

DEVELOPING A SUSTAINED AND COORDINATED U.S. COASTAL RESEARCH PROGRAM

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Motivation and Goal

- To address societal needs along the coast, a community of researchers from Federal agencies, academia, industry, & non-governmental organizations (NGOs) are developing a National science plan with the following goals:
 - To identify and address research priorities through better coordinated Federal activities
 - To enhance funding sources, strengthen academic programs, and build a skilled workforce.

A grassroots effort, initiated by researchers, led to meaningful engagement from the coastal community and swift action to build a National program.

A collaboration of federal agencies, academia, and stakeholders



[Home](#) [Storms Workshop](#)

Welcome to the U.S. Coastal Research Program

A National coastal effort to coordinate Federal activities, strengthen academic programs, and build a skilled workforce.

[CONTACT US](#)

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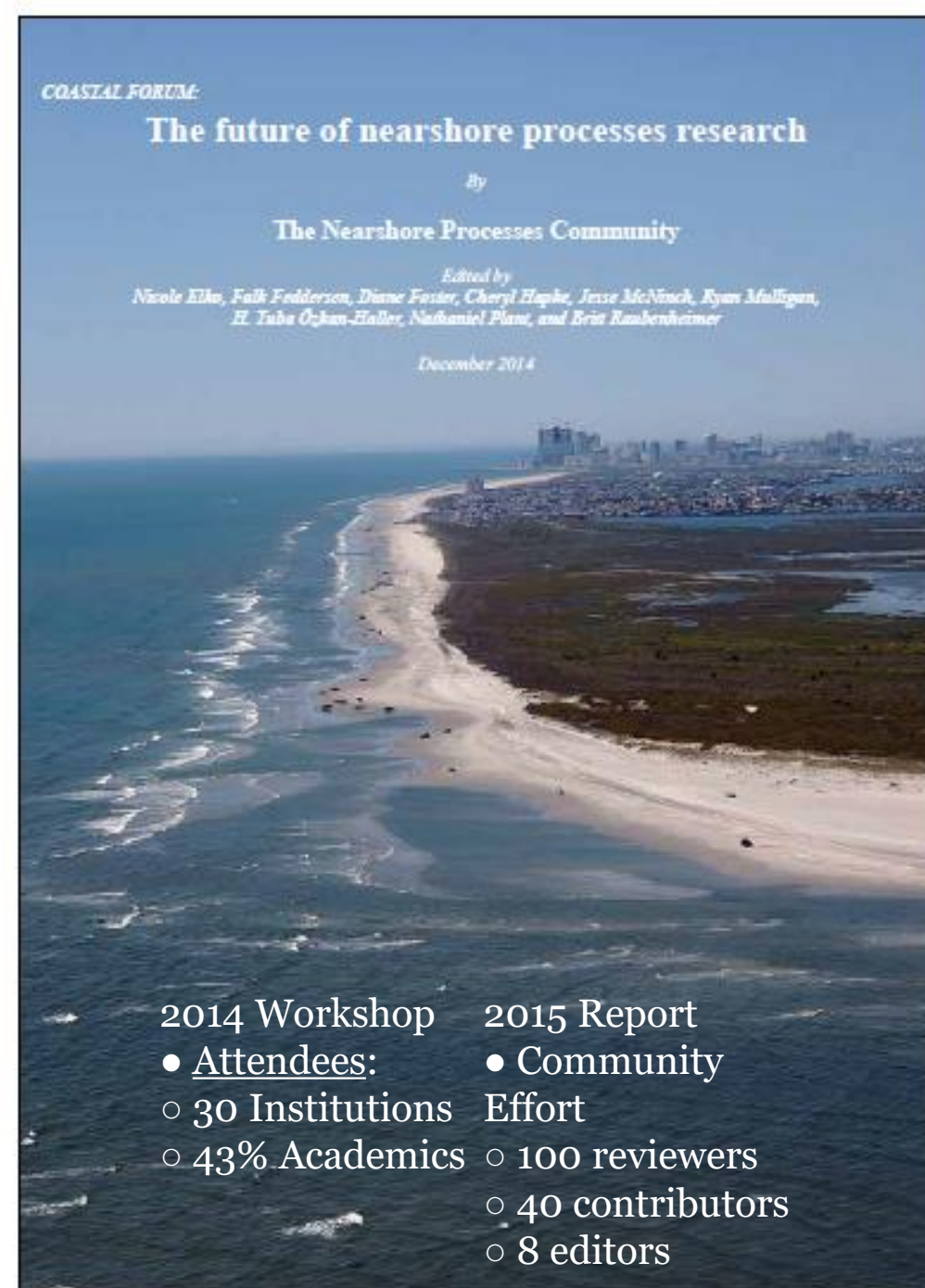
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Approach

