

Michael Edward Fraker  
Michigan Sea Grant  
Cooperative Institute for Great Lakes Research  
School for Environment and Sustainability  
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### **Education**

- 2007      Ph.D. Ecology and Evolutionary Biology  
            The University of Michigan
- 2001      A.B. Biology with Specialization in Ecology and Evolution  
            The University of Chicago  
            Graduated with General Honors and Special Honors in Biology

### **Professional Appointments**

- 2021-present    Research Program Manager  
                    Michigan Sea Grant
- 2019-present    Assistant Research Scientist  
                    The University of Michigan  
                    Cooperative Institute for Great Lakes Research  
                    School for Environment and Sustainability
- 2012-2019      Postdoctoral Researcher/Senior Research Associate (PI status obtained: 2017)  
                    The Ohio State University  
                    Department of Evolution, Ecology, and Organismal Biology
- 2009-11        Postdoctoral Researcher  
                    Oklahoma State University  
                    Department of Zoology
- 2007-8         Postdoctoral Researcher  
                    The University of Michigan  
                    Department of Molecular, Cellular, and Developmental Biology

**Funding**

- in review Internal: NOAA GLERL/CIGLR, Lake Michigan Integrated Ecosystem Assessment. PI. (\$837,300; \$457,201 to SEAS; full IDC)
- in review External: Great Lakes Fishery Commission (Fishery Research Program), Moving toward ecosystem-based fisheries management: Conceptualizing Lake Erie's dynamic ecosystem. PI. (\$283,574 total; \$115,060 to SEAS; 5% IDC)
- in review External: National Oceanic and Atmospheric Administration (NOAA-IOOS), Dynamics of biodiversity across lakescapes in North America's inland seas. Co-PI. (\$2,484,079 total; \$2,271,024 to SEAS; full IDC)
- in review External: National Oceanic and Atmospheric Administration (NIS-IOOS), Probabilistic toxin and hypoxia forecasts for Lake Erie. PI. (\$889,375 total; \$531,762 to SEAS; full IDC)
- 2022-2025 External: U. S. Coastal Research Program, Quantifying the role of *Microcystis* resuspension on HABs in coastal Lake Erie using multidisciplinary approaches. Co-PI. (\$219,627 total; \$219,627 to SEAS; full IDC)
- 2019-2022 Internal: NOAA GLERL/CIGLR, Great Lakes long-term ecological research. PI. (\$300,989 total through 3/31/21; \$300,989 to SEAS; full IDC)
- 2019-2022 Internal: NOAA GLERL/CIGLR, Implementation of a 3D HAB forecast. PI. (\$132,721 total through 3/31/21; \$132,721 to SEAS; full IDC)
- 2019-2022 External: Great Lakes Fishery Commission (Fishery Research Program), Moving toward ecosystem-based fisheries management: developing an integrated ecosystem assessment of Lake Erie as a case study. PI. (\$136,582 total; \$0 to SEAS; 5% IDC)
- 2016-21 External: National Science Foundation (IOS-1557831), The influence of the prey physiological stress response on predator-prey interactions. Co-PI and primary writer. (\$652,556 total; \$66,774 to SEAS; full IDC)
- 2016-20 External: Great Lakes Fishery Commission (Fishery Research Program), Spatial variation in habitat quality as a driver of Lake Erie walleye population dynamics: past, present, and future. Co-PI. (\$284,691 total; \$0 to SEAS; 5% IDC)

**Funding ending prior to 2019:**

- 2014-16 Ohio Sea Grant College Program, (Biennial Large Grant Program, R/ME-038), Linking Lake Erie agricultural production to ecosystem services. Co-PI. (\$199,630)
- 2012-15 Federal Sport Fish Restoration Program (Ohio DNR, F-69-P, Fish Management in Ohio, Project FADR69), A biophysical modeling approach to understanding walleye recruitment in Lake Erie. Co-PI. (annually renewed; \$232,112 total)
- 2007 Rackham One-Term Dissertation Fellowship, The University of Michigan (tuition and stipend, 1 semester)
- 2005 Peter Okkelberg Award, The University of Michigan (\$1,058)
- 2004-6 E. S. George Reserve Scholarship, The University of Michigan (3 awards; \$8,488 total)
- 2001-5 Regents' Fellowship, The University of Michigan (tuition and stipend, 4 years)

