



**Summer Program on Transportation Statistics**  
**August 14-18, 2017**

**Lecture:** *Causal Inference in Traffic Safety Studies*

**Speaker:** Fan Li

**Abstract:**

A central goal in traffic safety research is to evaluate the effectiveness of traffic safety programs and countermeasures from observational studies, which is inherently a causal inference problem. In this talk we review several causal inference methods highly relevant to traffic safety research, including propensity scores, difference-in-difference, and simulation based sensitivity analysis. We make the connection to the established methods in the traffic safety literature such as the empirical Bayes method. These methods will be illustrated with a real data set on rumble strips in Pennsylvania.