

Unforeseen Impacts To Water Quality During Managed Aquifer Recharge

October 18, 2023, 7:00-8:00pm (EST)



Sarah Fakhreddine, PhD
Assistant Professor
Civil and Environmental Engineering
Carnegie Mellon University

Population growth and climate variability highlight the need to enhance freshwater security and diversify water supplies. Subsurface storage of water in depleted aquifers is increasingly used globally to alleviate temporal disparities in water supply and demand often caused by variability of wet and dry periods. Managed aquifer recharge (MAR) stores excess water supplies during wet periods via infiltration into shallow underlying aquifers or direct injection into deep aquifers for recovery during dry periods. While MAR projects can enhance local water availability, introduction of recharge water alters the native biogeochemical and hydrological conditions of the receiving aquifer, potentially mobilizing toxic, naturally occurring (geogenic) contaminants from sediments into groundwater where they pose a much larger threat to human and ecosystem health. Arsenic poses a particular challenge at MAR sites due to its ubiquity in subsurface sediments and toxicity at trace concentrations. A strong understanding of the underlying biogeochemical processes can be used to design engineering approaches that protect water quality and ensure the long-term viability of water management strategies like MAR.

Dr. Sarah Fakhreddine is an Assistant Professor of Civil and Environmental Engineering at Carnegie Mellon University. Dr. Fakhreddine's research focuses on developing water management strategies that holistically address issues of water quantity and quality. She uses laboratory experiments, numerical modeling, and field-based approaches to investigate fundamental hydrological and biogeochemical processes controlling the fate and transport of contaminants in complex watersheds. Prior to her current role, she completed a postdoctoral fellowship in the Sustainable Water Resources group at the University of Texas at Austin and served as a fellow in the Climate Resilient Water Systems group at the Environmental Defense Fund. She received her PhD in Environmental Earth System Science and MS in Environmental Engineering and Science from Stanford University.

How to join:

[Click here to register](#) (recommended)

[Click here to join the meeting](#)

Meeting ID: 443 344 332 897

Passcode: Hm5KCs

[Download Teams](#) | [Join on the web](#)

Or contact dr.Ronghong.lin@gmail.com

Scan to Join



Scan to Register

