Impacts of waste management & mismanagement on environmental antibiotic resistance

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Over 2 million people are sickened and at least 23,000 people die in the U.S. die of antibiotic resistant (AR) infections each year. Community acquired AR infections in humans were recently associated with environmental sources of antibiotic resistance. Mitigating the risk of environmental AR infections requires understanding hot spots for AR as well as the controls on the fate and transport of resistant organisms. A series of case studies will be presented towards understanding the sources, fate, transport, and treatment of AR genes in soil and surface water systems impacted by different waste streams (i.e., unconventional oil and gas wastewater, manure, combined sewer overflow effluent).

Bio: Nicole Fahrenfeld is an assistant professor of Civil and Environmental Engineering at Rutgers University. She earned her B.S. in Environmental Engineering from Johns Hopkins University, M.S. in Environmental Science and Engineering from Clemson University, and Ph.D. in Civil Engineering with a concentration in Environmental and Water Resources from the Virginia Tech. Her research focuses on the fate and transport of microbial and organic chemical contaminants in surface and groundwater. She has published research on microbial source tracking, biodegradation of munitions and crude oil, microplastics, and antibiotic resistance.