TRISHA LYN SPANBAUER

Department of Earth & Environmental Sciences
College of Arts and Sciences
University of Kentucky

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EDUCATION

2015 **University of Nebraska – Lincoln**
Ph.D.: Geology and Biology
Dissertation: *Sizes, shifts, & structures: A statistical exploration of changes in diatom morphologies and communities*

2002 **University of Wisconsin – Milwaukee**
B.F.A.: Visual Art and Art History
Certificate: Women's Studies
Graduated with High Honors

PROFESSIONAL EXPERIENCE

2025 to present Associate Professor, *Department of Earth & Environmental Sciences, University of Kentucky*

2025 Associate Professor, *Department of Environmental Sciences & Lake Erie Center, University of Toledo*

2019 to 2025 Assistant Professor, *Department of Environmental Sciences & Lake Erie Center, University of Toledo*

2019 Post-Doctoral Researcher, *Department of Integrative Biology, University of Texas at Austin*

2017 to 2019 NSF Post-Doctoral Fellow, *Department of Integrative Biology, University of Texas at Austin*

2015 to 2017 Post-Doctoral Research Associate, *National Research Council, U.S. Environmental Protection Agency*

2014 to 2015 Presidential Fellow, *Department of Earth & Atmospheric Sciences and School of Biological Sciences, University of Nebraska - Lincoln*

2013 to 2014 Graduate Research Assistant, *Department of Earth & Atmospheric Sciences and School of Biological Sciences, University of Nebraska - Lincoln*

2010 to 2013 IGERT Trainee, *Department of Earth & Atmospheric Sciences and School of Biological Sciences, University of Nebraska - Lincoln*

2009 to 2010 Laboratory Technician (III), *School of Biological Sciences, University of Nebraska - Lincoln*

PUBLICATIONS

*indicates co-lead authorship, ⁑indicates cover or journal feature, ⁂indicates media coverage
†*undergraduate or NSF REU student advisee in my lab*, ‡*indicated graduate student advisee in my lab*

33) **Spanbauer, T.L.**, C.C. Beck, K. Cantner, E.D. Currano, S.C. Fritz, J.L. Gill, S.J. Ivory, M.M. McGlue, L. Park Boush, J.W. Williams, C.L. Yost (2026) Advancing ecology and evolution through continental scientific drilling *Trends in Ecology & Evolution* **41**(1): 67–77.

32) Fischer, S.E., E.C. Hoffman, *‡J.J. Jackson*, H.M. Streby, and **T.L. Spanbauer** (2025) *Migratory Songbirds as Potential Ectozoochorous Protist Dispersal Vectors* **15** (12): e72703. https://doi.org/10.1002/ece3.72703

31) Stetten, L., M.I. Boyanov, E.J. O'Loughlin, *‡S.P. Thomas*, K.R. Beilsmith, R.B. Peixoto, F. Machado-Silva D.J. Day, S.J. Wilson, T.W. Vugteveen, A.N. Myers-Pigg, O. Otenburg, **T.L. Spanbauer**, E.V. Shevchenko, P.B. Weisenhorn, N.D. Ward, J.P. Megonigal, M.N. Weintraub, V.L. Bailey, K.M. Kemner (2025) Biogeochemical controls on iron speciation and cycling across upland to shoreline gradients in freshwater and estuarine coastal soils (Lake Erie and Chesapeake Bay, United States) *Science of The Total Environment* **991:** 179878. https://doi.org/10.1016/j.scitotenv.2025.179878

30) Zepernick, B.N., A.G. Boeghold, E.A. Kiledal, E.E. Chase, L.N. Hart, K.A. Houghton, R.M. Martin, P. Williams, E. Johnson, P. Schofield, R.M. Cory, S.R. Chaganti, C. Godwin, **T.L. Spanbauer**, G.J. Dick, R.M. Errera, S.W. Wilhelm (2024) Diel Metatranscriptomes Capture Cyanobacteria-Dominated Lake Erie Community Response to Episodic Events *Microbiology Resource Announcements* 0:e00659-24. https://doi.org/10.1128/mra.00659-24

29) Machado-Silva, F., M. Weintraub, N. Ward, K.O. Doro, P.J. Regier, S. Ehosioke, *‡S.P. Thomas,* R.B. Peixoto, L. Sandoval, I. Forbrich, K.M. Kemner, E.J. O'Loughlin, L. Stetten, **T. Spanbauer**, T.B. Bridgeman, T. O'Meara, K.A. Rod, K. Patel, N.G. McDowell, B.P. Bond-Lamberty, J.P. Megonigal, R.L. Rich, V.L. Bailey‡ (2024) Groundwater redox dynamics across the terrestrial-aquatic interface of Lake Erie coastal ecosystems *Environmental Science & Technology* **58**: 14687-14697; https://doi.org/10.1021/acs.est.4c01115

28) Voje, K. L., M. Saito-Kato, **T.L. Spanbauer** (2024) Evolution in fossil time series reconciles observations in micro- and macroevolution *Journal of Evolutionary Biology* https://doi.org/10.1093/jeb/voae087

27) Ehosioke, S., M.B. Adebayo, V.L. Bailey, B.P. Bond-Lamberty, R. Bittencourt Peixoto, E.D. Emmanuel, F. Machado-Silva, P.J. Megonigal, **T. Spanbauer**, *‡S.P. Thomas*, N.D. Ward, M.N. Weintraub, K.O. Doro (2024) Geophysical methods reveal the soil architecture and subsurface stratigraphic heterogeneities across land-lake interfaces along Lake Erie *Journal of Soils and Sediments* https://doi.org/10.1007/s11368-024-03787-w

26) *Stegner, M.A., ***Spanbauer, T.L.** (2023) North American pollen records provide macro-scale ecological evidence for the Anthropocene *Proceedings of the National Academies of Science* **120**(43), e2306815120. https://doi.org/10.1073/pnas.2306815120. ⁑⁂

25) Lee, C., J.T. Cooper, F. Moroni, A.M. Salim, **T.L. Spanbauer**, E.C. Theriot (2023) Complete plastome of *Coelastrum microporum* Nägeli (Scenedesmaceae, Sphaeropleales) *Mitochondrial DNA Part B*, **8**(9): 948-951; https://doi.org/10.1080/23802359.2023.2252941

24) Williams, J.W., **T.L. Spanbauer**, P. D. Heintzman, J. Blois, E. Capo, S. Goring, M.-E. Monchamp, L. Parducci, J. Von Eggers, I.G. Alsos, C. Bowler, M. Coolen, N. Cullen, S. Crump, L. Epp, A. Fernandez-Guerra, E. Grimm, U. Herzschuh, A. Mereghetti, R. Meyer, K. Nota, M.W. Pedersen, V. Perez, B. Shapiro, K. Stoof-Leichsenring, , J. Wood (2023) Strengthening global-change science by integrating aeDNA with paleoecoinformatics. *Trends in Ecology & Evolution;* https://doi.org/10.1016/j.tree.2023.04.016

23) Stegner, M.A, E. Hadly, A. Barnosky, S. La Selle, B. Sherrod, R.S. Anderson, S. Redondo, K. Weaver, M. Viteri, B. Black, **T. Spanbauer** (2023). The Searsville Lake site (California, USA) as a candidate global boundary stratotype section and point for the Anthropocene series. *The Anthropocene Review*, **10**(1): 116-145; https://doi.org/10.1177/20530196221144098

