a concept map of

GeoCollaborative Crisis Management

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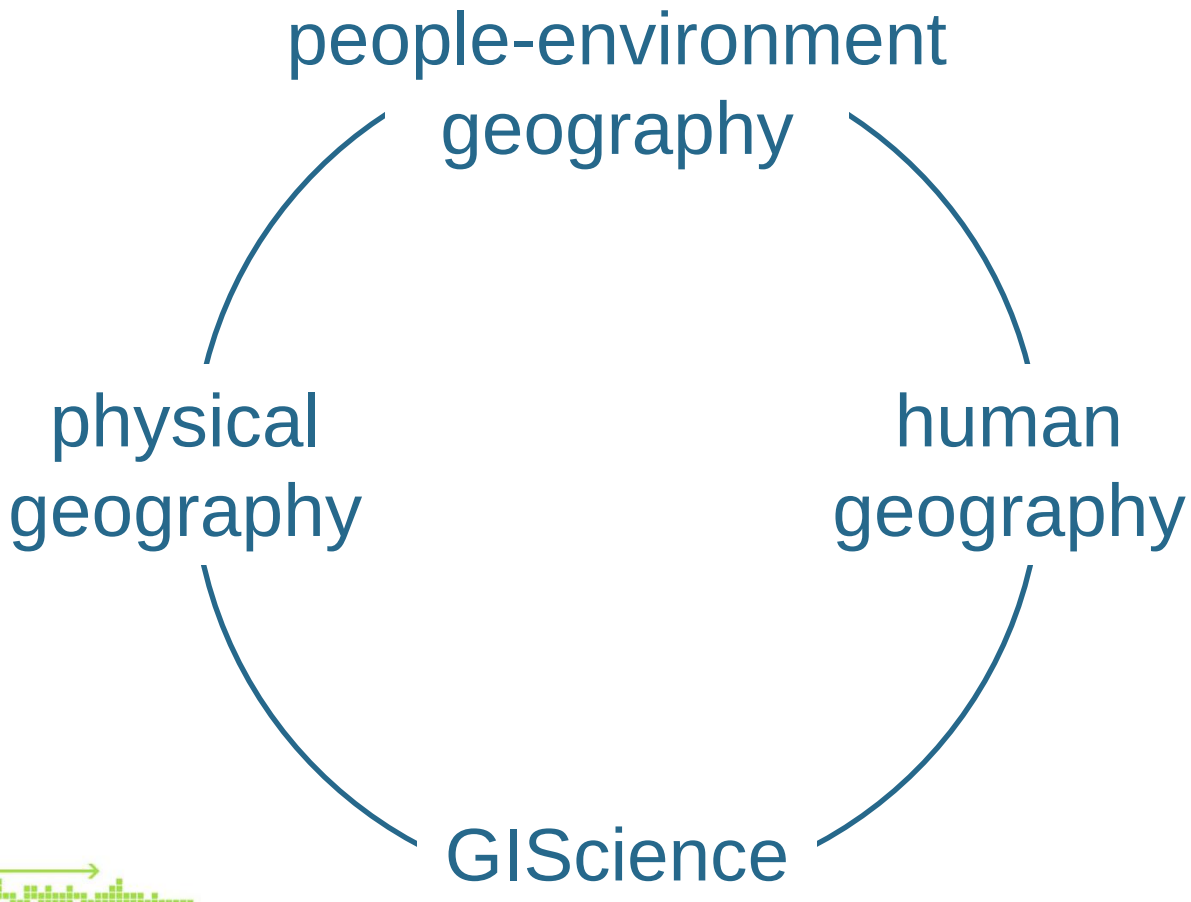
agenda:

1. Very brief overviews of Geography and IST
2. Review of workshop presentations
3. Concept mapping exercise
4. Discussion/Wrap-Up

Geography:


people-environment
geography
physical
geography
human
geography
GIScience

an imperfect history of GIScience:

