Presenter

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High resolution assessment of household vulnerability to inundation in the coastal counties of North Carolina

The coastal environment is densely populated and particularly vulnerable to threats associated with climate change (McGranahan et al., 2007). In the US, millions of people residing in inland and coastal areas will be affected by inundation related to increasing sea-level in the coming decades (Curtis & Schneider, 2011). With such a large population at risk, the identification of social and physical aspects of a population that are most vulnerable to a potential hazard is essential (Frazier et al., 2014). The development of vulnerability assessments has gained recognition as a useful tool to identify vulnerable populations and has been integrated into mitigation and hazard adaptation planning (Cutter et al., 2003; Rygel et al., 2006; Frazier et al., 2014). By applying a sensitivity and exposure framework, this study will model the potential impacts of inundation on coastal communities most exposed to flooding risks and identify the socio-economic characteristics of populations that may contribute to or compound vulnerability. Most vulnerability assessments to date have been conducted at the county scale potentially hindering the effectiveness of mitigation and adaptation planning in real-world settings. However, using the 2010 US Census at the block-group level and a novel high-resolution building finished floor elevations dataset, this study will identify locations, at a finer scale, with potentially vulnerable populations in the socially and physically diverse coastal North Carolina.