

**University of California, Irvine
Statistics Seminar**

Predictive Maltreatment

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**Thursday, April 20, 2017
4 p.m., 6011 Bren Hall
(Bldg. #314 on campus map)**

Child maltreatment continues to be a major social problem in the US, affecting millions of American children and their families. This analysis examined re-maltreatment dynamics of perpetrators in Florida's child welfare system between 2004 and 2014, focusing on group of families with chronic maltreatment (five or more reports during the study period). We examined a statewide perpetrator cohort over 10 years, with multiple episodes of recurrence of maltreatment. Following a robust entity resolution process, we built a network data structure to capture relationships between perpetrators, victims, siblings, and caregivers. From this data structure, models were developed, quantifying the impact various intrinsic and extrinsic factors on chronic maltreatment risk. We show that the models can identify chronic perpetration years before the fifth report, and in the riskiest 10% of the population; half of the chronic individuals can be detected in just over six months and 80% in just over two years. We used effective visualization techniques, where the networks of individuals related to a subject were presented along a timeline, so that distinct patterns or typologies could be observed, to help case-workers instantly identify high- and low-risk cases. Predicting the likelihood of re-reporting and re-maltreatment is expected to be instrumental within child welfare systems, in making decisions for screening and assessment strategies, service planning, and placement. While this discussion focuses primarily on the application of predictive modeling techniques to child safety, the topic will serve as framework for understanding the consequence of abusing and neglecting certain analytic concepts when working with opportunistic data. Maltreatment of certain data characteristics has resulted in biased findings in the practice and scientific literature of child safety.