Kay C. Stefanik, Ph.D.
Aquatic Ecologist and Biogeochemist

Education

2012 Ph.D., Environmental Science, The Ohio State University. Advisor: Dr. William J. Mitsch. Dissertation: "Structure and Function of Vascular Plant Communities in Created and Restored Wetlands in Ohio"

2007 B.S., Biology, Baldwin-Wallace University.
Minors: Chemistry and Environmental Studies.

Professional Experience

July 2019 – Present	Assistant Director, Iowa Nutrient Research Center, Iowa State University
August 2015 – June 2019	Postdoctoral Researcher, School of Environment and Natural Resources, The Ohio State University, Advisor: Mazeika Sullivan.
May 2014 – August 2015	Postdoctoral Researcher, Department of Civil, Environmental, and Geodetic Engineering & School of Environment and Natural Resources, The Ohio State University, Advisors: Gil Bohrer and Mazeika Sullivan.
October 2013- April 2014	Postdoctoral Researcher, Department of Microbiology, The Ohio State University, Advisor: Kelly Wrighton.
August 2012- September 2013	Research Aide & Site Engineer, Olentangy River Wetland Research Park, The Ohio State University, Supervisor: Lynn McCready.

Publications

Qianwen Ye, Cuicui Hou, Qiang Wang, Changjun Gao, **Kay Stefanik**, Feng Li, Bingbing Jiang. (2024). Stocks and sources of soil carbon and nitrogen in non-native *Kandelia obovata* afforestation and *Spartina alterniflora* invasion: A case study on northern margin mangrove in subtropic coastal wetlands of China. Water 6(6): 866.

Morin, Timothy, William Riley, Robert Grant, Zelalem Mekonnen, **Kay Stefanik**, Camilo Rey-Sanchez, Molly Mulhare, Jorge Villa, Kelly Wrighton, and Gil Bohrer. 2022. Water level changes in Lake Erie drive 21st century CO_2 and CH_4 fluxes from a coastal temperate wetland. Science of the Total Environment. 821: 153087.

Smith, Garrett, Jordan Angle, Lindsey Solden, Timothy Morin, Mikayla Borton, Rebecca Daly, Michael Johnston, **Kay Stefanik**, Richard Wolfe, Gil Bohrer, and Kelly Wrighton. 2018. Members of the Methylobacter are inferred to account for the majority of aerobic methane oxidation in oxic soils from a freshwater wetland. mBio 9 (6): e00815-18.

Davis, Robert P., S. Mazeika P. Sullivan, and **Kay C. Stefanik**. 2017. Reductions in fish-community contamination following lowhead dam removal linked more to shifts in food-web structure than sediment pollution. Environmental Pollution 231: 671-680.

Stefanik, Kay C., and William J. Mitsch. 2017. Vegetation productivity of planted and unplanted riverine wetlands in years 15 to 17. Ecological Engineering 108 (part B): -434.

Andres Camillo Rey-Sanchez, Timothy H. Morin, **Kay C. Stefanik**, Kelly C. Wrighton, and Gil Bohrer. 2017. Determining total emissions and environmental drivers of methane flux in a Lake Erie estuarine marsh. Ecological Engineering 114:7-15.

Narrowe, Adrienne B., Jordan C. Angle, Rebecca A Daly, **Kay C. Stefanik**, Kelly C. Wrighton, and Christopher S. Miller. 2017. High-resolution sequencing reveals unexplored archaeal diversity in methane-emitting freshwater wetland soils. Environmental Microbiology 19: 2192-2209.

Morin, Tim H., Gil Bohrer, **Kay C. Stefanik**, Andres C. Rey-Sanchez, and William J. Mitsch. 2017. Combining eddy-covariance and chamber measurements to determine the methane budget from a small, heterogeneous urban floodplain wetland park. Agricultural and Forest Meteorology 237: 160-170.

Morin, Tim H., Gil Bohrer, Renato Frasson, Liel Naor-Azreli, Scott Mesi, **Kay C. Stefanik**, and Karina V.R. Schafer. 2014. Environmental drivers of methane fluxes from an urban temperate wetland park. Journal of Geophysical Research – Biogeosciences 119: 2188-2208.

