



### Session Speakers

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### Session Title

Resilience and Recovery: A Case Study of the 2016 Lumberton, NC Flood

### Session Description

In early October 2016 Hurricane Matthew crossed North Carolina as a category 1 storm with some areas receiving 15-18 inches of rainfall on already saturated soil. The NIST-funded Center for Risk-Based Community Resilience Planning teamed with researchers from NIST's Engineering Laboratory (Community Resilience Group and Applied Economics Office) to conduct an initial resilience field study focused on the small city of Lumberton, NC and the flooding they experienced from the Lumber River. This team made a second field visit to Lumberton in January 2018. These two field studies are part of a series of annual field studies to document and better understand Lumberton's recovery from a multi-disciplinary viewpoint. This type of longitudinal study is critical to better understand community resilience and to ultimately provide data and insight into making U.S. communities more resilient to natural hazards.

Lumberton is an ethnically diverse community with higher than average poverty and unemployment rates, an average civil infrastructure for a city of 22,000, and possesses an organized governance structure. Findings from the first visit identified population dislocation probabilities to be higher for black and Native American households than for white households given the presence of the same levels of damage to homes following the flood.

This community resilience-focused longitudinal field study has three major objectives: (1) establish and document initial conditions for the longitudinal resilience field study of Lumberton's recovery with a focus on the most heavily affected area located within a particular school zone; (2) facilitate and document the development and first application of a combined engineering-social science field study protocol that provides a quantitative linkage between flood damage and socio-economics, including race/ethnicity, income, tenancy status, and

education level, and (3) measure business and housing recovery, and the relationship between business interruptions, household decision-making, infrastructure recovery, and recovery of related critical social functions over time.

This session comprises three related presentations and a panel discussion, which together, provide a holistic overview of the longitudinal field study to date and plans for future data collection. The presentations will address the following areas:

1. Study overview and presentation of the NIST Center of Excellence for Risk-Based Community Resilience Planning as well as the NIST Disaster and Failures Studies Program
2. Lumberton housing data collection and analysis: combining engineering and social science data collection
3. Business disruption data collection and preliminary results
4. Next Steps for the Lumberton longitudinal field study and lessons to be applied in other communities
5. Panel discussion and audience Q&A

The presenters welcome questions and discussion as they plan their third field study visit to Lumberton for late 2018/early 2019.