mapmaking

reference cartography

thematic cartography

remote sensing

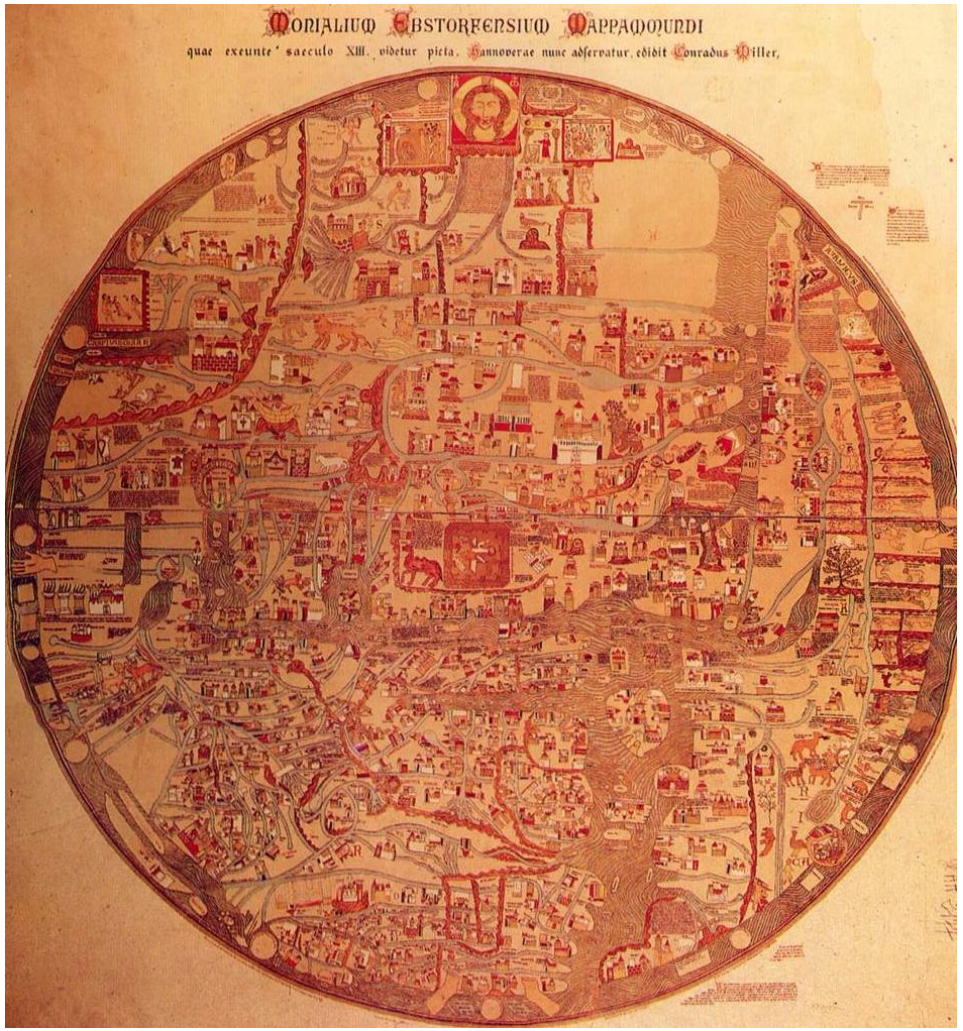
GIS

spatial analysis

geovisualization

geocollaboration

geovisual analytics



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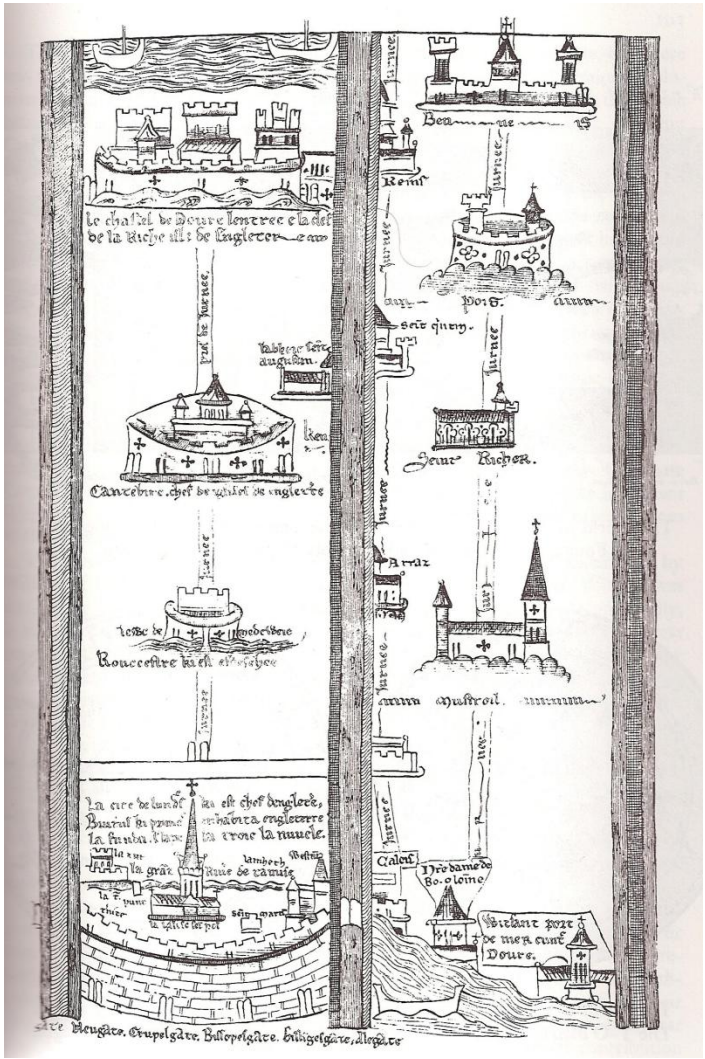

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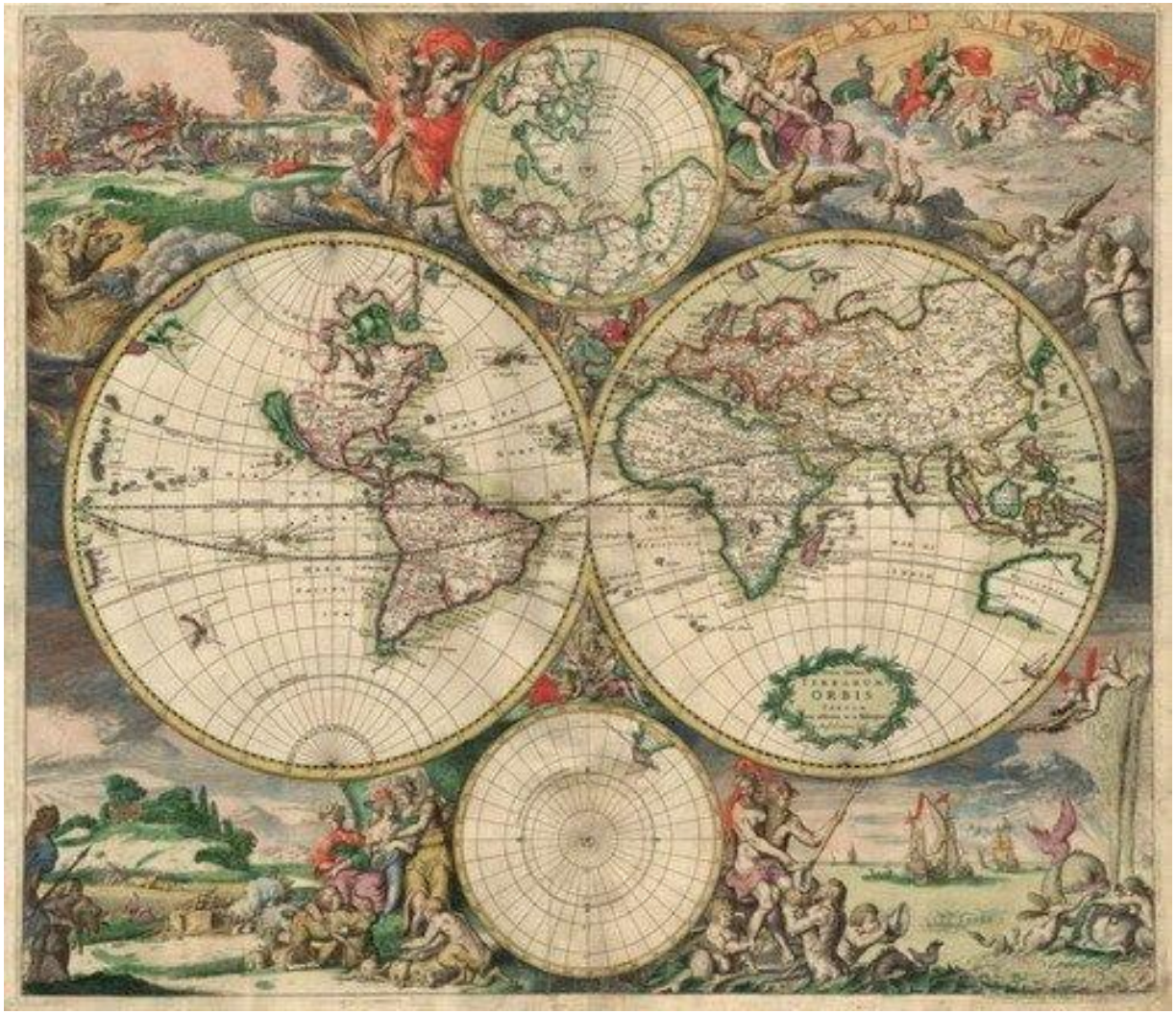

