

2020 Annual Mid-American Environmental Engineering Conference (MAEEC)

Event: A one-day conference for graduate students in civil and environmental engineering from six universities to share educational experience and research. Faculty advisors will attend.

Time: Oct. 24, 2020 (Saturday), 8:40 AM-5:30 PM

Location: Virtual conference (via Zoom)
Southern Illinois University Edwardsville, IL 62026

Registration: https://siue.co1.qualtrics.com/jfe/form/SV_eK8VOQqADBae8PH

Participating Universities:

- Southern Illinois University Edwardsville (HOST)
- Washington University in St. Louis
- Missouri University of Science and Technology
- University of Missouri Columbia
- Southern Illinois University Carbondale
- Saint Louis University



Sponsors:

- Southern Illinois University Edwardsville
- ASCE-EWRI St. Louis Chapter



SARS-CoV-2 in wastewater settled solids is associated with COVID-19 cases in urban sewersheds

Dr. Alexandria Boehm, Professor of Civil and Environmental Engineering, Stanford University and Senior Fellow at the Woods Institute for the Environment



Wastewater-based epidemiology (WBE) may be useful for informing public health response to viral diseases like COVID-19 caused by SARS-CoV-2. Here I describe our project to quantify SARS-CoV-2 RNA in wastewater influent and primary settled solids to determine how it is associated with COVID-19 infections in the sewershed. I will describe our method development approaches, as well as longitudinal data from several wastewater treatment plants and occurrence of COVID-19 infections within their sewersheds. In addition to technical results, I will also share some details on the “human side” of this project including anecdotes of what it has been like to formulate and implement a large field project to inform public health response to the COVID-19 pandemic during shelter-in-place orders.

Dr. Alexandria Boehm is a professor at Stanford University in the department of civil and environmental engineering. She received her BS from Caltech in engineering and applied science, and her MS and PhD in environmental engineering from Univ California Irvine. Her research focuses on pathogens in the environment including their sources, fate, and transport in natural and engineered systems. She is also interested broadly in coastal water quality where her work addresses the sources, transformation, transport, and ecology of biocolloids - specifically fecal indicator organisms, DNA, pathogens, and phytoplankton - as well as sources and fate of nitrogen. Presently, she serves on the State of California Ocean Acidification and Hypoxia science task force, and is an associate editor at ES&T and ES&T Letters. She received the ASCE Huber Prize in 2016 and an NSF CAREER award in 2007.

Civil and Environmental Engineering, Stanford University and the Woods Institute for the Environment: The CEE department at Stanford is housed within the School of Engineering and includes 30 faculty members, 250 graduate students, and 40 UG students. The Woods Institute for the Environment is an interdisciplinary community of faculty, staff and students devoted to environmental research related to sustaining communities while stewarding the environment.