

# Geospatial Information Science and Technology: An Integrating Force in Disaster Preparedness, Mitigation and Recovery

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## A National Problem

United States Natural Hazard Losses: 1960 -2003

Dollar Losses (Millions of 2004\$)

Slide courtesy of Susan Cutter, Univ. of South Carolina

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## An Increasing Problem Over Time

Slide courtesy of Susan Cutter, Univ. of South Carolina

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## Key Scientific Issues

- What makes people and places vulnerable to environmental threats from natural, technological, and human-induced hazards?
  - Understand circumstances that place people and localities at risk (susceptibility, resistance)
  - Understand circumstances that enhance or reduce ability to respond to environmental threats (resilience, adaptation)
- Provide scientific basis for disaster and hazard reduction policies

**United States Social Vulnerability**

Maps courtesy of Susan Cutter, Univ. South Carolina

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## Key Questions ...

- Need to take long-term, holistic view ...
  - What can we learn from past and what can we predict about future?
  - What policies and practices have worked in various places and why?
  - How can we document whether vulnerability is shifting or changing over time?
  - Why (how) are some places becoming more hazardous over time?
- Place is important ...
  - What is of concern and what works in one place may not be relevant and/or work in some other place

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## UCGIS / Geospatial Support

- One-stop shopping
  - Remote Sensing Hazard Guidance System funded by NASA REASoN project
- Archiving
  - The "shifting baseline" problem
- Backups and Redundancy
  - Role of Hunter College in the hours, days, and weeks following 9/11 tragedy
- Geographic Visualization and Analysis
  - New knowledge and methodologies for understanding complex interactions between social, natural, and engineered systems
- Education and Training
  - Helping to prepare tomorrow's workforce

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## Today's Program

- GIS-based Decision Support for Hurricane Disaster Relief
  - Mark W. Horner, Florida State University
- Anticipating and Responding to Unexpected Events: Supporting Real-World Geo-Information Exploration
  - Alan M. MacEachren, Pennsylvania State University
- Setting Wildfire Evacuation Trigger-Points Using GIS
  - Thomas J. Cova, University of Utah
- Integrated Research and Implementation in GIScience and Extreme Events: Developing Tools for Mitigation and Response
  - Chris S. Renschler, University at Buffalo (SUNY)



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