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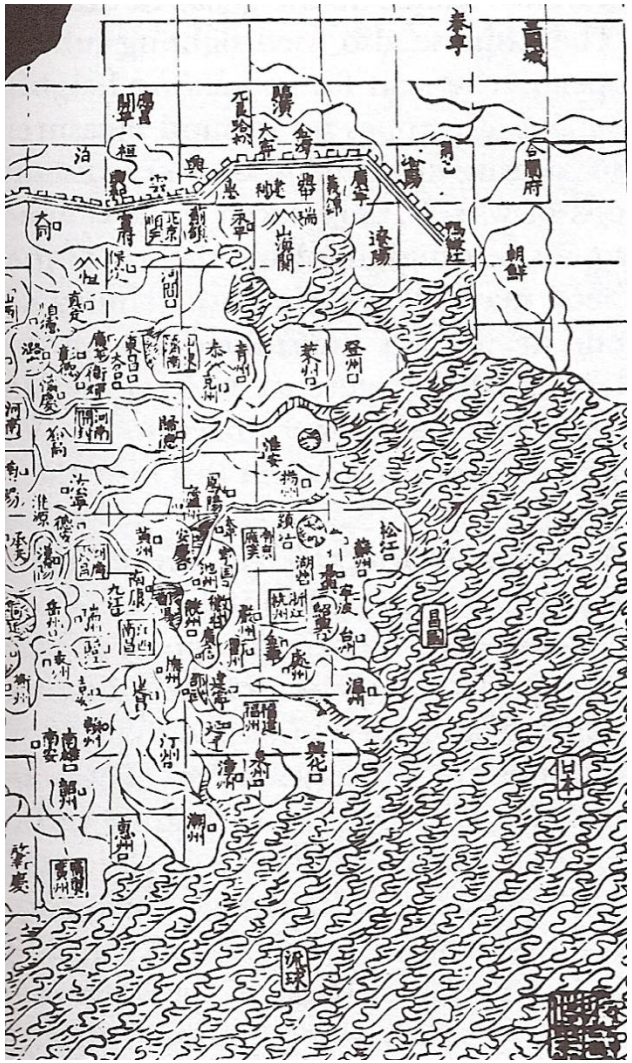

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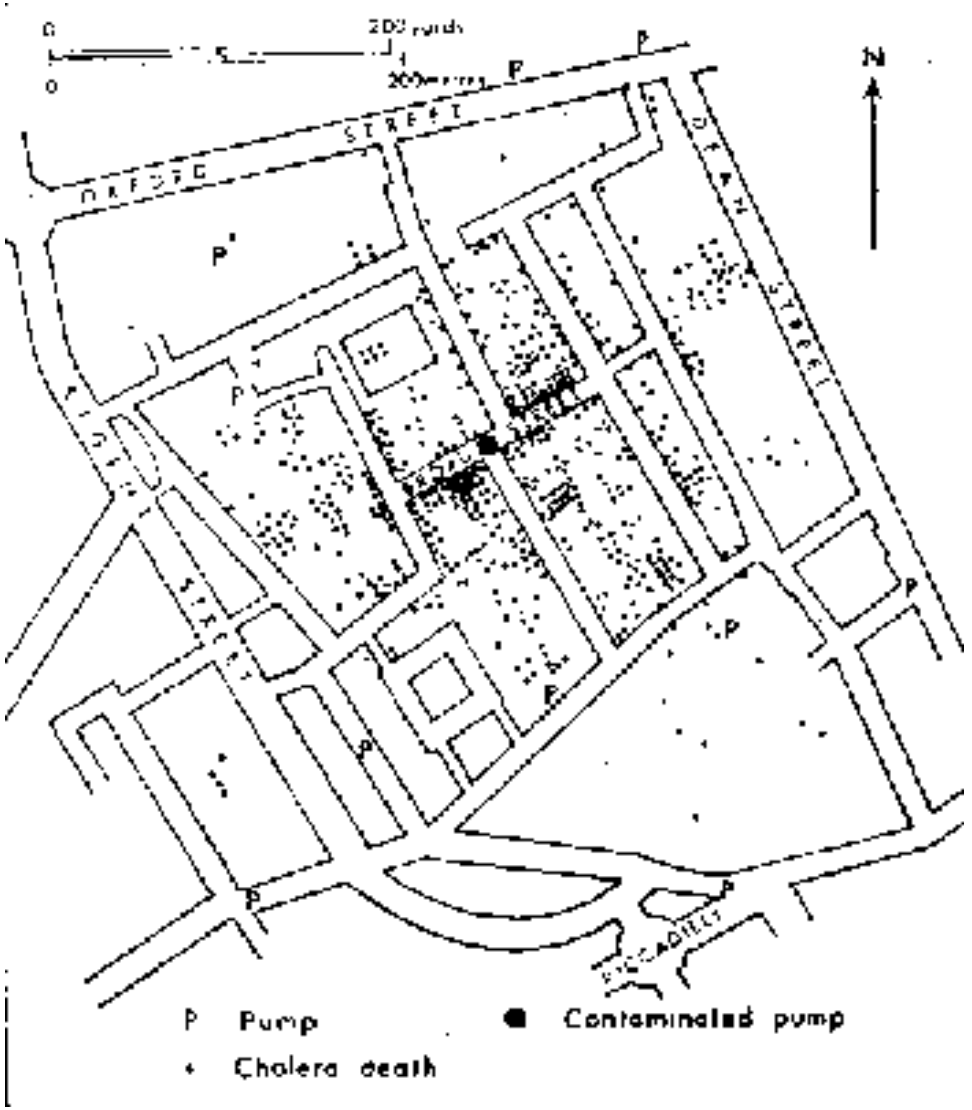

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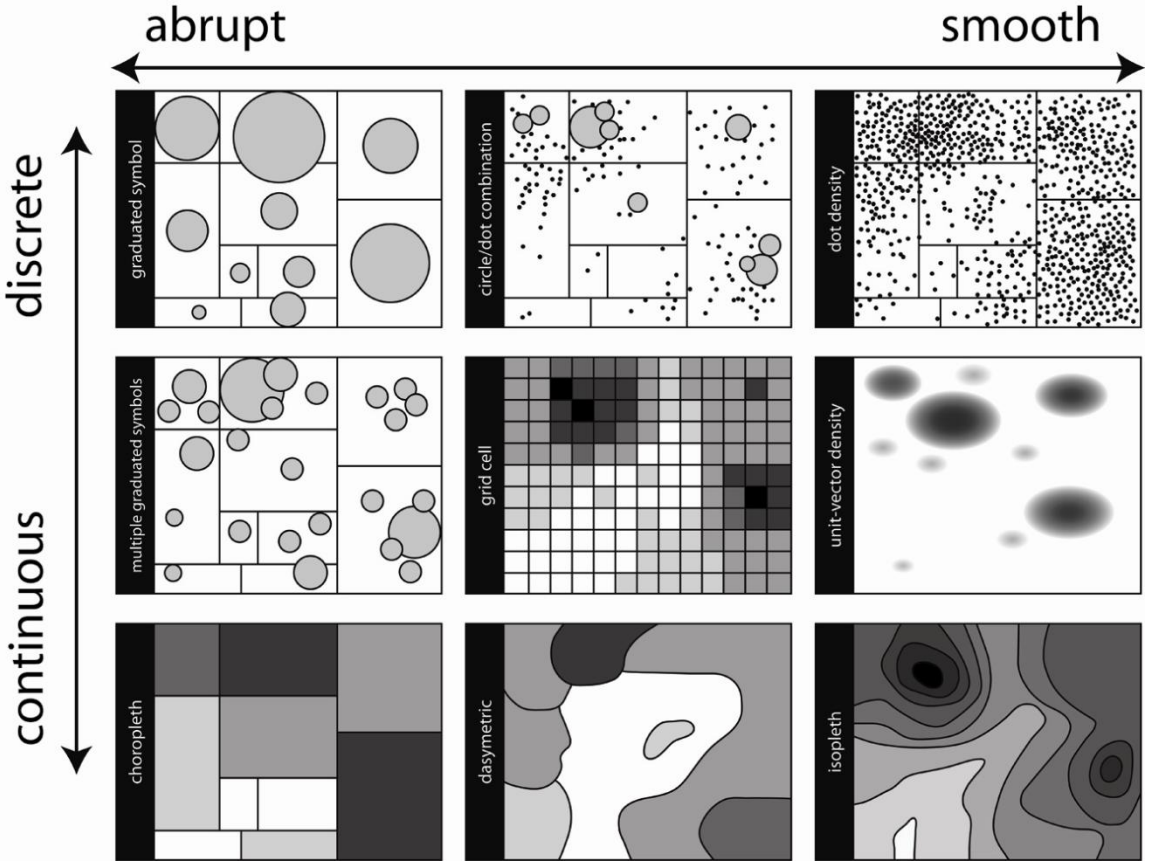

