Northeastern University
College *of* Engineering

CEE 7400: Graduate Seminar Series

Department Civil and Environmental Engineering

At the Confluence of Nutrients, Pharmaceuticals and Sustainability: Emerging Issues in Managing Wastewater

Professor Nancy Love
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University of Michigan
Thursday, December 2, 2010
3:00-4:00 PM*
105 Shillman Hall

Abstract

The wastewater treatment industry is in a dramatic period of change. Emerging contaminants such as pharmaceuticals and personal care products are in intractable problem for which cost effective solutions seem limited. Redefining and revolutionizing wastewater management to be more sustainable is eliciting great interest in an industry that already sees itself as being environmentally-minded but is not clear on how to truly achieve a sustainable existence. Furthermore, strategies used to achieve enhanced nitrogen removal may coincidentally enhance pharmaceutical removal while also challenging our preferred paradigm for sustainability. As the industry rethinks the entire strategy for waste management in the developed world (decentralization versus centralization, source separation versus source combination), decision-making needs to be better informed by a sound understanding of mechanisms that drive pharmaceutical fate and a more holistic approach to sustainable wastewater design. This seminar will lay out the framework for current conversations in the wastewater industry, highlight research conducted by the Love Research Group on pharmaceutical fate, the apparent synergies that come about in removing pharmaceuticals and nitrogen at the same time, and the ongoing development of a sustainable design methodology for the wastewater industry.

Dr. Nancy Love is a professor and chair of the Department of Civil and Environmental Engineering at the University Michigan. Her research focuses on environmental biotechnology and water quality with an emphasis on engineered treatment systems. She has been involved with a wide range of collaborative research projects totaling over $9 million (total). She has published 61 peer-reviewed journal articles, 2 book chapters, 3 peer-reviewed research reports, and over 200 conference papers, abstracts, presentations and research editorials. She is the recipient of a number of awards, including the NSF CAREER Award, the Paul L. Busch Award for Innovation in Applied Water Quality Research, the Harrison Prescott Eddy Medal and the Rudolf's Industrial Waste Management Medal from the Water Environment Federation, and the Civil and Environmental Engineering (Virginia Tech) Alumni Teaching Excellence Award.

** 30 minute reception to follow*