



Climate Change Seminar Series

Leveraging Social-Ecological-Technological Systems Dynamics for Urban Climate Resilience

Dr. Yeowon Kim
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Current infrastructure development is primarily reliant on identifying probable risks to engineered systems and making infrastructure reliable to maintain its function up to a designed system capacity. Alterations happening in the earth system (e.g., atmosphere, oceans, land, and ice) and in human systems (e.g., greenhouse gas emission, population, land-use, technology, and natural resource use) are increasing the uncertainties in weather predictions and risk calculations and making it difficult for engineered infrastructure to maintain intended design thresholds in non-stationary future. Motivated by the need for cities to prepare and be resilient to unpredictable future weather conditions, this talk introduces an emerging perspective of leveraging social, ecological, and technological systems (SETS) capacities for improved urban infrastructure resilience in cities.

Monday, October 17th

417 St. Patrick's Building

10:30am-11:30am EST

[Registration required](#)

10:30-11:10am Presentation

11:10-11:30am Q&A

Dr. Yeowon Kim is an Assistant Professor in Urban Systems and Environmental Engineering at Carleton University. Dr. Kim's research focuses on advancing urban infrastructure resilience to extreme weather events with a focus on hydrologic risks. Her research investigates ways to mitigate the impact of urban flooding and its consequences by advancing resilient and "safe-to-fail" infrastructure system design, stormwater management, and nature-based solutions. She links hydrologic models, infrastructure vulnerability analysis, decision support tools, and participatory workshops to improve infrastructure design and development strategies for systems-level urban water management. Furthermore, she studies how governance in diverse socio-cultural and biophysical contexts addresses climate extremes, the dynamics of social-ecological-technological systems (SETS) tackling hydrological risks in cities, and knowledge co-production approaches for institutional climate adaptation planning and community-based capacity building for urban resilience to extreme weather events.