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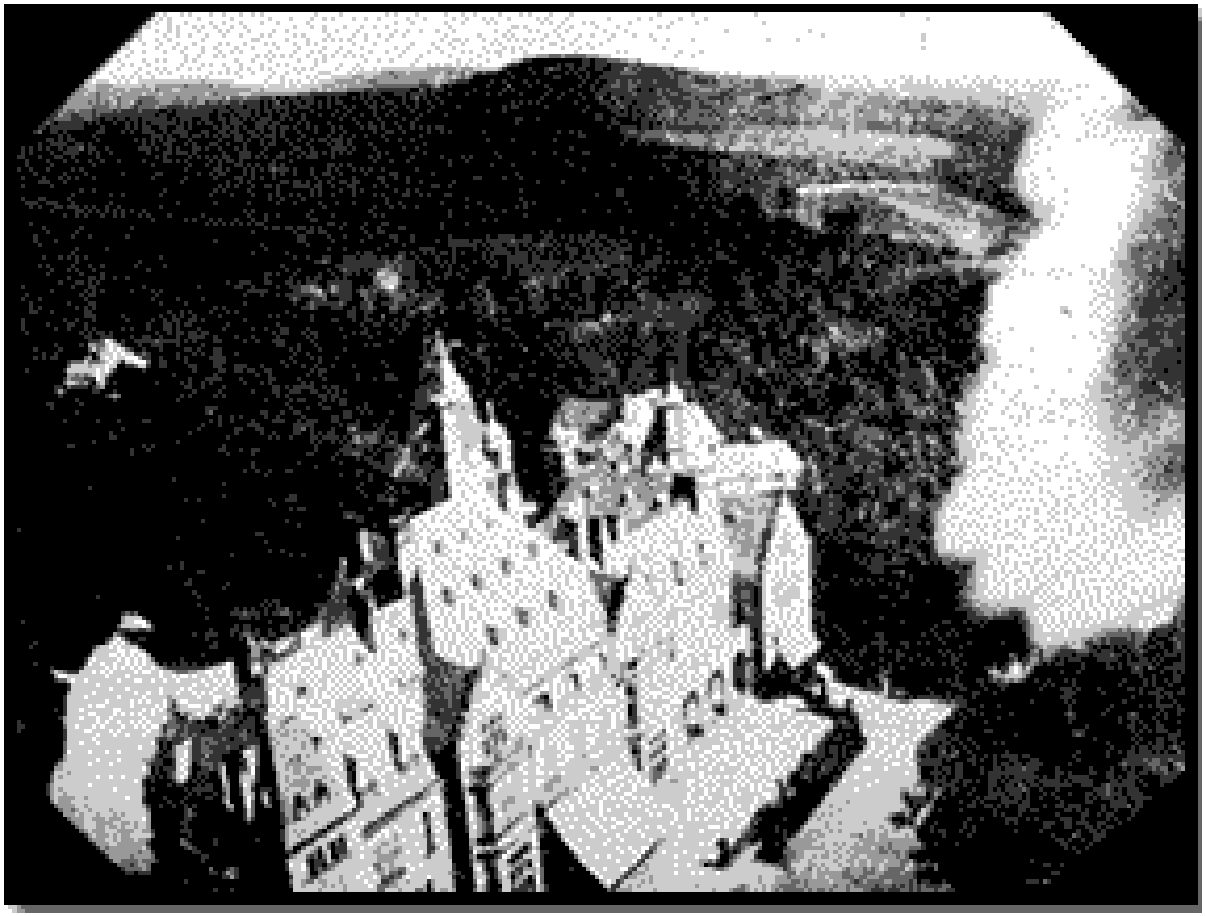

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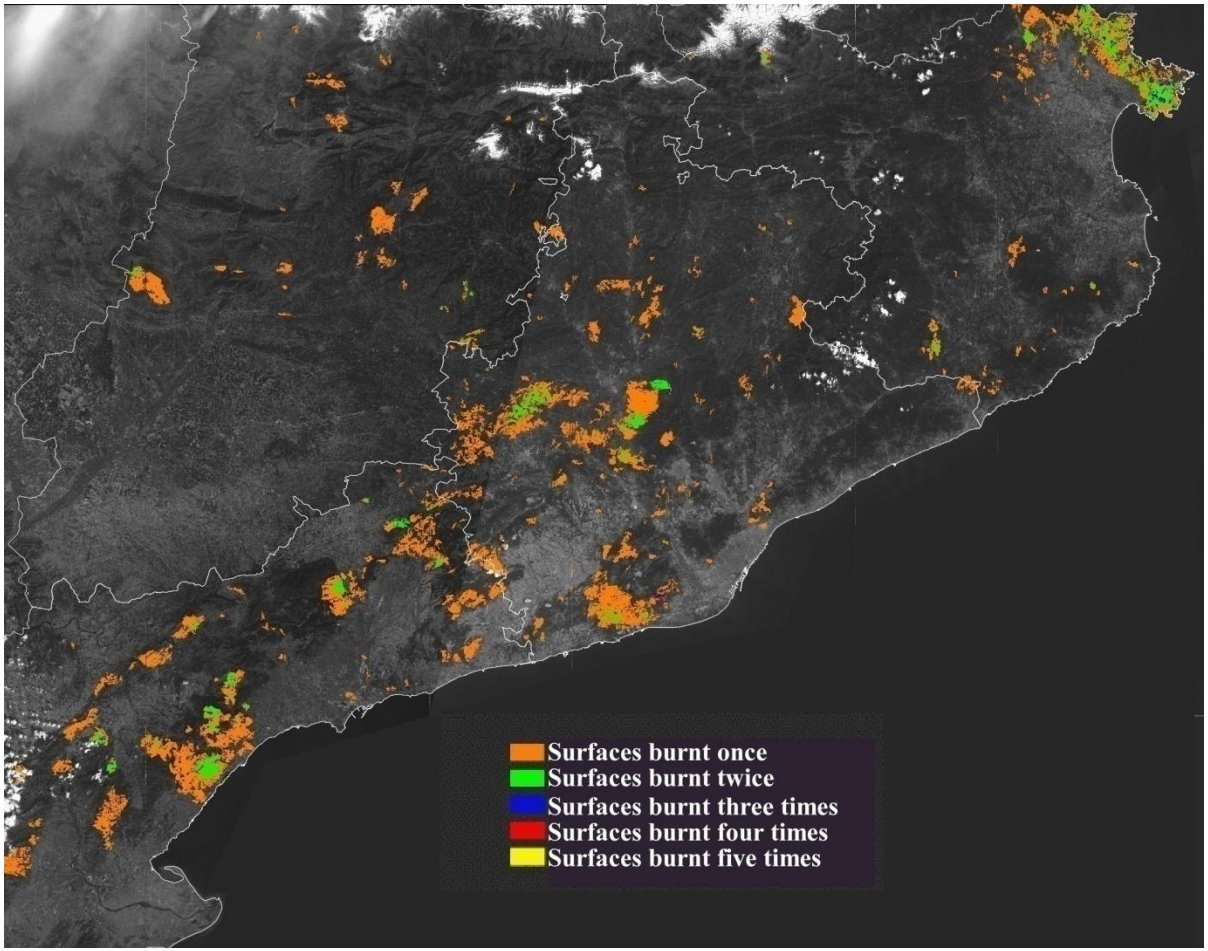

