Kevin J. Fermanich, Ph.D., Professor, Geoscience and Environmental Science Environmental Science and Policy Graduate Program University of Wisconsin – Green Bay 2420 Nicolet Drive Green Bay, WI 54311 fermanik@uwgb.edu 920-465-2240

Professional Preparation

University of Wisconsin-Stevens Point, Soil Science and Resource Management, B.S., 1985.

University of Wisconsin-Madison, Soil Science, M.S., 1988.

University of Wisconsin-Madison, Soil Science (soil physics; water resources minor) PhD, 1995.

Appointments

Barbara Hauxhurst Cofrin Professorship of Natural Sciences, UW-Green Bay (2014-2019)

Professor, 2013-present; Associate Professor, 2004-2013, Natural and Applied Sciences, UW-Green Bay

Chair (2010-2012); Faculty, 1998-present, Environmental Science and Policy Graduate Program

Director, Lower Fox River Watershed Monitoring Program, 2003-present, UW-Green Bay

Co-Director (2008-09, inaugural year) and Faculty Associate, Environmental Management and Business Institute, 2008-present, UW-Green Bay

Faculty, Global Studies Minor Executive Committee, 2007-present; Chair, 2007-2010, UW-Green Bay

Assistant Professor, UW-Green Bay, 1998-2004. Chair of Earth Science Discipline, 2002-03.

Water Quality Specialist/Outreach Program Manager, UW Sea Grant Institute, UW-Madison, 1995-1998.

Lecturer, Department of Plant and Earth Sciences, UW-River Falls, 1994-1995.

Associate Researcher, 1991-1994; Assistant Researcher, 1988-1991, Dept. of Soil Science, UW-Madison.

Teaching Experience

Twenty years of teaching courses in soil science, earth science, hydrogeology, environmental systems, environmental science, hydrology, groundwater resources, GIS, ecology of Costa Rica, and environmental science and policy.

Graduate Thesis's Supervised - Environmental Science and Policy Graduate program

- Marc Minani, 2017. Thesis topic: Environmental and Economic Implications of Soil Conservation Practices in Northeast Wisconsin
- Holly Harpster, 2016. Thesis: Characterizing Factors that Influence Water Quality and Plant Communities of Constructed Wetlands in Northeastern, Wisconsin
- Andrew Docter, 2016. Thesis: Soil Water Infiltration, Aggregate Stability, and Soil Quality Properties of Surface Soils Across a Range of Management Practices in Northeastern, Wisconsin, USA
- Alexis Heim, 2015. Thesis: Water Quality Analysis, Model Development, and Assessment of Alternative Management Strategies in a Dairy-dominated Agricultural Watershed Vulnerable to High Sediment and Phosphorus Runoff
- Martin Jacobson. 2012. *Phosphorus and Sediment Runoff Loss: Management Challenges and Implications in a Northeast Wisconsin Agricultural Watershed.*
- Chris Waltman. 2010. Mapping and characterization of springs in Brown and Calumet counties.
- Daniel Cibulka, 2009. Assessment of Management Activities and Water Quality in the Duck Creek Watershed, Wisconsin.

- Reckinger, N.A. 2007. Comparison of phosphorus forms at different spatial scales and assessment of an area weighted P-index to multi-field watersheds.
- Forsberg, A.A. 2006. *Testing the drift shadow concept: Using x-ray absorption imaging and statistical analysis to evaluate an analytical model.*
- Fink, J.C., 2005. The effects of urbanization on Baird Creek, Green Bay, Wisconsin.
- Hunt, T.R., 2001. Cover crops in Northeastern Wisconsin: A study of the interseeding method, impacts on soil cover, and crop production.
- Erb, K.A., 2000. A mass balance of nitrogen, phosphorus and potassium on farms in a dairy watershed in Northeastern Wisconsin.
- Committee member of more than 24 other completed M.S. graduate theses.

