Presented By:
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Environmental Engineering

Friday, December 8, 2017
McDonnell Douglas Engineering Auditorium (MDEA)
1:30PM to 2:30PM

Seminar Series

The Engineering Story of Beach Water Quality

Fecal contamination and its public health risk is a big concern for beach water quality especially in regions where beach recreational activities and tourisms play an important role in public's daily life and local economy. Fecal contamination currently is monitored by measuring fecal indicator bacteria such as *Enterococcus* spp. and *E. coli*. These fecal indicator bacteria can originate from many sources including human, non-human including gull, cow, dog, and even non-fecal sources such as natural vegetation and sand. However, different sources differ greatly in it potential public health risk as human fecal sources are more likely to contain human pathogens. Therefore it is necessary to identify sources of contamination for improved public health risk assessment and for more effective contamination remediation. This talk discusses a study to identify sources of fecal contamination and how engineered structures play an important role in beach water quality.

Dr. Yiping Cao is the Vice President of Technology at Source Molecular, and formally a senior microbiologist at Southern California Coastal Water Research Project Authority. She holds a Ph.D. in Environmental Molecular Microbiology, and a M.A. in Applied Statistics, a M.S. in Environmental Engineering, and a B.S. in Environmental Chemistry. She is on the editorial board of the journal *Applied and Environmental Microbiology*, and a guest editor for the special issue "*Pathogens in Water*" in the journal of *Waters*. She is on the board of directors for Southern California Chinese-American Environmental Protection Association. Her current research areas focus on water quality and resource issues and solutions. She has conducted extensive research related to development and evaluation of microbial source tracking (environmental forensics) and rapid indicator methods for assessing microbial contamination in waters and the associated public health risks, and to implementation of advanced molecular technology in environmental applications. She also specializes in applying microbial ecological tools, including sophisticated next generation sequencing and statistical tools, in water quality research. She has more than ten years of experience in applying and developing statistical tools in environmental research, particularly on the topics of experimental design, statistical analysis, and modeling.