Stefanik, Kay C., and William J. Mitsch. 2014. Metabolism and methane flux of dominant macrophyte communities in created riverine wetlands using open system flow through chambers. Ecological Engineering 72: 67-73.

Stefanik, Kay C., and William J. Mitsch. 2012. Structural and functional vegetation development in created and restored wetland mitigation banks of different ages. Ecological Engineering 39: 104-112.

Mitsch, William J., Li Zhang, **Kay C. Stefanik**, Blanca Bernal, Amanda M. Nahlik, Christopher J. Anderson, and Maria E. Hernandez. 2012. Creating wetlands: A 15-year experiment in self-design. BioScience 62: 237-250.

Professional and Extension Papers

Kay Stefanik and Nathan Stevenson. 2022. Iowa Wetlands. Iowa State University, Ames, IA. https://naturalresources.extension.iastate.edu/files/page/files/iowa_wetlands_accessible_reduced_size.pdf

Lallier, Robert, Rosemarie Giesser, and **Kay Stefanik**. 2007. Species Management Plan for Plum Brook Station, NASA Glenn Research Center, Cleveland, Ohio.

Awarded Grants

United States Department of Agriculture – Natural Resources Conservation Service Iowa Partners for Conservation grant. 2023. Training the Next Generation of Conservation Professionals. PIs: Jacqueline Comito, Mark Licht, Matthew Helmers, Ann Staudt, Elizabeth Ripley, Nathan Stevenson, Alena Whitaker, Billy Beck, Sara Winneke McMillan, and Kay Stefanik. **Awarded $390,787**

Iowa State University Extension and Outreach Excellence in Extension Grant. 2023. Iowa Nutrient Reduction Strategy Extension and Outreach Workshop. PI: Kay Stefanik, Co-PI: Matthew Helmers. **Awarded $2,500**

Iowa Department of Natural Resources. 2021. Profiles in the wonders of Iowa's wetlands. PIs: Adam Janke and Kay Stefanik. **Awarded $2,499**

United States Environmental Protection Agency STAR grant. 2017. Development of a multi-scale tool for predicting and mitigating harmful algal blooms (HABs) in Ohio River watersheds. Contributing Author. PIs: Mazeika Sullivan, Lauren Pintor, and Kaiguang Zhao. **Awarded: $681,343**

Invited Oral Presentations

Nutrient Cycling in Aquatic Ecosystems: From Small Scale to Regional Impacts. Zhejiang Ocean University, School of Fishery, China. October 2024.

Is that a pond or a wetland? How to tell ponds and wetlands apart and why the correct name matters. Iowa State Fair - Department of Natural Resources Building Outdoor Courtyard presentation. August 2024.

Reducing Plastics in the Environment: Why it Matters and How You Can Help. Iowa State University Extension and Outreach – Grundy County, IA. July 2024.

Wetland and Beaver Dam Water Quality Workshop. Iowa Learning Farms and Mahaska County Soil and Water Conservation District. Oskaloosa, IA. March 2024.

Nutrient Cycling in Aquatic Ecosystems: From Small Scale to Regional Impacts. Zhejiang Ocean University, School of Fishery, China. October 2023.

Iowa Nutrient Reduction Strategy: Water Quality Improvements and Added Benefits. East and West Nishnabotna Watershed Management Authority Fall Meeting. September 2023.

Benefits of Nutrient Management Practice Implementation: Source Water Protection. Eastern Iowa Rural Water Association source water conference. April 2023.

Benefits of Nutrient Management Practice Implementation: Source Water Protection. Iowa Rural Water Association Annual Conference. February 2023.

Nutrient Cycling in Aquatic Ecosystems: From Small Scale to Regional Impacts. Zhejiang Ocean University, School of Fishery, China. October 2022.

Implementing wetland edge-of-field management: Why, where, and how. AAI Agribusiness Showcase and Conference. February 2021.

Progress towards cleaner water. Hills Bank Agricultural Outlook 2020. March 2020.

Carbon dioxide and methane emissions associated with dominant macrophytes in riverine wetlands. Department of Biology, Baldwin Wallace University, April 2013.

Wetland Ecosystems. Columbus Zoo and Aquarium Docents Meeting. April 2013.

Vegetation dynamics of created and restored wetlands of Ohio. EcoLunch Seminar Series, Department of Biology, University of Akron. April 2011.