Grants Funded at UW-Green Bay (selected)

- Linking Soil Health Assessment to Edge of Field Water Quality in the Great Lakes Basin. USDA NRCS. Fermanich lead PI, Co-PI's: M. Dornbush, R. Turco (Purdue), G. Lawrence (USGS NY), M. Komiskey (USGS WI). Final version submitted July 2016; proposal development and negotiations started March 2015. Project period: September 2016 – October 2020. Funded: \$507,898.
- NEW Water (Green Bay Metropolitan Sewerage District [lead]) *Silver Creek Sediment & Nutrient Reduction and Habitat Restoration: Managed Grazing Paired Field Monitoring* Project Great Lakes Restoration Initiative US EPA. Collaborators: Oneida Tribe, NRCS, Tilth Agronomy. March 2016-March 2020. Funded: \$200,000 (UWGB portion) (w/ Baumgart).
- Soil Health Assessment of Priority Watersheds Field Level Sites. US Geological Survey/US EPA, May 2016 – September 2016. Cooperators: NRCS, Purdue University. Funded: \$11,000 (w/ Dornbush) Fox-Wolf Watershed Alliance (lead).
- Targeting Outcome-Based Sediment Reduction in the Lower Fox Watershed. Great Lakes Restoration Initiative US EPA. Collaborators: Outagamie and Brown Counties, The Nature Conservancy, UWGB LFRWMP, USGS, and The Great Lakes Commission. March 2015 – Feb. 2020. Funded \$4,196,221 (UWGB: \$688,800).
- Fermanich, K., P. Baumgart and M. Dornbush. 2014. Determination of the impact of Great Lakes Restoration Initiative funded agricultural best management practices through APEX modeling in the Upper East River, near Green Bay, WI US Geological Survey., \$11,500.
- Dornbush, M., and K. Fermanich (Co-PIs). *Soil Quality Assessment and Monitoring to Support Lower Fox River Demonstration Farms*. Brown County Land and Water Conservation Department / USDA Natural Resources Conservation Service. September 2014 – December 2015. \$51,115.
- Fermanich, K. (PI) and P. Baumgart (UWGB) *Monitoring Support for NEW Water Watershed Programs.* NEW Water (Green Bay Metropolitan Sewerage District) March 1, 2014 - December 31, 2014. \$4,269.
- Klump, J.V. (PI, UWM), K. Fermanich (co-PI) and H. Bravo (co-PI, UWM). Restoring the health of the Green Bay ecosystem under a changing climate: Modeling land use, management, and future outcomes. Univ. of Michigan Water Center. Sept. 2013- Aug. 2015. \$434,768 (UWGB: \$157,000).
- Baumgart P. and K. Fermanich. *Analysis of phosphorus and TSS trends in Duck Creek*. WDNR Office of the Great Lakes AOC Capacity Grants 2011. July 2011- Sept 2012. \$3,000.
- Fermanich, K., (Director) Lower *Fox River Watershed Monitoring Program 2010-13*. Management practice monitoring in Plum Creek (\$260,000), continuation and expansion of LFRWMP Schoolbased Monitoring Network (\$250,000, 3 years; in cooperation with Center for Biodiversity) and endowment (\$200,000). Arjo Wiggins Appleton, July 2010-July 2013. \$750,000 Funded gift.
- Klump, J.V (PI, UWM), D. Vimont (co-PI, UW Madison), K. Fermanich (co-PI), N. Richmond (co-PI, WDNR), J. Kennedy (co-PI, GBMSD). *CHRP: Green Bay Hypoxia: Biogeochemical Dynamics, Watershed Inputs and Climate Change*. NOAA Center for Sponsored Coastal Ocean Research, Coastal Hypoxia Research Program FY 2010. September 2010-August 2014. \$1,367,300 (UWGB portion \$358,361).

