March 21, 2025

Fate or Organic Pollutants and Pathogens in Electrochemically Treated Wastewater Solids

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Seminar Details

Friday, March 21, 2025
2:30pm – 4:00pm

UH Campus
Classroom & Business Building
Room CBB 108

Online via https://www.cive.uh.edu/research/seminars

ABSTRACT: Agriculture has depended upon "natural" fertilizers such as wastewater biosolids for centuries, yet today's farmers purchase synthetic fertilizers from overseas, while neighboring wastewater facilities apply nutrient-rich solids to vacant lands at financial loss. Why are practices such as these so common, and why is the recycling of wastewater nutrients scientifically feasible yet so underutilized? In this presentation, I will identify the current barriers limiting field application of wastewater-derived products and will introduce a developing technology that generates bioavailable ammonium from wastewater solids using low electric potential. I will describe the biological (fecal coliform), inorganic (metals), and organic (PAH and PFAS) composition of electrochemically derived products from this system and contextualize implications for downstream agricultural use.

BIOGRAPHY: Dr. Kay Millerick is an associate professor in Department of Civil, Environmental & Construction Engineering at Texas Tech University. She is an experimental environmental microbiologist whose research focuses on the confluence of environmental pollutants, reactive surfaces, and indigenous microorganisms. She examines microbial behavior and community dynamics in the built and natural environments, with an emphasis on biotransformation of pollutants under anaerobic conditions. Dr. Millerick additionally characterizes nutrient recovery products for the Center for Advancing Sustainable and Distributed Fertilizer Production (CASFER), an NSF Engineering Research Center.