

Center for Natural Disasters, Coastal Infrastructure and Emergency Management

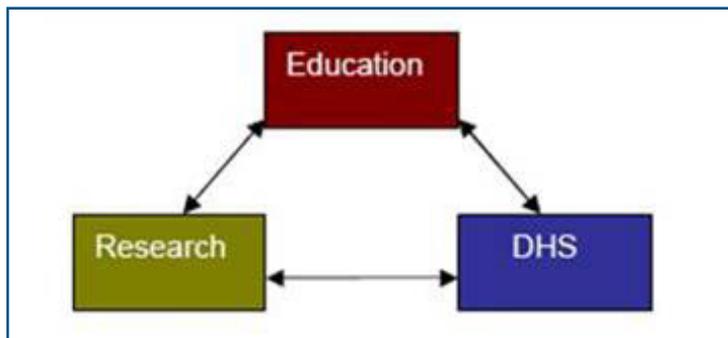
A DHS Center of Excellence

“Advancing natural hazards resilience through multi-disciplinary research and innovative engagement strategies”

CENTER OF EXCELLENCE

The Center for Natural Disasters, Coastal Infrastructure, and Emergency Management, led by the University of North Carolina at Chapel Hill and Jackson State University in Jackson, Miss. will enhance the Nation’s ability to safeguard populations, properties, and economies as it relates to the consequences of catastrophic natural disasters.

This Center of Excellence has two primary focuses: Research and Education.



MISSION

Reduce loss of life or injury and lessen damages to the built and natural environment by advancing the understanding of hazard resilience, transferring that knowledge into action, and developing educational curricula that serve as a firm and enduring foundation for producing the next generation of researchers to help solve the challenges associated with natural hazards and disasters.

RESEARCH

UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL

The Department of Homeland Security Center of Excellence for Natural Disasters, Coastal Infrastructure

and Emergency Management (DIEM) research co-lead is the University of North Carolina at Chapel Hill. DIEM is structured to conduct innovative research on natural hazards and disasters and disseminate the knowledge developed to hazard scholars and practitioners, community officials, individuals and other end-users.

The Center achieves its initiatives through four research focus areas:

- 1) The **Coastal Hazards Modeling** focus area emphasizes the study of the physical science of hazards to understand the meteorological, hydrological, geophysical, and other characteristics of hazards, develop improved models to assess their behavior and test these models in order to predict impacts on human settlements and natural systems.
- 2) The **Engineering to Enhance the Resilience of the Built and Natural Environment** focus area emphasizes the interaction between hazards and the built and natural environments to promote an improved understanding of how infrastructure, including natural systems, can be designed or managed to facilitate resilience.
- 3) The **Disaster Response and Social Resilience** focus area examines the institutional and social conditions that facilitate improved levels of community preparedness, emergency response and post disaster recovery.
- 4) The **Planning for Resilience** focus area evaluates planning and decision-support tools. Plan evaluation methods are used to determine the efficacy of hazard mitigation, disaster recovery and preparedness plans, including their ability to improve resilience.

Cross cutting programs support the research of the four focus areas and translate that research into action. The **Advanced Information Systems** program provides visualization, analysis and geospatial technology that supports all focus area research and helps to communicate findings to practitioners.



EDUCATION

JACKSON STATE UNIVERSITY

The Department of Homeland Security Center of Excellence for Natural Disasters, Coastal Infrastructure and Emergency Management (NDCIEM) education co-lead is Jackson State University. NDCIEM is focused on developing curricula that serve as a firm and enduring foundation for producing the next generation of highly educated, creative and innovative researchers to help meet DHS challenges from natural disasters in coastal areas.

NDCIEM has developed several programs to educate current and future homeland researchers and leaders. Education Programs include:

- Undergraduate and graduate research-oriented curricula is being developed at Jackson State University in Coastal Engineering with a focus on natural disaster
- Natural disaster concentration and integration into existing course tracks are being carried out at Alcorn State University, Jackson State University, Johnson C. Smith University, Mississippi Valley State University, and South Carolina State University
- Emergency management courses are being developed and implemented at Alcorn State University, Jackson State University, Mississippi Valley State University, and the University of Houston.
- Disaster response data is being integrated into core research methods classes in the Social Sciences at Tougaloo College.



PARTNERS

- University of North Carolina at Chapel Hill – Research Lead
- Jackson State University – Education Lead
- Alcorn State University
- California State Polytechnic University
- Georgia State University
- Johnson C. Smith University
- Louisiana State University
- Medical University of South Carolina
- Mississippi State University
- Mississippi Valley State University
- NOAA National Weather Service Severe Storms Laboratory
- North Carolina State University
- Renaissance Computing Institute
- Rensselaer Polytechnic Institute
- Rice University
- Texas Southern University
- Tougaloo College
- Tulane University
- University of Connecticut
- University of Delaware
- University of Houston
- University of North Carolina at Charlotte
- University of Oklahoma
- University of Texas at Dallas
- U.S Army Corps of Engineers