



A NOAA-sponsored cooperative institute for developing research at academic institutions in the Northern Gulf of Mexico Region.



The Portal

Official Newsletter of the Northern Gulf Institute
www.northerngulfinstitute.org

March 2007

Who We Are

The Northern Gulf Institute (NGI) at the NASA Stennis Space Center, Mississippi was established in October 2006, and is the newest NOAA Cooperative Institute. The NGI is a consortium of universities led by Mississippi State University, in partnership with the University of Southern Mississippi, Louisiana State University, Florida State University, and Dauphin Island Sea Laboratory, Alabama.

The fundamental philosophy of the NGI is integration - integration of the land-coast-ocean-atmosphere continuum; integration of research to operations; and integration of individual academic institutional strengths into a holistic research and educational program specifically geared to the needs of Northern Gulf of Mexico users.

NGI research is driven by a basic central premise - that the significant value of Northern Gulf of Mexico social and economic resources, combined with a burgeoning coastal population and the continuing threats of onshore storms and inland flooding, require research results that help decision makers and management agencies better understand the linkages between ecosystems and human societies in order to reduce the vulnerability and enhance resiliency of these linked systems. To this end, the NGI mission specifically includes support for important national and regional initiatives, including the President's Ocean Action Plan, the Gulf of Mexico Alliance, and the Gulf Coastal Ocean Observing System.

Specific research activities are planned at a number of scales. The primary focus of these efforts will be in the Northern Gulf of Mexico, from the Sabine River on the west to the Suwannee River on the east. However, a Basin-Scale of interest for the NGI encompasses the entire Gulf of Mexico coastal and ocean region, and conceptually at least extends as far inland as the Mississippi River drainage basin - more than 30 states and 40% of the U.S. landmass. The Basin-Scale of NGI interest links its Northern Gulf of Mexico work and products to the broader biophysical and institutional context of the entire Gulf of Mexico. The NGI builds upon the appropriate cooperative linkages of its members with the Gulf Coastal Ocean Observing System, large scale climate and weather processes (e.g., with NOAA's Lower Mississippi River Forecast Center), and to national and international level concerns with marine transportation, fisheries, energy development and national defense.



To submit info or ideas for upcoming newsletters, please contact:
Debbie McBride, Editor dmcbride@gri.msstate.edu

NGI Research Themes

The NGI conducts collaborative research under four scientific themes:

Ecosystem Management

Characterize Northern Gulf of Mexico coastal wetland and fisheries habitats, including restoration strategies

Geospatial Data Integration and Visualization in Environmental Science

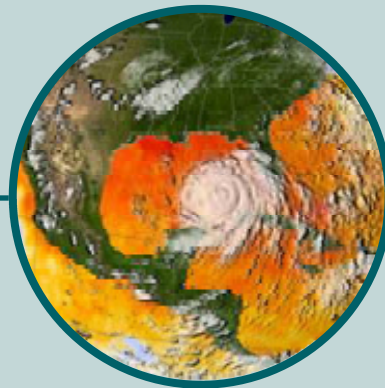
Develop significant results at the intersection of inland/watershed-coastal waters and resources, with a particular focus on the research, development, prototype testing and transition of scientifically-based geospatial observations, integration and improved access to data, and increased use of effective visualization technology

Climate Change and Climate Variability Effects on Regional Ecosystems

Contribute to Northern Gulf of Mexico climate assessment and impact models

Coastal Hazards

Strengthen the integration of watershed, estuarine and coastal models in the Northern Gulf of Mexico



NGI Mission

Design, develop and maintain a Northern Gulf of Mexico research and transition program that fills priority gaps or reduces limitations in current awareness, understanding and decision support between upland-watershed systems and practices and coastal waters, coastal habitats, coastal ecosystems and coastal hazards in the NGM Region. The CI mission specifically includes support for NOAA contributions to the President's Ocean Action Plan, a successful Gulf of Mexico Alliance, and strengthening the Gulf of Mexico Coastal Ocean Observing System.



