

IOWA STATE UNIVERSITY

Agricultural and Biosystems Engineering

Michelle L. Soupir

Associate Professor

3358 Elings Hall
515-294-2307
msoupir@iastate.edu
Wwww.abe.iastate.edu

Education

Ph.D. Biological Systems Engineering, 2008
Virginia Tech

M.S. Biological Systems Engineering, 2003
Virginia Tech

B.S. Biological and Agricultural Engineering,
1999
Kansas State University

Honors and Awards

College of Engineering Professional Progress Award, Kansas State University (2016)

Exemplary Faculty Mentor, ISU (2015)

ASABE New Holland Young Researcher Award (2014)

ASABE Young Engineer of the Year, Iowa Section (2014)

Early Career Engineering Faculty Research Award, ISU (2014)

Recent Publications

Chai, L., Y. Zhao, H. Xin, T. Wang, A. Atilgan, **M. Soupir**, K. Liu. Reduction of particulate matter and ammonia by spraying acidic electrolyzed water onto litter of aviary hen houses – a lab-scale study. *Transactions of the ASABE*.

Hoover, N.L., M.L. Soupir, R.D. VanDePol, T.R. Goode, and J.Y. Lav. Technical note: Pilot scale denitrification bioreactors for replicated field research. *Applied Engineering in Agriculture*.

Liang, X., C. Liao, M.L. Thompson, **M.L. Soupir**, L.R. Jarboe, P.M. Dixon. 2016. Diversity in properties of *E. coli* derived from stream water and sediment. *Frontiers in Microbiology*. DOI: <http://dx.doi.org/10.3389/fmicb.2016.01732>

Hruby, C.E., **M.L. Soupir**, M. Shelley, T.B. Moorman, R.S. Kanwar. 2016. Effects of Tillage and Poultry Manure Application Rates on Salmonella and Fecal Indicator Bacteria Concentrations in Tiles Draining Des Moines Lobe Soils. *Journal of Environmental Management*. 171:60-69.

Zwonitzer, M.R., **M.L. Soupir**, L.R. Jarboe, D.R. Smith. 2016. Quantifying attachment and antibiotic resistance of *Escherichia coli* from conventional and organic swine manure. *Journal of Environmental Quality*. DOI: 10.2134/jeq2015.05.0245

Research

The goal of Dr. Soupir's research program is to conduct basic research towards the development of sustainable water systems. Her broad research interests include nonpoint source pollution control, watershed management, and water quality monitoring. She uses both lab and field scale studies to examine the occurrence, fate and transport of pathogens, pathogen indicators and contaminants of emerging environmental concern (CoEECs) such as antibiotics and antibiotic-resistant bacteria to surface and groundwater systems. Findings from these studies have implications to improve the Total Maximum Daily Load (TMDL) development and implementation process, identify the impact of land use practices on water quality, and develop management practices to reduce pollutant transport. Her previous projects include examining the fate and transport of nutrients and pathogen indicators from pasturelands receiving animal waste applications and comparing erosion from construction areas treated with polyacrylamide to those treated with traditional erosion control practices. Her research program is funded by the Iowa Department of Natural Resources, National Science Foundation, U.S. Department of Agriculture, Iowa Soybean Association, Iowa Nutrient Research Center, the Iowa Egg Council, Center for Health Effects of Environmental Contaminants, Leopold Center for Sustainable Agriculture, National Pork Board, Water Environment Research Federation (WERF), Agriculture's Clean Water Alliance, and the U.S. Environmental Protection Agency.



Teaching

ABE 218 Project Management and Design
ABE 380 Principals of Biological Systems Engineering
ABE 432/532 Nonpoint Source Pollution and Control
ABE 436/536 Design and Evaluation of Soil and Water Monitoring Systems
ABE 537 TMDL Development and Implementation
ABE/TSM 601 Graduate Seminar

Professional Engagement

- Alpha Epsilon
- American Society of Agricultural & Biological Engineers
- American Water Resources Association
- Association of Environmental Engineering & Science Professors
- American Society for Engineering Education
- Society of Women Engineers
- Soil and Water Conservation Society
- Tau Beta Pi