- Dornbush, M. (PI), K. Fermanich (co-PI), J. Stoll (co-PI), P. Baumgart (co-PI). *Maximizing Ecological Services and Economic Returns by Targeted Establishment of Biomass Grasslands in Wisconsin.* Wisconsin Focus on Energy, Environmental and Economic Research and Development Program. July 2009-June 2011. \$164,853.
- Fermanich, K. *Cooperative automated and low-flow water quality monitoring in the Baird Creek watershed.* Baird Creek Preservation Foundation. January 2010. \$1,000. Funded-gift.
- Fermanich, K (PI), P. Baumgart and D. Cibulka. *Duck Creek Watershed Data Analysis and Monitoring Project*. Oneida Tribe of Indians of Wisconsin. May 2008-July 2009. \$15,200.
- Bauer-Dantoin, A. (PI), K. Fermanich (co-PI), M. Zorn (co-PI), *Assessing Levels and Potential Health Effects of Endocrine Disrupting Chemicals in Groundwater Associated with Karst Areas in Northeast Wisconsin.* UW System Groundwater Research Program. July 2008 June 2009. Requested: \$51,834; Funded: \$36,877 (\$43,063 w/ FB).
- Fermanich, K. (director) *Student-Teacher Monitoring: Lower Fox River Watershed Monitoring Program.* Georgia-Pacific Foundation, Inc. April 2008. \$5000. Funded.
- Fermanich, K., (PI). *Water Quality Sampling and Analysis: Fox/Duck Basins*. USGS. June 2007 September 2007. \$5000 Funded.
- Fermanich, K (PI), Stieglitz and Zorn. *Mapping and Characterization of Springs in Brown and Calumet Counties*. Wis. Dept. Natural Resources. Project director. May 2005-Sept 2006. \$17,800.
- Fermanich, K, (co-PI) and T. Ehlinger (UWM). *Lower Fox River Watershed Monitoring Program*. Arjo Wiggins Appleton, Inc. Collaboration among UW-Green Bay, UW-Milwaukee, US Geological Survey, seven high schools, the Oneida Nation, and the Green Bay Metropolitan Sewerage District. April 2003 – June 2007. \$1,500,000
- Stieglitz and Fermanich. *Restoring the Great Lakes Ecosystem's Natural Flow Regime: Shivering Sands Preserve*. The Nature Conservancy-Wisconsin. 1/2001-12/2002. Funded at: \$40,565

Publications (selected)

- Fermanich, K., A. Pelegrin, and L. Terrien. 2013. *Aquatic monitoring program engages high school students in restoration of the Green Bay watershed*. Water Resources IMPACT. 15:9-11.
- Bauer, A.C., Wingert, S., Fermanich, K.J., Zorn, M.E. 2013. Well Water in Karst Regions of Northeast Wisconsin Contains Estrogenic Factors, Nitrate and Bacteria. Water Environment Research, 85:318-326.
- Graczyk, D.J., D.M. Robertson, P. Baumgart, K. Fermanich. 2011. *Streamflow, Phosphorus and Suspended Solids in Five Agricultural Streams in the Lower Fox River and Green Bay Watersheds, Wisconsin, Water Years 2004–2006.* US Geological Survey Scientific Investigations Report 2011–5111, 28 p.
- Kolb, S., K. Fermanich, and M. Dornbush. 2009. *Effect of charcoal quantity on microbial biomass and activity in temperate soils*. Soil Science Society of America J. 73: 1173-1181.
- Lowery, B., R.C. Hartwig, D.E. Stoltenberg, K.J. Fermanich, and K. McSweeney. 1998. *Groundwater quality and crop yield responses to tillage management on a Sparta sand*. Soils and Tillage Research 48:225-237.
- Fermanich, K.J., W.L. Bland, B. Lowery, and K. McSweeney. 1996. *Irrigation and tillage effects on atrazine and metabolite leaching from a sandy soil*. J. Environ. Qual. 25:1291-1299.
- Hart, G.L., B. Lowery, K. McSweeney, and K.J. Fermanich. 1994. In situ characterization of *hydrologic properties of Sparta sand*. Geoderma 64:41-55.
- Wietersen, R.C., T.C. Daniel, K.J. Fermanich, B.D. Girard, K. McSweeney, and B. Lowery. 1993. *Atrazine, alachlor, and metolachlor mobility through two sandy Wisconsin soils.* J. Environ. Qual. 22:811-818.
- Wietersen, R.C., T.C. Daniel, K.J. Fermanich, B. Lowery, and K. McSweeney. 1993. *Irrigation and polymer effects on herbicide transport through the unsaturated zone of a Sparta sand*. J. Environ. Qual. 22:819-824.

- Fermanich K.J. and T.C. Daniel. 1991. *Pesticide mobility and persistence in microlysimeter soil columns from a tilled and no-tilled plot.* J. Environ. Qual. 20:195-202.
- Fermanich K.J., T.C. Daniel, and B. Lowery. 1991. *Microlysimeter soil columns for evaluating pesticide movement through the root zone*. J. Environ. Qual. 20:189-195.

