Risk and Resilience of Waterfront Cities

- ## Research Team

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- ## Grand Challenges

  Reducing risks and increasing resilience to climate change (e.g., changes in lake or sea levels, precipitation), natural and human-made disasters (e.g., Hurricane Katrina, Fukoshima disaster, Gulf of Mexico oil spill), and rapid urban growth in coastal and major river floodplains, where much of the world's population resides. Risk is defined broadly to include fatalities, economic impairment, damage to infrastructure and other critical services, loss of biodiversity and cultural diversity, introduction of invasive species, impairment of human health and wellbeing, and loss of outdoor recreational opportunity.

- ## Research Questions

  (1) How can waterfront cities' risk mitigation measures be designed to optimize economic, ecological, and societal outcomes, in both the short and long term?

  (2) How can we develop resilient strategies that evolve and adapt with changing risks, while catalyzing economic activity and human and ecosystem wellbeing?

  (3) How can waterfront cities' risks be assessed and effectively and rapidly communicated?

  (4) How do policies and governance affect risk mitigation and how can barriers to effective management be overcome?