

UPCOMING CANDIDATE SEMINAR

*Candidate for Assistant Professor
Climate Resilience Engineer*

MAY 15

Frazier Rogers 122, 10:30 a.m.



**Dr. Nasser
Najibi**

**POSTDOCTORAL ASSOCIATE
BIOLOGICAL AND
ENVIRONMENTAL ENGINEERING**

CORNELL UNIVERSITY

**WEDNESDAY, MAY 15
ROG 122 • 10:30 A.M.**

ZOOM LINK: [HTTPS://
GO.UFL.EDU/GH3K6D9](https://go.ufl.edu/GH3K6D9)

PASSCODE: 031522

“Advancing Climate Risk Management in Water Resource Systems: A Process-Driven Analysis of Climate Extremes and Climate Change Impacts”

About the Seminar

Climate change poses a major threat to the sustainability of water systems. To better understand this threat, planners require a range of future climate scenarios that reflect the uncertainty in different components of climate change, in order to test the robustness of their systems. For example, the intensification of precipitation with warming is a direct impact of climate change and is driven by the increased moisture-holding capacity of the air as temperatures rise. However, the rate of precipitation intensification is highly uncertain, with major implications for how communities should adapt to future climate change. In addition, it remains an open question how this and other climate change uncertainties should be embedded in large ensembles of climate scenarios for risk-based analysis of water systems. In this talk, I will present a series of studies that examine the hydroclimate processes driving the distribution of past precipitation extremes and flooding across the United States. Next, I will discuss how precipitation extremes intensify with warming under different patterns of atmospheric flow and storm types across the Northeastern and Western United States. Finally, I will present a novel weather generation model that incorporates various signals of climate change from Earth system models to efficiently create large ensembles of weather data to support bottom-up vulnerability-based planning efforts at regional scales. This work addresses both fundamental questions about the impacts of climate variability and change on past and future hydroclimate extremes and how we can leverage such insights to develop new tools and datasets to engineer resilient solutions for sustainable planning and adaptation to climate change.

About Dr. Nasser Najibi

Nasser Najibi is a Postdoctoral Associate at Cornell University (Ithaca, NY). Prior to this, he was an ORISE Postdoctoral Fellow, sponsored by the USACE Engineer Research and Development Center. His work bridges water resources, climate sciences, and resilient engineering to understand the drivers of extreme weather events and climate change impacts on infrastructure systems. He received his Ph.D. and M.Phil. in Civil Engineering (Environmental and Water Resources Engineering) from the City University of New York, an M.Sc. in Geodesy and Remote Sensing from the University of Chinese Academy of Sciences, and a B.Sc. in Civil and Surveying Engineering from the University of Tehran.