22) Halpern, B.S., C. Boettiger, M.C. Dietze, J.A. Gephart, P. Gonzalez, N.B. Grimm, P.M. Groffman, J. Gurevitch, S.E. Hobbie, K.J. Komatsu, K.J. Kroeker, H.J. Lahr, D.M. Lodge, C.J. Lortie, J.S.S. Lowndes, F. Micheli, H.P. Possingham, M.H. Ruckelshaus, C. Scarborough, C.L. Wood, G.C. Wu, L. Aoyama, E.E. Arroyo, C.A. Bahlai, E.E. Beller, R.E. Blake, K.S. Bork, T.A. Branch, N.E.M. Brown, J. Brun, E.M. Bruna, L.B. Buckley, J.L. Burnett, M.C.N. Castorani, S.H. Cheng, S.C. Cohen, J.L. Couture, L.B. Crowder, L.E. Dee, A.S. Dias, I.J. Diaz-Maroto, M.R. Downs, J.C. Dudney, E.C. Ellis, K.A. Emery, J.G. Eurich, B.E. Ferriss, A. Fredston, H. Furukawa, S.A. Gagné, S.R. Garlick, C.J. Garroway, K.M. Gaynor, A.L. González, E.M. Grames, T. Guy-Haim, E. Hackett, L.M. Hallett, T.K. Harms, D.E. Haulsee, K.J. Haynes, E.L. Hazen, K. Jones, R.M. Jarvis, G.S. Kandlikar, D.W. Kincaid, M.L. Knope, A. Koirala, J. Kolasa, J.S. Kominoski, J. Koricheva, L.T. Lancaster, J.A. Lawlor, H.E. Lowman, F.E. Muller-Karger, K.E.A. Norman, N. Nourn, C.C. O'Hara, S.X. Ou, J. L. Padilla-Gamino, P. Pappalardo, R.A. Peek, D. Pelletier, S. Plont, L.C. Ponisio, C. Portales-Reyes, D.B. Provete, E.J. Raes, C. Ramirez-Reyes, I. Ramos, S. Record, A.J. Richardson, R. Salguero-Gómez, E.V. Satterthwaite, C. Schmidt, A.J. Schwartz, C.R. See, B.D. Shea, R.S. Smith, E.R. Sokol, C.T. Solomon, **T.L. Spanbauer**, P.V. Stefanoudis, B.W. Sterner, V. Sudbrack, J.D.Tonkin, A.R. Townes, M. Valle, J.A. Walter, K.I. Wheeler, W.R. Wieder, D.R. Williams, M. Winter, B. Winterova, L.C. Woodall, A.S. Wymore, and C. Youngflesh (2023) Priorities for synthesis in ecology and environmental science *Ecosphere,* **14**(1): e4342; https://doi.org/10.1002/ecs2.4342

21) Fisher, T.G., S.J. DeVries-Zimmerman, E.C. Hansen, J.A. Wolin, K. Lepper, **T. Spanbauer** (2021) Drought coincident with aeolian activity in a Great Lakes coastal dune setting during the Algoma Phase (3.1–2.4 ka), southwest Michigan. *Journal of Great Lakes Research*, **47**(6): 1468-1484; https://doi.org/10.1016/j.jglr.2021.04.017

20) Capo, E., C. Giguet-Covex, A. Rouillard, K. Nota, P. Heintzman, A. Vuillemin, D. Ariztegui, F. Arnaud, S. Belle, S. Bertilsson, C. Bigler, R. Bindler, A.G. Brown, C.L. Clarke, S.E. Crump, D. Debroas, G. Englund, G.F. Ficetola, R.E. Garner, J. Gauthier, I. Gregory-Eaves, L. Heinecke, U. Herzschuh, A. Ibrahim, V. Kisand, K.H. Kjær, Y. Lammers, J. Littlefair, E. Messager, M.-E. Monchamp, F. Olajos, W. Orsi, M.W. Pedersen, D.R. Rijal, J. Rydberg, **T.L. Spanbauer**, K. Stoof-Leichsenring, P. Taberlet, L. Talas, C. Thomas, D. Walsh, Y. Wang, E. Willerslev, A. van Woerkom, H. Zimmermann, M.J.L. Coolen, L.S. Epp, I. Domaizon, I.G. Alsos, L. Parducci (2021) Lake sedimentary DNA research on past terrestrial and aquatic biodiversity: Overview and recommendations. *Quaternary,* **4**(1): 6; https://doi.org/10.3390/quat4010006

19) Garmestani, A.S., D. Twidwell, D.G. Angeler, S. Sundstrom C. Barichievy, B.C. Chaffin, T. Eason, N.A.J. Graham, D. Granholm, L. Gunderson, M. Knutson, K.L. Nash, R.J. Nelson, M. Nystrom, **T.L. Spanbauer**, C.A. Stow, C.R. Allen (2020) Panarchy in practice: opportunities and challenges for ecosystem management. *Frontiers in Ecology and the Environment*, **18**(10): 576-583; https://doi.org/10.1002/fee.2264

18) **Spanbauer, T.L**., C. Briseño-Avena, K.J. Pitz, E. Suter (2020) Salty Sensors, Fresh Ideas: The use of molecular and imaging sensors in understanding plankton dynamics across marine and freshwater ecosystems. *Limnology and Oceanography Letters* **5**(2): 169-184; https://doi.org/10.1002/lol2.10128

17) Stone, J.R., J.E. Saros, **T.L. Spanbauer** (2019) The Influence of Fetch on the Holocene Thermal Structure of Hidden Lake, Glacier National Park. *Frontiers in Earth Science* **7**:28; https://doi.org/10.3389/feart.2019.00028

16) Sundstrom, S.M., D.G. Angeler, C. Barichievy, T. Eason, A. Garmestani, L. Gunderson, M. Knutson, K.L. Nash, **T.L. Spanbauer**, C. Stow, C.R. Allen (2018) The distribution and role of functional abundance in cross-scale resilience *Ecology* **99**(11): 2421-2432; https://doi.org/10.1002/ecy.2508

15) Hampton, S.E., S. McGowan, T. Ozersky, S.G.P. Virdis, T.-T. Vu, **T.L. Spanbauer**, B.M. Kraemer, G. Swann, A. Mackay, S. Powers, M.F. Meyer, S.G. Labou, C.M. O'Reilly, M. DiCarlo, A.W.E. Galloway, S. Fritz (2018) Recent ecological change in ancient lakes *Limnology and Oceanography* **63**: 2277-2304; https://doi.org/10.1002/lno.10938

14) Chuang, W.C., A. Garmestani, T.N. Eason, **T.L Spanbauer**, H.B. Fried-Petersen, C.P. Roberts, S.M. Sundstrom, J.L. Burnett, D.G. Angeler, B.C. Chaffin, L. Gunderson, D. Twidwell, C.R. Allen (2018) Enhancing quantitative approaches for assessing community resilience *Journal of Environmental Management* **213**: 353-362; https://doi.org/10.1016/j.jenvman.2018.01.083

13) ⁑ **Spanbauer, T.L.**, S. Brown, R. Cartier, D. Conley, S.C. Fritz, C. Schiller, E.C. Theriot, C. Whitlock, P. Zahajská (2018) Yellowstone Lake Coring Projects: Research with a History *Limnology and Oceanography Bulletin* **27**(1): 6-10; https://doi.org/10.1002/lob.10229

12) **Spanbauer, T.L.,** S.C. Fritz, P.A. Baker (2018) Punctuated changes in the morphology of an endemic diatom from Lake Titicaca *Paleobiology* **44**(1):89-100; https://doi.org/10.1017/pab.2017.27

11) Scown, M.W., J.E. Flotemersch, **T.L. Spanbauer**, A.S. Garmestani, T. Eason, B.C. Chaffin (2017) People and water: Exploring the social-ecological condition of watersheds of the conterminous United States. *Elementa: Science of the Anthropocene*. **5**:64; https://doi.org/10.1525/elementa.189

10) Kelly, P.T., T. Bell, A.J. Reisinger, **T.L. Spanbauer**, L.E. Bortolotti, J.A. Brentrup, C. Briseño-Avena, X. Dong, A.M. Flanagan, E.M. Follett, J. Grosse, T. Guy-Haim, M.A. Holgerson, R.A. Hovel, J.Y. Luo, N.C. Millette, A. Mine, M.E. Muscarella, S.K. Oliver, H.J. Smith (2017) Ecological Dissertations in Aquatic Science (Eco-DAS): An excellent networking opportunity for early career aquatic scientists. *Limnology and Oceanography Bulletin* **26**:25-30; https://doi.org/10.1002/lob.10180

9) Sundstrom, S. M., T. Eason, R.J. Nelson, D.G. Angeler, C. Barichievy, A.S. Garmestani, N.A.J. Graham, D. Granholm, L. Gunderson, M. Knutson, K.L. Nash, **T.L. Spanbauer**, C.A. Stow, and C.R. Allen (2017) Detecting spatial regimes in ecosystems. *Ecology Letters* **20**: 19–32; https://doi.org/10.1111/ele.12709

8) **Spanbauer, T.L.,** C.R. Allen, D.G. Angeler, T. Eason, S.C. Fritz, A.S. Garmestani, K.L. Nash, J.R. Stone, C.A. Stow, S.M. Sundstrom (2016) Body size distributions signal a regime shift in a lake ecosystem. *Proceedings of the Royal Society B: Biological Sciences* **283**: 20160249; https://doi.org/10.1098/rspb.2016.0249

