**Tropical Storm Alberto**

- First named storm of the 2018 Atlantic Hurricane Season
- Despite non-tropical origins, Tropical storm Alberto formed in the Gulf of Mexico on May 25th
- Wind shear and general unfavorable development conditions in the Gulf hindered Alberto from strengthening

**Southern Appalachian Mountains**

- Greatest topographic relief in the eastern United States
- Contains some of the most diverse topographical and climatological environments in the United States
- Mountainous terrain greatly increases flooding and landslide hazards

**Ingredients for Heavy Precipitation and Flash Flooding**

**Tropical Moisture-Infused Orographic Lifting**

The westward track of Alberto produced southerly upslipping winds & orographic lift along the Blue Ridge Escarpment. Bands of heavy rain stalled out over local communities and resulted in 5+" in mere hours.

**Above-Average Spring Precipitation**

Heavy rain in April and early May provided well-above normal streamflow in parts of the mountains. By the time Alberto arrived, many rural communities in Polk County were still recovering from deadly flooding and debris flows that struck earlier that same month.

**Flash Flooding**

Heavy rain during the day on May 29th continued well into the night with rates often surpassing 1"/hr. Roads, bridges, and first responders were washed away. Lake Tahoma Dam threatened collapse and thousands were forced to evacuate.

**Rural, Vulnerable Communities Heavily Impacted**

- Contains some of the most socially vulnerable citizens in North Carolina
- Highest vulnerability commonly found in census tracts with high poverty and low rates of high school graduation
- True urban and rural divide with areas like Asheville having relatively low social vulnerability

**Social vulnerability of western North Carolina**

**Historic Flooding and Damage**

- Equaled or surpassed the devastation caused by Hurricanes Frances and Ivan in September 2004
- Discharge from the Catawba River in McDowell County was unprecedented for any Spring rain event
- Discharge remained above normal for months following event

- Catawba River peaked nearly 5ft above flood stage
- Crest occurred just 2 feet shy of the 2004 record (17.55 ft.)
- Rapid rise of the Catawba River and many smaller tributaries ultimately forced large evacuations across mountain communities

**“Separate and Distinct Events”**

- FEMA denied a request for a disaster declaration as the “severity and magnitude” of the damage did not go beyond the capabilities of the State
- Many towns delayed repairs so as to not jeopardize funding opportunities, only to be denied
- Smaller communities have struggled to recover following impacts from Florence and Michael

**Need for Future Research**

- How are rural and vulnerable communities responding to extreme events?
- How do impacts compare with Florence and Michael?
- What linkages can be made between personal experience with disaster and climate change skepticism?