

CLEAN WATER

Session Co-chairs:

Yonghui SONG, Dr.Ing., Ph.D., Professor, Principal Investigator, Department of Urban Water Environmental Research, Chinese Research Academy of Environmental Sciences

Daniele Lantagne, Ph.D., P.E., Assistant Professor, Tufts University

Abstract

Water supply systems are an essential component of public health infrastructure development. Over the past 100 years, there has been an extensive local and national effort to install piped, treated, large-scale centralized water and wastewater systems in the United States and China. However, there are challenges with large-scale centralized treated water systems, such as maintenance requirements and removal of all disease-causing pathogens. In addition, large-scale infrastructure may not be appropriate in all contexts, such as areas with low population density or areas with non-conductive geographical terrain.

The two US speakers recommended for the panel have experience working to ensure the sustainability of infrastructure systems, and with decision-making on when to choose smaller-scale systems. The first speaker, Dr. Joe Brown, will speak on his work investigating the efficacy of smaller-scale water and wastewater systems in the southeast United States and Cambodia. The third speaker, Dr. Kristen Jellison, will speak on her work investigating pathogen transport (particularly of cryptosporidium) through watersheds and the water treatment network.

The two speakers from China will talk about the key issues for refractory wastewater treatment process and the development of new wastewater treatment technology – membrane bioreactor, which facilitates wastewater reclamation. The second speaker, Dr. Aijie Wang, will present an innovative biocatalytic electrolysis stimulated wastewater biotreatment technology for recalcitrant compounds removal; and the fourth speaker, Dr. Liang Duan, will talk about his research findings about the influence factors on membrane fouling in membrane bioreactor, which is one of the key issues for the widespreading and cost control of the technology.