Homeland Security
Science and Technology

Coastal Resilience Center (CRC)

A DHS Center of Excellence

The CRC conducts research and education to enhance the resilience of people, infrastructure, economies, and the natural environment from the impacts of coastal hazards such as floods and hurricanes.

LAUNCH ▶	2015
PARTNERS ▶	More than 30 university, industry, and government partners
EXPERTISE ▶	Disaster recovery and mitigation planning, coastal hazards/storm surge modeling, risk communication, decision support modeling, infrastructure assessment, and engineering
DHS ALIGNMENT ▶	Federal Emergency Management Agency, U.S. Coast Guard, National Protection and Programs Directorate

Feedback from Our Partners

"I won't show up to hurricane season without [ADCIRC]," said **Rear Admiral Peter J. Brown,** *Commander, 7th Coast Guard District, in 2017 about his experience using the Advanced Circulation (ADCIRC) forecasting system to inform decisions during hurricanes Irma and Maria.*

"The Resilience Scorecard [developed by CRC researchers] **is an effective tool allowing us to evaluate our existing plans and policies** *against the backdrop of resilience… [W]e plan to revisit our scores and use the Resilience Scorecard as we begin developing our updated comprehensive plan so* **we can maximize our opportunities to transform Norfolk into the resilient coastal community of the future.***"*

George Homewood, Director of Planning & Community Development
City of Norfolk, VA, 2018

Research and Education Capabilities

- High-precision coastal flood, storm surge and wind forecasting
- Hazard mitigation and recovery planning
- Education and training for the current and future homeland security workforce

COASTAL RESILIENCE CENTER
A U.S. Department of Homeland Security Center of Excellence

A nationwide consortium led by:

University of North Carolina at Chapel Hill

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In partnership with:

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University Partners

Colorado State University, CO
Cornell University, NY
East Carolina University, NC
Florida State University, FL
Jackson State University, MS*
Johnson C. Smith University, NC*
Louisiana State University, LA
North Carolina State University, NC
Old Dominion University, VA
Oregon State University, OR
Rensselaer Polytechnic University, NY
Texas A&M University, TX
Tougaloo College, MS*
University of Central Florida, FL
University of Maryland, MD
University of North Florida, FL
University of Puerto Rico-
    Mayaguez, PR*
University of Rhode Island, RI
University of Texas – Austin, TX

Minority Serving Institution (MSI)

Enterprise Partners

ARCADIS Consulting
Seahorse Coastal Consulting
NASA Jet Propulsion Laboratory
AECOM
WaterWonks, LLC
American Planning Association
American Red Cross
Association of State
    Floodplain Managers
International Association of
    Emergency Managers
National Association of
    Emergency Managers
Salvation Army
American Shore & Beach
    Preservation Association

For a complete list of partners
and more information, please visit
Coastalresiliencecenter.unc.edu

For more information on DHS
Centers of Excellence, please visit
hsuniversityprograms.org

Impacts

Protecting flood-prone communities

CRC uses the Advanced Circulation (ADCIRC) Storm Surge Guidance System to predict location and severity of coastal flooding. ADCIRC was used at the North Carolina Emergency Operations Center during Hurricane Matthew (2016) and Texas State Operations Center during Hurricane Harvey (2017) to execute search-and-clear operations, position resources in advance of the storm, aid evacuation, and make preliminary damage assessments; and during hurricanes Irma and Maria (2017) for the U.S. Coast Guard to position people and assets.

Guiding resilient planning and rebuilding

CRC developed the Plan Integration Method and Resilience Scorecard to assess community plans for their ability to work collectively to reduce future flooding and storm risks. The Scorecard has been used in Norfolk, Va., and League City, Texas, and will be used to assess communities in Houston, Texas following Hurricane Harvey. In the wake of Hurricane Matthew, CRC also works with several North Carolina communities to develop community rebuilding plans.

Improving risk communication

Using tailored personal communications delivered by text messages, CRC relays disaster risk information to increase individual actions to become more prepared.

Educating the next generation of hazards professionals

Through education programs, CRC educates future hazard researchers, educators and practitioners, emphasizing the development of certificate and degree programs at Minority Serving Institutions (MSIs). Since 2016, instructors have taught more than 30 courses to more than 500 students across seven university campuses.