Campus and Departmental Talks

Reducing Plastics in the Environment. Horticulture and Natural Resources Extension Group Webinar Series, Iowa State University, Co-Presented with Adam Janke, March 2024.

Iowa's Wetlands from the Sky: Educational videos on wetland wildlife and water quality with drones. Iowa Learning Farms, Iowa State University, Co-Presented with Adam Janke, March 2023.

Improving Flexibility of the Iowa Nutrient Reduction Strategy N-Load Model: Use at the Watershed Scale, Iowa Learning Farms Webinar, Iowa State University, July 2022.

Wetlands and Wildlife: A Conservation Case Study. Iowa Learning Farms Webinar, Iowa State University, Co-Presented with Adam Janke, December 2021.

Increasing Water Quality Enhancement Wetlands and Oxbows. Iowa Learning Farms Virtual Field Day, Iowa State University, Co-Presented with Matt Helmers, Adam Janke, and Casey Judge, October 2021.

Profiles in the Wonders of Iowa's Wetlands. Iowa State University Extension and Outreach, Co-Presented with Adam Janke, May 2021.

Increasing Wetland Vegetation throughout Iowa. Iowa Master Gardener Webinar Series, Iowa State University Extension and Outreach, November 2020.

Celebrating Iowa's Wetlands, Iowa Learning Farms Virtual Field Day, Iowa State University, Co-Presented with Adam Janke, May 2020.

Wetland Ecosystem Services: How Wetlands Can Benefit Iowans. Iowa Learning Farms Webinar Series, Iowa State University, May 2020.

Wetland ecosystems and engineering. Green Engineering Scholars Sophomore Seminar, Department of Civil, Environmental, and Geodetic Engineering. The Ohio State University. September 2013.

Wetland ecosystems and engineering. Green Engineering Scholars Freshman Seminar, Department of Civil, Environmental and Geodetic Engineering. The Ohio State University. September 2013.

Conference Presentations

Stefanik, Kay C. Iowa Nutrient Reduction Strategy: What Practices and Why Do We Need Them All. Iowa Swine Day, Iowa State University. July 25, 2024. Ames, IA. Oral Presentation.

Stefanik, Kay C. Bringing the Iowa Nutrient Reduction Strategy into the Classroom with Conservation Case Studies. Iowa Conservation Education Coalition Winter Workshop. February 3, 2024. Waterloo, IA. Oral Presentation.

Stefanik, Kay C. and Matt Helmers. The Iowa Nutrient Reduction Strategy and Your Farm: Using the Nutrient Tracking Tool to Estimate Nutrient Loss from Row Crop Acres. Integrated Crop Management Conference. December 4, 2023. Altoona, IA. Oral Presentation.

Stefanik, Kay C., J. Comito, A Staudt, and M. Helmers. Designing Engaging Wetland Visuals: Using 3-D Printing and Art for Wetland Extension and Outreach Education in Iowa. Society of Wetland Scientists Annual Conference, June 2023. Spokane, WA. Oral Presentation.

Jackie Comito, Jake Hansen, Matt Helmers, Adam Janke, Kay Stefanik, and Ann Staudt (co-presented). Increasing Wetlands and Oxbows = Improved Water Quality and More Wildlife. Soil and Water Conservation Society Annual Conference, July 2021. Virtual. Oral Presentation.

Stefanik, Kay C. and Laurie Nowatzke (co-presented). Trade-offs between increasing row crop acres and meeting the water quality goals of the Nutrient Reduction Strategy. Integrated Crop Management Conference. December 4, 2019. Ames, IA. Oral Presentation.

Stefanik, Kay. C. and S. Mazeika P. Sullivan. Effects of the interactions between land use and stream geomorphic features on nutrient loadings. Society of Freshwater Sciences Annual Meeting, May 23, 2019. Salt Lake City, UT. Oral Presentation.

Stefanik, Kay C., S. Mazeika P. Sullivan, L.M. Pintor, and K. Zhao. Relationships between physical and chemical water quality across land uses of southern Ohio. Society of Freshwater Sciences Annual Meeting, May 23, 2018. Detroit, MI. Poster Presentation.

Stefanik, Kay C., S. Mazeika P. Sullivan, L.M. Pintor, and K. Zhao. Variability in sources and fates of nitrogen and phosphorus in catchments of the Ohio River basin. Society of Freshwater Science Annual Meeting, June 8, 2017. Raleigh, NC. Oral Presentation.