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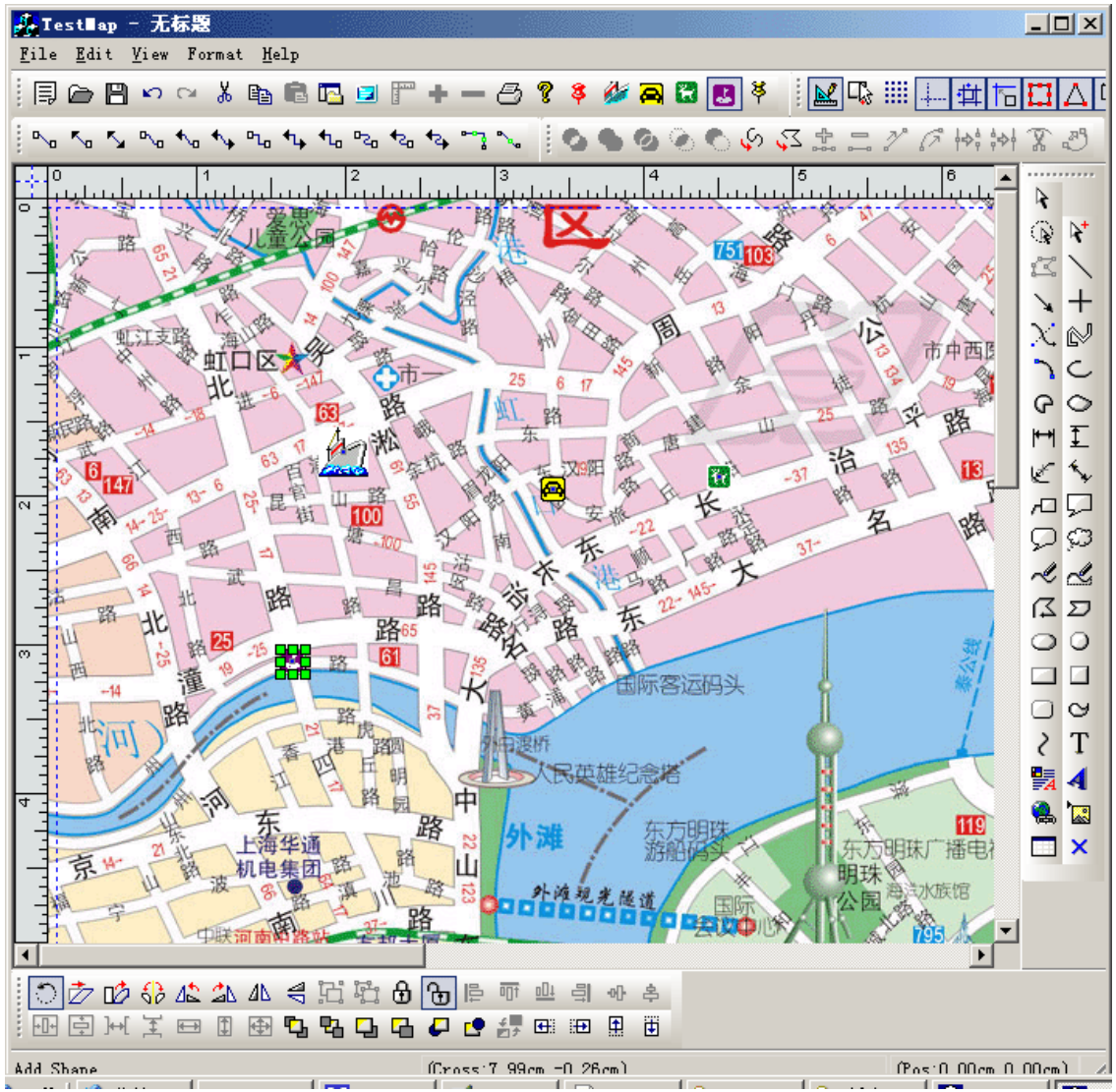