NGI Projects - Year One

Dauphin Island Sea Laboratory

- *Education, Outreach and Habitat Restoration Research at the Dauphin Island Sea Lab* PI: Dindo, John
- *Habitat Restoration Research - Oyster Reef and Estuarine Landscapes* PI: Heck, Ken

Florida State University

- *The Florida State University Contribution to the Northern Gulf of Mexico Cooperative Institute – Year I* PI: Chassignet, Eric
- *Development of an Operational Coupled Physical – Biogeochemical Ocean and Atmospheric Modeling System for the Gulf of Mexico* PI: Chassignet, Eric
- *Enabling and Initiating Observing System Simulation Experiments of a Coastal High Resolution Oceanographic Model in the Northern Gulf of Mexico* PI: Chassignet, Eric

Louisiana State University

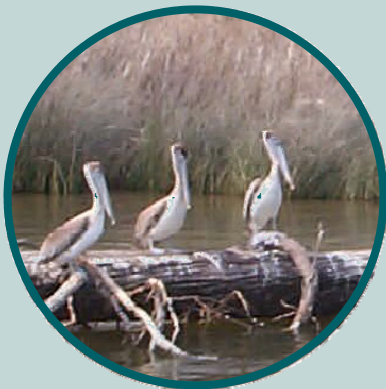
- *Delta Ecosystem Forecasting System* PI: Twilley, Robert
- *Public Health and Stressors* PI: Ates, Sibel A.
- *Trophic Linkages and Biomass Production in Estuarine Ecosystems* PI: Ates, Sibel A.
- *Investigating Material Exchange Between the Marsh and Channel Along an Estuarine Gradient* PI: Cable, Jaye

Mississippi State University

- *Developing a Foundation for Analysis of Natural and Human-Induced Disturbances to Coastal Economies* PI: Evans, Garen
- *Assessing the Impact of Ordinances, Outreach, and Enforcement on the Resiliency of Gulf Coastal Watersheds* PI: Walker, Jason
- *Watershed Modeling Improvements to Enhance Coastal Ecosystems* PI: McAnally, William
- *Spatial Technology and High Performance Computing for Improving Prediction of Surface Water Quality* PI: McAnally, William
- *Modeling Mobile Bay Sediments and Pollutants with New Technologies* PI: McAnally, William
- *Visualization Techniques for Improving Public Understanding of Catastrophic Events* PI: Moorhead, Robert
- *An Information Semantic Approach for Resource and Knowledge Discovery in an Integrated Ocean Observing System* PI: King, Roger
- *Northern Gulf Institute Outreach Efforts* PI: Hodge, Sharon
- *Improving Hurricane Intensity and Landfall Estimation with Refined Modeling* PI: Fitzpatrick, Pat

University of Southern Mississippi

- *Microbial Source Tracking and its Application to the Northern Gulf of Mexico* PI: Ellender, R. D.
- *Utility of Ionosphere and Troposphere Models for Extending the Range of High-Accuracy GPS* PI: Dodd, Dave
- *Monitoring and Assessment of Coastal Marine Ecosystems in the Northern Gulf* PI: Howdan, Stephan
- *Interaction between Off-Shore Circulation and Near-Shore Processes during Extreme Weather Events* PI: Kamenkovich, Vladimir
- *Satellite and in-situ Optical Assessment of Algal Blooms Events in the Northern Gulf of Mexico* PI: Lohrenz, Stephen
- *Coordination and Educational Support for USM Northern Gulf Institute Activities* PI: Lohrenz, Stephen
- *Quantifying Ecosystem Services of Different Coastal Habitat Types* PI: Fulford, Richard
- *Macrofaunal Indicators of Hypoxia* PI: Rakocinski, Chet