**Refereed Publications****In review or in preparation:**

**Fraker, M. E.**, Aloysius, N. R., Martin, J. F., Gebremarian, S. Y., Keitzer, S. C., Dippold, D. A., Yen, H., Arnold, J. G., Daggupati, P., Johnson, M.-V. V., Robertson, D. M., Sowa, S. P., White, M. J., and Ludsin, S. A. in review. Agricultural conservation practices could help offset climate change impacts on harmful algal blooms in Lake Erie. (Harmful Algae)

Sinclair, J. S., K. A. Frank, J. M. Hood, S. A. Ludsin, and **M. E. Fraker**. to be submitted. A shifting density-growth rate feedback driven by a changing ecosystem state. (Proceedings of the National Academy of Sciences, USA)

Sinclair, J. S., K. A. Frank, J. M. Hood, S. A. Ludsin, and **M. E. Fraker**. in review. 100-year dataset indicates potential tradeoffs among maintaining fisheries production and mitigating harmful algal blooms. (Fish and Fisheries)

**Fraker, M. E.**, Fredrickson, J., Marshall, L., and Miller, R. in review. Scales of spatial variability in Lake Michigan limnological observations. (Journal of Great Lakes Research)

Budnik, R. R., Frank, K. T., Collis, L. M., **Fraker, M. E.**, Mason, L. A., Muir, A. M., Pothoven, S., Scofield, A. E., and Ludsin, S. A. to be submitted. Feasibility of implementing an integrated long-term database to advance ecosystem-based management in the Laurentian Great Lakes basin. (Journal of Great Lakes Research)

Green, R., Dusicksa, E., Sun, K., Waldman, C., Wu, X., Chaganti, S. R., **Fraker, M. E.**, Hughes, S., Vanderploeg, H., Godwin, C. in review. Nutrient Management in Lake Erie: evaluating stakeholder values, attitudes, and policy preferences. (Journal of Great Lakes Research)

Waldman, C., Wu, X., Dusicksa, E., Sun, K., Green, R., Godwin, C., Chaganti, S. R., **Fraker, M. E.**, Vanderploeg, H., Hughes, S. to be submitted. The dual role of phosphorus and nitrogen in harmful algal blooms: A comparison of Lake Erie and the National Lakes Assessment. (Journal of Great Lakes Research)

### **Published:**

**Fraker, M. E.**, J. S. Sinclair, K. A. Frank, J. M. Hood, and S. A. Ludsin. 2022.

Temporal scope influences ecosystem driver-response relationships: a case study of Lake Erie with implications for ecosystem-based management. *Science of the Total Environment* 813: 152473.

Sinclair, J. S., **M. E. Fraker**, K. A. Frank, J. M. Hood, and S. A. Ludsin. 2021.

Multiple stressors induce contrasting responses in the functional trait composition of fish assemblages in Lake Erie. *Global Change Biology* 27: 6232-6251.

**Fraker, M. E.**, A. Shrestha, L. Marshall, L. Mason, and R. Miller. 2021. Seasonal variation in subsurface chlorophyll in Lake Michigan observed by a glider. *Journal of Great Lakes Research* 47: 1228-1234.

Manubolu, M., L. Goodla, S. A. Ludsin, T. Jayakumar, **M. Fraker**, and K. Pathakoti. 2021.

Nanotechnology-based detection and remediation of mycotoxins for food and agriculture applications. pp. 183-212 in: *Nanosensors for Environment, Food, and Agriculture*, Vol. 1. (V. Kumar, P. Guleria, S. Ranjan, N. Dasgupta, and E. Lichtfouse, eds.). Springer.

**Fraker, M. E.**, S. A. Ludsin, B. Luttbeg, and R. J. Denver. 2021. Stress hormone-mediated antipredator morphology improves escape performance in amphibian tadpoles. *Scientific Reports* 11:4427.

