

Please join us for the following ESSIE Seminar:

Hurricane Flooding Hazard Assessment

By Dr. Jennifer Irish

Monday, February 29th, 1:30pm

PERC 202

Since 2005, the US experienced some of its largest surges and hurricane-related damage on record. These disasters highlight the critical need for a robust and accurate hurricane flooding hazard assessment approach to support future disaster resilience engineering and planning activities. Here, dimensionless scaling and hydrodynamics arguments are used to quantify the influence of hurricane variables and geographic characteristics on the surge response. The use of this physical scaling to develop surge response functions (SRF) enables fast algebraic calculation of maximum surge height at any location of interest for any hurricane meteorological condition, without loss of accuracy gained via high-resolution computational surge simulation. When coupled with joint probability statistics, the use of SRFs facilitates rapid development of continuous probability density functions for probabilistic hazard assessment. Methods will also be presented for incorporating future changes in hurricane climatology, sea level rise, and land-cover change into the extreme-value flooding statistics.

