Arctic Engineering Research Center (ERC)

The University of Alaska Fairbanks (UAF) has been funded by the National Science Foundation (NSF) for a year-long planning grant to develop an Engineering Research Center (ERC) proposal. The ERC will develop integrated solutions for communities threatened and displaced by climate change. The goal is to facilitate the creation of communities and economies based on sustainable use of local and renewable resources.

Need

Over 30 isolated coastal Alaska communities are threatened with erosion, flooding, and the loss of clean water and infrastructure in the next decade due to the amplified effects of climate change in the Arctic. Similar climate changes and their effects are occurring throughout the world. Alaska can serve as a microcosm for coordinated and sustainable energy and infrastructure development for human displacement challenges and resilience worldwide.

Strategy

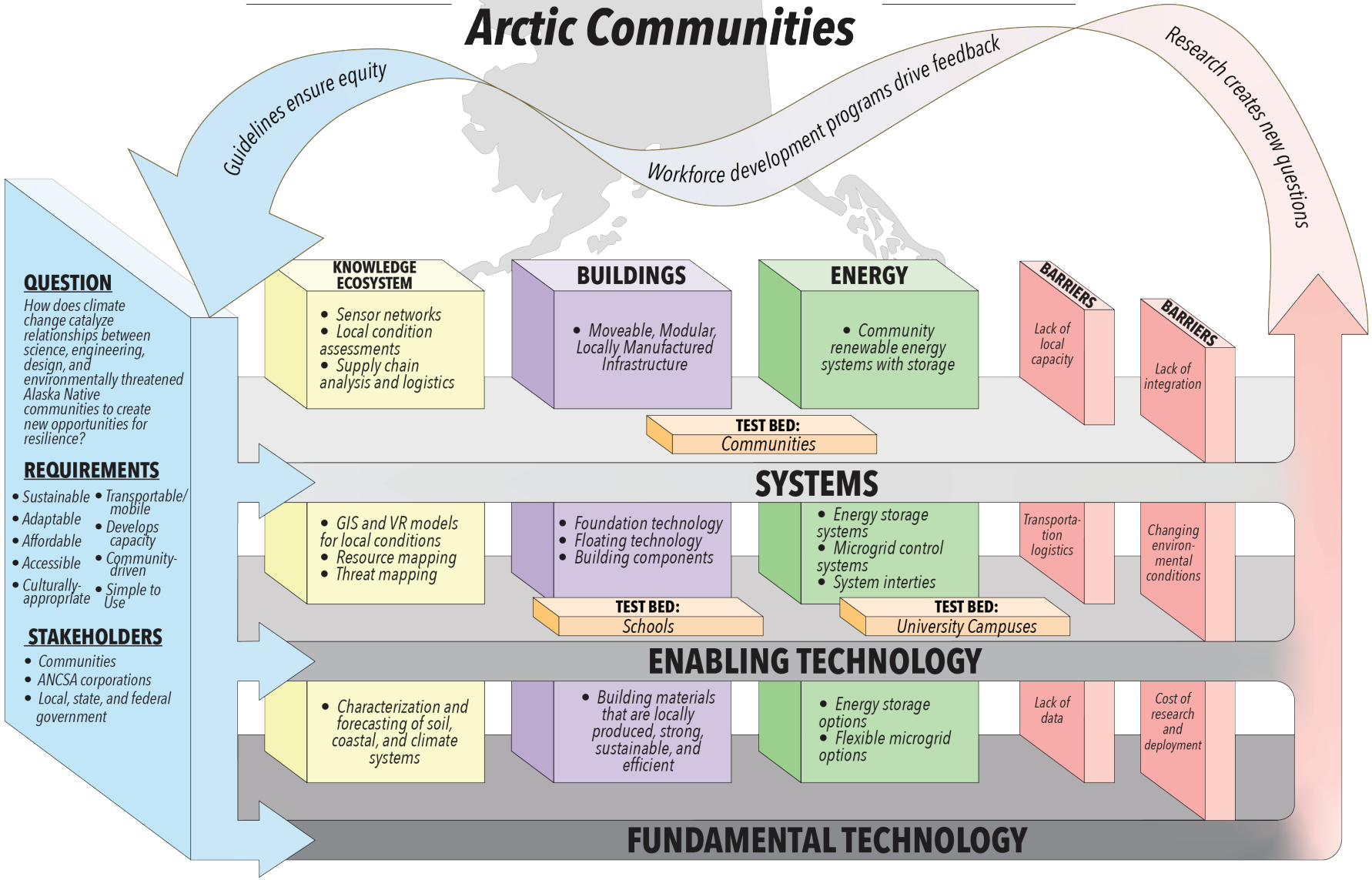
The Arctic ERC will include education, workforce development, implementation processes, research, and technology innovation with diverse partners across the state. The university recognizes ongoing efforts around the state to help threatened communities and does not seek to supplant those efforts, but rather, to complement and focus them in a manner that adds value and results in long-term sustainability and new approaches that translate across the country and beyond. This will take the form of integrating engineering research and education with technological innovation to transform national prosperity, health, and security.

Vision

Working with communities and leaders at the forefront of climate change, the Arctic ERC will improve Arctic community resilience and sustainability by engineering buildings, energy technologies, and knowledge systems that are equitable, culturally integrated, and applicable to threatened communities worldwide.

Erosion has forced the village of Newtok, Alaska to relocate.

Resilient, Sustainable Infrastructure for *Arctic Communities*



Project Partners

Alaska Native Tribal Health Consortium

Cold Climate Housing Research Center

Arctic Slope Regional Corporation Energy Services

Oak Ridge National Laboratory

Project Lead

University of Alaska

University Partners

Arizona State University

University of Virginia Arctic Design Group

George Washington University

Washington State University

University of Tennessee