**Fraker, M. E.**, S. C. Keitzer, J. S. Sinclair, N. R. Aloysius, D. A. Dippold, H. Yen, J. G. Arnold, P. Daggupati, M.-V. V. Johnson, J. F. Martin, D. M. Robertson, S. P. Sowa, M. J. White, and S. A. Ludsin. 2020. Projecting the effects of agricultural conservation practices on stream fish communities in a changing climate. *Science of the Total Environment* 747: 141112.

Dippold, D. A., N. Aloysius, S. C. Keitzer, H. Yen, J. G. Arnold, P. Daggupati, **M. E. Fraker**, J. F. Martin, D. M. Robertson, S. P. Sowa, M.-V. V. Johnson, M. J. White, and S. A. Ludsin. 2020. Forecasting the combined effects of anticipated climate change and agricultural conservation practices on fish recruitment dynamics in Lake Erie. *Freshwater Biology* 65: 1487-1508.

**Published during or prior to 2019:**

- Goodla, L., M. Manubolu, K. Pathakoti, T. Jayakumar, J. R. Sheu, **M. Fraker**, P. B. Tchounwou, and P. R. Poondamalli. 2019. Protective effects of *Ammannia baccifera* against CCl<sub>4</sub>-induced oxidative stress in rats. *International Journal of Environmental Research and Public Health* 16: 1440.
- Brown, T., **M. E. Fraker**, and S. A. Ludsin. 2018. Space use of predatory larval dragonflies and tadpole prey in response to chemical cues. *American Midland Naturalist* 181:53-63.
- DeVanna Fussell, K. M., R. E. H. Smith, **M. E. Fraker**, and 17 co-authors. 2016. A perspective on needed research, modeling, and management approaches that can enhance Great Lakes fisheries management under changing ecosystem conditions. *Journal of Great Lakes Research* 42:742-753.
- Brodnik, R.\*, **M. E. Fraker\***, E. J. Anderson, L. Carreon-Martinez, K. M. DeVanna, B. J. Fryer, D. D. Heath, J. M. Reichert, and S. A. Ludsin. 2016. Combining microsatellite data with dispersal trajectories of larvae reveals novel stock structure and demographically-important population connectivity in a freshwater fish. *Canadian Journal of Fisheries and Aquatic Sciences* 73:416-426. \*co-first authors
- DuFour, M. R., C. J. May, E. F. Roseman, S. A. Ludsin, C. S. Vandergoot, J. J. Pritt, **M. E. Fraker**, J.J. Davis, J. T. Tyson, J. G. Miner, E. A. Marschall, and C. M. Mayer. 2015. Portfolio theory as a management tool to guide conservation and restoration of multi-stock fish populations. *Ecosphere* 6:art296.
- Fraker, M. E.**, E. J. Anderson, K.-Y. Chen, J. J. Davis, K. M. DeVanna, M. R. DuFour, E. A. Marschall, C. J. May, C. M. Mayer, J. G. Miner, K. L. Pangle, J. J. Pritt, E. F. Roseman, J. T. Tyson, Y. Zhao, and S. A. Ludsin. 2015. Variation in larval advection and early life history of Lake Erie walleye (*Sander vitreus*): insights from an individual-based biophysical model. *Journal of Great Lakes Research* 41:830-845.
- Fraker, M. E.**, E. J. Anderson, R. Brodnik, L. Carreon-Martinez, K. M. DeVanna, B. J. Fryer, D. D. Heath, J. M. Reichert, and S. A. Ludsin. 2014. Particle backtracking improves breeding subpopulation discrimination and natal-source identification in mixed populations. *PLoS ONE* 10:e0120752.
- Fraker, M. E.** and B. Luttbeg. 2012. A spatially explicit model of predator-prey space games. *Oikos* 121:1935-1944.
- Fraker, M. E.** and B. Luttbeg. 2012. Predator-prey space use and the spatial distribution of predation events. *Behaviour* 149:555-574.
- Fraker, M. E.** 2010. Risk perception and anti-predator behavior of wood frog (*Rana sylvatica*) tadpoles: a comparison with green frog (*Rana clamitans*) tadpoles. *Journal of Herpetology* 44:390-398.

