February 15, 2024

Dear GISMO member,

We invite your expert participation in a workshop on *Developing a Digital Twin for Climate Adaptation in New York City* on Friday, March 15, 2024 at the Verizon Executive Education Center at the Cornell Campus on Roosevelt Island.

The workshop is hosted by a coalition of researchers from Cornell University and Cornell Tech, Hunter College (CUNY), the New School, Barnard College, George Mason University, scientists from the USDA Forest Service, and two civil society organizations (RISE and Universe City) that have come together to advance a National Science Foundation proposal for a new Civic-Led Urban Adaptation Research Center (CIVIC-UARC or the Center).

CIVIC-UARC brings together urban experts in multiple disciplines and institutions, working closely with public sector stakeholders, civil society, and community members on climate adaptation in New York City. With an environmental justice focus, our objective is to develop a model for coproduction of new knowledge and actions to address climate change hazards and risks that can be scaled to other cities.

Central to our project is the concept of a "Digital Twin" – a sophisticated digital replica of the city, enhanced by real-time data to model urban environments accurately. This initiative aims to use a Digital Twin and new emerging urban technologies to develop equitable urban climate change adaptation responses to heat exposure and flooding.

We strive to create a computational platform that will influence the reallocation of public sector climate adaptation funding towards more effective interventions in communities. Our proposed technology will not only empower experts, but also civil society organizations, contributing to increased cross-sectoral collaboration in NYC, and potentially lead to scaling of this approach to other U.S. cities.

Your input will significantly shape the direction of this work, particularly in the areas of data inputs, visualization, interface and experience, decision-making capabilities, and urban technology development. If you have questions, please contact Ben Wilde at benjamin.wilde@cornell.edu. We ask that you please RSVP to Claire Fisher at cmf239@cornell.edu for the workshop by Friday, March 1, 2024.

Sincerely,
Sean C. Ahearn and Farzin Lotfi-Jam

CIVIC-UARC Partners

Agenda

Developing a Digital Twin for Climate Adaptation in New York City

Time	Content
8:30 - 9:00	**Registration and Breakfast**
9:00 - 9:30	**Project Introduction and Objectives of the Day:**
9:30 - 11:45	**Session 1: Panel Discussions** **Panel Discussion 1 (9:30 - 10:30)** Discussion of how NYC is using emerging technologies to support planning processes and climate adaptation efforts, as well as pressing needs, areas of interest, and how Digital Twin technology could be leveraged to support participatory and inclusive climate adaptation efforts. **Panel Discussion 2 (10:45 - 11:45)** Building a shared understanding of the constraints and opportunities that emerging Digital Twin technologies present to municipal agencies. Discussion of the ethical considerations and concerns associated with emerging technologies, knowledge gaps, and efforts to make the technology more inclusive.
12:00 - 1:00	**Lunch**
1:00 - 3:00	**Break Out Working Groups** **Working Group 1: Data Inputs and Analyses** Discussion of the collection, representation, and ethical considerations of urban climate data. We will examine current systems, instruments, and sensors used for data observation, emphasizing the need for ethically and sensitively gathered information that considers community and urban dynamics. Identifying gaps in current data collection methods and proposing innovative approaches to address these climate data gaps and new collaborative efforts, and illustrating how various stakeholders, when working together, can contribute to and use these data for effective urban planning and policy-making. **Working Group 2: Interface and Experience** Discussion of how the public, city leaders, and climate experts interface with current platforms, and how an evolving Digital Twin technology can enhance these interactions and experiences. **Working Group 3: Data-Driven Decision-Making and Action** Exploration of the crucial role of data in enhancing decision-making

	processes, particularly for large-scale urban climate challenges. Discussion of criteria and methods to assess the efficacy and impact of data-driven decision-making systems, and how these technologies increase community agency and democratization of the public sphere.
2:30 - 3:00	**Coffee Break**
3:00 – 3:45	**Working Group Presentations** Each group will share the key points of their discussion with the larger group, paying particular focus on how CIVIC-UARC could advance Digital Twin technology to best support more effective and equitable climate adaptation planning.
4:00 pm – 5:00	**Summary, Next Steps, and Closing**