OLD DOMINION UNIVERSITY
Center for Coastal Physical Oceanography

INSTITUTE FOR COASTAL ADAPTATION & RESILIENCE℠

Spring 2026 Virtual Seminar Series

"EXPLORING THE ROLE OF COASTAL GREEN INFRASTRUCTURE: INSIGHTS FROM AQUATIC CANOPY HYDRODYNAMICS"

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Monday, March 23, 2026
3:30 PM EST

ZOOM LINK
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Abstract
With increasing coastal vulnerability, there is a need to design and develop resilient coastal infrastructure to help mitigate risk. Coastal natural and nature-based features (NNBF) and nature-based solutions (NbS) broadly refer to the incorporation of natural ecosystems into coastal infrastructure. This type of nature-based system is often also referred to as green infrastructure, and it has gained attention in recent years as an alternative to traditional gray infrastructure (e.g., breakwaters). From a coastal engineering perspective, there are still a number of unknowns for natural ecosystems, ranging from wave attenuation capacity to long-term vulnerability. In this seminar, I will present research on wave-vegetation interactions and how environmental conditions can influence the underlying dynamics relevant for wave dissipation. Additionally, I will discuss how this subfield of research can help inform restoration efforts and green infrastructure design.

Biography
Matthew Falcone is a Research Assistant Professor at the Institute for Coastal Adaptation and Resilience at Old Dominion University. He obtained both his B.S. and M.S. in the School of Civil and Environmental Engineering at the Georgia Institute of Technology and a Ph.D. in Environmental Engineering at the University of California, Berkeley. Matthew is broadly interested in coastal resilience, and his research has focused on better understanding the capacity of green infrastructure (specifically salt marshes) to support coastal adaptation.