News

Press Releases
Event Announcements
CCT Weekly
Grants and Funding
Student News
Archived News

Coastal resiliency researchers awarded $1.3 million in grants

EurekAlert (press release)

Nearly a quarter of the world's population lives within 60 miles of the shoreline and within 300 feet of sea level elevation. As sea level rises, these shoreline communities as well as barrier islands, dunes and marshes become more at-risk. The LSU Center for Coastal Resiliency, or CCR, led by Scott Hagen, a professor in the LSU Department of Civil & Environmental Engineering and the LSU Center for Computation & Technology, has received $1.3 million in grants to support critical research that will advance the tools and processes to assess these risks.

With support from the NOAA National Centers for Coastal Ocean Science, CCR will build upon its previous NOAA-funded efforts and those successful outcomes and strategies. One strategy has been to directly involve coastal resource managers early and throughout the assessment process. Resource managers' input has informed the development and application of large-scale, high-definition computer models that can predict the coastal dynamics of sea level rise and assess hydrodynamic and ecological impacts at the coastal land margin. This research examines the impacts from the coastal dynamics of sea level rise through integrated field assessments and models representing tides, wind-wave, storm surge, coastal morphology, overland and biological processes.

In collaboration with the Dauphin Island Sea Lab, University of Central Florida, University of South Carolina and Texas A&M University-Corpus Christi, CCR researchers aim to refine, enhance and extend the models as well as link the economic impact and value of ecosystem services to the coastal dynamics of sea level rise.

"Our collaborative work has helped shift the paradigm for climate change and sea level rise assessments at the coastal land margin away from 'bathtub' assessments, which simply apply a static rise to existing configurations, to a more dynamic and realistic assessment," said Hagen, the principal investigator of the projects. "The end products we have produced and are developing are truly outcomes from transdisciplinary work."

This $1.2 million project is funded for four years. The researchers will deliver their results through a flexible, multi-platform mechanism that allows for region-wide or place-based assessments.

"Engaging stakeholders appropriately and effectively over the duration of the project should help ensure development of accessible and useful tools that can empower communities in better understanding and preparing for the impacts of climate change and sea level rise," said Denise DeLorme, professor in the LSU Department of Environmental Sciences and co-principal investigator on the project.

Tackling large-scale challenges, such as sea level rise and storm surge response, with high definition computer models requires robust high-performance computing infrastructure.

"We have the people, tools and technology at LSU and the Center for Computation & Technology to find solutions that will be able to protect coastal communities worldwide," said J. "Ram" Ramanujam, director of the LSU Center for Computation & Technology. "CCR's strength is in building collaborations across disciplines to develop advanced systems-based models and further our understanding of the complexities that factor into coastal resiliency."

CCR received another grant to quantify the dynamic effects of sea level rise and projected landscape changes on storm surge in Hampton Roads, Virginia, which is rated second only to New Orleans as the most vulnerable area to relative sea level rise in the U.S. Results from this project will be centered on scenario projections of nuisance flooding at high tide, storm surge depth and extent under a suite of storm conditions, sea level rise rates, landscape changes and possible management actions. CCR will partner with the Northern Gulf Institute at Mississippi State University on this project.

Publish Date:
11-04-2016

Center for Computation & Technology
2003 Digital Media Center • Telephone: +1 225/578-5890 • Fax: +1 225/578-8957