



Southeast Region Research Initiative (SERRI)

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Director

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The SERRI Research Team

Georgia

- **Georgia Institute of Technology**

Kentucky

- **University of Kentucky**

Mississippi

- **Alcorn University**
- **Jackson State University**
- **Mississippi State University**
- **University of Mississippi**
- **University of Southern Mississippi**

North Carolina

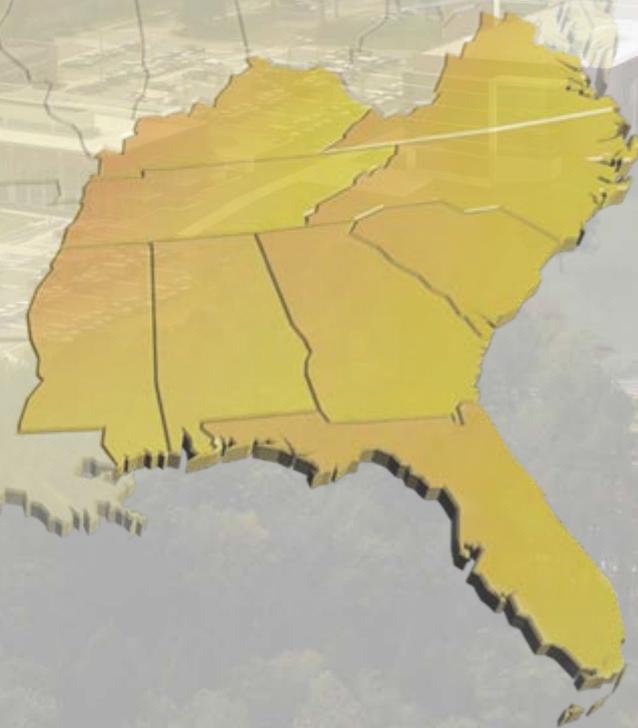
- **Western Carolina University**

South Carolina

- **University of South Carolina**
- **Savannah River National Laboratory**

Tennessee

- **Tennessee State University**
- **University of Tennessee**
- **Oak Ridge National Laboratory**
- **Y-12 NNSA Site**





SERRI Mission

Assist local, state, tribal and regional leaders within the Southeast Region in developing the tools and methods required to anticipate and deter terrorist events and to enhance disaster response.

***Community-Based, Regionally-Deployed Solutions
to Homeland Security Challenges***



SERRI Goals

Research Support – leverage regional research institutions and national research capabilities to meet regional homeland security needs

Operations Support – integrate requirements, facilitate mission-effective interactions among homeland security participants within the region and facilitate technology transition

SERRI Research Projects

Borders and Maritime

Security

- Real time identification and monitoring of barge carried hazardous commodities
- Mississippi groundwater, surface water, and dam inventory and vulnerability assessment
- Computational tools for water security

Chemical / Biological

- Rapid detection of agriterrorism via remote sensing
- Real time detection of chemical / biological pathogens in fluids
- Integrated sensor system for real time monitoring of metabolites / organophosphorus chemical warfare agents, pesticides, and E. coli in food and water
- Expansion of highway radiological detection to All Hazards capability

Explosives

- Nano particle reinforced composites for critical infrastructure protection

Human Factors

- Capturing Hurricane Katrina Data for Analysis and Lessons Learned research
- Workforce development at the frontier of DHS STEM
- Technology Transfer/commercialization of emerging HLS-related technologies
- Large capacity simulation of population response to disasters

Infrastructure / Geophysical

- Semantics driven knowledge discovery for wide area monitoring of electric power grid
- Southeast region critical infrastructure protection center initiative
- Simulation environment for planning, training, and assessment of emergency response / evacuation capabilities at high consequence sports events
- Analysis of WMD materials in waste / storm water treatment infrastructures in Southeastern U.S. cities
- High performance agent based topic monitoring
- Simulation based decision support system for water infrastructure security
- Rule set-based automation to support CIP decision making

Command, Control, and Interoperability

- Assured strategic communications during natural / willful disasters
- Disaster Response Intelligence System
- Real time operations support for emergency evacuations
- Specification, validation, and verification of imagery products for disaster management and response
- All hazards emergency operations management system
- Regional Emergency Planning Model for continuous disaster mitigation response
- Wireless Authentication and Tracking cybersecurity systems
- Data-sharing “middleware” for C2I systems
- Law Enforcement HLS-task capability assessment
- High performance agent-based media/internet topic monitoring
- Capturing and applying emergency preparedness/response lessons learned

SERRI Answers the Call for a New National Culture of Preparedness

“. . .in the new *culture of national preparedness*, State and local governments must continually seek to work with their neighboring jurisdictions. . . .the Federal government must take an active role in encouraging and facilitating these partnerships. Regional collaboration . . . will help the nation to reduce overlapping or redundant capabilities . . .as well as be a means of identifying and sharing homeland security lessons learned and best practices.

The Federal Response to Hurricane Katrina: Lessons Learned