

CIVIL AND ENVIRONMENTAL ENGINEERING DEPARTMENT SEMINAR



DR. KARA NELSON

Chair in Development Engineering
Civil and Environmental Engineering
University of California, Berkeley

Date: Thursday, November 20th, 2025

Time: 4:00pm – 5pm EST

Location: Online via Zoom [Here](#), or view the seminar in Bingham, Vose Room #138

Will Direct Potable Reuse Make Drinking Water Safer?

Abstract: Piped water systems have enabled billions of people around the globe to gain access to improved drinking water over the past 100 years. However, water scarcity, degrading infrastructure, and defacto (unplanned) water reuse present challenges to the safety of drinking water. Direct potable reuse (DPR) is an emerging practice in water scarce regions in which highly purified wastewater is introduced directly to potable water supplies. In this talk, I will review the treatment and regulatory approach developed in California to ensure that DPR is safe. Then, I will illustrate how research to enable DPR is revealing insights that have the potential to make all drinking water safer. Drawing on recent and ongoing research in Texas and California to better understand the microbial safety of advanced purified wastewater, I will discuss innovative strategies for water quality monitoring and new perspectives on the water microbiome, including remaining knowledge gaps.

Bio: Dr. Kara Nelson is a Professor of Environmental Engineering and holds the Blum Chancellor's Chair in Development Engineering at U.C. Berkeley. She is also the president of the Association of Environmental Engineering and Science Professors (AEESP). Prof. Nelson is passionate about developing innovative solutions to water quality challenges through the lens of equity and environmental sustainability. She teaches courses on innovation in the water sector, drinking water and wastewater treatment processes, pathogen detection, and pathogen inactivation, taking into consideration the wide range of contexts that exist in low to high-income countries. Her research program investigates practices for water reuse, wastewater based epidemiology, nutrient recovery, and international WASH (water, sanitation, and hygiene), which draw on her expertise in a wide range of treatment processes.

Sampling recycled water in Orange County, CA

