



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

**Lecture:** *Understanding and Evaluating Predictive Crash Models*

**Speaker:** Michael Porter

**Abstract:**

This talk will discuss how predictive crash models should be understood and evaluated. The focus will be on evaluating point process models that estimate the intensity and density of crash events over time. By viewing the crash events as realizations from a marked point process (in space or on a grid), a new understanding of \*hotspots\* emerges. The hotspot detection problem can then be solved in a decision theoretic manner that addresses the trade-offs between interventions and cost. Methods to compare competing models are also addressed. If time permits, I will also discuss how machine learning models can be used to construct better SPFs by removing the rigid functional form in the standard linear models and incorporating multi-way interactions.