

Environmental Engineering Seminar

The Astani Department of Civil & Environmental Engineering presents



Prof. Kara Nelson
Environmental Engineering
University of California, Berkeley

Date: November 13, 2015

Time: 3 - 4 pm

Place: GFS 106

Decentralized Approaches for Wastewater Management, Water Reuse, and Nutrient Recovery

Decentralized systems are expected to play an important role in urban water and wastewater systems of the future. In addition, there is growing interest in recovering resources from wastewater, including recycled water, energy, and nutrients. Innovative new technologies are needed as well as analysis to identify approaches that will reduce the overall environmental footprint of our water infrastructure, and to reveal trade-offs between alternatives. In this talk, I will present ongoing research efforts in technology development and analysis methods that aim to speed innovation in decentralized systems. The first example is recovery of nitrogen from urine, which can be implemented at the household or building scale, and has the potential to reduce the energy required for nutrient removal and simultaneously produce fertilizer. The second example is non-potable reuse of water at the building or neighborhood scale, which may have advantages over centralized non-potable reuse schemes in some contexts.

About the Speaker

Dr. Kara Nelson is a Professor in Civil and Environmental Engineering at the University of California, Berkeley. Her research program focuses on improving our water infrastructure to make it more effective, affordable, environmentally sustainable, and reduce the threat posed by waterborne pathogens. Specific research areas include mechanisms of pathogen removal/inactivation, non-potable and potable water reuse, nutrient recovery, and improving the provision of safe drinking water and sanitation in the developing world. She is the Director of Graduate Education at the Engineering Research Center for Reinventing our Nation's Urban Water Infrastructure (ReNUWIt). She currently conducts research in the United States, India, Bangladesh, Kenya, and Panama.