Identify Future Directions

March 2014

- Academic and Federal researchers convened the Future of Nearshore Processes Workshop to develop a research vision to address societally-relevant coastal science challenges. They organized science needs within the **Nearshore Report** in three broad research themes:
 - (1) long-term coastal evolution,
 - (2) extreme events, and
 - (3) human and ecosystem health.
- They also identified a need to strengthen science infrastructure (e.g. observations and modeling) and recommended creation of a **U.S. Coastal Research Program** and Nearshore Advisory Council (NAC) to support the vision (NPC 2015).



Approach (cont.)

February 2016

- A Leadership Council composed of Federal agencies, the NAC, and the American Shore and Beach Preservation Association (ASBPA) agreed to collaborate to implement the Nearshore Report's recommendations.

March - August 2016 (Inventory Ongoing Research)

- Representatives from nine federal agencies met at the **Integrated Research Implementation Plan Workshop** to compile ongoing coastal research projects related to the societally-relevant themes identified in the Nearshore Report and to find potential collaboration opportunities. Academic researchers submitted additional ongoing coastal projects. Over **260** ongoing coastal research projects were identified.



September 2016

U.S. Nearshore Community Integrated Research Implementation Plan -

The National Plan



U.S. Nearshore Community Integrated Research Implementation Plan - The National Plan



September 2016

Approach (cont.)

Demonstrating the Value of Collaboration

October 2015; December 2016; April 2018

- The USCRP has organized three collaborative workshops that were conceived based on research themes identified in the Nearshore Report. Outcomes of these workshops improve the impact of agency investments, including funding of academic collaborators.
- Dune Management Challenges on Developed Coasts, October 2015 (Elko et al., 2016) – Technology Challenge
- 1st National Nearshore Collaboration Workshop, December 2016 (<https://uscoastalresearch.org/>)
- Storm Processes and Impacts, April 2018 (<https://uscoastalresearch.org/storms-workshop>)

Dunes Workshop Technology Challenge



SCIENCE

Topics, centers, missions

PRODUCTS

Maps, data, publications

NEWS

Releases, I'm a reporter

CONNECT

Contact, chat, social media

ABOUT

Organization, jobs, budget

Search

Shore & Beach

Funding ~\$265,672 in academic research; Informed by coastal managers

Scientific Partnership Aims to Help Shape Safer Coastal Communities

Release Date: DECEMBER 7, 2016

Coastal zone research projects will help managers protect developed areas' beach dunes, which are vital to resilient communities, ecosystems and economies.

University of Pennsylvania scientists will build a wind tunnel to test the sand-capturing capability of five types of dune vegetation. Oregon State University's model of coastal dune evolution will be expanded to include management options such as vegetation planting, beach nourishment, and beach scraping. The University of Alabama will investigate the vulnerability of dunes to multiple storms. These are among the new research projects undertaken in a collaboration by coastal scientists in the federal government and academia. The goal is to improve management of coastal dunes, which are vital to maintaining the resilience of coastal communities, ecosystems and economies.

The U.S. Geological Survey, U.S. Army Corps of Engineers and the American Shore and Beach Preservation Association are working together to advance coastal dune science and management through workshops and research investments. The ASBPA led the first Nearshore Collaboration Workshop in Kitty Hawk, NC Nov. 29-Dec. 1. The meeting brought together coastal experts from USGS, the USACE, National Park Service, Bureau of Ocean Energy Management, Office of Naval Research, NOAA, Woods Hole Oceanographic Institution, University of New Hampshire, and other academic institutions. The meeting is intended to become an annual event where federal and non-federal coastal scientists gather to develop opportunities for collaborative research projects in the coastal zone.



Contacts



1st National Nearshore Collaboration Workshop
November 29–December 1, 2016

**Hilton Garden Inn
Kitty Hawk, NC**

Logos: asbpa (American Shore & Beach Preservation Association), US Army Corps of Engineers, BOEM (Bureau of Ocean Energy Management), FEMA (Federal Emergency Management Agency), USGS (United States Geological Survey), National Science Foundation, NOAA (National Oceanic and Atmospheric Administration), Department of the Army Science & Technology, and Department of the Interior.