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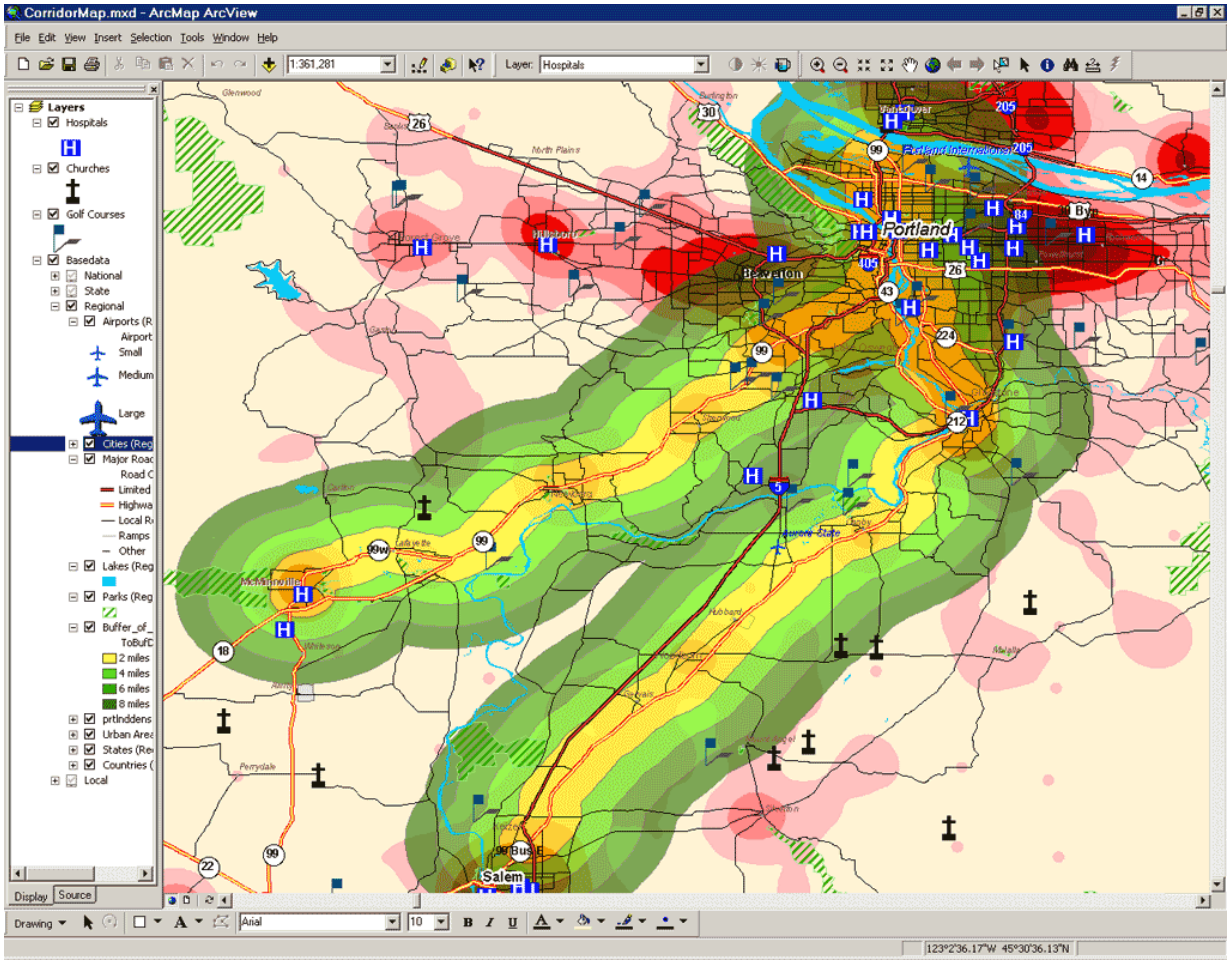

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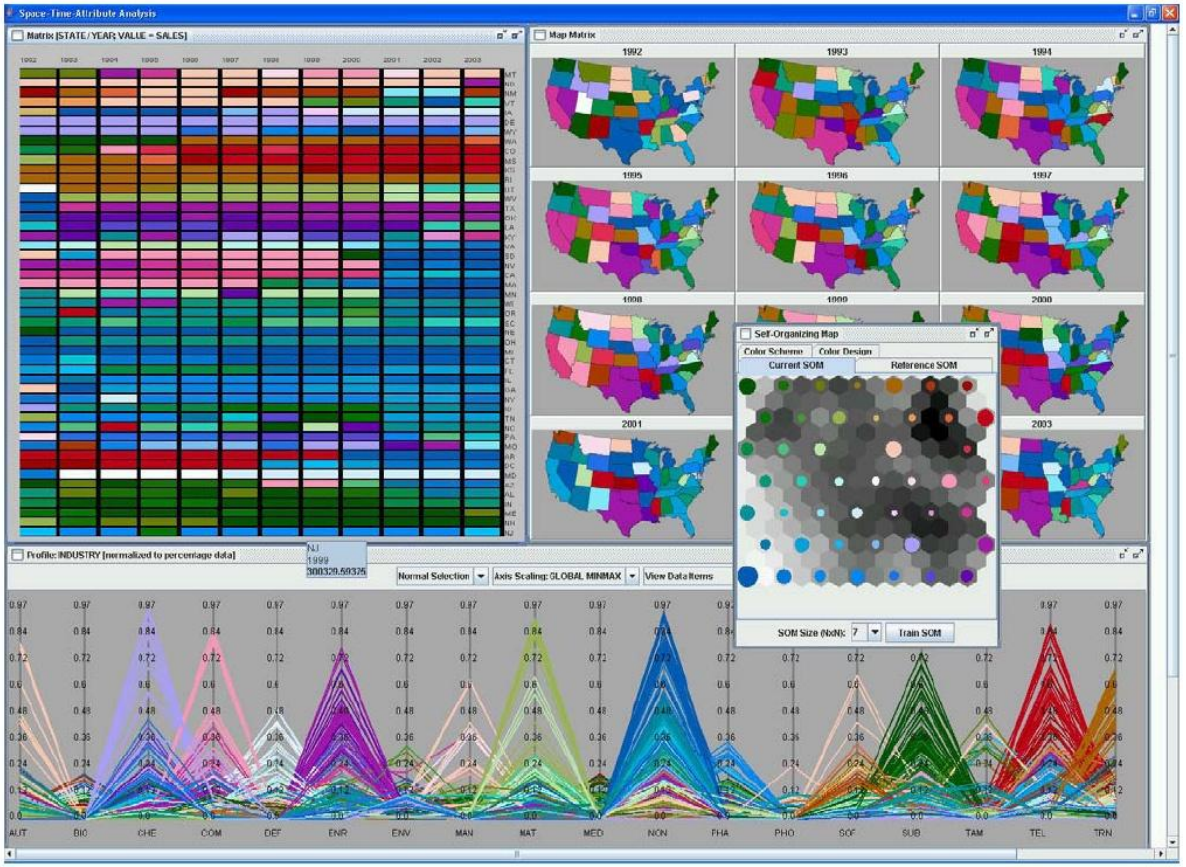

