Gregory H. LeFevre, Ph.D.

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Research Focus

Non-point source pollutants are the leading cause of water quality degradation. My research focuses on the fundamental mechanisms related to the fate, transport, and transformation of emerging contaminants in aquatic environments, particularly microbial and vegetative processes. My work informs the optimization of sustainable natural systems-based treatment technologies to improve water quality for ecosystem and human health.

Education

Postdoctoral Scholar Environmental Engineering & Sciences, STANFORD UNIVERSITY — Stanford, CA
10/2012−Current

Ph.D. Environmental (Civil) Engineering, UNIVERSITY OF MINNESOTA (UMN) — Minneapolis, MN
2/2009−8/2012

M.S. Environmental (Civil) Engineering, UNIVERSITY OF MINNESOTA (UMN) — Minneapolis, MN
9/2007−2/2009

B.S. Environmental Engineering, MICHIGAN TECHNOLOGICAL UNIVERSITY (MTU) — Houghton, MI
8/2003−12/2006
s*umma cum laude*
Minor: German language
Concentration: Engineering Enterprise

Professional Registration

Engineer in Training: Fundamentals of Engineering Exam Passed April 2006, Michigan

Honors and Awards

- 2013 AEESP Paul V. Roberts Outstanding Doctoral Dissertation Award
- 2007-2012 NSF Graduate Research Fellowship
- 2011 US-European Commission Course in Environmental Biotechnology (Selected Participant, 1 of 12 in US)
- 2011 ARCS Foundation Fellowship (Achievement Reward for College Scientists, 1 of 2 in Minnesota)
- 2011 Academic Excellence Award Central States Water Environment Association
- 2009 American Water Works Advanced Degree Scholarship
- 2007-2012 NSF Integrative Graduate Education & Research Traineeship (IGERT) Fellow
- 2007 University of Minnesota Graduate School Fellowship (1 of 60)
- 2005 Morris K. Udall Scholar (U.S. Congressional Environmental Fellowship, 1 of 80 in US)
- 2012 Sommerfeld Travel Grant Award
- 2006 World Wildlife Fund Scholar (1 of 16 in US)
- 2005 Haested Methods National Hydrologic Modeling Competition Scholarship (1st Place)
- 2005 MTU Civil & Environmental Engineering Department Scholarship Achievement Award
- 2005-2006 MTU CEE Dept. Learning Center Coaching Excellence Award
- 2003-2006 Michigan Tech Academic Excellence Tuition Award
- 2003-2006 Damoder & Reddy Alumni Award, Mayer Memorial, DeVieg Foundation, Rozsa, and VanCamp Endowment
- 2003 American Groundwater Trust Scholarship
- 2003 American Garden Club conservation scholarship, Midwest regional and local winner
- 2003 Aldo Leopold Conservation Scholarship

Research Skills and Experience

RESEARCH SKILLS:

- Areas of Expertise: Vegetative uptake and transformation of emerging contaminants, untargeted metabolomics, microbial transformation, potential endocrine disrupters in plants, stormwater pollutant fate, natural systems for beneficial water reuse, contaminants of emerging concern, optimizing bioretention practices, denitrifying bioreactors, fungal treatment technologies, non-point source pollutants, soil sorption
- Chemical Analysis: LC/MS/MS, LC/MS/MS-TOF, HPLC-UV, liquid scintillation, TOC, CE, GC-FID, GC-PID, GC-ECD, EEMs, novel compound synthesis, NMR
- Biotechnology / Genetic Molecular Methods / Microbiology: DNA, RNA, live cell extractions; conventional PCR, qPCR, RT-PCR; agarose gels; plating; some tRFLP & cloning
- Experimental and Reactor Design: Column, batch, microcosm; full (+/-) controls, mass balances
- Field-Based Research: hydrocarbon soil residual, geomedia for trace organic and arsenic removal
- Data & Statistical Analysis (parametric, non-parametric): GraphPad, Excel Solver and VBA Macros, Canoco, Stata, SAS; (*e.g.*: t-tests, one + two-way ANOVA, rank-sum, F-tests, Spearman-Rho correlation, matched-pairs tests, regression modeling, principal component analysis, error propagation, post-tests, normality tests)
- Interdisciplinary/ Collaborative Research with Ecology, Geology, Chemical Engineering, Water Resources Science, Policy
- Hydrologic & Hydraulic Modeling: HEC-HMS (3.0.1, 2.2.2), H2O NET and EPA NET, SewerCAD, ASIM, P8, SWAT, BASINS, FLUX, ArcGIS