14 Collaborative Research Projects

<http://asbpa.org/get-involved/science-technology/>

- DUNEX
- Modeling test bed

Motivation for DUNEX

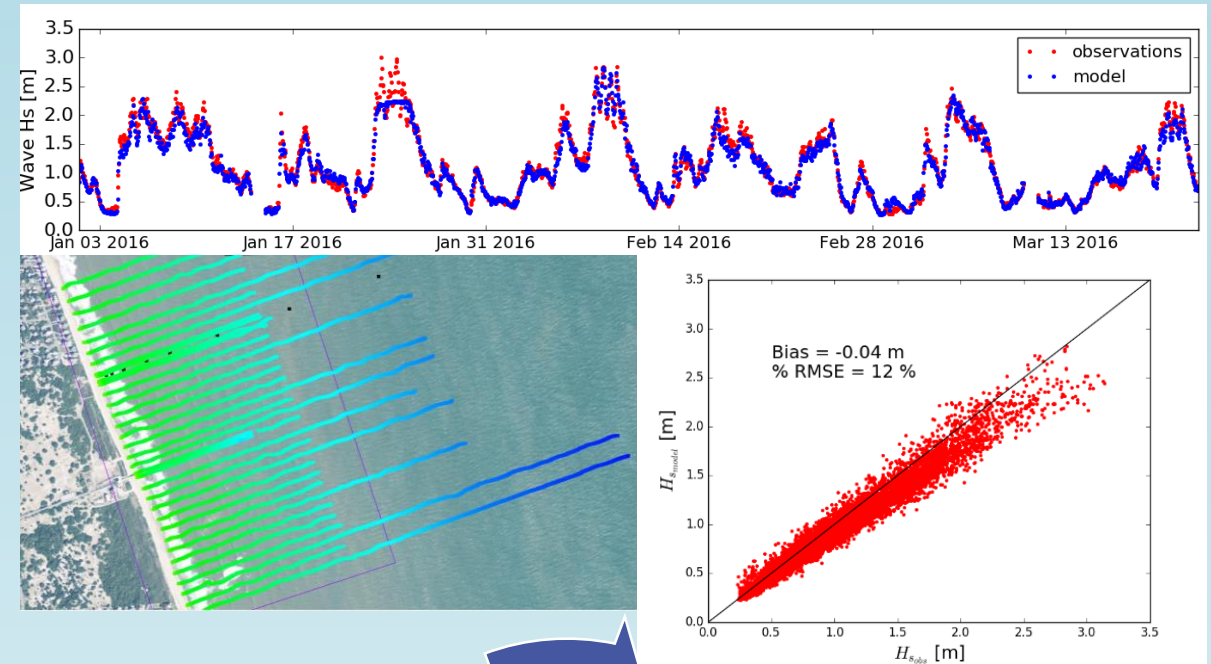
- Improve our understanding of storm processes and ability to:
 - Calculate storm processes and storm response (impacts)
 - Incorporate better representation of physical processes into models
 - Evaluate USACE and community actions that improve coastal resilience to extreme events
 - Identify gaps in knowledge to prioritize and foster Federal and academic R&D
- Fixed field site: Outer Banks, NC in 2020
- Conduct extreme-event field experiment(s) to measure during-storm:
 - Hydrodynamics, Sediment transport, Meteorology
 - Hydrology, Ecology
 - Morphological evolution of the beach/dune
 - Dune overtopping/overland flow
- USACE Commitment: Joint Airborne Lidar Bathymetry Technical Center of Expertise (JALBTCX)
Topography, Bathymetry, High Resolution RGB camera, Hyperspectral Imagery
- Target Storm: Nor'Easter or Hurricane on the US Atlantic Coast



Coastal Model Test Bed

Automated evaluation of coastal numerical models in near real-time utilizing ERDC/CHL Field Research Facility data to:

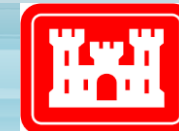
- assess model performance across a range of environmental conditions
- identify missing/insufficient model physics
- quantify model uncertainty
- provide framework to develop data assimilation techniques
- Modular, open-source approach
- **Collaborative environment**