Stefanik, Kay C., S. Mazeika P. Sullivan, Lauren M. Pintor, and Kiaguang Zhao. Nitrogen and phosphorus dynamics in a mixed-use Ohio watershed. June 1, 2017. 4th Symposium on Urbanization and Stream Ecology. Poster Presentation.

Stefanik, Kay C., Gil Bohrer, and William J. Mitsch. Seasonal and diurnal relationships between methane and carbon dioxide flux from a *Typha* spp. dominated Wetland. June 3, 2015. Society of Wetland Scientists 2015 Annual Meeting. Oral Presentation.

Stefanik Kay C., Rebecca A. Daly, Adrienne B. Narrowe, Jordan C. Angle, Raymond T. McVeety, Lindsey M. Solden, Michael J. Wilkins, Christopher S. Miller, and Kelly C. Wrighton. Impacts of climate change-induced drought on the microbial communities of a freshwater, circumneutral wetland. April 12, 2014. Ohio Branch American Society for Microbiology. Poster Presentation.

Stefanik, Kay C., and William J. Mitsch. Metabolism of dominant macrophyte species in created riverine wetlands using open system flow through chambers. October 1, 2012. EcoSummit International Conference, Oral Presentation.

Stefanik, Kay C., and William J. Mitsch. Vegetation succession in created wetlands in Ohio. June 4, 2012. INTECOL Wetland Conference. Oral Presentation.

Stefanik, Kay C., and William J. Mitsch. Vegetation development and succession in mitigation wetlands of Ohio. August 10, 2011. Ecological Society of America 96th Annual Meeting. Oral Presentation.

Stefanik, Kay C., and William J. Mitsch. Emergent macrophyte dynamics of two created wetlands in central Ohio. August 6, 2010. Ecological Society of America 95th Annual Meeting. Oral Presentation.

Stefanik, Kay C., and William J. Mitsch. Vegetation development and productivity in created wetlands in Ohio. June 23, 2009. The Society of Wetland Scientists 2009 Annual Meeting. Poster Presentation.

Stefanik, Kay C., and Michael Melampy. An investigation of the impact of land use on the reproduction of mayapple (*Podophyllum peltatum*). March 10, 2007. Midwest Ecology and Evolution Conference. Poster Presentation.

Conference Presentations by Collaborators (since 2016)

Bohenek, Jason R., S. Mazeika P. Sullivan, Rebecca Czaja, Travonya Kenly, **Kay C. Stefanik**, and Lauren M. Pintor. Shifts in invertebrate network structure correspond to nutrient concentrations in streams of central Ohio, USA. Society for Freshwater Science. Virtual Annual Meeting. May 2021.

Morin, Timothy, William Riley, Robert Grant, Zelalem Mekonnen, **Kay Stefanik**, Camilo Rey-Sanchez, Molly Mulhare, Jorge Villa, Kelly Wrighton, and Gil Bohrer. Wetland water level projected to control 21st century carbon and warming source/sink behavior at a temperate wetland. American Geophysical Union Annual Meeting, December 2020.

Czaja, Rebecca, Krystal Pocock, **Kay C. Stefanik**, Lauren M. Pintor, and S. Mazeika P. Sullivan. Associations between macroinvertebrate communities and nutrient concentrations in Ohio streams and reservoirs. Society of Freshwater Sciences Annual Meeting, May 2018.

Angle, Jordan, Timothy Morin, Lindsey Solden, Garrett Smith, Adrienne Narrowe, Mikayla Borton, David Hoyt, Rebecca Daly, Richard Wolfe, **Kay Stefanik**, William Riley, Christopher Miller, Gil Bohrer, and Kelly Wrighton. Methanogenesis in oxygenated soils is an unrecognized

driver of wetland methane emissions. American Society for Microbiology Microbe Annual Meeting, June 2017.

Wrighton, Kelly C., Garrett J. Smith, Jordan C. Angle, Adrienne B. Narrowe, Mikayla A. Borton, Michael D. Johnston, **Kay C. Stefanik**, Rebecca A. Daly, Michael J. Wilkins, David W. Hoyt, Paula J. Mouser, Ljiljana Pasa-Tolic, Malak M. Tfaily, and Christopher S. Miller. Identifying factors controlling methane emissions across freshwater wetland gradients. 101st Annual Meeting of the Ecological Society of America, August 2016.