7) Angeler, D. G., C.R. Allen, C. Barichievy, T. Eason, A.S. Garmestani, N.A.J. Graham, D. Granholm, L.H. Gunderson, M. Knutson, K.L. Nash, R.J. Nelson, M. Nyström, **T.L. Spanbauer**, C.A. Stow and S.M. Sundstrom (2015) Management applications of discontinuity theory. *Journal of Applied Ecology* **53**(3): 688-698; https://doi.org/10.1111/1365-2664.12494

6) **Spanbauer, T.L.,** C.R. Allen, D.G. Angeler, T. Eason, S.C. Fritz, A.S. Garmestani, K.L. Nash, and J.R. Stone (2014) Prolonged Instability Prior to a Regime Shift. *PLOS One* **9** (10): e108936; https://doi.org/10.1371/journal.pone.0108936

5) Nemec, K. T., J. Chan, C. Hoffman, **T. L. Spanbauer**, J. A. Hamm, C. R. Allen, T. Hefley, D. Pan and P. Shrestha (2014) Assessing Resilience in Stressed Watersheds. *Ecology and Society* **19**(1): 34; http://dx.doi.org/10.5751/ES-06156-190134

4) Fritz, S.C., P.A. Baker, P. Tapia, **T. Spanbauer**, K. Westover (2012) Evolution of Lake Titicaca basin and its diatom flora over the last ~ 370,000 years. *Palaeogeography, Palaeoclimatology, Palaeoecology* **317**: 93-103; https://doi.org/10.1016/j.palaeo.2011.12.013

3) Saros, J.E., J.R. Stone, G.T. Pederson, K. Slemmons, **T.L. Spanbauer,** A. Schleip, D. Cahl, C.E. Williamson, D.R. Engstrom (2012) Climate-induced changes in lake ecosystem structure inferred from coupled neo- and paleoecological approaches *Ecology* **93**:2155-2164; https://doi.org/10.1890/11-2218.1

2) ⁑ Weber, K.A., **T.L. Spanbauer**, D. Wacey, M.R. Kilburn, D.B. Loope, R.M. Kettler (2012) Biosignatures link microorganisms to iron mineralization in a paleoaquifer *Geology* **40**: 747–750; https://doi.org/10.1130/G33062.1

1) Byrne-Bailey, K.G., K.A. Weber, A.H. Chair, S. Bose, T.K. Knox, C. Chow, **T.L. Spanbauer,** O. Chertkov, J.D. Coates (2010) Completed genome sequence of the anaerobic iron-oxidizing bacterium Acidovorax ebreus strain TPSY. *Journal of Bacteriology* **192**: 1475–1476; https://doi.org/10.1128/jb.01449-09

DATASETS

Von Eggers, J., M.-E. Monchamp, E. Capo, C. Giguet-Covex, **T.L. Spanbauer**, P.D. Heintzman (2022) Inventory of ancient environmental DNA from sedimentary archives: locations, methods, and target taxa *Zenodo* doi.:10.5281/zenodo.6847522

GRANTS, CONTRACTS, & FELLOWSHIPS

2025 to 2027 NSF Capacity: Cyberinfrastructure DBI 2607662 *Collaborative Research: Strengthening Global Biodiversity Research by Building Informatics Capacity for Ancient Environmental DNA*

2025 to 2028 NSF Biodiversity on a Changing Planet DEB 2607634 *Collaborative Research: BoCP-Implementation: Quantifying the response of biodiverse freshwater ecosystems to abrupt and progressive environmental change determines resilience*

2025 to 2027 NSF Biodiversity on a Changing Planet DEB 2607637 *Collaborative Research: BoCP-Implementation: The impact of climate change on functional biodiversity across spatiotemporal scales at Lake Tanganyika, Africa*

2024 to 2025 NSF Capacity: Cyberinfrastructure DBI 2332568 *Collaborative Research: Strengthening Global Biodiversity Research by Building Informatics Capacity for Ancient Environmental DNA*

2024 Cooperative Institute for Great Lakes Research (CIGLR) *2024 Working Group award The Use of Archival Environmental DNA in the Laurentian Great Lakes*

2024 to 2025 NSF Biodiversity on a Changing Planet DEB 2325894 *Collaborative Research: BoCP-Implementation: Quantifying the response of biodiverse freshwater ecosystems to abrupt and progressive environmental change determines resilience*

2024 to 2026 U.S. Department of Energy (DOE) Biological and Environmental Research program (BER) *Coastal Observations, Mechanisms, and Predictions Across Systems and Scales (COMPASS) - Field, Measurements, and Experiments (FME) COMPASS Phase 1*

2023 to 2025 NOAA Great Lakes Environmental Research Laboratory (GLERL) Contract *Paleontological and sedimentological analysis of cyanobacteria and eukaryotic phytoplankton on sediment cores collected from Lake Erie*

2022 to 2025 NSF Biodiversity on a Changing Planet DEB 2224891*Collaborative Research: BoCP-Implementation: The impact of climate change on functional biodiversity across spatiotemporal scales at Lake Tanganyika, Africa*

2022 to 2025 NOAA HAB-OA 2022: Synergistic impact of climate induced acidification, temperature, total alkalinity and nutrients on cyanobacteria HABs in the Great Lakes

2021 to 2023 U.S. Department of Energy (DOE) Biological and Environmental Research program (BER) *Coastal Observations, Mechanisms, and Predictions Across Systems and Scales (COMPASS) - Field, Measurements, and Experiments (FME) pilot study and supplements*

2021 to 2022 National Oceanic and Atmospheric Administration**,** University of Toledo, *Maumee River FLOWS (Floating Laboratory on Watershed Science)*

2020 to 2022 Ohio Sea Grant, University of Toledo, *Assessing the impact of shore management on the resilience of coastal environmental microbiomes*

2017 to 2019 NSF Earth Sciences Postdoctoral Fellowship EAR 1625040, University of Texas at Austin *Ancient DNA meets modern genomes: an exploration of diatom evolution, ecology, and environmental change in the Yellowstone Basin*

2015 to 2017 Postdoctoral Fellowship, National Academies Research Associateship Program ~ National Research Council, U.S. Environmental Protection Agency, *Measuring the Resilience of Ecosystems with Archival and Historical Long-Term Data Sets*

2014 to 2015 Presidential Fellowship, University of Nebraska – Lincoln ($24,000)

2013 to 2016 NSF Sedimentary Geology and Paleobiology EAR 1251678, University of Nebraska – Lincoln *Morphology and Molecules: Diatom Diversification, Extinction, and Dispersal in an Ancient Tropical Lake System*

2012 to 2013 American Microscopical Society, University of Nebraska – Lincoln, Student Research Fellowship

2012 Mid-America Paleontology Society (MAPS) Outstanding Student Research Award, University of Nebraska – Lincoln, The Paleontological Society

2011 Graduate Student Research Grant, University of Nebraska – Lincoln, Geological Society of America

2010 to 2013 NSF Integrative Graduate Education and Research Traineeship (IGERT) University of Nebraska – Lincoln

USER AWARDS

2021 Joint Genome Institute (JGI) and the Environmental Molecular Sciences Laboratory (EMSL), Facilities Integrating Collaborations for User Science Award (FICUS) *Leveraging a reciprocal soil transplant experiment to illuminate soil biogeochemical responses to moisture and salinity disturbance* PI – J. Zheng, Co-I – P. Weisenhorn, P. Megonigal, A. Hopple, B. Bond-Lamberty, A. Myers-Pigg, N. Ward, **T. Spanbauer**, S. Pennington, V. Bailey

2021 Joint Genome Institute (JGI), Community Science Program Award (CSP) *Metagenomic and metatranscriptomic insights into the role of microbial interactions in the cycling of carbon and nutrients during toxic cyanobacterial blooms* PI – G. Dick, Co-I – G. Boyer, T. Bridgeman, G. Bullerjahn, J. Chaffin, T. Davis, V. Denef, G. Doucette, M. Duhaime, R. Errera, J. Kharbush, D. Isailovic, N. Lin, X. Mayali, M. Mckay, H. Paerl, D. Sherman, **T. Spanbauer,** M. Steffen, A. Tripathi, J. Westrick, S. Wilhelm

HONORS & AWARDS

2013 On to the Future Award, Geological Society of America

2012 Myerly-Martin Award for Excellence in Graduate Research: Department of Earth & Atmospheric Sciences, University of Nebraska-Lincoln

2010 to 2012 Honorable Mention, NSF Graduate Research Fellowship

INVITED PRESENTATIONS

2025 *(internal)* **University of Kentucky** (Lexington, KY) Vintage DNA, vampires, and the value of reusing paleoecological data

