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Department of Civil and Environmental Engineering
Case Western Reserve University
Bingham Bldg. Room 208
10900 Euclid Ave
Cleveland, OH 44106

Civil and Environmental Engineering Department Seminar

Adapting to coastal change: Opportunities and challenges for coupled human-natural systems

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Assistant Professor

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Date: Wednesday Nov 4, 2020, 10:30 – 11:30 AM

Zoom Meeting ID: 913 9974 3238 **Passcode:** 576579

<https://cwru.zoom.us/j/91399743238?pwd=QlVTVWJFVUFGZDVON2ZMVMZleFlxdz09>

Abstract

As the climate changes, sea-level rise and more frequent and severe storms will increase the prevalence of flooding and erosion along the world's coastlines and pose a threat to people, property, and critical infrastructure systems. Human development and modification of the natural coastline will also play a role in defining the extent and severity of coastal hazards. Understanding the interactions and feedbacks between natural hazards and human decision-making is thus critical to ensuring the long-term sustainability of coastal communities. In this talk, I will present ongoing research aimed at quantifying flood-related challenges for densely populated coastal regions, including impacts on populations and critical infrastructure systems. I will then outline how coordinated adaptation planning can provide opportunities to enhance regional resilience while mitigating negative externalities associated with disjointed local-scale planning efforts.

About the speaker:



Michelle Hummel is an assistant professor of Water Resources at the University of Texas at Arlington. Her research focuses broadly on understanding how coupled human-natural systems respond to climate-driven disturbances in coastal regions. She has developed and applied numerical models to study how shoreline management decisions affect estuarine hydrodynamics and flooding and to quantify impacts on populations and interdependent critical infrastructure systems. She holds a B.S. in Civil Engineering from Case Western Reserve University and an M.S. and Ph.D. in Environmental Engineering from the University of California, Berkeley.