UNIVERSITY of HAWAI'I® MĀNOA

Department of Civil and Environmental Engineering
College of Engineering

SEMINAR

Unraveling organochlorine-respirers and organochlorine respiration

Time: April 17, 1:00-2:00 pm. Location: Holmes 287

Presented by:
Paige Novak, Ph.D.
Dr. Alfred A. Yee Visiting Professor at University of Hawai'i, Manoa,
Professor, Department of Civil and Environmental Engineering
University of Minnesota

Abstract:

Chlorinated organics, produced by man for uses such as degreasing, insulation, and fumigation, are some of the world's most hazardous compounds, causing effects from cancer to liver damage. They contaminate tens of thousands of sites in the US alone. About 20 years ago, bacteria that were able to "breathe" some of these chlorinated compounds (called organochlorine respirers), and thereby detoxify them, were discovered. The fact that some of these bacteria actually *required* these compounds to grow and survive was thought to be amazing. Scientists and engineers have since debated how these organisms came to be, whether they had a niche in uncontaminated environments, and how we could best harness their abilities to clean up contaminants. Our recent work has focused on determining whether organochlorine respirers have a natural role in the environment, what controls their numbers and activity in uncontaminated sites, and whether non-respiratory dechlorination processes might be important for contaminant degradation. The overall goal of this work is to develop better and safer remediation methods and begin to unravel global chlorine cycles.

Speaker's Bio:

Dr. Paige Novak is the Joseph T. and Rose S. Ling Chair and Professor in Environmental Engineering at University of Minnesota, an elected fellow of the Water Environment Federation, a recipient of the Samuel Arnold Greeley Award of ASCE, and a recipient of the Paul Busch Award of Water Environment Research Federation. She is currently the Co-Director of MNDRIVE Environment at the Biotechnology Institute of the University of Minnesota, and the Editor in Chief of the Royal Society of Chemistry journal *Environmental Science: Water Research and Technology*. Dr. Novak's research focuses on biological transformation of hazardous substances in the environment, including dechlorination of polychlorinated biphenyls in sediments and fate of estrogenic compounds in wastewater treatment plants.