Fondation des Treilles (Tourtour. France) From ancient lakes to ancient DNA: Understanding environmentally driven changes in phytoplankton structure and function

University of Maine (Orono, ME) Using microfossils and ancient environmental DNA to understand past evolutionary and ecological dynamics

National Museum of the Great Lakes (Toledo, OH) From Diatoms to DNA: Using the information contained in mud to understand the history of lakes

2024 **University of Kentucky** (Lexington, KY) Lakes as integrators of environmental, ecological, and evolutionary change

Southern Illinois University (Carbondale, IL) Paleolimnology as a tool for understanding ecological and evolutionary change

Illinois Indigenous Plant Society (Carbondale, IL) Using paleoecology to better understand the impacts anthropogenic changes to North American vegetation

2023 **University of Wisconsin – Milwaukee** (Milwaukee, WI) Small indicators of large changes in freshwater ecosystems

Ohio Sea Grant Freshwater Science Webinar (online) Environmental microbiomes as indicators of coastal Lake Erie resilience

Stone Lab's Annual Science Writers Event (Put-in-Bay, Ohio) Assessing the Impact of Shore Management on the Resilience of Coastal Environmental Microbiomes

Neotoma All Hands Meeting: Research, Education, and Broadening Access (Online) Planning and launching the aeDNA constituent database in Neotoma

University of Wyoming (Laramie, WY) Time, traits, and trees: How eco-evolutionary dynamics of algae informs past environmental change

2021 **John Carroll University** (Online) Salty Sensors, Fresh Ideas: The adaption of marine technology for use in freshwater systems

1st African sedaDNA Symposium (Online) Preliminary work and future plans for sedaDNA from Lake Tanganyika

2020 **Neotoma sedaDNA Cyberinfrastructure Working Group** (Online) Using paleolimnology, ecological theory, and molecular biology to better understand diatom ecology and evolution

PAGES-INQUA Workshop for Early-Career Researchers: Past Socio-Environmental Systems (Online) Using sedimentary ancient DNA (sedaDNA) records to evaluate the impact of the Anthropocene on the Laurentian Great Lakes

2019 **USGS Great Lakes Science Center** (Ann Arbor, MI) Algae through the ages: An exploration of basic and applied paleolimnology

Lawrence Livermore National Lab (Livermore, CA) Basic and Applied Paleolimnology: From fossils to DNA and back again

(internal) **Lake Erie Center** (Toledo, OH) Inferring the past to create a better future using paleolimnology

NOAA Great Lakes Environmental Research Laboratory (Ann Arbor, MI) Assessing algal diversity: From paleolimnology to genomics

Cleveland State University (Cleveland, Ohio) Deciphering diatom evolution using paleolimnology and molecular biology

ICDP workshop on The Lake Tanganyika Drilling Project (Dar es Salaam, Tanzania) Preliminary sedimentary DNA results from Lake Tanganyika

University of Kentucky (Lexington, Kentucky) Revealing historical processes in Yellowstone Lake through paleolimnology and molecular ecology

2018 **ESA Ignite session**, Ecological Society of America (New Orleans, LA) Extreme events, scale, and the paleoecological record

ICDP workshop on the Scientific Drilling of Lake Nam Co (Beijing, China) Diatoms and aDNA prospects in Lake Nam Co

EcoRe3 Workshop, PAGES (Salt Lake City, UT) Abrupt change in paleoecological records: from a systematic review to a meta-analysis

University of Toledo (Toledo, OH) History and diversity: Understanding microscopic organisms in large lakes

University of Wisconsin, Madison (Madison, WI) Ancient DNA and modern genomes: an exploration of diatom evolution and environmental change in the Yellowstone Basin

2017 **EcoRe3 Workshop**, PAGES (Finse, Norway) Integrating paleolimnology with resilience theory

2016 **Tarleton State University** (Stephenville, TX) Panel: Pursing careers in the natural resource sciences

Indiana State University (Terre Haute, IN) Punctuational change in the size of an endemic diatom from Lake Titicaca

2015 **USEPA** (Cincinnati, OH) A look at recent environmental change through the lens of paleoecology

2014 **Organization for Tropical Studies** (Costa Rica) Diatom Diversification in an Ancient Tropical Lake System

CONTRIBUTED CONFERENCE PRESENTATIONS

*indicates co-lead authorship, ⁂indicates media coverage †*undergraduate or NSF REU advisee in my lab*, ‡*graduate advisee* ◊*lab technician*

2026 Dilworth, J., **T.L. Spanbauer**, E.W. Woolery, M.M. McGlue *CHIRP seismic imagery from West Okoboji Lake, an emerging terrestrial archive of Late Quaternary environmental*

change in northwest Iowa Submitted poster presentation to the GSA Triple Joint 75th Southeastern / 60th North-Central / 60th South-Central Annual Section Meeting

Spanbauer, T.L., M.A. Stegner, J.W. Williams *Linking paleoecological and limnological databases to facilitate watershed- to continental-scale environmental change research* Submitted talk to the 2026 ASLO-SIL Joint Meeting Montreal, Canada

◊†*Ginther, M.,* C. Sheik, R.M. Errera, K.M. Yeager, **T.L. Spanbauer** *Lake Erie phytoplankton and non-indigenous species histories revealed through aeDNA* Submitted talk to the 2026 ASLO-SIL Joint Meeting Montreal, Canada

‡*Jackson, J.*, J. Dilworth, M.M. McGlue, K.M. Yeager, A.I. Shultis, **T.L. Spanbauer** *Diatom traits and geochemical data provide evidence for a shift in primary production driven by eutrophication* Submitted talk to the 2026 ASLO-SIL Joint Meeting Montreal, Canada

Barbosa, C.C., **T.L. Spanbauer**, S. Scanga, M.A. Stegner *Macrosystems teaching incorporating continental-scale lake data* Submitted talk to the 2026 ASLO-SIL Joint Meeting Montreal, Canada

2025 Williams, J.W., J.L. Blois, R. Booth, D. Charles, E. Davis, L. Endres, T. Giesecke, S. Goring, N. Hoffman, M. Hurley, S. Ivory, N. Kaushal, J. Nelson, S. Pilaar Birch, A. Smith, **T.L. Spanbauer**, S. Dominguez Vidana *Recent advances and current directions in the Neotoma Paleoecology Database* Talk given at the 12th Biannual Conference of the International Biogeography Society Aarhus, Denmark.

Spanbauer, T.L., ‡*S.P. Thomas,* ‡*G.O. Okoko*, J. Dilworth, M. McGlue, K.M. Yeager, M.A. Stegner, J.J. Jackson, A.I. Shultis *Agriculturally driven eutrophication impacts the structure and function of primary producers and consumers in a lake ecosystem* Talk given at the 2025 IAL/IPA Conference, Aix les Bains, France

Spanbauer, T.L., J. Williams, S. Dominguez, S. Goring, K. More, R. Meyer, J. Nelson, V. Perez, D. Prasad Rijal, K. Stoof-Leichsenring *Supporting multi-proxy ancient environmental DNA research through community curation within the Neotoma Paleoecology Database* Talk given at the Living Data 2025 Conference, Bogota, Columbia

Bandopadhyay, S., R.E. Danczak, K.E. Patel, K.R. Beilsmith, P. Weisenhorn, **T.L. Spanbauer**, N.J. Reichart, M.N. Weintraub, V.L. Bailey *Structural and functional insights from the terrestrial-aquatic interfaces of a freshwater and estuarine coastal system* Talk given at 2025 ESA Annual Meeting, Baltimore MD

Williams, J.W., **T.L. Spanbauer**, S.J. Goring, J.K. Nelson, A. Myrbo, and the aeDNA cyberinfrastructure workshop collaborators *First steps to integrating aeDNA with the Neotoma Paleoecology Database* Talk given at the 2nd SedaDNA Scientific Society Meeting, Tromso, Norway

‡*S.P. Thomas* & **T.L. Spanbauer** *Co-occurrence networks reveal interactions between aquatic prokaryotes and protists* Talk given at the 20205 AquaEcOmics meeting, Evian, France

2024 Bandopadhyay, S., R.E. Danczak, K.F. Patel, K.R. Beilsmith, P. Weisenhorn, ‡*S.P. Thomas*, **T.L. Spanbauer**, M. Weintraub, P. Megonigal and V.L. Bailey *Soil Microbial Community Structure, Core Membership and Ecological Function along a Terrestrial-Aquatic Interface of a Freshwater and Estuarine Coastal System* Poster presentation given at the 2024 American Geophysical Union Fall Meeting, Washington, DC

