on the stable isotope and trace element composition of Maastrichtian age bivalve shells from Seymour Island, Antarctica.” *Geological Society of America Connects Online*.
15. **2020.** ^{UG}Hoffman, J.J.; Jones, M.J.; Petersen, S.V. and **Curley, A.N.** “Multi-proxy seasonality investigation of the mid-Cretaceous Western Interior Seaway using oyster macrofossils.” *Geological Society of America Connects Online*.
16. **2020.** Jones, M.J.; **Curley, A.N.** and Sierra V. Petersen. “A tropically hot and salty Western Interior Seaway (USA) spanning Cretaceous Oceanic Anoxic Event 2.” *Geological Society of America Connects Online*.
17. **2020.** ^{UG}Hoffman, J.J.; Jones, M.J.; Petersen, S.V. and **Curley, A.N.** “Multi-proxy investigation of the Cenomanian Western Interior Seaway using oyster macrofossils (~94.5 Ma).” *Geological Society of America North-Central Section Meeting*.
18. **2020.** Thibodeau, A.; **Curley, A.N.**; Bonsey, K.; Barber, D.C. and Strock, K.E. “Investigation of mercury burial in two small lakes undergoing browning in northeastern Pennsylvania.” *Geological Society of America Joint Southeastern/Northeastern Section Meeting*.
19. **2018.*** **Curley, A.**; Kochtitzky, W.H.; Edwards, B.R.; Bonsey, K. and Ritter, M. “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*.
20. **2018.*** Bonsey, K.; **Curley, A.**; Strock, K. and Thibodeau, A. “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*.
21. **2018.*** [Talk] Thibodeau, A.; **Curley, A.**; Kaplan, E. and Howe, E. “Lead Isotopes as Chronological Markers for Colonial Period Ritual Drinking Vessels in the Andes.” *Society for American Archaeology Annual Meeting*.
22. **2017.*** **Curley, A.**; Thibodeau, A.M.; Kaplan, E. and Howe, E. “Lead Isotopes as Chronological Markers for Colonial Period Ceremonial Drinking Vessels in the Andes.” *Geological Society of America Annual Meeting*.

ACADEMIC HONOURS, AWARDS & FELLOWSHIPS

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| 2025 | [Seal of Excellence] Marie Skłodowska-Curie Actions Postdoctoral Fellowship
<i>Horizon Europe</i> |
| 2024 | Rackham Outstanding Graduate Student Instructor Award
<i>University of Michigan Rackham Graduate School</i> |
| 2024 | Outstanding Graduate Student Instructor Award
<i>University of Michigan Department of Earth and Environmental Sciences</i> |
| 2024 | Outstanding Graduate Student Service Award
<i>University of Michigan Department of Earth and Environmental Sciences</i> |
| 2020 | [Honorable Mention] NSF Graduate Research Fellowship Program
<i>National Science Foundation</i> |
| 2019-21 | Ernest A. Novak Graduate Fellowship
<i>University of Michigan Department of Earth and Environmental Sciences</i> |
| 2019 | Phi Beta Kappa National Honor Society
<i>Dickinson College</i> |
| 2019 | William Vernon Prize for Excellence in Geology
<i>Dickinson College Department of Earth Sciences</i> |

- 2016-19 Dean's List
Dickinson College
- 2016 Alpha Lambda Delta National Honor Society
Dickinson College
- 2015-17 Bonner Community Engagement Fellowship
Dickinson College Center for Civic Learning and Action
- 2015 John Montgomery Scholarship
Dickinson College

MONETARY RESEARCH GRANTS

- 2023 Smithsonian Institution Predoctoral Research Fellowship
Smithsonian National Museum of Natural History
- 2023 PhD Candidate Research Grant
Rackham Graduate School
- 2022 Scott Turner Award
University of Michigan Department of Earth and Environmental Sciences
- 2020 Master's Student Research Grant
Geological Society of America
- 2020 Master's Student Research Grant
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 Vernon Research Prize in Geology
Dickinson College Department of Earth and Environmental Sciences
- 2018 Isabel and Arthur Watres Student Research Award
Lacawac Sanctuary

EXTERNAL PROFESSIONAL ACTIVITIES

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.*
- 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.*

REFEREEING ACTIVITIES

Biogeosciences; Palaeogeography, Palaeoclimatology, Palaeoecology; Geology

WORKSHOP PARTICIPATION

2026 International Clumped Isotope Workshop

2022 International Clumped Isotope Workshop

CONFERENCE SESSION ORGANIZATION

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

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 Chemistry of Earth Systems

2018 Reading and Writing Contemporary Italian Culture

2017 Humans and the Natural World

2017-19 Multilingual writing tutor via Norman Eberly Multilingual Writing Center

2016-19 Peer tutor via Dickinson Center for Advising, Internships, and Lifelong Learning

STUDENT THESIS SUPERVISION

2025-26 MSc thesis co-advisor

Student: Marlon Greim

Title: “ Δ_{47} - Δ_{48} measurements reveal kinetic effects in the stable isotope composition of terrestrial gastropod shells”

2023-26 BSc thesis primary advisor

Student: Darya Lollos

Title: “Regional variation in biologically driven isotopic fractionations in cosmopolitan bivalve genera *Dosinia* and *Macra*” (High Honors in Earth and Environmental Science)

PUBLIC ENGAGEMENT AND OUTREACH

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

2020-23 University of Michigan Science Olympiad Proctor
University of Michigan Science Olympiad

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

2017-19 Public Education & Engagement Consultant
Borough of Carlisle, PA, Stormwater Management Steering Committee

2015-19 Citizen Science Watershed Programming Coordinator
Alliance for Aquatic Resource Monitoring

MANAGEMENT, ADMINISTRATION, AND ACADEMIC SERVICE

- 2021-24 Unlearning Racism in Geoscience (URGE) Pod Member
- 2021 Wellness & Inclusion Workshop Series Organizer
- 2020-24 Michigan Geophysical Union Organizing Committee (Co-chair 2023; Chair of Presenter Coordination 2022; Leadership Board 2020-21)
- 2020-23 Departmental Town Hall Organizer
- 2016-19 Geology Club Officer (President 2018-19; Field Trip & Events Coordinator 2017)

PERSONAL DEVELOPMENT AND DEVELOPING OTHERS

MENTORSHIP FOR TEACHERS

- 2021-23 Michigan Earth Graduate Student Mentor (Program Lead 2022-23)

OTHER MENTORSHIP

- 2023-24 Geosciences Education & Mentorship Program Mentor
National Association of Geoscience Teachers
- 2023 CataLIST (Ladies in Science and Technology) Mentoring Circle
University of Michigan
- 2020-22 Guidance, Perspective, and Support Mentor (program discontinued 2022)
University of Michigan Spectrum Center for LGBTQ+ Services
- 2020-23 First Year Mentor
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
- 2020-23 Graduate Student Instructor Workshop attendance 3x/semester
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 Center for Research on Learning and Teaching
- 2019 Teaching in Tumultuous Times
University of Michigan Center for Research on Learning and Teaching
- 2019 Departmental instructor orientation & practice teaching sessions
University of Michigan Dept. of Earth & Environmental Sciences
- 2016 Inclusive Leadership Student Training
Popel Shaw Center for Race and Ethnicity