Navigating the New Arctic
One of the NSF’s 10 Big Ideas

**Major Goals:**

- Improved understanding of Arctic change and its effects
- Observation infrastructure
- Process understanding
- Modeling interactions among natural, built & social environments
- New research communities for research at intersections of Arctic natural and built environments and social systems
- Research outcomes that inform US national security and economic development needs and enable resilient, sustainable Arctic communities
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*Where CESM and CESM community can play an important role*
Improved understanding of Arctic change and its effects

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  - Sea ice
  - Clouds
  - Atmospheric circulation
  - Internal variability
  - Predictability
  - Midlatitude response
  - Detection/attribution
  - Freshwater system
  - Arctic shipping
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Changing climate

Impacts on coastal erosion

How to use CESM in modeling/informing these interactions?
NSF goal: New research communities for research at intersections of Arctic natural and built environments and social systems

• How do we build on the CESM community to contribute to these efforts? For example, to better understand natural hazards relevant for built environments and local communities.

• Knowledge exchanges
• Workshops
• Sharing of information between local communities, built environment experts, CESM climate scientists
• Others?
How can the CESM project contribute to NSF NNA goals?

• What model developments are needed?
• What community activities would be useful?
• What simulations would be valuable?
• How can we leverage existing and/or ongoing activities and model simulations to contribute to NNA goals
  • For example, model output needs for new large ensemble
  • Cross working group interactions
  • Annual and working group meetings
  • Tutorial activities
Questions?

Photo credit: Marika Holland