Peixoto, R.B., I. Forbrich, F. Machado-Silva, L. Sandoval, E. Grammenidis, A. Malhotra, ‡*S.P. Thomas*,, A. Che Ing Tang, E.D. Emmanuel, L. Stetten, K. Patel, S. Bandopadhyay, K. Morris, A. Hopple, K.O. Doro, **T.L. Spanbauer**, B. Bond-Lamberty, N. Ward, K.M. Kemner, N. McDowell, E.J. O'Loughlin, T. O'Meara, R. Kenton, J.P. Megonigal, M.N. Weintraub, V. Bailey *Root and microbial controls on methane fluxes in a frequently flooded forest* Poster presentation given at the 2024 American Geophysical Union Fall Meeting, Washington, DC

Stetten, L., M.I. Boyanov, E.J. O'Loughlin, R. Bittencourt Peixoto, D. Day, A.M. Hopple, M. Kovach, F. Machado-Silva, A.N. Myers-Pigg, O. Otenburg, K.R. Beilsmith, ‡*S.P. Thomas*, **T.L. Spanbauer**, P. Weisenhorn, S. Wilson, E. Shevchenko, N.G. McDowell, N.D. Ward, P. Megonigal, M. Weintraub, V. Bailey, K.M. Kemner *From Molecular- to Field- Scale Investigation of Iron Biogeochemistry in Marine and Freshwater Coastal Environments* Poster presentation given at the 2024 Goldschmidt Conference, Chicago, IL.

‡*Jackson, J.* and **T.L. Spanbauer** *Assessing the impact of shore management on the resilience of coastal diatom communities* Poster presentation given at the ASLO 2024 Meeting, Madison, WI.

◊†*Ginther, M.,* **T.L. Spanbauer,** ‡*S.P. Thomas*, ‡*A. Armstrong Community science participants investigate Lake Erie watershed microbiomes* Poster presentation given at the ASLO 2024 Meeting, Madison, WI.

Spanbauer, T.L., M.M. McGlue, K.M. Yeager, R. Errera, J. Dilworth, ‡*G.O. Okoko*, K.J. Schindler, M.A. Stegner *Baselines, biodiversity, and basin infill: Using paleolimnology to inform management practices and conservation efforts* Talk given at the North American Paleontological Convention, Ann Arbor, MI.

Bandopadhyay, S, K.F. Patel, P. Weisenhorn, ‡*S.P. Thomas*, **T.L. Spanbauer**, M. Weintraub, V.L. Bailey *Soil Bacterial Community Structure and Core Membership Along a Terrestrial-Aquatic Interface of a Freshwater and Estuarine Coastal System* Poster presentation at the DOE ESS PI Meeting, Reston, VA

†*Oeder, A.*, **T.L. Spanbauer** *How Does Microplastic Pollution Impact Algal Dynamics in the Laurentian Great Lakes* Poster presentation given at the 2024 Ohio Academy of Science's Annual Meeting, Kent, OH.

◊†*Ginther, M., ‡A. Armstrong, ‡S.P. Thomas*, **T.L. Spanbauer** *Lake Erie Watershed Investigations by Community Science Participants* Poster presentation given at the Northwest Ohio Natural History and Research Conference, Toledo, OH.

Ward, N., R. Rich, S.C. Pennington, P. Regier, M. Kovach, F. Machado-Silva, R. Peixoto, S. Wilson, M. Abedayo, B. Bond-Lamberty, T. Bridgeman, X. Chen, N. Conroy, D. Day, J. Ding, K. Doro, S. Ehosioke, E. Emmanual, B. Li, N. McDowell, K. Morris, A. Myers-Pigg, E.J. O'Loughlin, T. O'Meara, K.F. Patel, E. Phillips, K.A. Rod, L. Sandoval, **T.L Spanbauer**, A. Stearns, L. Stetten, ‡*S.P. Thomas*, M.N. Weintraub, K.M. Kemner, J.P. Megonigal, V. Bailey *An Integrative Approach for High Resolution Monitoring of the Interactions Among Water, Soil, and Plants that Establish Gradients in Coastal Ecosystem Function* Presentation given at the Ocean Sciences Meeting, New Orleans, LA

2023 ◊†*Ginther, M., ‡A. Armstrong, ‡S.P. Thomas*, **T.L. Spanbauer** *Lake Erie Watershed Investigations by Community Science Participants* Poster presentation given at the Water Task Force Research Showcase, Toledo, OH

‡*Armstrong, A., ‡S.P. Thomas*, **T.L. Spanbauer** *Coastal Lake Erie Resilience Revealed through Lower Food Web Dynamics* Poster presentation given at the Water Task Force Research Showcase, Toledo, OH

Spanbauer, T.L., ◊†*S, Wong, †P. Martin Archival Sediments Extend the Record of HABs in the Western Basin of Lake Erie* Poster presentation given at the Water Task Force Research Showcase, Toledo, OH

‡*Jackson, J.*, ‡*G.O. Okoko*, **T.L. Spanbauer** *Tracking the Impact of the Anthropocene on Aquatic Ecosystems in Agricultural Landscapes* Poster presentation given at the Water Task Force Research Showcase, Toledo, OH

Spanbauer, T.L. *Biodiversity Changes in Large Lakes across the Globe* Poster presentation given at the Water Task Force Research Showcase, Toledo, OH

‡*Armstrong, A., ‡S.P. Thomas*, **T.L. Spanbauer** *Understanding the influence of Old Woman Creek on Coastal Lake Erie* Poster presentation given at the Old Woman Creek Research Symposium, Huron, OH

Bailey, V.L., K.F. Patel, K.A. Rod, M.N. Weintraub, J.P. Megonigal, B. Bond-Lamberty, M. Boyanov, X. Chen, N. Conroy, D.J. Day, K.O. Doro, S. Ehosioke, D. Fields, A. Hopple, L. Johnson, K.M. Kemner, F. Machado-Silva, N. McDowell, S. McKever, K.A. Morris, J.I. Musci, A. Myers-Pigg, C.G. Norris, E.J. O'Loughlin, T. O'Meara, R.B. Peixoto, S. Pennington, E. Phillips, P. Regier, R. Rich, L. Sandoval, **T. Spanbauer**, A. Stearns, L. Stetten, N. Ward, P. Weisenhorn, S. Wilson, J. Zheng *Comparing and contrasting soil biogeochemical characteristics in freshwater vs. estuarine coastal systems* Talk given at the Ecological Society of America annual meeting, Portland, OR

Stegner, M.A, E. Hadly, A. Barnosky, S. La Selle, B. Sherrod, R.S. Anderson, S. Redondo, K. Weaver, M. Viteri, B. Black, **T. Spanbauer** *Dynamics of biotic and abiotic markers of the Anthropocene at Jasper Ridge Biological Preserve, California, USA* Talk given at the XXI INQUA Congress, Rome, Italy.

Peixoto, R., L. Sandoval, F. Machado-Silva1, ‡*S.P. Thomas*, K. Hopkins, C. Cash, M. Kovach, D. Day, S. Ehosioke, S.C. Pennington, K.F. Patel, K.A. Morris, P. Regier, L. Stetten, N. Ward, B. Bond-Lamberty, I. Forbrich, J.P. Megonigal, N. McDowell, K.A. Rod, E.J. O'Loughlin, K.M. Kemner, K. Doro, **T. Spanbauer**, T.B. Bridgeman, R. Rich, T. O'Meara, M.N. Weintraub, V. Bailey *Spatial variability of ecosystem function at coastal Western Lake Erie* Poster presentation at the DOE ESS PI Meeting, Bethesda, MD

2022 Machado-Silva, F., P. Regier, A. Myers-Pigg, S. Ehosioke, A. Hopple R.B. Peixoto, S. Wilson, D. Day, M. Kovach, S. Pennington, E. Phillips, L. Sandoval, A. Stearns, ‡*S. Thomas*, B. Bond-Lambert, T. Bridgeman, N. Conroy, K. Doro, K. Kemner, N.G. McDowell, P. Megonigal, E. O'Loughlin, T. O'Meara, R. Rich**, T.L. Spanbauer**, N. Ward, M. Weintraub, V. Bailey *Flooding events and groundwater redox dynamics of coastal ecosystems* Poster presentation at the American Geophysical Union Fall Meeting, Chicago, IL

Spanbauer, T.L., J. Cooper, E.C. Theriot *Lakes Drive Population Dynamics of Phytoplankton* Talk given at the Joint Aquatic Sciences Meeting (JASM), Grand Rapids, MI.

