

UCLA

BIOSTATISTICS SEMINAR

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It is the Network Stupid: The rise of the information sleuths and applications to everything that spreads

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

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

ABSTRACT: This talk will focus on both the fundamental nature and the impact of the informationally-networked and connected world that we live in. The availability of large-scale data is one of the consequences of the Internet age, and it has led to the rise of a new breed of Information Sleuths, who can trawl the web for all sorts of data and mine them for profit, or for science, or for social good. While big corporations such as Google, Microsoft, and Yahoo! are the obvious leaders in this information world, it is fast becoming a level playing field, and individual and small groups of researchers have as much of an opportunity at accessing and analyzing data as any big organization. As a window into this new frontier, the talk will detail some of the web-based data sleuthing work done in the speaker's research group over the last decade. The basis of this work rests on models of how information propagates in a network of agents, and how the network itself evolves and gets modified as a result of the information dynamics it enables. Given that most emergent and system-level behavior are the end-result of an interacting set of agents, this framework has applications in a wide variety of fields, including epidemiology, social and behavioral sciences, and artificial intelligence. Case studies will include, a study on HIV infection outbreaks in the Adult film industry, a hypothesis about the effectiveness of controlling HIV infections in a population by treating Sexually Transmitted Diseases (STDs), a methodology for dealing with spam emails, and the first steps towards a new kind of artificial intelligence, where machines can automatically learn from the peta-bytes of data flying around the web and the internet everyday.