RESEARCH EXPERIENCE:

Postdoctoral Scholar, STANFORD UNIVERSITY, Dept. Civil & Env. Eng. **2012-Present**

- Postdoctoral Scholar at NSF Engineering Research Center for Re-inventing the Nation's Urban Water Infrastructure (ReNUWIt)
- Mentors: Prof. Richard G. Luthy and Asst. Professor Elizabeth S. Sattely (Chemical Engineering)
- Primary writer on >$1.8M of research grant funding
- Collaborate with graduate students, postdocs, and faculty from Stanford, UC-Berkeley, Colorado School of Mines, and New Mexico State University
- Stanford Woods Institute for the Environment affiliated postdoc

Graduate Research Fellow, UNIVERSITY OF MINNESOTA, Dept. Civil Eng. **2007-2012**

- NSF Graduate Research Fellow and NSF IGERT Fellow
- Dissertation: "Fate and Degradation of Petroleum Hydrocarbons in Stormwater Bioretention Cells"
- Research Advisors: Prof. Paige J. Novak and Prof. Raymond M. Hozalski
- Minnesota BioTechnology Institute and Institute on the Environment affiliated student
- 2013 AEESP Paul V. Roberts Outstanding Doctoral Dissertation Award

US-European Commission Short Course On Environmental Biotechnology **July 2011**

"Microbial Catalysts for the Environment" UNIVERSITY OF LAUSANNE, Switzerland (Prof. Jan van der Meer)

- Competitively awarded (12 US participants), collaborative, advanced training course in molecular methods

Undergraduate Research:

Summer Undergraduate Research Fellow for Prof. Brian Barkdoll (MTU) **Summer 2006**

- Created long-term simulation hydrologic models of four watersheds in HEC HMS to evaluate effects of global climate change on sediment transport; competitively awarded proposal-based fellowship

Research Assistant for Prof. John Gierke (MTU) **2004-2006**

- Hydrologic watershed modeling using HEC HMS; Enterprise and Research Scholars Program

International Field Research:

Geophysical Groundwater Exploration, Boaco, Nicaragua, Prof. John Gierke (MTU) **Jan 2007**

Project Phiri: Brown Hyena Research, Pilanesberg, South Africa, Dr. Dawn Scott Univ. Brighton (UK) **Aug 2006**

Groundwater of the Rio Sonora Basin, Sonora, Mexico, Prof. Alex Mayer (MTU) **May 2006**

Refereed Journal Publications

- **LeFevre, G.H**.; Novak, P.J.; Hozalski, R.M. Fate of naphthalene in laboratory-scale bioretention cells: Implications for sustainable stormwater management. *Environ. Sci. Technol.* **2012,** *46* (2), 995-1002.
- **LeFevre, G.H**.; Hozalski, R.M.; Novak, P.J. The role of biodegradation in limiting the accumulation of petroleum hydrocarbons in raingarden soils. *Water Res.* **2012**, *46* (20), 6753-6762.
- **LeFevre, G.H**.; Hozalski, R.M.; Novak, P.J. Root exudate enhanced contaminant desorption: Evidence for an abiotic contribution to the rhizosphere effect. *Environ. Sci. Technol.* **2013,** *47* (20), 11545–11553.
- **LeFevre, G.H.**; Paus, K.A.; Natarajan, P; Gulliver, J.S.; Novak, P.J.; Hozalski, R.M. Review of dissolved pollutants in urban storm water and their removal and fate in bioretention cells. *J. Environ. Eng*. **2014, In Press.** DOI: 10.1061/(ASCE)EE.1943-7870.0000876.
- Mueller, C.E., **LeFevre, G.H.**, Sattely, E.S., Luthy, R.G. Competing mechanisms for perfluoroalkyl-acid accumulation in plants revealed using an *Arabidopsis* model system. **In Submission, 2014**. (*Environ. Sci. Technol.*)
- **LeFevre, G.H.**, Mueller, C.M., Li, J., Luthy, R.G., Sattely, E.S. Phytotransformation of benzotriazole micropollutants reveals novel synthetic hormone-like products. **In Final Preparation** (undergoing internal review)**, 2014**. (*Proc. Nat. Acad. Sci.* OR *Environ. Sci. Technol.*)
- **LeFevre, G.H.,** Portmann, A.C., Mueller, C.E., Sattely, E.S., Luthy, R.G. Rapid plant uptake and metabolism of 2-mercaptobenzothiazole rubber vulcanizers. **In Advanced Preparation, 2014.** (*Environ. Sci. Technol.*)
- **LeFevre, G.H.,** Wong, C., Luthy, R.G. The role of vegetation in stormwater bioretention systems: Plant impacts on pollutant removal and hydrologic function. **In Advanced Preparation, 2014.** (*J. Sustain. Water Built Environ.*)

