



The three-tiered disaster management approach, *disaster planning*, *disaster response* and *disaster recovery*, is ripe for innovation through integrated knowledge and technology transfer efforts between university researchers, technology companies, and public sector responders. The period immediately following a disaster can be critical to preserving human life and property, and recent events have highlighted the need for system-wide improvements. Rochester Institute of Technology (RIT) and the University at Buffalo (UB) has created a *NSF Partnership for Innovation* program called the **Information Products Laboratory for Emergency Response** (IPLER), dedicated to innovation in disaster management. The *mission of the IPLER* is to create a technology, policy and business development incubator to facilitate interaction and innovation among university researchers, private sector service and product providers, and public sector emergency response decision makers. The IPLER will develop user-directed, management products through broadened industry-user participation, focused research and development, and knowledge and technology transfer.

**IPLER approach:** The IPLER will focus on understanding user needs in terms of disaster management and response, defining the range of possible solutions, and sharing remote sensing disaster R&D with the private and public sectors. This will be done by

- i. initially selecting two very specific disasters (fires and floods) in which the proposal partners have proven track records, followed by
- ii. broadening the participation to include industry and end-users to implement and direct the fires/floods disaster R&D, which will
- iii. contribute to the development of IPLER infrastructure that encourages user-driven disaster product development and dissemination, and
- iv. establish a sustainable IPLER enterprise through the addition other disaster focus areas and products with expanded funding resources.

**Intellectual Merit:** RIT and UB are leading centers in remote sensing research and will build the IPLER on a foundation of state-of-the art geospatial analysis technology. Researchers at RIT have extensive experience in basic and applied remote sensing research, a history of collaboration with local emergency response and energy providers, and expertise in fire detection and fire behavior. UB team members bring expertise in geospatial analysis of a variety of natural and manmade disasters, including fire and floods. Both universities have strong policy components. The integrated team will apply a systems engineering approach to define user needs in disaster management, perform targeted research and development of disaster management products, and form a sustainable infrastructure for knowledge and technology transfer, thereby spurring creativity and innovation in the disaster management domain.

**Broader Impacts:** RIT and UB will leverage their collective experience to create a vehicle to broaden the participation of all types of entities along the spectrum of disaster management. The IPLER will facilitate economic development by establishing and maintaining a continuous dialogue between the developers and providers of technologies and the people that use them in disaster response. Diffusion of technologies will improve the prevention and mitigation of disasters in the United States and lead to innovative tools for response and recovery. Students at RIT and UB will be actively engaged in the targeted research and will be uniquely qualified to contribute to disaster management research, development, and response. The IPLER is designed to grow and can incorporate new members from the academic, public, and private sectors as the initiative evolves.

**Partners:** The IPLER will be expanded to include a broader scope of user-defined disasters, following the initial focus on fires and floods as proxies for disaster events. Our private partners include DigitalGlobe (Longmont, CO), Pictometry (Rochester, NY), Kucera International Inc. (Willoughby, OH), ImageCat Inc. (Long Beach, CA), and Wacom Technology Corporation (Vancouver, WA). Public partners include the US Forest Service Remote Sensing Applications Center, New York State - Deputy Secretary for Public Safety, New York State Foundation for Science, Technology & Innovation (NYSTAR), and Monroe County Office of Emergency Management.