†*Kohart, C.* & **T.L. Spanbauer** *40 Years Later: A Comparison of Diatom Communities from Oak Openings Preserve Metropark* Poster presentation given at the Joint Aquatic Sciences Meeting (JASM), Grand Rapids, MI.

O'Meara, T., P. Thornton, B. Bond-Lamberty, X. Chen, K. Doro, B. Brown, D. Day, R. Rich, E. O'Loughlin, N. Conroy, K. Patel, M. Kovach, J. Zheng, A. Myers-Pigg, S. Pennington, P. Regier L. Johnson, **T. Spanbauer**, T. Bridgeman, M. Weintraub, P. Megonigal, V. Bailey, N. McDowell, K. Kemner, N. Ward *Multi-scale observations and modeling for improved prediction of coastal wetland processes* Spark presentation at the DOE ESS-PI Meeting, Online

2020 **Spanbauer, T.L.,** M.A. Stegner, † *E. Aselage*, and D. Charles *North American diatom diversity patterns recorded in the Neotoma database* Talk given at the Ecological Society of America annual meeting, Online

#M.A. Stegner* and **T.L. Spanbauer*** *Abrupt vegetation changes in the Anthropocene exceed Holocene levels of abrupt change* Talk given at the Ecological Society of America annual meeting, Online

2019 **Spanbauer, T.L.** and E. Capo *A ~4,000-year record of the microbial eukaryotic community from Yellowstone Lake (Yellowstone National Park, USA)* Poster presentation given at the American Geophysical Union Fall Meeting, San Francisco, CA

Spanbauer, T.L., J. Cooper, E.C. Theriot *Chloroplast genomes of closely related Stephanodiscus species and populations: towards a phylogeography* Talk given at the North American Diatom Symposium, Eatonton, GA.

Spanbauer, T.L., E.C. Theriot, L. Naski Keffer, P.R. Owen *Scientists working with K-12 educators: a method to expand research-based inquiry in the classroom* Talk given at the ASLO Aquatic Sciences Meeting, San Juan, PR.

SELECTED CONFERENCE PRESENTATIONS PRIOR TO 2019

2018 **Spanbauer, T.L.** and E.C. Theriot *Heritability of morphological variation in the Stephanodiscus niagarae complex (Thalassiosiraceae: Bacillariophyta)* Oral presentation given at the Ecological Society of America annual meeting, New Orleans, LA.

Spanbauer, T.L. and E.C. Theriot *Plastid variation in closely related diatoms* Oral presentation given at the Phycological Society of America annual meeting, Vancouver, BC.

2017 W. Chuang*, **T.L. Spanbauer***, T. Eason, A. Garmestani *Quantitative approaches for assessing ecological and community resilience* Oral presentation co-delivered at the Ecological Society of America annual meeting, Portland, OR.

2016 **Spanbauer, T.L,** S.C. Fritz, T. Eason, and A.S. Garmestani *Using paleolimnology to test resilience theory* Oral presentation given at the ASLO Summer Meeting, Santa Fe, NM.

2015 **Spanbauer, T.L** and S.C. Fritz *Evolutionary change in a dominant phytoplankton species complex in Lake Titicaca during the last ~370,000 years* Oral presentation given at the ASLO Aquatic Sciences Meeting, Granada, Spain.

2014 **Spanbauer, T.L** and S.C. Fritz *Morphological Evolution of a Dominant Phytoplankton from Lake Titicaca* Video poster presentation at the UNL Research Fair, Lincoln, NE.

Spanbauer, T.L., C.R. Allen, D.G. Angeler, T. Eason, S.C. Fritz, A.S. Garmestani, K.L. Nash, and J.R. Stone *Paleo-thresholds: What the past can tell us about abrupt changes in ecosystems* Oral presentation at Resilience 2014, Montpellier, France.

2013 **Spanbauer, T.L.,** T. Hefley, J. Stone, and S.C. Fritz *Using paleoecological data to test models and indicators of extinction.* Poster presentation at the ASLO Aquatic Sciences Meeting, New Orleans, LA.

2012 **Spanbauer, T.L*.** and T. J. Hefley* *Modeling critical transitions in natural systems: Can extinctions be predicted?* Poster presentation at the IGERT Annual meeting, Washington, D.C.

2010 **Spanbauer, T.L.**, J.R. Stone, J.E. Saros, and S.C. Fritz *The Paleoecology of the Holocene Diatom Flora of a Pristine Alpine Lake and Its Implications for Regional Paleoclimatology*. Poster presentation, International Diatom Symposium, St. Paul, MN.

2009 **Spanbauer, T.L.**, J.R. Stone, J.E. Saros, and S.C. Fritz *Cyclotella Response to Climate Change During the Holocene: An Analysis of the Diatom Paleoecology of a Pristine Alpine Lake in Glacier National Park*. Poster presented at the 20th North American Diatom Symposium, Lake Okoboji, IA.

Spanbauer, T.L., D. Wacey, M.R. Kilburn, R.M. Kettler, D.B. Loope, K.A. Weber *Biosignatures in Spheroidal Iron Oxide-Rich Concretions from the Navajo Sandstone*. Poster presented at the American Geophysical Union fall meeting, San Francisco, CA

TEACHING EXPERIENCE

2026 to present Associate Professor, *Department of Earth & Environmental Sciences, University of Kentucky*

Courses taught:

EES 160: Geology for Teachers
EES 395 Special Problems in Geology
EES 748 Master's Thesis Research
EES 749 Dissertation Research
EES 782 Individual Work in Geology

2020 to 2025 Assistant Professor, *Department of Environmental Sciences, University of Toledo*

Courses taught:

EEES 2010: Introduction to Environmental Studies
EEES 2600: Techniques for Environmental Sciences
EEES 4730/5730: Aquatic Ecology/Advanced Aquatic Ecology
EEES 4740/5740: Aquatic Ecology Lab/Advanced Aquatic Ecology Lab
EEES 4980/5980: Special Topics – Art, Algae, and the Environment
EEES 4980/5980: Special Topics – Phycology
EEES 4910: Directed Research
EEES 6960: Thesis Research
EEES 6990: Ind Study: Molecular Ecology
EEES 8960: Doctoral Dissertation Research
EEES 8990: IS Adv Readings in Ecology

2013 Instructor of record, Environmental Geology, *University of Nebraska – Lincoln*

2011 Guest Lecturer, Biogeography, *University of Nebraska – Lincoln*

2001 to 2002 Teaching Assistant, Art 299/499: Advanced Printmaking Workshop, *University of Wisconsin – Milwaukee*

POST-DOCTORAL ADVISEES

2024 to present Majoi Nascimento (University of Toledo – Post doctoral associate)
Ancient environmental DNA from Lake Izabal (Guatemala)

DOCTORAL ADVISEES

2022 to present Joy Jackson (University of Kentucky)
Diatom records of the Anthropocene from the Laurentian and Iowa Great Lakes

2022 to present Shan Thomas (University of Toledo)
Microbial community structure and function across the Lake Erie terrestrial aquatic interface

MASTERS THESIS ADVISEES

2025 to present Zoe Gonzales (University of Kentucky)
TBD

2024 to present Megan Ginther (University of Kentucky)
Understanding past harmful algal blooms using archival environmental DNA

2021 to 2023 George Okoko (University of Toledo)
The spatiotemporal dynamics of anthropogenic eutrophication of West Lake Okoboji

2020 to 2022 Amber Beecher (University of Toledo – co-advisee)
Tracking Toxin Production in Lake Erie using SPATT Technology and Finding the Best Filter Preservation Method

UNDERGRADUATE HONORS THESIS ADVISEES

2023 to 2024 Amanda Oeder
How does Microplastic Pollution impact Phytoplankton Dynamics in the Laurentian Great Lakes: Unraveling Ecological Implications

2022 to 2023 Paul Martin
Using Magnetic Susceptibility to determine Optimal Coring Sites in Western Lake Erie

2022 to 2023 Megan Ginther
Leveraging Community Scientists to Investigate the Microbiomes of Recreational Areas within the Lake Erie Watershed

2020 to 2021 Corbin Kohart
38 Years Later: A Comparison of Diatom Communities from Oak Openings Preserve Metropark

GRADUATE STUDENT COMMITTES

2024 to present Ismael G. Espinoza (University of Wisconsin-Madison – Ph.D.)

2021 to 2025 Sabrina Jaffe (University of Toledo – Ph.D.)

2021 to 2025 Silas Fischer (University of Toledo – Ph.D.)

2021 to 2023 Paige Madden (University of Toledo – M.S.)