Future Publications (Work in Progress)

- **LeFevre, G.H.**, Luthy, R.G., Sattely, E.S. Plant hormone effects of benzotriazole metabolites. (*Environ. Sci. Technol. Lett.*).
- **LeFevre, G.H.**, Sirk, S., Luthy, R.G., Sattely, E.S. Bioavailability of benzotriazole plant metabolites under simulated gastric conditions. (*Environ. Sci. Technol. Lett.*).
- **LeFevre, G.H.,** Hyland, K.C., Sattely, E.S., Luthy, R.G., Higgins, C.P. Presence of benzotriazole plant metabolites in food crops irrigated with recycled water.
- Halaburka, B.J., **LeFevre, G.H.**, Luthy, R.G. Enhanced denitrification in woodchip bioreactors containing biochar.
- Halaburka, B.J., **LeFevre, G.H.**, Luthy, R.G. Optimizing denitrification in woodchip bioreactors through temperature controlled hydraulic manipulation.
- Wolfand, J. **LeFevre, G.H.**, Luthy, R.G. White-rot fungi treatment of stormwater trace organic contaminants for beneficial reuse.

Proposals / Grants (lead or major writer)

- *Participant*: Stanford Woods Institute Grant Writing workshop, August 2014
- Los Angeles Department of Water and Power, Flood Control District. *Removal of contaminants prior to groundwater recharge in stormwater capture and infiltration systems using geomedia.* (with D. Sedlak and R. Luthy) **Awarded**; $855,000
- US EPA STAR Nutrient Management Program. *Enhanced removal of nutrients from urban runoff with novel unit-process capture, treatment, and recharge systems.* (with D. Sedlak and R. Luthy) **Awarded**; $440,000
- NSF Student Exchange Supplemental Grants. *US-UK clean water collaboration student exchange program: Investigating fate and removal of stormwater micropollutants and pathogens in engineered geomedia used to capture, treat and recharge urban runoff for beneficial reuse.* (with R. Luthy) **Awarded**; $50,000
- USGS National Institute for Water Resources. *An innovative system for the capture, treatment and recharge of urban runoff as a means of augmenting potable water supplies.* Program sequestered; $550,000
- National Science Foundation Graduate Research Fellowship Program proposal. *Rhizobacteria Degradation of Stormwater Petrochemicals in Bioretention Systems*. **Awarded**; $121,500
- Minnesota Water Resources Center / USGS. *Enhanced degradation of stormwater petrochemicals within the rhizosphere of raingarden bioretention cells.* (with P. Novak) **Awarded**; $7,000

- Water Environment Research Foundation. *Rhizobacteria Degradation of Stormwater Petrochemicals in Bioretention Systems***.** (with R. Hozalski and P. Novak) Unsuccessful; $25,000
- Michigan Space Grant Consortium *Rain Garden Studies for Increasing Participation of Underrepresented Students in Earth Sciences: A Collaboration of College (Mentors) and Pre-College (Protégés) Students.* (with J. Gierke) **Awarded**; $7,500

Refereed Conference Proceedings

- **LeFevre, G**., Novak, P., Hozalski, R. Quantification of petroleum hydrocarbon residual and biodegradation functional genes in rain garden field sites*. ASCE Conference Proceedings* **2010** (367) 1379-1386. DOI:10.1061/41099(367)118

