

# **+ Engagement Centers Provide Local Presence and Statewide Impact**

## **The Issue**

Addressing issues of statewide importance and that manifest themselves differently by region cannot be adequately addressed by one organization based in the Triangle area. Expertise from other UNC campuses, regional organizations, and the local business and education communities must be put to use in order to have an impact from the mountains to the Outer Banks.

## **RENCI Projects**

RENCI launched its statewide engagement center program in 2007 and now operates regional engagement centers at UNC Asheville, East Carolina University in Greenville, and at UNC Charlotte. All three sites aim to address problems that affect the entire state and that have specific impacts on their regions. The sites are linked via high-speed networks to RENCI's anchor site at Europa Center in Chapel Hill and to engagement sites at UNC Chapel Hill, NC State and Duke. Together they comprise a statewide organization that uses technology to link talented people, software, hardware, and data and visualization resources, and to connect to a nationwide community of researchers, educators and practitioners dedicated to collaborative problem solving.

RENCI at UNC Asheville works with a wide range of community groups on disaster preparedness and response, with an emphasis on dealing with floods and mudslides in mountainous areas in order to protect people and property and promote sustainable economic development. It also works closely with the NOAA's National Climatic Data Center on visualizing elements of the agency's vast weather archive, the largest in the world.

RENCI at ECU's disaster and geospatial team has tapped the expertise of ECU's medical and public health schools to identify at risk populations who would be most vulnerable during coastal storms that require mass evacuations. Going forward, the center will focus on understanding and dealing with coastal hazards, specifically the potentially devastating impacts of storm surge (e.g., overwash), the episodic and chronic erosion of North Carolina's ocean and estuarine shorelines, and the hard-to-define but serious threats posed by sea-level rise.

RENCI at UNC Charlotte utilizes university-based expertise in urban growth, urban planning and visualization to analyze growth patterns over the next 20 years in the Charlotte metro area and its potential effects on the environment, traffic, public service infrastructure and overall quality of life. The center has created a visual software tool called the Urbanization Explorer, which allows users to explore growth patterns over time and could be a useful decision support tool for developers, urban planners and open space advocates.

## **The Expertise**

RENCI technical experts have deployed world-class visualization and collaboration technologies at all the engagement sites. These custom-designed and built resources give researchers and community collaborators powerful tools for creating visual computer models and for analyzing data related to the problems addressed at each center. RENCI's state-of-the-art facilities and technical expertise also encourage local campus networks to partner with RENCI and add their talents and knowledge to the statewide community of researchers working to solve statewide problems through RENCI.

## **The Partners**

UNC Asheville  
East Carolina University  
UNC Charlotte  
numerous community collaborators  
including government agencies  
non-profits and businesses

## **The Impact**

Across North Carolina, RENCI has put in place a geographically distributed network of subject-matter experts and technology resources that are addressing some of the states' most pressing issues – natural disaster mitigation and response, sea-level rise, coastal erosion, and rapid urbanization. In little more than two years, communities in the mountains, on the coast and in between have begun to work in partnership with campus faculty and staff on problems that affect day-to-day life in their regions. New software tools that analyze the risks of natural hazards and help in decision support have been developed and put into the hands of government officials, community groups and others. Together, the engagement centers comprise an important component of the UNC System's ability to respond to the needs of North Carolinians.