COMPUTATIONAL RESEARCH
in BOSTON and BEYOND SEMINAR

Nonlinear epidemics on graphs

JULIAN KATES-HARBECK
Harvard University

ABSTRACT:

Most epidemiological models assume independent transmission events, where the transmission probability between individuals is linear in the intensity/number of exposures. However, for social epidemics (such as behaviors, ideas, internet memes, opinions or other "virally" spreading social phenomena) it is not unreasonable to assume that there is a strong nonlinearity in the probability of an individual becoming infected as a function of the number of infected contacts. We study the behavior of such nonlinear epidemics on well-mixed populations as well as more realistic graphs. We provide analytical results which are compared to numerical simulations.

FRIDAY, FEBRUARY 3, 2017
12:00 PM – 1:00 PM
Building 32, Room 124
(STATA)

Pizza and beverages will be provided.

http://math.mit.edu/crib/

Massachusetts Institute of Technology