Meet Your Leadership



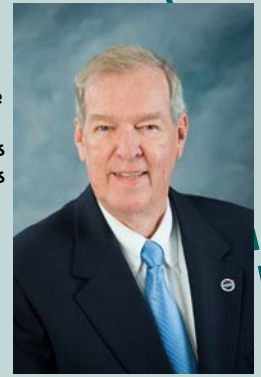
David Shaw
NGI Director

Dr. David Shaw is the director of the newly formed Northern Gulf Institute, and also serves as the director of the Geo-Resources Institute at Mississippi State University. He received his Ph.D. from Oklahoma State University in 1985, M.S. from OSU in 1983, and his B.S. from Cameron University in 1981. He holds the honor of being designated a William L. Giles Distinguished Professor, one of the highest honors to be bestowed upon a professor at MSU.

Shaw began his career at Mississippi State University in 1985 as an assistant professor of Weed Science, with research focused particularly on optimizing weed management practices to maintain farm productivity while improving surface water protection and management, and development of Best Management Practices for protection of surface waters from pesticides. Because of developmental efforts in applying spatial technologies to these research areas, MSU appointed him as the first director of the Remote Sensing Technologies Center in 1998. More recently, he has focused on developing applications of spatial technologies in site-specific agriculture and in assessing natural resources.

Honors and awards include MSU's highest distinction as a William L. Giles Distinguished Professor in 1998, the Ralph E. Powe Research Award (MSU's highest recognition for research) in 2000, election as a Fellow in the Weed Science Society of America in 2002, the Outstanding Alumnus Award from Cameron University in 1999, and the Grantsmanship Award from the Mississippi Agricultural and Forestry Experiment Station in 1997. He currently serves as president for the Southern Weed Science Society, and also a board member for the Universities Council on Water Resources.

You may reach Dr. Shaw at 662-325-9575, or via email at: dshaw@ngi.msstate.edu.



Glade Woods
NGI Co-Director

The former head of Mississippi's marine resources department is co-director of the recently created Northern Gulf Institute. Glade Woods' appointment to the Stennis Space Center-based institute recently was approved by the Board of Trustees, State Institutions of Higher Learning. He led the Mississippi Department of Marine Resources 1994-2000.

As NGI co-director, Woods will be the principal advocate to federal and state agencies at the space research facility, and throughout the Northern Gulf Coast region. He also will supervise MSU faculty and staff working at the Hancock County complex.

Woods holds an electrical engineering degree from MSU and a master's in engineering administration from the University of Utah.

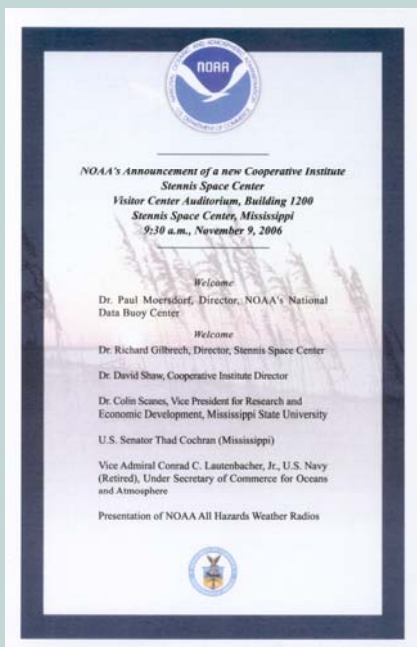
He serves as board president of the Partners for Stennis, an organization dedicated to promoting the growth and stability of the space center, and Partners for Pearl River County, an economic development group for the surrounding area. He also is a board member of numerous business, community development and financial institutions.

You may reach Mr. Woods at 228-688-1103, or via email at: gwoods@ngi.msstate.edu.

Did You Know?

There are already more than 100 scientists involved in collaborative research projects within NOAA's newly-formed Northern Gulf Institute - only 3 months after its inception.

Welcome aboard!



NOAA Vice-Admiral Conrad Lautenbacher, Jr. and U. S. Senator Thad Cochran joined other officials in formally announcing the Northern Gulf Institute at NASA's John C. Stennis Space Center on November 9, 2006.