Technical Publications (selected):

- Docter, A., M. Dornbush, and K. Fermanich. 2016. Soil Quality Assessment and Monitoring to Support Lower Fox River Demonstration Farms Final Report. University of Wisconsin-Green Bay. Prepared for and funded by Brown County Land and Water Conservation Department/Great Lakes Commission. pp. 71.
- Klump, J.V., K. Fermanich, H. Bravo. 2016. Restoring the health of the Green Bay ecosystem under a changing climate: Modeling land use, management, and future outcomes Final Report. UW-Milwaukee, UW-Green Bay. Prepared for and funded by University of Michigan Water Center. pp. 25.Klump, J. V. and K. Fermanich. 2013. Highlighting the Problem of Hypoxia. *International Innovations: Environment* pp. 80-82
- M.E. Dornbush M.E., Von Haden A.C., Baumgart P.D., Fermanich K.J., Stoll J.R., and A.M. Rieth. 2012. *Maximizing Ecological Services and Economic Returns by Targeted Establishment of Biomass Grasslands for Electricity and Heat Generation in Wisconsin*. University Of Wisconsin-Green Bay. Prepared for and funded through the Environmental and Economic Research and Development Program of Wisconsin's Focus on Energy. pp.60.
- Cibulka, D., P. Baumgart, K. Fermanich. 2010. *Temporal Assessment of Management Practices and Water Quality in the Duck Creek Watershed, Wisconsin.* Final Report to Environmental Health and Safety Division, Oneida Tribe of Indians of Wisconsin. pp. 61.
- Fermanich, K.J.; Zorn, M.E.; Stieglitz, R.D.; Waltman, C.S. 2006. *Mapping and characterization of springs in Brown and Calumet Counties*. Final Report for UW Project Number 144-NS04. Wisconsin Department of Natural Resources Bureau of Drinking Water and Groundwater. pp. 76.
- Fermanich, K., R. Stieglitz and M. Stiefvater. March 2005. Final report: Assessing Hydrologic Function and Water Chemistry at The Nature Conservancy's Shivering Sands Ecoregional Site in Door County. 39 pp. plus data DVD. Grant funded project The Nature Conservancy.

Research presentations at professional meetings and published abstracts (selected):

- Fermanich, K., P. Baumgart, and H.J. Harris. 2016. *Managing Nutrient Loading to Green Bay under a Changing Business Climate and Climate Change*. International Symposium on Society and Resource Management (ISSRM) in Houghton, Michigan, June 22-26, 2016.
- Fermanich, K., P. Baumgart, J.V. Klump and E. Verhamme. 2016. *Linking Watershed Nutrient Management and Receiving Water Response: Green Bay, Lake Michigan Case Study*. 18th Seminar on Water Resources and Environmental Management, Concepcion, Chile March 13-17, 2016
- Zorn, M.E., K. Fermanich, E. Meulemans, J.V. Klump. *Continuous monitoring of dissolved phosphate in the Lower Fox River and Green Bay, Lake Michigan.* 18th Seminar on Water Resources and Environmental Management, Concepcion, Chile March 13-17, 2016
- Fermanich, K., P. Baumgart, M. Zorn, J.V. Klump, and D. Robertson. 2016. *Data and models to support nutrient management in the Winnebago-Fox-Green Bay System of Wisconsin*. p. 29 in 40th Annual Meeting Program and Abstracts, Wisconsin Chapter of the American Water Resources Association Meeting, Wisconsin Dells, WI. March 10-11, 2016 (poster)
- Fermanich, K. and P. Baumgart. 2015. *Lower Fox River Green Bay TMDL: Strategies, Practices and Restoration Goals*, invited presentation for session: "Can Water Quality Practices and State Nutrient Reduction Strategies Meet Nutrient Reduction Goals for Protection, TMDL, Great Lakes, and Gulf of Mexico Water Quality Goals." Soil and Water Conservation Society conference: Nutrient Management and Edge of Field Monitoring: From the Great Lakes to the Gulf conference, Memphis, TN., December 1-3, 2015. (invited)

