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Sustainability Seminar Series

Sustainability Seminar Series, 2024

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Nov 18th, 3:45 PM - 5:00 PM

## Should we stay or should we leave? Multi-objective tradeoffs in identifying robust beach nourishment and managed retreat

Prabhat Hegde

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**MONTCLAIR STATE**  
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The Doctoral Program in Environmental Science & Management  
and MSU Sustainability Seminar Series Present:

## Should we stay or should we leave? Multi-objective tradeoffs in identifying robust beach nourishment and managed retreat strategies.

WHEN: November 18, 3:45 pm WHERE: CELS 120

**Prabhat Hegde**

Thayer School of Engineering at Dartmouth College



Prabhat Hegde is a PhD candidate in Operations Research at the Thayer School of Engineering at Dartmouth College. During his PhD, Prabhat has worked on multi-layer network theory to model interdependent infrastructure systems, designing rural school bus routes and schedules, and decision analyses in climate risk management problems. Prior to his academic foray, Prabhat worked at the intersection of the energy and transportation sectors, conducting industrial research on sustainable fuels and emissions reduction technologies. Prabhat holds a Master's degree in Energy and Products from École nationale supérieure du pétrole et des moteurs and a Bachelor's of Technology in Mechanical Engineering from Manipal Institute of Technology.

In some low-lying coastal areas around the world, decision-makers are beginning to consider “managed retreat” of human populations to adapt to sea-level rise. One of the main challenges in designing a managed retreat strategy is determining when to trigger retreat. Decision-makers lack tools and scientific understanding to evaluate whether the benefits of interim response strategies, like beach nourishment, outweigh the costs of waiting longer to trigger retreat.

In this talk, I will contextualize the coastal beach nourishment problem within the umbrella of decision analyses frameworks for climate change adaptation. I will demonstrate how considerations of uncertainty and multiple objectives improve upon existing decision-making practices, drastically changing expected outcomes and the recommended timing of retreat.

For more information please contact Jorge Lorenzo-Trueba at [lorenzotruej@montclair.edu](mailto:lorenzotruej@montclair.edu)