Rey-Sanchez, Andres C., Timothy H. Morin, **Kay C. Stefanik**, Kelly C. Wrighton and Gil Bohrer. Carbon fluxes in a heterogeneous estuarine wetland in Northern Ohio. Comparing eddy covariance and chamber measurements. American Geophysical Union Fall Meeting, December 2016.

Rey-Sanchez, Andres C., Timothy H. Morin, **Kay C. Stefanik**, Kelly C. Wrighton, and Gil Bohrer. The carbon balance in a heterogeneous estuarine wetland in Northern Ohio. American Ecological Engineering Society Annual Meeting, June 2016.

Narrowe, Adrienne B., Jordan C. Angle, Rebecca A. Daly, **Kay C. Stefanik**, Mikayla A. Borton, Kelly C. Wrighton, and Christopher S. Miller. Archaeal and bacterial distribution and diversity across spatial and geochemical gradients within a methane-emitting freshwater wetland. International Symposium for Microbial Ecology, August 2016.

Morin, Timothy H., Andres C. Rey-Sanchez, Gil Bohrer, William J. Riley, Jordan C. Angle, Zelalem A. Mekonnen, **Kay C**. **Stefanik**, and Kelly C. Wrighton. Utilizing patch and site level greenhouse-gas concentration measurements in tandem with the prognostic model. American Geophysical Union Fall Meeting, December 2016.

Smith, Garrett J., Jordan C. Angle, Mikayla A. Borton, **Kay C. Stefanik**, Michael D. Johnston, Rebecca A. Daly, and Kelly C. Wrighton. Novel Methylococcaceae with denitrification potential in freshwater wetland soils. Gordon Research Seminar (Enzyme Mechanisms to Multispecies Interactions: Understanding Biological One-Carbon Conversions to Address Future Challenges), July 2016.

Morin, Timothy H., Gil Bohrer, Andres C. Rey-Sanchez, **Kay C. Stefanik**, Karina V.R. Schafer, and William J. Mitsch. Modeling greenhouse gas chemistry and transport in heterogeneous wetlands. Ecosummit, September 2016.

Angle, Jordan C., Garrett J. Smith, M A. Jackson, Timothy H. Morin, Adrienne B. Narrowe, Michael D. Johnston, **Kay C. Stefanik**, David W. Hoyt, Rebecca A. Daly, Christopher S. Miller, and Kelly C. Wrighton. Challenging a paradigm: Active methanogenesis in oxic surface wetland soils. International Symposium for Microbial Ecology, August 2016.

Teaching Activities

Adjunct Assistant Professor, Iowa State University

- Aquatic Ecology, Department of Ecology, Evolution, and Organismal Biology. Fall 2022. Undergraduate/graduate lecture (44 students).

Lecturer, The Ohio State University.

- Water Quality Management, Stone Laboratory & School of Environment and Natural Resources. Summer 2018 & 2019. Weeklong undergraduate immersion course with lecture, lab, and field components (7 to 13 students).
- Water Quality Management, School of Environment and Natural Resources. Fall 2014, 2015, & 2016. Undergraduate lecture (57 to 94 students).
- Natural Resources Data Analysis, School of Environment and Natural Resources. Spring 2016. Undergraduate lecture and lab course (39 students).
- Stream Ecology (co-lecturer), School of Environment and Natural Resources. Fall 2015. Undergraduate/graduate lecture and lab course (32 students).
- Ecological Engineering and Science (co-lecturer), Department of Civil, Environmental, and Geodetic Engineering. Spring 2014. Undergraduate/graduate lecture (63 students).

Adjunct Instructor, Otterbein University

- Introduction to Organisms and Ecology, Department of Biology. Spring 2013. Undergraduate lecture (2 sections of 60 students).

Graduate Teaching Assistant, The Ohio State University

- Introductory Biology Laboratory, Center for Life Sciences Education. Fall 2008, Winter 2009, and Spring 2009. Undergraduate lab (2 sections of 24 students each quarter).