2019 to 2021 Kaitlyn Zigulis (University of Toledo – M.S.)

2019 to 2021 Polly Peterson (University of Toledo – M.S. non-thesis)

UNDERGRADUATE/REU STUDENTS MENTORED

2026	Mamie Clark (University of Kentucky)
2025	Spencer Matthews (University of Toledo)
2025	Abigail Sanders (University of Toledo)
2024	Phoebe Jackson (University of Toledo)
2024	Samantha Krouse (University of Toledo)
2024	Melanie Richards (University of Toledo)
2023 to 2024	Emily Mielke (University of Toledo – Undergraduate Research Fellow)
2023 to 2024	Amanda Oeder (University of Toledo – Undergraduate Research Fellow)
2022 to 2023	Devin Wilson (University of Toledo)
2022 to 2023	Mason Kolesar (University of Toledo – Undergraduate Research Fellow)
2022 to 2023	Paul Martin (University of Toledo)
2022 to 2023	Megan Ginther (University of Toledo – Undergraduate Research Fellow)
2022	Alexander Horvath (University of Toledo)
2022	Brendan Luurtsema (University of Toledo)
2022	Hallie Webb (University of Toledo – NSF REU)
2021	Elizabeth Vincent (University of Toledo – NSF REU)
2021	Ariel Markus (University of Toledo)
2020 to 2021	Corbin Kohart (University of Toledo – Undergraduate Research Fellow)
2020 to 2021	Adam Price (University of Toledo)
2020	Emili Aselage (University of Toledo – Undergraduate Research Fellow)
2018 to 2019	Scott Burns (UT Austin)
2015	Sara Heine (UNL)
2014 to 2015	Jacob Morehouse (UNL)
2014 to 2015	Madeline DeVeney (UNL)
2014 to 2015	April Thalken (UNL)

LABORATORY TECHNICIANS

2024 to 2025	Amanda Oeder (University of Toledo)
2024 to 2025	John Dilworth (University of Toledo)
2023 to 2024	Megan Ginther (University of Toledo)
2023	Sophia Wong (University of Toledo)
2020 to 2022	Aaron Shultis (University of Toledo)

ADVISEE GRANTS AND AWARDS

2025 Joy Jackson (graduate) – *Investigating the Stephanodiscus niagarae vs. Stephanodiscus reimeri populations in West Okoboji Lake* Luc Ector Bursary Award

2024 Emily Mielke (undergraduate) – *A Morphological and Molecular Investigation of Diatoms that Co-bloom with Cyanobacterial Harmful Algal Blooms* Department of Environmental Studies Student Research Award and Academic Year Research Program

Amanda Oeder (undergraduate) – *How does Microplastic Pollution impact Phytoplankton Dynamics in the Laurentian Great Lakes: Unraveling Ecological Implications* Department of Environmental Studies Student Research Award and Academic Year Research Program

2023 Joy Jackson (graduate) The Charles W. Reimer Scholarship awarded to attend the Ecology and Systematics of Diatoms course at Iowa Lakeside Laboratory

Joy Jackson (graduate) – *Diatom assemblages and reconstruction from sediment core analysis of West Lake Okoboji* Department of Environmental Studies Student Research Award

Megan Ginther (undergraduate)– *Leveraging Community-Based Science to Investigate the Microbiomes of Recreational Areas within the Lake Erie Watershed* Department of Environmental Studies Student Research Award and Academic Year Research Program

Joy Jackson (graduate) The Hannah T. Croasdale Fellowship awarded to attend the Ecology and Systematics of Diatoms course at Iowa Lakeside Laboratory

Mason Kolesar (undergraduate) – *Do spatial factors and nutrient variation drive differentiation of Fragilaria crotonensis populations from Lakes Gull, Wintergreen, Lawrence, and Swan?* Undergraduate Summer Research and Creative Activity Program

2022 Carson Montz (graduate) – *Anthropogenic impacts on the microbial eukaryotic community of Lake Okoboji (Iowa), reconstructed through analysis of sediment-core ancient DNA* Geological Society of America Graduate Student Research Grant and Department of Environmental Studies Student Research Award

George Okoko (graduate) – *Increasing our understanding of anthropogenic eutrophication of West Lake Okoboji using basin resolved biogenic silica and XRF proxy analysis* Geological Society of America Graduate Student Research Grant and Department of Environmental Studies Student Research Award

2021 Corbin Kohart (undergraduate)– *Temporal Comparison of Spring Fed Brook Diatom Communities in Oak Openings Preserve Metropark* Department of Environmental Studies Student Research Award and Academic Year Research Program

2020 Emili Aselage (undergraduate) – *Importance of Environmental and Spatial Factors in Structuring Diatom Communities* Academic Year Research Program

DEPARTMENT AND UNIVERSITY SERVICE

2025 to present Chair's Select Committee – NRES Steering Committee
Department of Earth and Environmental Sciences, University of Kentucky

2025 to present Space Committee
Department of Earth and Environmental Sciences, University of Kentucky

2025 to present Curriculum Committee
Department of Earth and Environmental Sciences, University of Kentucky

2025 to present Personnel and Budget Committee
Department of Earth and Environmental Sciences, University of Kentucky

2023 to 2024 4+1 Undergrad to Grad Committee (Ad-hoc)
Department of Environmental Sciences, University of Toledo

2023 to 2024 DES Grad Program Future Committee (Ad-hoc)
Department of Environmental Sciences, University of Toledo

2021 to 2025 Departmental Honors Advisor
Department of Environmental Sciences, University of Toledo

2020 to 2025 Instrumentation Center Advisory Board
Colleges of Natural Sciences and Mathematics, University of Toledo

2020 to 2025 Proposal Reviewer for the Office of Undergraduate Research
University of Toledo

2020 to 2025 Lake Erie Center Advocacy Board Coordinator
Lake Erie Center, University of Toledo

2020 to 2022 Environmental Sciences Graduate Degree Program Committee (Ad-hoc)
Department of Environmental Sciences, University of Toledo

2020 to 2021 Graduate Affairs Committee, Department of Environmental Sciences
University of Toledo

2019 to 2025 UT Water Task Force
University of Toledo

2019 to 2025 Assessment Committee for the Bachelor of Arts degree in Environmental Studies
University of Toledo

2019 to 2025 Recruiting and Outreach Committee, Department of Environmental Sciences
University of Toledo

PROFESSIONAL SOCIETIES: LEADERSHIP

2023 to present Advisory Board, sedaDNA Scientific Society

2020 to 2023 Organizing Committee, sedaDNA Scientific Society

2020 to 2023 Student Grant Committee, The Paleontological Society

2018 to 2023 PSA Algae and Human Affairs Committee, Phycological Society of America

PROFESSIONAL SOCIETIES: MEMBERSHIP

American Association for the Advancement of Science
American Geophysical Union
Association for the Sciences of Limnology & Oceanography
Ecological Society of America
Geological Society of America
International Paleolimnology Association
PAGES Past Global Changes
Phycological Society of America
sedaDNA Scientific Society
The Paleontological Society

SYNERGISTIC ACTIVITIES & SERVICE TO THE DISCIPLINE

2025 to present Review Board
Biogeography

2024 Chair, Paleoecology Working Group
Continental Scientific Drilling Facility

2021 Pod Member
URGE (Unlearning Racism in Geosciences)

2020, 2023, 2025 Ad-hoc Reviewer
National Science Foundation

2017 Panelist
National Science Foundation

2014 to 2015 McNair Scholar's Judge
University of Nebraska – Lincoln

2014 to 2015 Student Ambassador
Paleontological Society

2013 to 2014 Review Panel, Geosciences Teaching Activities
On the Cutting Edge, SERC

2012 to 2013 Graduate Research Fair Planning Committee
University of Nebraska – Lincoln

2011 to 2014 Council of Students, Chancellor's Commission on the Status of Women
University of Nebraska – Lincoln

2010 to 2011 IGERT Student Graduate Representative of the Steering Committee
University of Nebraska – Lincoln

Manuscript Reviewer

Journal of Applied Ecology
Journal of Environmental Management
Hydrobiologia
Ecography
Nature Communications
Ecology
Diatom Research
American Journal of Botany
Geosciences
Water
Peer J
Journal of Animal Ecology
Ecosystems
Sustainability
Marine and Freshwater Research
Freshwater Biology
Marine Pollution Bulletin
Limnology and Oceanography
Earth-Science Reviews
Paleoceanography and Paleoclimatology
Nature+Culture
Microbial Ecology
Aquatic Microbial Ecology
Arctic, Antarctic, and Alpine Research