Non-Refereed Conference Papers / Reports

- **LeFevre, G.**, Hozalski, R. Novak, P. Investigating stormwater hydrocarbon fate and biodegradation in bioretention areas. *Saint Anthony Falls Laboratory Stormwater UPDATES* newsletter. *7* (3), **2012**.
- **LeFevre, G.**, Hozalski, R. Novak, P. Bioretention: A sustainable approach to removing stormwater hydrocarbons and protecting groundwater. *Minn. Groundwater Association Newsletter*. *31* (1), **2012**.
- **LeFevre, G.**, Novak, P., Hozalski, R. Effect of vegetation on the fate of petroleum hydrocarbons in laboratory-scale raingardens. *Proceedings to the EWRI/ASCE International LID Conference.* Philadelphia, PA **2011**.
- Hozalski, R., **LeFevre, G**., Gulliver, J. Assessment of the stormwater infiltration and pollutant removal capacities of rain gardens**.** *Proceedings to EWRI/ASCE Thailand: An International Perspective on Environmental and Water Resources.* **2009**.
- Weiss, P., **LeFevre, G**., and Gulliver, J. Contamination of soil and groundwater due to stormwater infiltration practices: A literature review. University of Minnesota, St. Anthony Falls Laboratory Project Report No.515. Prepared for Minnesota Pollution Control Agency. **2008**.
- Ward, A., Trahan, M., **LeFevre, G**., Culberson, S., Krevinghaus, A. Hydrologic model of the Silver River watershed. Prepared for the Haestad Methods National Hydrologic Modeling Competition by Aqua Terra Tech Enterprise. First place award winner. Michigan Tech. Univ. **2005.**

Oral Presentations and Invited Lectures

(Presenter underlined)

- **LeFevre, G.**, Portmann, A., Mueller, C., Sattely, E., Luthy, R. Bioretention and vegetated treatment systems for stormwater and reclaimed water: Plant processes prevent problems from persistent and polar pollutants. Invited seminar, Environmental Science and Engineering, Colorado School of Mines, Golden. Oct. **2014**.
- **LeFevre, G.**, Mueller, C., Sattely, E., Luthy, R. Rapid uptake and in-planta metabolism of benzotriazole anticorrosives: Implications for water reuse. *4th International Conference on Occurrence, Fate, Effects & Analysis of Emerging Contaminants in the Environment*. University of Iowa, Iowa City, IA. Aug 19-22, **2014**.
- **LeFevre, G.** Engineered natural treatment systems for the removal and degradation of non-point and emerging contaminants. Invited seminar, Civil and Environmental Engineering, University of Vermont, Burlington, VT. Mar 14, **2014**.
- **LeFevre, G.,** Mueller, C., Timotfe, A., Sattley, E., Luthy, R. Plant uptake and processing of trace organic chemicals in reclaimed water: *In-planta* degradation of benzotriazole. *SETAC North America*. Nashville, TN, Nov. **2013**.
- **LeFevre, G.**, Luthy, R., Sedlak, D., Grebel. Combining urban stormwater capture, treatment, and recharge to augment potable water supplies: Identifying needs for utilities and research. *AEESP 50th Anniversary Conference*, Urban Hydrology session. Golden, CO, **2013**.
- Mueller, C., **LeFevre, G**., Hussain, F., Sattely, E., Luthy, R. Uptake of nitrosamines and other chemicals of emerging concern in the model plant *Arabidopsis thaliana. SETAC Europe*. Glasgow, Scotland, **2013**.
- **LeFevre, G**. Fate and biodegradation of petroleum hydrocarbons in stormwater bioretention areas. US Geological Survey, Wisconsin Water Science Center, Middleton, WI, **2012**.
- **LeFevre, G**. Petroleum hydrocarbons in stormwater bioretention areas. Minnesota Pollution Control Agency, St. Paul, MN, **2012**.
- **LeFevre, G**. Petroleum hydrocarbons in stormwater bioretention areas. US Geological Survey, Minnesota Water Science Center, Mounds View, MN, **2012**.
- **LeFevre, G.**, Novak, P., Hozalski, R. Fate of petroleum hydrocarbons in stormwater bioretention areas. *Minnesota Water Resources Conference.* St. Paul, MN, **2011**.

- **LeFevre, G.**, Novak, P., Hozalski, R. Effect of vegetation on the fate of petroleum hydrocarbons in laboratory-scale raingardens. *International Low Impact Development Symposium.* Philadelphia, PA, **2011**.
- **LeFevre, G.**, Novak, P., Hozalski, R. Prevalence and biodegradation of stormwater petroleum hydrocarbons in raingarden bioretention areas. *25th Annual AWMA/WEF Conference on the Environment*. Minneapolis, MN, **2010**.
- **LeFevre, G.**, Novak, P., Hozalski, R. Quantification of petroleum hydrocarbon residual and biodegradation functional genes in rain garden field sites. *ASCE International Low Impact Development Conference.* San Francisco, CA, **2010**.
- Almer, C. and **LeFevre, G**. Impacts of stormwater infiltration on the groundwater system. *Minnesota Ground Water Association Conference.* St. Paul, MN, **2009**.
- **LeFevre, G**. Petrochemicals residual and bacterial degradation genes in raingardens. *University of Minnesota Department of Civil Engineering Environmental Engineering Seminar*. Minneapolis, MN, **2008**.