Awards and Fellowships

College of Agriculture and Life Sciences Team Award, Iowa Learning Farms/Water Rocks! program. Jacqueline Comito, Matt Helmers, Mark Licht, Adam Janke, **Kay Stefanik**, Ann Staudt, Elizabeth Ripley, Nathan Stevenson, Alena Whitaker, and Hannah Preston. Iowa State University (2023).

New Voices in Water Quality in Iowa Award Winner, Water Quality and Wildlife category, Iowa State University's Conservation Learning Group and Iowa's Department of Natural Resources (2022).

1st Place Certificate of Excellence for long publications American Society of Agronomy Extension Education Community Educational Materials Awards Program for "Whole Farm Conservation Best Practices Manual". Liz Ripley, Mark Licht, **Kay Stefanik**, Sarah Carlson, Stefan Gallens, Matt Helmers, Chris Hay, Jackie Comito, Ann Staudt, Jamie Benning, Nathan Stevenson, and Jim Jordahl. American Society of Agronomy (2021).

Educational Aides Blue Ribbon Award for "Whole Farm Conservation Best Practices Manual". Liz Ripley, Mark Licht, **Kay Stefanik**, Sarah Carlson, Stefan Gallens, Matt Helmers, Chris Hay, Jackie Comito, Ann Staudt, Jamie Benning, Nathan Stevenson, and Jim Jordahl. American Society of Agricultural and Biological Engineers (2021).

Rhonda and Paul Sipp Wetland Research Award, Olentangy River Wetland Research Park. Funding amount: $500 (2011).

Ohio Wetlands Foundation Fellowship, Ohio Wetlands Foundation (2009-2012).

Fay Fellowship, Environmental Science Graduate Program, Ohio State University (2007-2008).

Professional Development Activities

Remote Pilot Certificate, 14 CFR Part 107 Small Unmanned Aircraft Systems, Federal Aviation Administration (2021). Certification updated June 2023.

Virtual Harmful Algal Bloom Research Symposium. North Central Region Water Network (2021).

Understanding Harmful Algal Blooms: State of the Science workshop (2018).

Postdoctoral Mentor Training workshop, Postdoctoral Seminar Series (2018).

Improving your management skills: The basics for success, Postdoctoral Seminar Series (2017).

Grant writing: An introduction, Research Commons Writing Workshop (2016).

Gender initiative symposium, CFAES Office of Equity and Inclusion (2016).

Boat Ohio online course (NASBLA-approved) and boater education card (2015).

Active learning – "Live" and online, Engineering Inclusive Teaching Faculty Professional Development Webinar (2015).

Creating a positive climate for learning: Dealing with incivility and conflict in the classroom, Engineering Inclusive Teaching Faculty Professional Development Webinar (2015)

Outreach and Service Activities

Iowa Department of Education State Science Leadership Team member. Participating in K-12 educator training. Member of the Informal Educators working group. (2023 – Present)

Iowa Nutrient Reduction Strategy and Your Farm Workshop. Developed a half day workshop and associated materials on the purpose, need, action items, and benefits of the Iowa Nutrient Reduction Strategy, as well as to create a basic nutrient reduction plan for a farm operation using modeling tools to estimate nutrient losses from row crop acres. (2023-Present) https://naturalresources.extension.iastate.edu/iowa-nutrient-reduction-strategy-and-your-farm-workshops

Iowa Nonpoint Source Management Plan Development Workshop. Participated in a workshop to comment on Iowa Nonpoint Source Management Plan updates for Goal 3: Improving Iowa's Waters for Native Wildlife and Fish, and Recreation. April 2023.

Profiles in the Wonders of Iowa's wetlands educational video series. 12 short videos on different types of wetlands in Iowa created using drone footage. Iowa State University Extension and Outreach, Iowa Nutrient Research Center, and Iowa Department of Natural Resources. Co-

created with Adam Janke. Series available through the Iowa State University Extension and Outreach, Agriculture and Natural Resources YouTube page (2023). https://www.youtube.com/playlist?list=PLyDHx-rmZpCke_RkW9kThvw_6yAK89ny3

Iowa Youth Institute Expert for Roundtable Session. World Food Prize Foundation. Facilitated discussion amongst 8th – 12th grade students who presented on food security challenges in developing countries and scored student presentations (2023).