Proposal Reviewer

National Geographic Society
AmeriCorps

WORKSHOPS & WORKING GROUPS CONVENED

2024 CIGLR Workshop co-lead at Ann Arbor, Michigan
The Use of Archival Environmental DNA in the Laurentian Great Lakes

2022 Workshop Organizer and Instructor at the AMQUA Meeting in Madison, Wisconsin
Sedimentary Ancient DNA: Introduction and Current Advances

CONFERENCE SESSIONS ORGANIZED

2022 Joint Aquatic Sciences Meeting (lead organizer) *Deciphering past aquatic ecosystem dynamics using sedimentary ancient DNA*

2021 Association for the Sciences of Limnology and Oceanography (co-organizer) *Contextualizing abrupt change using big environmental data at freshwater and marine ecosystems*

2020 Ecological Society of America (co-organizer) *Leveraging ecoinformatics and expert-curated databases to understand macro-scale community dynamics in time and space*

2019 American Geophysical Union (co-organizer) *Mapping Biodiversity Through Space and Time: Integrating Sedimentary DNA, Metagenomics, Phylogenetics, and Ecological Approaches to Resolve Biodiversity Gaps*

INVITED WORKING GROUPS

Sept. 2025 Environmental Tipping Points & Transformations Summit, *ESIIL*

Sept. 2025 Ancient DNA from the seafloor to predict the fate of plankton in a future ocean – Challenges and opportunities in paleogenomics, *Fondation des Treilles*

July 2024 Macrosystems Ecology for All (MEFA), NSF funded Research Coordination Network

Nov. 2022 Workshop on Urban Evolutionary and Ecological 'Omics, *Society for Molecular Biology and Evolution (SMBE)*

2021-2022 Building a synthesis database of past human-environmental systems in the Global South (pSESYNTH), *INQUA*

2021-2022 African sedaDNA working group, The sedaDNA scientific society

2020-2023 Neotoma sedaDNA Cyberinfrastructure Working Group

Nov. 2020 PAGES-INQUA Workshop: Past Socio-Environmental Systems

2020-2022 Regime Shift Working Group, Canadian Institute for Ecology and Evolution (CIEE)

June 2019 ICDP Workshop on Scientific Drilling of Lake Tanganyika, Africa

May 2018 EcoRe3 - Resistance, Recovery and Resilience in Long-term Ecological Systems, *PAGES*

May 2018 ICDP Workshop on Scientific Drilling of Lake Nam Co (Tibetan Plateau)

Jan. 2018 AnDiNa IV: Species Range Shifts & Local Adaptations

Mar. 2017 EcoRe3 - Resistance, Recovery and Resilience in Long-term Ecological Systems, *PAGES*

Oct. 2016 Eco-DAS Ecological Dissertation in the Aquatic Science, *ASLO*/*University of Hawai'i*

Oct. 2014 Powell Center Working Group, Understanding and Managing for Resilience, *USGS*

PROFESSIONAL DEVELOPMENT

June 2020 Blended Course Design Workshop, *University Teaching Center – University of Toledo*

May 2020 Online Teaching Certificate Course, *University of Toledo*

Nov. 2019 Using Environmental DNA for Surveys and Monitoring, *Columbus Zoo and Aquarium*

Feb. 2019 Network Modeling Tutorial, *NIMBioS*

Aug. 2017 SNP genotyping and high-throughput amplicon sequencing, *Oregon State University*

May 2017 Metagenomics and Genome Variant Analysis, *CCBB – University of Texas at Austin*

Aug. 2016 GIS Applications in Aquatic Ecology & Evolution, *St. Louis University*

Mar. 2015 La Kretz Center Conservation Genomics Workshop, *UCLA*

July 2014 Bioinformatics & NGS Workshop, *University of Nebraska – Lincoln*

June 2014 Preparing Future Faculty Course, *University of Nebraska – Lincoln*

Jan. 2014 Tropical Ecology Course, *Organization for Tropical Studies*

Aug. 2012 Sao Paulo School of Advanced Science – evolution, *SP.SAS-evo*

June 2011 Preparing for an Academic Career in the Geosciences, *Cutting Edge*

Mar. 2011 Science: Becoming the Messenger, *NSF*

Feb. 2011 Taking Charge of Your Career Development, *University of Nebraska – Lincoln*

Jan. 2011 Teaching and Learning Workshop – Systems-thinking, *University of Nebraska – Lincoln*

OUTREACH & PUBLIC ENGAGEMENT

2023 to 2025 African Women in Science
Mentor

2021 to 2023 Girl Scouts of America
Scientific programming for high school troops

2020 to 2025 ERIeDNA
Community-based science effort to sequence aquatic environments from the Western Basin of Lake Erie watershed

2019 to present Skype-a-Scientist
Educational outreach activities with high school classrooms

2019 to 2020 Old Woman Creek NERR
Annual educational outreach activities with middle school students

2017 to 2019 Texas Memorial Museum
Public outreach activities and K-12 teacher training

2010 to 2011 High School Mentor, *EnvironMentors Program*
Science based mentorship program for minority high school students

2009 to 2015 Nebraska State Museum
Public outreach activities and programming for K-12

2008 to 2014 University Place Community Organization
Treasurer, Board of Directors and River Clean-up Supervisor

MEDIA COVERAGE

2024 UToledo News featuring classroom instruction: *Environmental Sciences Course Explores Intersection of Algae and Art*
https://news.utoledo.edu/index.php/12_10_2024/environmental-sciences-course-explores-intersection-of-algae-and-art

UToledo News featuring research: *UToledo Environmental Scientist Recovers Insights into Changing Ecosystems in Guatemala*
https://news.utoledo.edu/index.php/02_23_2024/utoledo-environmental-scientist-recovers-insights-into-changing-ecosystems-in-guatemala

2023 UToledo News featuring undergraduate researcher: *Undergraduate Biology Student Digs into Sediment Cores in Directed Research Opportunity*
https://news.utoledo.edu/index.php/11_27_2023/undergraduate-biology-student-digs-into-sediment-cores-in-directed-research-opportunity

UToledo News featuring undergraduate researcher: *ERIeDNA Invites Community to Join Research of Lake Erie Microbiome*
https://news.utoledo.edu/index.php/10_16_2023/eriedna-invites-community-to-join-research-of-lake-erie-microbiome

SciTechDaily: *Redefining Earth's Timeline: The Advent of the Anthropocene Epoch*
https://scitechdaily.com/redefining-earths-timeline-the-advent-of-the-anthropocene-epoch/

EurekAlert *Sediment core analysis supports new epoch characterized by human impact on planet* https://www.eurekalert.org/news-releases/1005770

UToledo News and News Release: *Analysis Supports Demarcation of New Epoch Characterized by Human Impact on Planet*
https://news.utoledo.edu/index.php/10_25_2023/analysis-supports-demarcation-of-new-epoch-characterized-by-human-impact-on-planet

Farm and Dairy *Researchers study Lake Erie's microscopic ecosystems*
https://www.farmanddairy.com/news/researchers-study-lake-eries-microscopic-ecosystems/786433.html

The Highland County Press *New Ohio Sea Grant research uses microbes to understand Lake Erie health*
https://highlandcountypress.com/new-ohio-sea-grant-research-uses-microbes-understand-lake-erie-health#gsc.tab=0

Ohio Sea Grant Newsletter *Small but Mighty*
https://ohioseagrant.osu.edu/news/2023/yuujf/small-but-mighty

Midstory article on *What's Keeping Lake Erie Green? Part II: Climate Change*:
https://www.midstory.org/whats-keeping-lake-erie-green-part-ii-climate-change/

2022 Interview for 13 ABC *The University of Toledo continues to be an important part of studying Harmful Algal Blooms in Lake Erie:*
https://www.13abc.com/2022/07/15/university-toledo-continues-be-an-important-part-studying-harmful-algal-blooms-lake-erie/

2020 Coverage for Stegner and Spanbauer (ESA presentation) *Abrupt vegetation changes in the Anthropocene exceed Holocene levels of abrupt change*

Science News: https://www.sciencemag.org/news/2020/08/humans-have-altered-north-america-s-ecosystems-more-melting-glaciers

Gizmodo: https://earther.gizmodo.com/humans-have-changed-north-america-more-than-an-ice-age-1844731595

ADMINISTRATIVE EXPERIENCE

2005 to 2009 Office and Programs Manager, *Lincoln Arts Council,* Lincoln, NE

2003 to 2005 Publications Associate, *National Council on Crime and Delinquency,* Madison, WI