- Fraker, M. E.,** V. Cuddapah, S. A. McCollum, R. A. Relyea, J. Hempel, and R. J. Denver. 2009. The behavioral and endocrine stress response of tadpoles to a chemical cue of predation secreted by conspecifics. *Hormones and Behavior* 55: 520-529.
- Fraker, M. E.** 2009. Predation risk assessment through chemical cues produced by multiple prey. *Behavioral Ecology and Sociobiology* 63: 1397-1402.
- Fraker, M. E.** 2009. The effect of prior experience on a prey's current perceived risk. *Oecologia* 158: 765-774.
- Fraker, M. E.** 2009. The perceptual ability of tadpoles limits the accuracy of their predation risk assessment. *Behaviour* 146: 1025-1036.
- Fraker, M. E.** 2008. The influence of the circadian rhythm of green frog (*Rana clamitans*) tadpoles on their antipredator behavior and the strength of the nonlethal effects of predators. *American Naturalist* 171: 545-552.
- Fraker, M. E.** 2008. The effect of hunger on the strength and duration of the anti-predator behavioral response of green frog (*Rana clamitans*) tadpoles. *Behavioral Ecology and Sociobiology* 62: 1201-1205.
- Fraker, M. E.** and S. D. Peacor. 2008. Statistical tests for biological interactions: a comparison of permutation tests and analysis of variance. *Acta Oecologia* 33: 66-72.
- Fraker, M. E.** 2008. The dynamics of predation risk assessment: responses of anuran larvae to chemical cues of predators. *Journal of Animal Ecology* 77: 638-645.
- Fraker, M. E.,** J. W. Snodgrass, and F. Morgan. 2002. Differences in growth and maturation of blacknose dace (*Rhinichthys atratulus*) across an urban-rural gradient. *Copeia* 2002: 1122-1127.

### **Final Reports (non-refereed)**

- Glover, D., **M. E. Fraker**, S. C. Keitzer, and E. A. Marschall. 2016. Modeling the effects of climate change on anadromous fish populations in the Connecticut River. Final Report. NOAA Fisheries (National Marine Fisheries Service). Project IJ10-15.
- May, E., **M. E. Fraker**, S. Gebremariam, J. Martin, and W. Zhang. 2016. Linking agricultural production and Great Lakes ecosystem services: modeling and valuing the impacts of harmful algal blooms in Lake Erie. Ohio Sea Grant College Program. Project R/ME-038.
- May, C. J., **M. E. Fraker**, and S. A. Ludsin. 2016. The influences of hydrodynamics, early growth, and larval movement on walleye recruitment in the western basin of Lake Erie. Final Report. Ohio DNR. Project FADR67.

**Fraker, M. E.** and S. A. Ludsin. 2015. A biophysical modeling approach to understanding walleye recruitment in Lake Erie. Final Report. Ohio DNR. Project FADR69.

**Presentations (invited and contributed)**

- 2022            Assessing drivers of ecosystem change: the role of temporal perspective, Joint Aquatic Sciences Meeting, Grand Rapids, Michigan (invited oral presentation)
- 2022            Moving toward ecosystem-based management of the Great Lakes, SUNY-Buffalo State (invited oral presentation)
- 2021            Contrasting states of the Lake Erie ecosystem and their implications for ecosystem-based management, International Association of Great Lakes Research Annual Meeting, Houghton, Michigan. (contributed oral presentation)
- 2020            Contrasting states of the Lake Erie ecosystem, Lake Erie-Inland Waters Annual Research Review, Columbus, Ohio (invited oral presentation)
- 2020            Antipredator phenotypic plasticity in tadpoles: physiology to phenotype to outcome. Wayne State University, Department of Biology. (invited oral presentation)
- 2020            Ecosystem trends and drivers of a dynamic, large freshwater lake depend on the chosen perspective. Association for the Sciences of Limnology and Oceanography and Society for Freshwater Science Joint Meeting, Madison, Wisconsin. (contributed oral presentation; meeting cancelled)
- 2020            Lake Erie ecosystem trends and drivers during 1969-2018. NOAA-GLERL All Hands meeting, Ann Arbor, Michigan. (invited oral presentation)
- 2019            Stress hormone-mediated antipredator morphology improves escape performance in wood frog tadpoles, Ecological Society of America Annual Meeting, Louisville, Kentucky. (contributed oral presentation)
- 2019            Developing an integrated ecosystem assessment of Lake Erie fisheries, International Association of Great Lakes Research Annual Meeting, Brockport, New York. (contributed oral presentation)
- 2019            Individual- to ecosystem-level responses to the abiotic and biotic environment in freshwater systems, Murray State University, Department of Biological Sciences. (invited oral presentation)
- 2019            Individual- to ecosystem-level responses to the abiotic and biotic environment in freshwater systems, Kennesaw State University, Department of Ecology, Evolution, and Organismal Biology. (invited oral presentation)