Fobes Ronald Lecture Series Committee Member. Planning committee for annual campus wide seminar that invites a prestigious female scholar in economic, environmental, or societal sustainability with an emphasis on water sustainability to speak on their research (2022 – 2023).

Osher Lifelong Learning Institute (OLLI) Instructor. Co-organized and co-taught 4-week course on "Science of Water Quality in Agricultural Systems" for lifelong learners ages 50+. (2022).

Farm Progress Show Planning Committee Member for Water Quality Display. Co-Committee Members: Matthew Helmers and Catherine DeLong. Joint agricultural show Iowa and Illinois. (2022).

Wings2Water Board Member. Serving in a scientific advisory capacity for the Wings2Water board and grant review panel. Wings2Water is a nonprofit organization that began at Eastern Iowa Airport and is working to support projects that help reduce nutrient runoff and flooding, improve water quality, and help eliminate the Dead Zone in the Gulf of Mexico (2021 – Present).

Natural Resources Stewardship Professional Development Planning Committee. Assisted with planning the 2021 Extension and Outreach Natural Resources Stewardship Professional Development Day for county and campus extension personnel. Organized the urban conservation tour in Fort Dodge, Iowa and presented wetland models from the Marsh Madness Wetland trailer (2021).

Science Committee Member (Formerly Environmental Conservation Committee), ICON Water Trails (Formerly Central Iowa Water Trails). Providing scientific recommendations on safety of recreational water use from a public health perspective (2021 – 2022).

Iowa Nutrient Reduction Exchange (INRE). Working with the Department of Natural Resources, Iowa Cities, and Iowa State University partners to create documents to guide INRE users and vet the software Nutrient Tracking Tool used by INRE for use in Iowa. The INRE is a program where cities can offset municipal nutrient loss by working with farmers and landowners upstream to implement nutrient reduction practices. (2021 – Present).

Marsh Madness Wetland Trailer, Conservation Station Fleet, Iowa Learning Farms. Designed three wetland model displays to demonstration structure and function of common Iowa wetlands and provided scientific expertise for trailer completion. Traveling Iowa with Marsh Madness Wetland Trailer to community events for educational purposes. As part of the Conservation Station Fleet, won the Soil and Water Conservation Society's Conservation Innovation Award in 2021. (2020 – Present).

Iowa Urban Food-Energy-Water Systems (FEWS) Advisory Board Member. The Urban FEWS project is funded by the National Science Foundation and aims to find ways to make cities more

self-reliant in terms of food, water and energy production with a focus on Des Moines, Iowa. (2019 – Present).

Extension and Outreach Events (farmer field days and community programming), Presenter. Providing educational information to Iowan on nutrient reduction, edge-of-field practices, the Iowa Nutrient Research Center, Conservation Station Trailers, and wetlands through Iowa State University Extension and Outreach (2019 – Present).

Conservation Learning Group Member. Think tank group prioritizing conservation and water quality practices in agricultural settings. Produces educational materials for use by educators and the general public on conservation practices. (2019 – Present)

Destination Ohio State University (DOSU) Bridge Program, Postdoctoral Association. Laboratory training to increase the number of underrepresented minority students in undergraduate STEM programs at The Ohio State University (2018).

Environmental biology lecture and laboratory contributor, Louis Stokes Alliances for Minority Participation STEM Bridge Program, Wilma H. Schiermeier Olentangy River Wetland Research Park. Introductory freshman program to increase the success of underrepresented students in STEM (2017 & 2018).

Summer Research Opportunities Program, The Ohio State University. Summer research program to promote STEM participation for historically underrepresented students (2017).

BioBlitz fish collection and identification, Preservation Parks, Columbus, Ohio (2016).

Met with Ohio State University student group, Project Nicaragua, to discuss potential water quality improvements in a small Nicaraguan town (2015).

Tour guide and service event leader, Wilma H. Schiermeier Olentangy River Wetland Research Park (2012 – 2019).

Journal Referee Activity

Acta Oecologica, Biogeosciences, Ecological Engineering (multiple), Environmental Monitoring and Assessment, Global Change Biology, International Journal of Digital Earth, Journal of Ecology, PLoS ONE, Science of the Total Environment (multiple).

Professional Memberships

Sigma Xi (Full Member), Society of Wetland Scientists, Soil and Water Conservation Society.