



Cornell CIS  
**Statistical Science**

## **STATISTICS SEMINAR**

**Wednesday, February 21, 2017**

**4:15 pm**

**G01 Biotechnology**



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### **Causal Inference with Unmeasured Confounding: an Instrumental Variable Approach**

Causal inference is a challenging problem because causation cannot be established from observational data alone. Researchers typically rely on additional sources of information to infer causation from association. Such information may come from powerful designs such as randomization, or background knowledge such as information on all confounders. However, perfect designs or background knowledge required for establishing causality may not always be available in practice. In this talk, I use novel causal identification results to show that the instrumental variable approach can be used to combine the power of design and background knowledge to draw causal conclusions. I also introduce novel estimation tools to construct estimators that are robust, efficient and enjoy good finite sample properties. These methods will be discussed in the context of a randomized encouragement design for a flu vaccine.

*Refreshments will be served following the seminar in 1181 Comstock Hall.*