- Cook, C., E. Verhamme, J. DePinto, K. Fermanich, and J.V. Klump. 2015. *Green Bay Ecosystem Modeling: Stakeholder Input and Management Analysis Tool Implications*. p. 9 in Speaker Biographies and Abstracts: 9th Biennial State of Lake Michigan/ 15th Annual Great Lakes Beach Association Joint Conference, Traverse City, MI, October 28 30, 2015
- Fermanich, K., P. Baumgart, A. Heim, D. Lorenz, and J.V., Klump. 2015. Nutrient Export to Green Bay under Various Watershed Management and Climate Scenarios. p. 14 in Speaker Biographies and Abstracts: 9th Biennial State of Lake Michigan/ 15th Annual Great Lakes Beach Association Joint Conference, Traverse City, MI, October 28 - 30, 2015
- Klump, J.V., K. Fermanich, P. Baumgart, H. Bravo, S. LaBuhn, E. Verhamme, and J.V. DePinto. 2015. *Green Bay hypoxia, eutrophication and climate change an overview*. p. 25 in Speaker Biographies and Abstracts: 9th Biennial State of Lake Michigan/ 15th Annual Great Lakes Beach Association Joint Conference, Traverse City, MI, October 28 30, 2015
- Klump, J.V*., K. Fermanich, H. Bravo, S. Hamidi, S. LaBuhn. 2015. *Hypoxia in Green Bay, Lake Michigan*, CERF annual conference, Portland OR, Nov. 9-13, 2015. Special session on the Harmful Algal Bloom and Hypoxia Research and Control Act: accomplishments and remaining challenges" (invited).
- Heim, A., P. Baumgart, and K. Fermanich. 2015. Assessing the Impact of Alternative Management Strategies in a Dairy-dominated Agricultural Watershed Vulnerable to High Sediment and P Runoff.
 p. 93 in Book of Abstracts SWAT 2015 International Soil & Water Assessment Tool Conference, West Lafayette, IN, USA, October 14-16, 2015. http://swat.tamu.edu/media/114933/swat-purdue-2015-book-of-abstracts.pdf
- Fermanich, K. and P. Baumgart. 2015. *Agriculture's Link to the Water Quality of Green Bay: What does a decade of watershed monitoring tell us?* p. 9 in 39th Annual Meeting Program and Abstract Wisconsin Chapter of the American Water Resources Association Meeting, Oconomowoc, WI. March 5-6
- Docter, A., K. Fermanich, and M. Dornbush. 2015. Infiltration and Soil Quality Properties of Cropland Soils in Northeastern Wisconsin. p. 29 in 39th Annual Meeting Program and Abstract Wisconsin Chapter of the American Water Resources Association Meeting, Oconomowoc, WI. March 5-6 (poster)
- Fermanich, K., A. Pelegrin and P.D. Baumgart. 2014. *Green Bay Watershed High Schools Contribute to Long Term Monitoring*. p. 88 in 57th Annual Conference of the International Association for Great Lakes Research Abstract Book, Hamilton, ON
- Heim, A., K. Fermanich, and P. Baumgart. 2014. *Development of a Watershed Model to Assess Alternative Management Strategies in an Agricultural Watershed Vulnerable to High Sediment and P Runoff.* p. 10 in 38th Annual Meeting Program and Abstract Wisconsin Chapter of the American Water Resources Association Meeting, Oconomowoc, WI. March 13-14
- Baumgart, P., K. Fermanich, D. Cibulka and A. Heim. 2014. *Phosphorus and TSS Trends in Two Streams in Northeastern Wisconsin.* p. 60 in 38th Annual Meeting Program and Abstract Wisconsin Chapter of the American Water Resources Association Meeting, Oconomowoc, WI. March 13-14.
- Fermanich, K.J., P. Baumgart and A. Heim. 2013. *Event Driven Loads in the Fox River Basin: Science, Awareness, and Management*. P. 17 in Lake Michigan: State of the Lake and Great Lakes Beach Association Conference Abstracts; Sheboygan, WI, October 16-17, 2013. (oral)
- Fermanich, K.J. and P. Baumgart. 2013. *Landscape Sources of Phosphorus to Lower Green Bay: Concentrations, Loadings and Management Challenges*. p. 85 in 56th Annual Conference of the International Association for Great Lakes Research Abstract Book, West Lafayette, IN, June 2-6, 2013. (oral)
- Fermanich, K., M. Jacobson, P. Baumgart. 2013. *TMDL Goals and Water Quality Realities in a Lower Fox River Watershed*. p. 35 in 37th Annual Meeting Program and Abstract Wisconsin Chapter of the American Water Resources Association Meeting, Brookfield, WI. March 7-8. (poster)
- Fermanich, K., M. Jacobson and P. Baumgart. 2012. *TMDL Goals and Water Quality Realities in an Agriculturally Dominated Watershed: Management Challenges and Implications*. Fox-Wolf Watershed Alliance Fall 2012 Research Symposium. Oct. 10. St Norbert College, DePere, WI. (oral)