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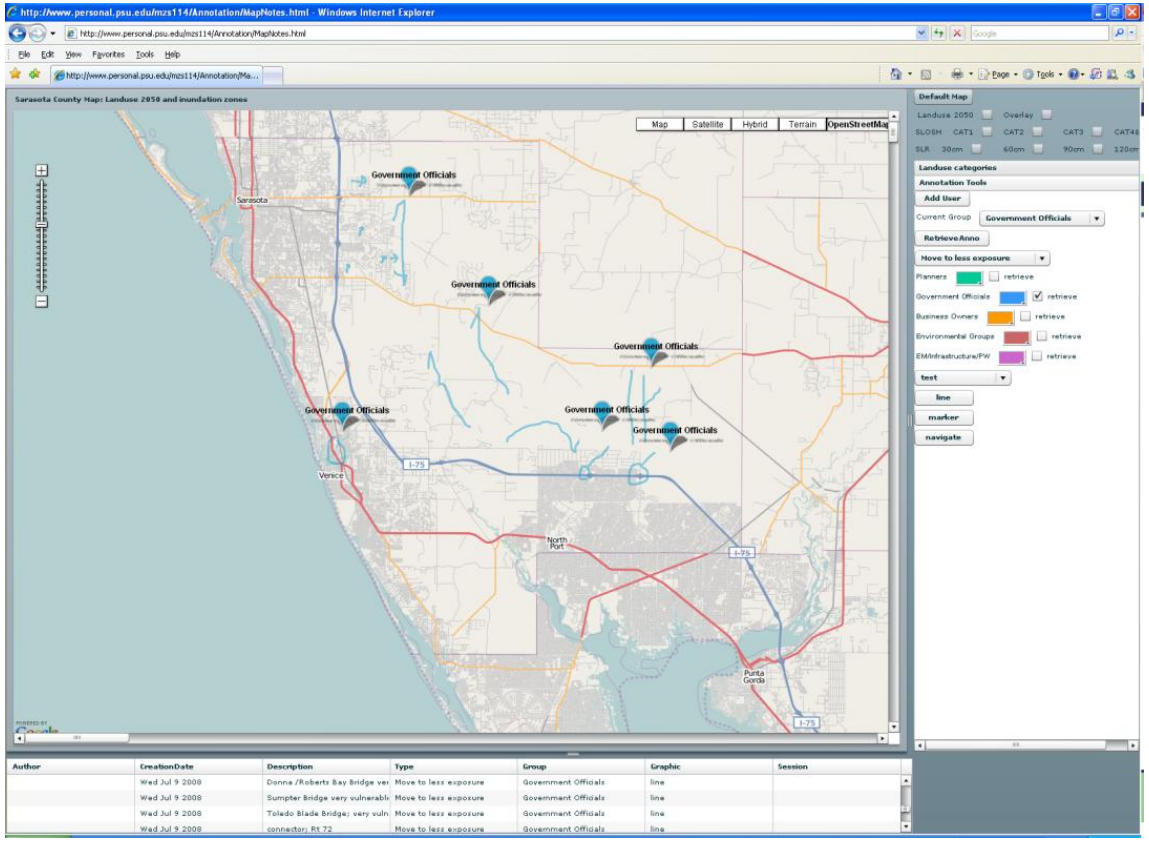
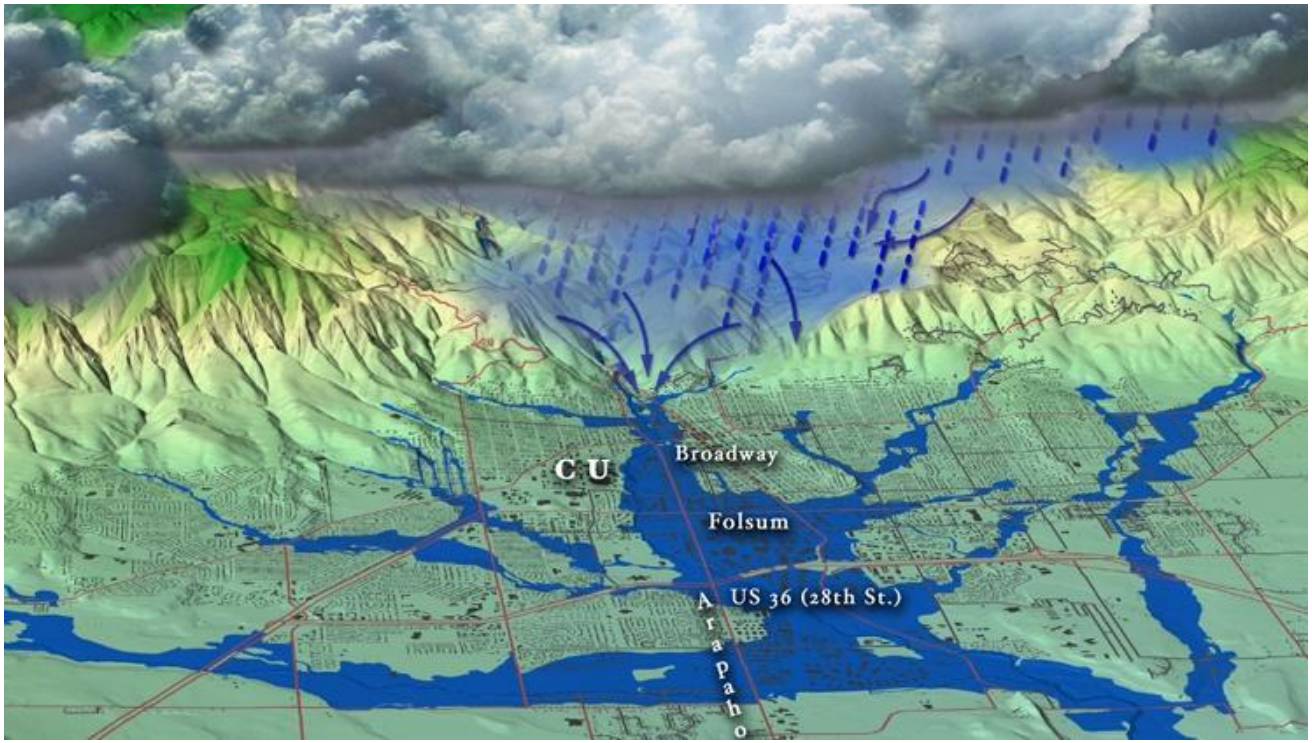


geovisual analytics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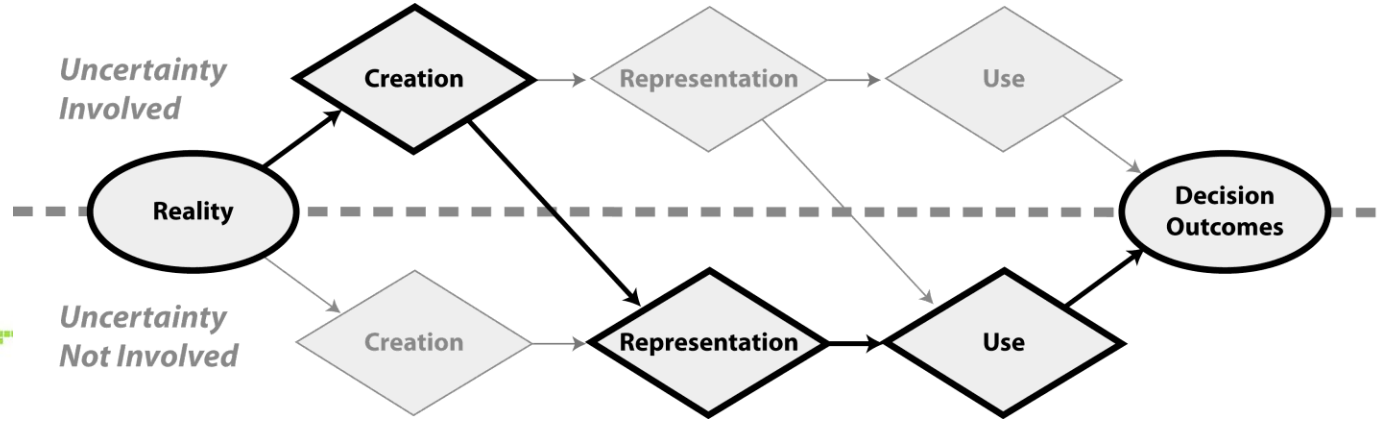
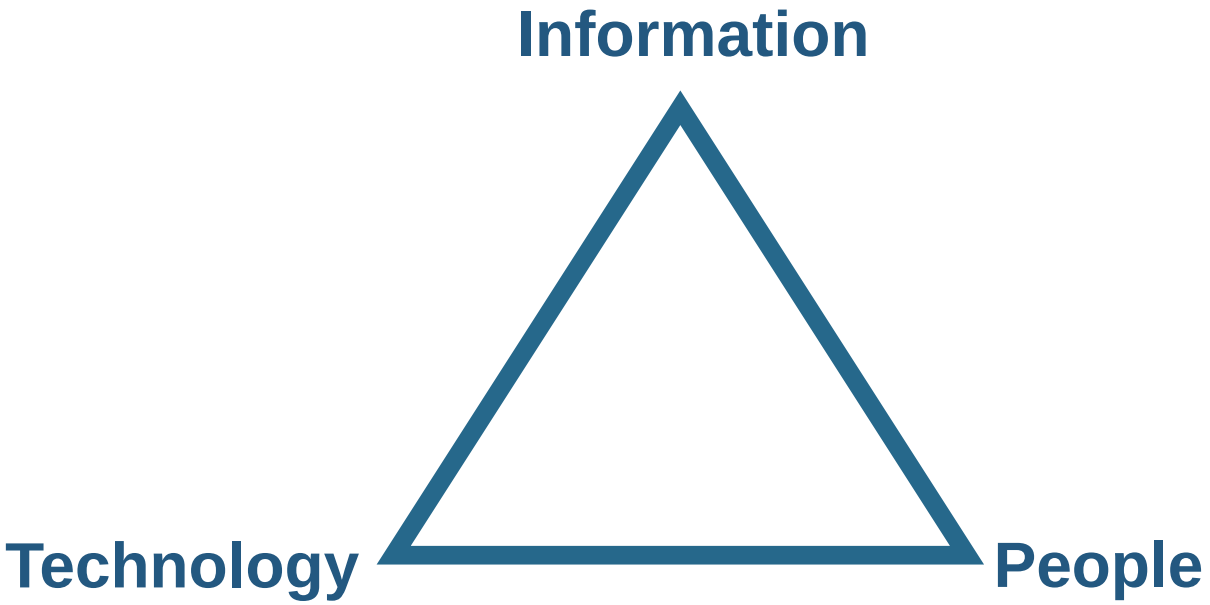

