
TRISHA LYN SPANBAUER

Department of Environmental Sciences

University of Toledo
2801 West Bancroft St., Mail Stop #604
Toledo, OH 43606-3390

Lake Erie Center

University of Toledo
6200 Bay Shore Road
Oregon, OH 43616

(419) 530-2823 ~ trisha.spanbauer@utoledo.edu ~ trishaspanbauer.com

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

- 2019 to present 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

- 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*, (3.1–2.4 ka), southwest Michigan. *Journal of Great Lakes Research*, <https://doi.org/10.1016/j.jglr.2021.04.017>
- 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. Ficotola, R.E. Garner, J. Gauthier, I. Gregory-Eaves, L. Heinecke, U. Herzsuh, A. Ibrahim, V. Kisand, K.H. Kjær, Y. Lammers, J. Littlefair, E. Messenger, 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>
- 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.
- Spanbauer, T.L.**, C. Briseño-Avena, K.J. Pitz, E. Suter (2019) Salty Sensors, Fresh Ideas: The use of molecular and imaging sensors in understanding plankton dynamics across marine and freshwater ecosystems. *Limnology and Oceanography Letters* doi: 10.1002/lol2.10128
- 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.
- 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.
- Hampton, S.E., S. McGowan, T. Ozersky, S.G.P. Viridis, 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. doi: 10.1002/lno.10938
- 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.
- # **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.
- 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. doi: 10.1017/pab.2017.27
- 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. doi: 10.1525/elementa.189
- 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.
- 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. doi:10.1111/ele.12709
- 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.
- 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*. DOI: 10.1111/1365-2664.12494
- 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. doi: 10.1371/journal.pone.0108936
- 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. [online] URL: <http://www.ecologyandsociety.org/vol19/iss1/art34/>
- 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* **317-318**: 93–103.
- 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. doi: 10.1890/11-2218.1
- # 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. doi: 10.1130/G33062
- 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.

indicates journal cover

GRANTS & FELLOWSHIPS

- 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* University of Toledo: PI – M. Weintraub, Co-I – T. Bridgeman, K. Doro, and T. Spanbauer
- 2021 to 2022 National Oceanic and Atmospheric Administration, University of Toledo, *Maumee River FLOWS (Floating Laboratory On Watershed Science)* University of Toledo: PI – T. Bridgeman Co-I – W. Hintz and T. Spanbauer

- 2020 to 2022 Ohio Sea Grant, University of Toledo, *Assessing the impact of shore management on the resilience of coastal environmental microbiomes* University of Toledo: PI – T. Spanbauer, Co-I – R. Becker
- 2017 to 2019 NSF Earth Sciences Postdoctoral Fellowship, University of Texas at Austin *Ancient DNA meets modern genomes: an exploration of diatom evolution, ecology, and environmental change in the Yellowstone Basin* PI – T. Spanbauer
- 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* PI – T. Spanbauer
- 2014 to 2015 Presidential Fellowship, University of Nebraska – Lincoln
- 2013 to 2016 NSF Sedimentary Geology and Paleobiology, University of Nebraska – Lincoln *Morphology and Molecules: Diatom Diversification, Extinction, and Dispersal in an Ancient Tropical Lake System* PI – S. Fritz, Co-I – P. Baker and T. Spanbauer
- 2012 to 2013 American Microscopical Society, University of Nebraska – Lincoln, Student Research Fellowship PI – T. Spanbauer
- 2012 Mid-America Paleontology Society (MAPS) Outstanding Student Research Award, University of Nebraska – Lincoln, The Paleontological Society PI – T. Spanbauer
- 2011 Graduate Student Research Grant, University of Nebraska – Lincoln, Geological Society of America PI – T. Spanbauer
- 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. Deneff, 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
- 2013 Student Travel Award, Association for the Sciences of Limnology and Oceanography
- 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

- 2010 Student Travel Award, International Diatom Symposium
 2009 Student Travel Award, North American Diatom Symposium

TEACHING EXPERIENCE

2020 to present Assistant Professor, *Department of Environmental Sciences & Lake Erie Center, University of Toledo*

Courses taught:

- Fall 2022 Field Methods Lab
 Art, Algae, and the Environment
 Thesis Research
 Dissertation Research
- Spring 2022 Analytical Techniques Lab
 Thesis Research
 Dissertation Research
- Fall 2021 Field Methods Lab
 Molecular Ecology
 Directed Undergraduate Research
 Thesis Research
- Spring 2021 Phycology
 Directed Undergraduate Research
 Thesis Research
- Fall 2020 Field Methods Lab
 Aquatic Ecology/Advanced Aquatic Ecology
 Aquatic Ecology Lab/Advanced Aquatic Ecology Lab
 Ind Study: Molecular Ecology
 Directed Undergraduate Research
 Thesis Research
- Spring 2020 Introduction to Environmental Studies
- 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*

GRADUATE STUDENTS MENTORED

- 2022 to present Joy Jackson (University of Toledo – Ph.D.)
 2022 to present Shan Thomas (University of Toledo – Ph.D.)
 2021 to present Carson Montz (University of Toledo – M.S.)
 2021 to present George Okoko (University of Toledo – M.S.)
 2021 to present Alyssa Armstrong (University of Toledo – M.S.)
 2020 to 2022 Mo Holley (University of Toledo – M.S. non-thesis)
 2020 to 2022 Amber Beecher (University of Toledo – M.S.)