- Klump, V, H. Bravo, J. Waples, K. Fermanich, D. Dolan, P. Baumgart, D. Vimont, D. Lorenz, T. Valenta, and J. Kennedy. 2012. *Hypoxia and Biogeochemical Cycling in Green Bay, Lake Michigan*. p. 119 in 55th Annual Conference of the International Association for Great Lakes Research Abstract Book, Cornwall, ON May 13-17.
- Baeten, J., K. Fermanich, and M. Zorn. 2012. *Groundwater Chemistry and Dispersion Downgradient* of Septic Drainage Field. p. 67 in 36th Annual Meeting Program and Abstract Wisconsin Chapter of the American Water Resources Association Meeting, Wisconsin Dells, WI. March 1-2.
- Jacobson, M., K. Fermanich, P. Baumgart. 2012. *Phosphorus and Sediment Loss from Plum Creek Watershed*. p. 17 in 36th Annual Meeting Program and Abstract Wisconsin Chapter of the American Water Resources Association Meeting, Wisconsin Dells, WI. March 1-2.
- Baumgart, P.D., Fermanich, K.J, and Klump, V. 2011. *Tracing the Source of Suspended Sediment in L. Fox River Streams using Radionuclide Analysis.* Fox-Wolf Watershed Alliance Fall 2011 Research Symposium. UW Green Bay. (poster)
- Baumgart, P., J.V. Klump, K. Fermanich. 2011. *Finding the Source: Fingerprinting the Suspended Sediment in Lower Fox River Wisconsin Tributaries*. p. 14 in 35th Annual Meeting Program and Abstract Wisconsin Chapter, American Water Resources Assoc. Meeting, Appleton, WI. March 3-4.
- Fermanich, K., J.V. Klump, and P. Baumgart. 2011. *Green Bay Hypoxia: Watershed Inputs, Impacts, and Management*. Presentation at Coastal Zone 2011, Chicago, II. July 20, 2011. (invited, oral)
- Fermanich, K. 2011. *Phosphorus Losses Comparing the Phosphorus Index and Edge of Field Monitoring: What it Tells Us.* Annual Conference, Wisconsin Soil and Water Conservation Society. Stevens Point, WI. February 8, 2011. (invited, oral)
- Fermanich, K., and P. Baumgart. *Runoff Pollution in the Fox River Basin, Wisconsin: Monitoring, Modeling and Management.* Presented at the 14th Biennial Water Resources and Environmental International Seminar, National Agricultural University La Molina, Lima, Peru, August 16 and 17, 2010 and at the First International Seminar on Watershed Pollution, held at the National University of Tumbes, Peru, August 20-24, 2010. (oral)
- Cibulka, D.A., K.J. Fermanich, P.D. Baumgart. 2009. *A 20-Year Analysis of Water Quality, Watershed Condition, and Biotic Integrity in Duck Creek, WI.* p. 21. The 33rd Annual Meeting of the American Water Resources Assoc. (AWRA) Wisconsin Section. March 5-6, 2009. Stevens Point, WI.
- Baumgart, P. and K. Fermanich*. 2008. Simulating the effects of alternative management practices on suspended sediment and phosphorous loads to Green Bay, Wisconsin (U.S.A.) using the Soil and Water Assessment Tool. Presentation* at the 5th International SWAT Conference, Beijing Normal University, Beijing, China. October 17-19, 2008.
- Fermanich, K., P. Baumgart, D. Graczyk, N. Reckinger. 2007. *Temporal and spatial nature of watershed sources of sediment and phosphorus to the Lower Fox River and Green Bay.* p. 28. Joint Conference: Lake Michigan, State of the Lake and Great Lakes Beach Association, Traverse City, MI. October 3-7, 2007. Invited (oral)

Professional Service and Memberships (selected)

- Invited expert, Great Lakes Climate Adaptation and Resilience Workshop: Developing a Binational Approach for Planning and Action. Emerging Issues Work Group of the IJC Water Quality Board. July 12-13, 2016, Windsor, ON
- Invited external peer reviewer, National Center for Environmental Research, USEPA Office of Research and Development, for proposals to establish *Centers for Water Research on National Priorities Related to a Systems View of Nutrient Management*. April 2013, Washington D.C.
- Co-organizer and presenter at annual Lower Fox River Watershed Monitoring Program high school student watershed symposiums, 2004-2016.
- Member of Wisconsin DNR appointed Lower Fox River TMDL Technical Team and Ad-Hoc Science Team 2008-2010.
- Member of Wisconsin Initiative on Climate Change Impacts (WICCI) Green Bay Ecosystem Working Group 2008-2011.