CASE WESTERN RESERVE UNIVERSITY

CIVIL AND ENVIRONMENTAL ENGINEERING DEPARTMENT SEMINAR& CASE ADVANCEMENT FELLOWS

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Date: Thursday, October 9th, 2025
Time: 4:00pm – 5pm EST
Location: In person, Bingham, Vose Room 138
Zoom link: Here

Improving drinking water safety: Harmful algal blooms, DBPs, and a potential new treatment to control algal toxins

Abstract: Harmful algal blooms (HABs) and their toxins pose a growing threat to human health. Increasing incidents of HAB-related Do Not Drink/Do Not Boil orders due to the detection of algal toxins in finished waters above guidelines have brought urgent attention to managing harmful algae and algal toxins in drinking water. Algae can also serve as a source of organic matter in the formation of disinfection by-products (DBPs), including the more toxic nitrogen-containing DBPs. This presentation will present new research that addresses these issues, along with a potentially promising new treatment (UV/chlorine) to control algal toxins (microcystins). Target and nontarget analysis using GC-MS and LC-MS/MS, as well as total organic halogen analysis was used to analyze DBPs and other transformation products.

Bio: Dr. Susan Richardson is the Arthur Sease Williams Professor of Chemistry at the University of South Carolina and was formerly at the U.S. EPA for many years. Her research surrounds the study of emerging contaminants in water. She is a member of the National Academy of Engineering (2024), Executive Editor and Associate Editor for *Environmental Science & Technology,* past President of the American Society for Mass Spectrometry (2020-2022), and received the American Chemical Society (ACS) Award for Creative Advancements in Environmental Science & Technology (2008), an Honorary Doctorate from Cape Breton University (2006), an AAAS Fellow (2019), an ACS Fellow (2016), the Herty Medal (2020), the Southern Chemist Award (2020), the Walter J. Weber, Jr. AEESP Frontier in Research Award (2021), and the Analytical Scientist Power List (2024, 2023, 2021, and 2019). Over her career, she has published 220 articles, given 399 invited presentations and seminars (including 80 plenaries/keynotes) and 198 contributed presentations. She has a Ph.D. in Chemistry from Emory University and a B.S. in Chemistry & Mathematics from Georgia College & State University.