Uncertainty Involved
Creation
Representation
Use
Reality
Decision Outcomes
Uncertainty Not Involved
Creation
Representation
Use

What is IST:

- Information Sciences and Technology
- Interdisciplinary
  - No single paradigm
  - No recognized canon of literature
  - Use and integration of methodologies

Foundational Belief:

Technology cannot be studied or researched in isolation from the people using the technology or the information that is carried or altered using the technology.



Research Themes:

- Emerging and ubiquitous technologies such as nano-scale sensing, wireless communications and invisible computing
- Information use and usefulness, information assurance and cyber security
- Creation and retrieval of information (e.g. search engines, knowledge representation)
- Social impacts in the workplace and society
- Computer support for humans in decision making, analysis, and cognition

Application Domains

- Home-land security and defense
- Medical informatics
- Environmental monitoring
- Crisis management
- Monitoring of complex systems
- Supply chain management
- Education
- E-business applications

Research Examples

Define research questions that have an impact on the real world.

- *Study team cognition for enhanced emergency preparedness
- *Research coordination of non-governmental organizations for effective disaster relief

Integrate innovative ideas to influence the future of information technology.

- *Enable intelligent search of documents in the chemistry domain
- *Develop a machine-assisted image tagging and searching service
- *Employ a game theoretic approach to predict cyber attacks

Research Examples

Shape the context in which information and technology is used.

- *Explore learning through fantasy sports games
- *Study the development, deployment, and evaluation of case studies as means for innovative, problem-based learning
- *Research information search behaviors to improve their effectiveness

Study the impact of novel information technology on people, organizations, and society.

- *Study gender issues in the IT workforce
- *Explore solutions for bridging the digital divide
- *Research the diffusion of mobile technologies
- *Investigate privacy issues surrounding new technology
- *Analyze evolving information policy and regulations

Centers & Labs

Centers

Center for Human-Computer Interaction

Center for Information Assurance

Enterprise Informatics and Integration Center

Network-Centric Cognition and Information Fusion Center

Laboratories

Applied Cognitive Science Laboratory

Cyber Security Laboratory

Intelligence Information Systems Laboratory

Laboratory for Computer-Supported Collaboration and Learning

Laboratory for Intelligent Agents

Spatial Information Laboratory

User Science and Engineering (USE) Laboratory

Concept Mapping Activity

John Kelmelis

USGS and Penn State University

Wednesday, 9:30-10:30am

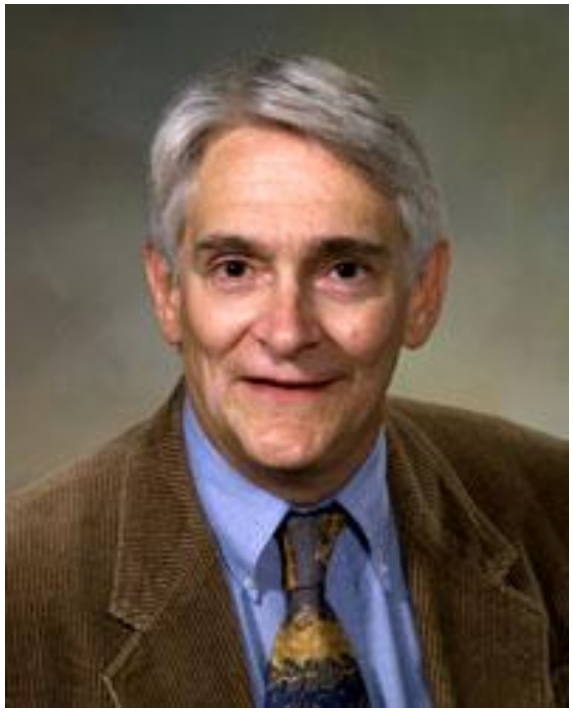
“Geographical information use in crisis management”

Daniel Sui

Texas A&M

Wednesday, 10:30-11:30am

“Overview of crisis management in China”



Jack Carroll

Penn State University

Wednesday, 1:15-2:00pm

“Is technology ready? Overview of geocolla-borative technologies”

Louise Comfort

University of Pittsburgh

Wednesday, 2:00-2:45pm

“Distributed cognition: The basis for coordinated action in dynamic environments”

Carleen Maitland

Penn State University

Wednesday, 3:00-3:45pm

“Inter-agency coordination in humanitarian relief activities”

Menno-Jan Kraak

ITC Netherlands

Thursday, 8:30-9:30am

“GeoVisual Analytics”

Xia Li

ITC Netherlands

Thursday, 9:30-10:00am

“Visual problem solving with spatial data”

Ioannis Delikostidis

ITC Netherlands

Thursday, 10:00-10:30am

“Usability aspects of mobile maps”

Luke Zhang

Penn State University

Thursday, 11:00-11:40am

“Multiscale visualization”

Anna Wu

Penn State University

Thursday, 11:40-12:00pm

“Using visualization techniques to enhance emergence management and decision-making in geo-collaboration”