

Environmental Engineering Seminar

The Astani Department of Civil & Environmental Engineering presents



Prof. Lauren Stadler
Environmental Engineering
Rice University

Date: April 15, 2016

Time: 3 - 4 pm

Place: SGM 101

Elucidating the Impact of Low Dissolved Oxygen Wastewater Treatment on Pharmaceutical Fate

More than half of the energy in conventional wastewater treatment is consumed by aeration. To achieve significant energy savings and comply with increasingly stringent effluent nutrient regulations, wastewater utilities are beginning to control and minimize aeration, thereby operating at a lower dissolved oxygen (DO) concentration. As utilities implement low DO processes, the impact of DO on non-regulated pollutants, such as pharmaceuticals, warrants attention to avoid technologies that increase pharmaceutical loading on the environment. Low DO treatment could impact pharmaceutical biotransformation directly by acting as a limiting substrate and slowing the activity of microorganisms involved in biotransformation, and indirectly by selecting for a community that is more (or less) effective at biotransformation. The objective of this work was to evaluate and characterize both direct and indirect impacts of low DO conditions on pharmaceutical biotransformation.

About the Speaker

Lauren Stadler's research is focused on advancing sustainable biological wastewater treatment processes. Central research issues include resource recovery from wastewater (energy, water, nutrients); the fate of emerging contaminants (pharmaceuticals, antibiotic resistance elements) in wastewater treatment; microbial ecology of biological treatment systems; and quantitative sustainable design. Lauren worked in environmental consulting designing algae pond systems for wastewater treatment and received a Fulbright Scholarship to do research in New Delhi, India. Lauren has a bachelor's degree from Swarthmore College, and master's and Ph.D. degrees from the University of Michigan. She is currently an assistant professor in the Department of Civil and Environmental Engineering at Rice University.