- 2019 Individual- to ecosystem-level responses to the abiotic and biotic environment in freshwater systems, Emporia State University, Department of Biological Sciences. (invited oral presentation)
- 2019 Individual- to ecosystem-level responses to the abiotic and biotic environment in freshwater systems, St. Bonaventure University, Biology Department. (invited oral presentation)
- 2017 Linking stress physiology to the expression of the anti-predator phenotype, Lund University (Sweden), Department of Biology. (invited oral presentation)
- 2016 Spatial variation of impacts of ecosystem change on habitat quality for a Lake Erie fish, Ecological Society of America Annual Meeting, St. Petersburg, Florida. (contributed oral presentation)
- 2016 Spatial variation of impacts of ecosystem change on habitat quality for a Lake Erie fish, 40<sup>th</sup> Annual Larval Fish Conference, Solomons, Maryland. (contributed oral presentation)
- 2015 The role of environmental heterogeneity in individual-level variation in performance, University of Mississippi, Department of Biology. (invited oral presentation)
- 2015 Hydrodynamic backtracking improves stock discrimination capability in Lake Erie yellow perch, Lake Erie-Inland Waters Annual Research Review, Columbus, Ohio. (invited oral presentation)
- 2014 Biophysical drivers of walleye recruitment variation in Lake Erie, International Association of Great Lakes Research Annual Meeting, Hamilton, Ontario. (invited oral presentation)
- 2014 The role of biophysical processes in the early life history of Great Lakes fish, Western Michigan University, Department of Biology. (invited oral presentation)
- 2014 Biophysical drivers of walleye recruitment variation in Lake Erie, Lake Erie-Inland Waters Annual Research Review, Columbus, Ohio. (invited oral presentation)
- 2013 The use of hydrodynamic backtracking as a tool for studying population connectivity, Ecological Society of America Annual Meeting, Minneapolis, Minnesota. (contributed oral presentation)
- 2013 A coupled biophysical model of walleye recruitment in western Lake Erie, International Association of Great Lakes Research Annual Meeting, West Lafayette, Indiana. (invited oral presentation)



- 2013 A coupled biophysical model of walleye recruitment in western Lake Erie, Lake Erie-Inland Waters Annual Research Review, Columbus, Ohio. (invited oral presentation)
- 2012 Predator-prey space games: a general model and empirical patterns, The Ohio State University, Department of Evolution, Ecology, and Organismal Biology. (invited oral presentation)
- 2011 An individual-based model of predator-prey space games, Evolution 2011, Norman, Oklahoma. (contributed oral presentation)
- 2011 Connecting predation risk assessment to prey behavior, The Ohio State University, School of Natural Resources and the Environment. (invited oral presentation)
- 2010 Connecting predation risk assessment to prey behavior, The University of Tulsa, Department of Biological Science. (invited oral presentation)
- 2010 Connecting predation risk assessment to prey behavior, Oklahoma State University, Department of Zoology. (invited oral presentation)
- 2007 Predation risk assessment and the anti-predator behavioral dynamics of larval anurans, The University of Michigan, Department of Ecology and Evolutionary Biology. (invited oral presentation)
- 2006 The effect of circadian rhythms on anti-predator behavior in green frog (*Rana clamitans*) tadpoles, Ecological Society of America Annual Meeting, Memphis, Tennessee. (contributed oral presentation)
- 2005 Some effects of short term temporal variation in predation risk on the behavior of green frog (*Rana clamitans*) tadpoles, Ecological Society of America Annual Meeting, Montreal, Quebec. (contributed poster)
- 2005 Some effects of short term temporal variation in predation risk on the behavior of green frog (*Rana clamitans*) tadpoles, Midwest Ecology and Evolution Conference, Carbondale, Illinois. (contributed oral presentation)

