

## Using Natural Disaster Impacts to Identify Vulnerabilities Created by Global Shocks – A Visual Analytics Approach

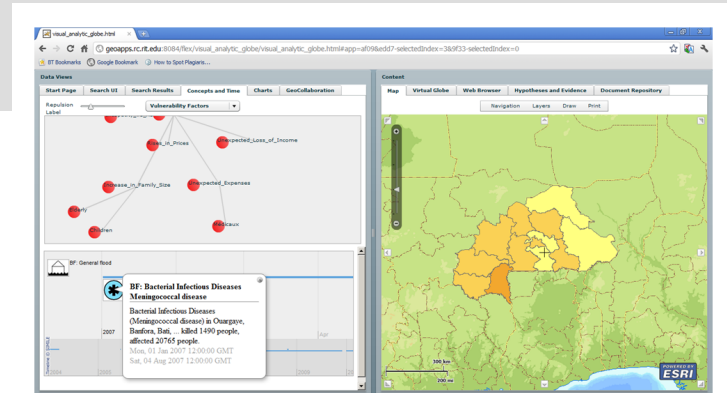


Image of a Visual Analytic environment

**Dr. Brian Tomaszewski**

Impacts from natural disasters often reveal or emphasize vulnerabilities present before a disaster strikes. For example, a cotton farmer in Burkina Faso whose village is impacted by a flood may have a harder time recovering from flood damage due to livelihood impacts created by global shocks like the recent global economic crisis. Identifying how global shocks have created vulnerability in order to make decisions about potential vulnerability intervention is a challenging analytical task. The analytical challenge stems from the complexity and scale of evidence that must be reasoned with in order to develop a clear situational understanding to make decisions. Visual Analytics has emerged in the past six years as a new paradigm to inform how investigation into complex, multi-scale problems are addressed and to develop information technologies that enable investigation, and is thus well suited to address issues such as identifying vulnerabilities created by global shocks. The goal of computational systems designed within the Visual Analytics paradigm is to aid user reasoning processes directed to explaining evidence and to making evidence-based decisions, especially when potentially relevant evidence is scattered across unstructured and differing data formats. In this talk, Dr. Tomaszewski will discuss his research project titled “A Visual Analytics Approach to Understanding Poverty Assessment through Disaster Impacts in Latin America and Africa” that is a partnership between RIT and United Nations Office for Outer Space Affairs, Platform for Space-based Information for Disaster Management and Emergency Response (UN-SPIDER) and supported by the UN Global Pulse Rapid Impact and Vulnerability Analysis Fund (RIVAF). Specifically, he will discuss a Visual Analytics system designed to support human analysis of natural disaster impacts to identify vulnerabilities created by global shocks. The system is being designed to analyze a variety of inputs such as geographic information, text documents, ontologies, space-based information and social media. He will also outline opportunities that the technological and domain-specific aspects of his research offer for Imaging Science.

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