Identify poorly resolved physics

Directed Research to address deficiencies

Add improvements to model





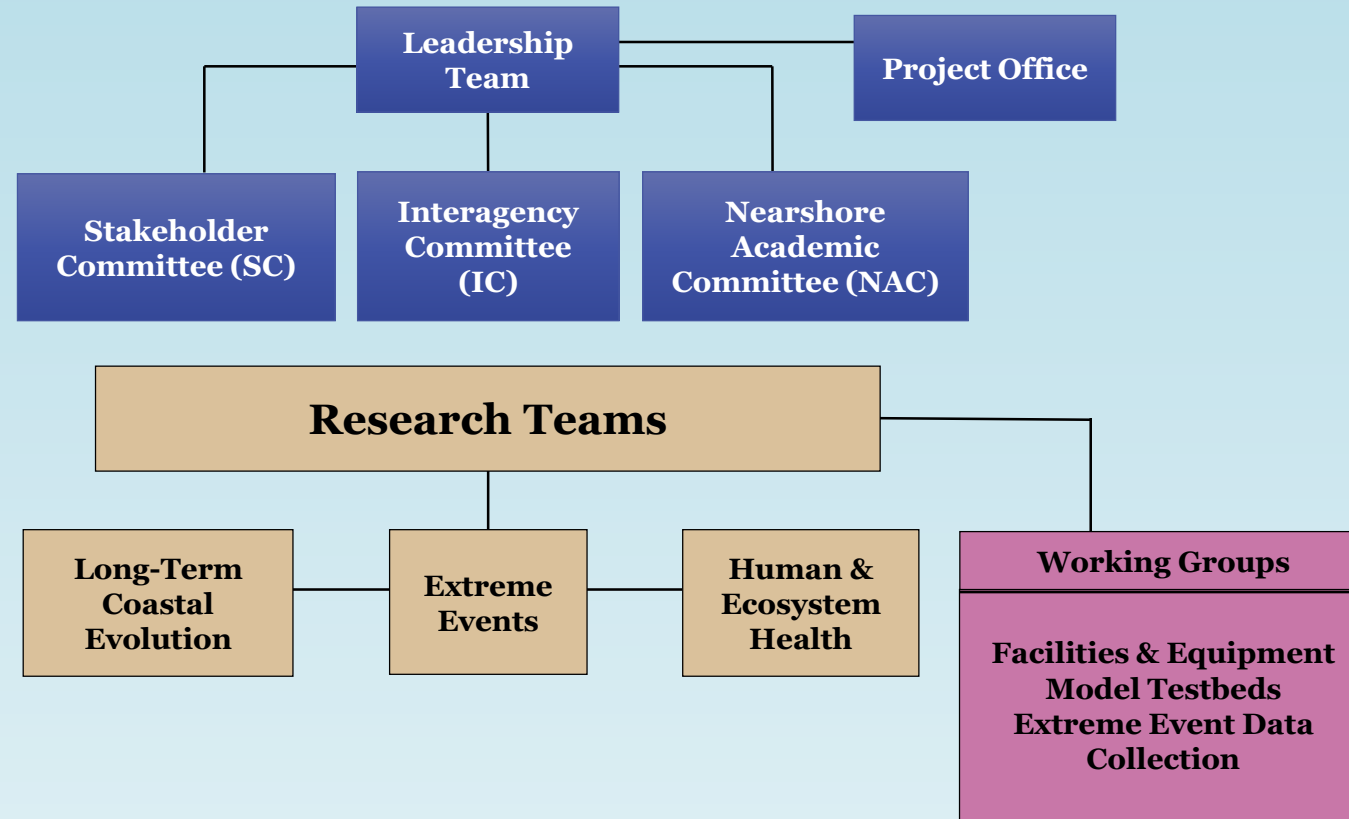
U.S Coastal Research Program (USCRP) Storm Processes and Impacts Workshop April 16-18, 2018



www.uscoastalresearch.org

Hilton St. Petersburg Bayfront
St. Petersburg, Florida

U.S. Coastal Research Program Governance



ASBPA 2018 National Coastal Conference



Oct. 30-Nov. 2

**The San Luis Hotel,
Spa & Conference
Center,**

Galveston Island, TX



Resilient Shorelines for Rising Tides

Questions?

www.uscoastalresearch.org

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