### **Teaching Experience**

- Winter, 2016 Guest Lecturer, EEOB 3410, Introduction to Ecology, The Ohio State University
- Fall, 2015 Instructor of Record, EEOB 8896, Scientific Writing, The Ohio State University
- Winter, 2014 Guest Lecturer, EEOB 3410, Introduction to Ecology, The Ohio State University

- Spring, 2008 Instructor of Record, Biology 171, Introductory Biology: Ecology and Evolutionary Biology, The University of Michigan
- Fall, 2006 Lab Coordinator (Graduate Student Instructor, GSI), Biology 282, Field Ecology, The University of Michigan
- Winter, 2006 GSI, Biology 162, General Biology, The University of Michigan
- Fall, 2005 Lab Coordinator (GSI), Biology 282, Field Ecology, The University of Michigan
- Winter, 2005 GSI and Guest Lecturer, Biology 281, General Ecology, The University of Michigan
- Fall, 2004 Lab Coordinator (GSI), Biology 282, Field Ecology, The University of Michigan
- Fall, 2002 GSI, Biology 282, Field Ecology, The University of Michigan
- Winter, 2002 GSI, Biology 162, General Biology, The University of Michigan

### **Student Mentorship**

#### September 2019-present

Undergraduate: Lauren Payne (2020, UM PitE, Honors project); Erin Eberhard (2022, UM PitE, Honors project)

MS group project advisor: Emily Dusicska, Rae Green, Carol Rosenbaum, Kathy Sun, and Xinjie Wu (UM SEAS 2020-2021); Justin Huber, Andrew Nowicki, Pradip Shrestha, and Lucas Vanderbilt (UM SEAS 2021-2022); Akshata Pavin Karnik, Journ Galvan, Nicole Rappuhn, Bangzhao Shu, Joshua Habib (UM SEAS, 2022-2023)

MS thesis committee: Melissa Mattwig (UM SEAS, 2021-present)

PhD dissertation committee: Brenna Friday (Wayne State University, 2020-present)

CIGLR Great Lakes Summer Fellow Program: Anisha Shrestha (2020), Brenna Friday (2020), Jacob Fredrickson (2021)

#### 2004-September 2019

High school: LaCarr Trent (2015), Kenton Colvin (2016)

Undergraduate: Sarah Szymanski (UM, 2004), Jon Falk UM, (2005), Christine Balmes (UM, 2005-6), Sarah Seiter (UM, 2006), Sara Koelsch (OSU, 2013-15), Jacob Lebamoff (OSU, 2016), Taylor Brown (OSU, 2016-18, Honors thesis), Derek Huck (OSU, 2017), Kaitlyn Scott (OSU,

2017), Molly Kotick (OSU, 2018-19, Honors thesis)

MS: Anna Moyer (Oklahoma State, 2009-11), Reed Brodnik (OSU, 2013-15)

PhD: David Dippold (OSU, 2016-2020)

### **Service**

2021-22 Organizer/Chair, “Spatial and Temporal Scales of Stressor Effects on Ecosystems”

symposium for Joint Aquatic Sciences Meeting, Grand Rapids, Michigan

2021-22 Planning committee and judge, 58th Annual Junior Science and Humanities

Symposium - Michigan Southeastern Region, Detroit, Michigan

2021-22 Planning committee and judge, National Ocean Sciences Bowl - Great Lakes Region,

