# University of California, Irvine
## Statistics Seminar

### *Inference for Partially-observed Multi-type Branching Process Models*

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## Thursday, June 1, 2017
## 4 p.m., 6011 Bren Hall
## (Bldg. #314 on campus map)

Markov branching processes are a class of continuous-time Markov chains (CTMCs) with ubiquitous modeling applications. Multi-type processes are necessary to model phenomena such as competition, predation, or infection, but often feature large or uncountable state spaces. Moreover, data arising from such models are often only partially observed. These present challenges to statistical inference, rendering standard CTMC techniques impractical. We present recent methodology enabling likelihood-based inference in these settings, and discuss techniques to scale these methods to very large systems and datasets. Applications include molecular epidemiology, hematopoietic lineage tracking, and SIR models of infectious disease from prevalence data.