Poster Presentations

(Presenter underlined)

- **LeFevre, G.H.**, Mueller, C.M., Sattely, E.S., Luthy, R.G. Rapid plant metabolism of benzotriazole micropollutants reveals novel synthetic auxin-like transformation products. *Gordon Research Conference: Environmental Sciences in a Human-Impacted World*. Holderness, NH, **2014**.
- **LeFevre, G.H.**, Mueller, C.M., Sattely, E.S., Luthy, R.G. Rapid plant metabolism of benzotriazole micropollutants reveals novel synthetic auxin-like transformation products. *Gordon Research Seminar: Science Ahead of the Game: Linking Fundamental Science to Applied Problems*. Holderness, NH, **2014**.
- Mueller, C., Timofte, A., **LeFevre, G.** Sattely, E., Luthy, R. Investigating plant uptake and translocation of perfluoroalkyl substances in the model plant *Arabidopsis thaliana*. *SETAC North America*. Nashville, TN, **2013**.
- Mueller, C., **LeFevre, G.**, Sattley, E., Luthy, R., Hussain, F., Timofte, A., Carlson, D., Arabit, T. Plant uptake and processing of trace organic chemicals in reclaimed water. *ReNUWIt NSF ERC 2nd Annual Meeting*. Stanford, CA, **2013**.
- Grebel, J., Charbonnet, J., Ulrich, B., Higgins, C., Kemper, J., **LeFevre, G.**, Luthy, R., Sedlak, D. Stormwater Capture and Reuse: Methodologies, models, and materials for removal of chemicals from stormwater during distributed recharge. *ReNUWIt NSF ERC 2nd Annual Meeting*. Stanford, CA, **2013**.
- **LeFevre, G.**, Hozalski, R., Novak, P. Fate and biodegradation of stormwater petroleum hydrocarbons in bioretention areas. *Gordon Research Seminar Environmental Sciences: Water, Fate of Environmental Contaminants*. Holderness, NH, **2012**.
- **LeFevre, G.**, Hozalski, R., Novak, P. Fate and biodegradation of stormwater petroleum hydrocarbons in bioretention areas. *Gordon Research Conference Environmental Sciences: Water, Grand Challenge Frontiers in the Aquatic Environmental Sciences*. Holderness, NH, **2012**.
- **LeFevre, G.**, Novak, P., Hozalski, R. Fate of naphthalene in laboratory-scale bioretention cells: Implications for sustainable stormwater management. *US-EC Task Force in Environmental Biotechnology.* Lausanne, Switzerland, **2011**.
- **LeFevre, G.**, Novak, P., Hozalski, R. Petroleum hydrocarbon residual and biodegradation genes in raingardens. *24th Annual Conference on the Environment of the Water Environment Association and Air & Waste Management Association*. Minneapolis, MN, **2009**.
- **LeFevre, G.**, Novak, P., Hozalski, R. A field study to quantify petroleum hydrocarbon residual and biodegradation functional genes in rain gardens. *Land Conservation and Clean Water Summit*. Chaska, MN **2009**.
- **LeFevre, G.**, Novak, P., Hozalski, R. Petrochemical runoff into raingarden soils—remediation or residuals? *23rd Annual Conference on the Environment of the Water Environment Association and Air & Waste Management Association.* Minneapolis, MN, **2008**.

Teaching, Mentoring, and Advising Experience; Advanced Pedagogical Training

STANFORD UNIVERSITY:

- Sole research supervisor and thesis advisor to Andrea Portmann, visiting ETH Zürich MS student (student of Eberhard Morgenroth; her thesis was given the highest possible score and has been nominated for an award at ETH)
- Project advisor to two Stanford PhD students (Halaburka, Wolfand) on stormwater pollutant removal optimization
- Taught and coordinated Stanford graduate seminar-course "Re-Inventing Water Infrastructure" Winter Quarter, 2014 (14 Participants)