Ann Arbor, Michigan

2019 Judge, 71<sup>st</sup> Annual Ohio Academy of Science State Science Day, Columbus, Ohio

2019 Organized class visits on aquatic ecology with Jessica Florea, New Albany High School, Ohio

2018 Organizer/Presenter, Annual 6<sup>th</sup> Graders’ AEL Field Trip, The Ohio State University

2018 Presenter, Museum of Biological Diversity Annual Open House, The Ohio State University

2017 Organizer/Presenter, Annual 6<sup>th</sup> Graders’ AEL Field Trip, The Ohio State University

2017 Judge, 69<sup>th</sup> Annual Ohio Academy of Science State Science Day, Columbus, Ohio

2017 Presenter, Museum of Biological Diversity Annual Open House, The Ohio State University

2016 Organizer/Presenter, Annual 6<sup>th</sup> Graders’ AEL Field Trip, The Ohio State University

2016 Judge, Blaxter Award, 40<sup>th</sup> Annual Larval Fish Conference, Solomons, Maryland.

2015 Organizer/Presenter, Annual 6<sup>th</sup> Graders’ AEL Field Trip, The Ohio State University

2015 Judge, 67<sup>th</sup> Annual Ohio Academy of Science State Science Day, Columbus, Ohio

- 2015 Judge, 2015 NMS Undergraduate Research Forum, The Ohio State University
- 2014 Organizer/Presenter, Annual 6<sup>th</sup> Graders' AEL Field Trip, The Ohio State University
- 2014 Initiated weekly Behavioral Ecology Discussion Group, The Ohio State University
- 2014 Judge, student presentations, IAGLR Annual Meeting, Hamilton, Ontario
- 2014 Judge, 66<sup>th</sup> Annual Ohio Academy of Science State Science Day, Columbus, Ohio
- 2013 Organizer/Presenter, Annual 6<sup>th</sup> Graders' AEL Field Trip, The Ohio State University
- 2013 Judge, student presentations, IAGLR Annual Meeting, West Lafayette, Indiana
- 2013 Judge, Denman Undergraduate Research Forum, The Ohio State University
- 2012 Organizer/Presenter, Annual 6<sup>th</sup> Graders' AEL Field Trip, The Ohio State University
- 2006-7 Mentor, EEB Graduate Mentorship Program, The University of Michigan
- 2004 Coordinator, EEB Lunch Seminar series, The University of Michigan

### **Peer reviewing**

#### **September 2019-present**

**Granting agencies:** California Sea Grant, Michigan Sea Grant, National Oceanographic and Atmospheric Administration - National Marine Fisheries Service

**Journals:** Acta Herpetologica, Animal Biology, Ecological Modeling (4), Journal of Comparative Physiology, Journal of Experimental Biology, Limnology and Oceanography, Nature - Scientific Reports, Oecologia, Progress in Oceanography

#### **2005-September 2019**

**Granting agencies:** Great Lakes Fishery Trust, National Science Foundation, Natural Sciences and Engineering Research Council of Canada, Ohio Sea Grant

**Book:** Trophic Ecology (Garvey, J. E.)

**Journals:** Acta Herpetologica, Acta Oecologica, American Naturalist, Animal Behaviour, Animal Cognition, Annales Zoologica Fennici, Aquatic Ecology, Behaviour, Behavioral Ecology, Behavioral Ecology and Sociobiology, Biological Journal of the Linnean Society, Biology Letters, Canadian Journal of Fisheries and Aquatic Sciences, Canadian Journal of Zoology, Ecology and Evolution, Ecological Modelling, Ecosphere, Ethology, Ethology Ecology

and Evolution, Evolutionary Biology, Frontiers in Biology, General and Comparative Endocrinology, Global Change Biology, The Herpetological Journal, Hydrobiologia, Journal of Animal Ecology, Journal of Biosciences, Journal of Chemical Ecology, Journal of Comparative Psychology, Journal of Great Lakes Research, Journal of Herpetology, Landscape Ecology, Marine and Freshwater Behaviour and Physiology, North American Journal of Fisheries Management, Oecologia, Oikos, PeerJ, Reviews in Fisheries Science and Aquaculture, Transactions of the American Fisheries Society

**Professional Membership**

American Society of Naturalists, Association for the Sciences of Limnology and Oceanography, Ecological Society of America, International Association for Great Lakes Research, Society for the Study of Amphibians and Reptiles