GRADUATE STUDENT COMMITTEES

- 2021 to present Paige Madden (University of Toledo – M.S.)
 2021 to present Bayley Wilmoth (University of Toledo – Ph.D.)
 2021 to present Silas Fischer (University of Toledo – Ph.D.)
 2019 to 2021 Kaitlyn Zigulis (University of Toledo – M.S.)
 2019 to 2021 Polly Peterson (University of Toledo – M.S. non-thesis)
 2017 to present Chanhee Lee (UT Austin – Ph.D.)

UNDERGRADUATE/REU STUDENTS MENTORED

- 2022 Hallie Webb (University of Toledo – NSF REU)
 2020 to 2021 Corbin Kohart (University of Toledo – Undergraduate Research Fellow; Department of Environmental Sciences Honor’s Thesis Recipient)
 2021 Elizabeth Vincent (University of Toledo – NSF REU)
 2021 Ariel Markus (University of Toledo)
 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)

INVITED PRESENTATIONS

- 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
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: Pursuing 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

SELECT CONFERENCE PRESENTATIONS

*indicates co-lead authorship, †indicates undergraduate student in my lab, #indicates media coverage

- 2022 **Spanbauer, T.L.**, J. Cooper, E.C. Theriot *Lakes Drive Population Dynamics of Phytoplankton* Oral presentation given at the Joint Aquatic Sciences Meeting (JASM), Grand Rapids, MI.
- E.C. Theriot, J. Cooper, **Spanbauer, T.L.** *What is a Cryptic Species? Depends on the Species Concept.* Oral presentation given at the Joint Aquatic Sciences Meeting (JASM), Grand Rapids, MI.
- C. Kohart† & **Spanbauer, T.L.** *40 Years Later: A Comparison of Diatom Communities from Oak Openings Preserve Metropark* Oral presentation given at the Joint Aquatic Sciences Meeting (JASM), Grand Rapids, MI.
- 2020 **Spanbauer, T.L.**, M.A. Stegner, E. Aselage†, and D. Charles *North American diatom diversity patterns recorded in the Neotoma database* Oral presentation 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* Oral presentation 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, C.A.
- Spanbauer, T.L.**, J. Cooper, E.C. Theriot *Chloroplast genomes of closely related *Stephanodiscus* species and populations: towards a phylogeography* Oral presentation 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* Oral presentation given at the ASLO Aquatic Sciences Meeting, San Juan, PR.
- 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.

CONFERENCE SESSION 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) *Leveragingecoinformatics 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*

DEPARTMENT AND UNIVERSITY SERVICE

- 2021 to present Departmental Honors Advisor
Department of Environmental Sciences, University of Toledo
- 2020 to present Environmental Sciences Graduate Degree Program Committee (Ad Hoc),
Department of Environmental Sciences, University of Toledo
- 2020 to present Lake Erie Center Advocacy Board Coordinator
Lake Erie Center, University of Toledo
- 2020 to present Instrumentation Center Advisory Board
Colleges of Natural Sciences and Mathematics, University of Toledo
- 2019 to present UT Water Task Force
University of Toledo
- 2019 to present Assessment Committee for the Bachelor of Arts degree in Environmental Studies
University of Toledo
- 2020 to 2021 Graduate Affairs Committee, Department of Environmental Sciences
University of Toledo
- 2020 to 2021 Proposal Reviewer for the Office of Undergraduate Research
University of Toledo
- 2019 to 2020 Recruiting and Outreach Committee, Department of Environmental Sciences
University of Toledo

SERVICE

Manuscript Reviewer

Journal of Applied Ecology
Journal of Environmental
Management
Hydrobiologia

Ecography
Microorganisms
Water
Nature Communications

Ecology
 Diatom Research
 American Journal of Botany
 Geosciences
 Peer J
 Biology
 Journal of Animal Ecology
 Ecosystems

Sustainability
 Marine and Freshwater Research
 Freshwater Biology
 Marine Pollution Bulletin
 Limnology and Oceanography
 Earth-Science Reviews
 Paleoceanography and
 Paleoclimatology

Proposal Reviewer

National Geographic Society
 AmeriCorps

2021 to present Organizing Board Member
sedaDNA scientific society

2021 Pod Member
URGE (Unlearning Racism in Geosciences)

2020 to present Student Research Grants Committee
Paleontological Society

2020 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

OUTREACH & PUBLIC ENGAGEMENT

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

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

- 2020 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>

INVITED WORKING GROUPS

- 2021-2022 Building a synthesis database of past human-environmental systems in the Global South (pSESYNTH), *INQUA*
- 2020-2022 Neotoma sedaDNA Cyberinfrastructure Working Group
- Nov. 2020 PAGES-INQUA Workshop for Early-Career Researchers: 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*

PROFESSIONAL SOCIETIES LEADERSHIP

- 2020 – present Organizing Committee, sedaDNA Scientific Society
- 2020 – present Student Grant Committee, The Paleontological Society
- 2019 – present 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
Geological Society of America
International Paleolimnology Association
The Paleontological Society
Phycological Society of America
PAGES Past Global Changes
sedaDNA Scientific Society

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