- Sole project supervisor for MS student independent study (Carol Wong); manuscript in preparation for submittal
- Taught hydrology and environmental science lessons to Bay Area high schools in AP environmental science classes and a minority student college-prep summer session on water science and engineering
- Worked with ReNUWIt Education & Outreach director to develop classroom teaching plans
- Completed special postdoctoral workshop on developing mentoring skills
- Tomorrow's Professor Academic Chat seminar series participant
- Mentored three graduate students as they prepared research fellowship applications
- Developed ReNUWIt-Newcastle/Glasgow student exchange program via the US-UK Clean Water Partnership (wrote funded NSF proposal and coordinated with UK researchers)

UNIVERSITY OF MINNESOTA:

- Teaching training through Preparing Future Faculty program
- ASCE Undergraduate-Graduate Student Mentor
- Mentored three undergraduate / graduate students as they prepared research fellowship applications
- Supervised undergraduate summer research aide
- Acted as mentor to new graduate students entering laboratory

MICHIGAN TECH:

- Taught fluid mechanics and hydrology at the CEE Department Learning Center to small groups
- Co-initiated Earth and Hydro-Science Outreach program with Cass Tech High School, Detroit, to mentor underrepresented students on raingarden projects and summer science programs

RELATED TEACHING EXPERIENCE and VOLUNTEER WORK:

- Led volunteer groups (>30), tours, and taught school groups for over 15 years at two different non-profits and National Park Service
- Responsible for supervising interns
- Created an interactive middle school education program
- Habitat Restoration Volunteer Crew Leader, US National Park Service

Professional Experience

SEASONAL HYDROLOGIST: FRIENDS of the TETON RIVER, *Driggs, ID* **Summer 2007**

- Conducted water quality (chemical & microbial) monitoring, erosion surveys, sediment surveys, fish electro-shocking, and stage-discharge relationships for gauging sites; data processing and analysis
- Researched seepage characteristics of gaining / losing stream segments

WATER QUALITY INTERN: WORLD WILDLIFE FUND, SE RIVERS & STREAMS, *Nashville, TN* **Spring 2007**

- Examined, wrote, and submitted formal comments to Tennessee Statewide Stormwater Pollution Prevention Plan with special emphasis on transportation planning and environmental mitigation
- Evaluated highway and construction site engineering plans for stormwater pollution impacts
- Conducted dam re-licensing impact evaluations
- Participated in Tennessee state environmental legislative agenda meetings

ENGINEER COSTEP: INDIAN HEALTH SERVICE, OFFICE OF ENVIRONMENTAL HEALTH & ENGINEERING (U.S. Public Health Service), *Navajo Nation*, *Shiprock, NM* **Summer 2005**

- Researched and implemented arsenic removal adsorptive media pilot tests at multiple well sites
- Constructed hydraulic model of 80+ mile distribution system using H20 NET, including original design
- Designed preliminary sewer layout plan and lagoon revitalization in area of groundwater contamination
- Performed independent field work with various engineering instruments
- Participated in pre- and post-construction project meetings

INSTRUCTOR: MTU CEE DEPT LEARNING CENTER, *Houghton, MI* **2005-2006**

- Instructed undergraduate students in water resources engineering, environmental engineering, and fluid mechanics in teams and individual help sessions
- Member of the Steering Committee to oversee successful operation of the learning center

ECOLOGICAL RESTORATION INTERN: CITIZENS FOR CONSERVATION, *Barrington, IL* **Summers 1999-2004**

- Performed field work in the ecological restoration of wetlands, prairies, savannas, woodlands
- Multi-year evaluation studies on wetland mitigation, streambank stabilization, invasive species management, macro-invertebrate water quality Supervised two to four summer interns
- Oversaw education of new interns and volunteer workdays, including high school work groups

Journal Peer Reviewer

- Environmental Science & Technology
- Water Research
- Journal of Hazardous Materials
- Journal of Environmental Engineering—ASCE
- Biodegradation
- Journal of Irrigation and Drainage Engineering—ASCE
- European Journal of Soil Science

Professional Societies

- Association of Environmental Engineering and Science Professors (AEESP)
- American Society of Civil Engineers (ASCE), Environmental & Water Resources Institute (EWRI)
- Water Environment Federation
- American Water Works Association
- Air and Waste Management Association
- Society of Environmental Toxicology and Chemistry

Leadership, Outreach, and Service Experience

- Leadership training through Center for Integrative Leadership, UMN
- Institute on the Environment Boreas Leadership Program, UMN
- Twin Cities Regional Science Fair Judge
- Aqua Terra Tech Enterprise (President) MTU
- Society of Environmental Engineers (Student President and VP), MTU