

BIOSTATISTICS SEMINAR

UCLA

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Mechanistic Models for Public Health Research: Applications to Infectious Disease and Cluster Randomized Trials

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3:30pm - 4:30pm, CHS 33-105A

Refreshments served at 3:00 PM in room 51-254 CHS

ABSTRACT: Mechanistic models seek to explain the underlying process by which the data arose and can yield meaningful interpretations and new insights that cannot be otherwise obtained. We present two different examples of mechanistic models with important public health applications. We briefly discuss our first example, a model for herpes simplex virus type 2 infection with applications to treatment efficacy estimation and study of the natural history of the infection. The second example concerns cluster randomized trials, a fundamental study design for public health research in which the intervention is applied at the group level. We develop a model for within-cluster dependence of observations that leads to improved study design for these expensive studies.