

**NYU Stern School of Business**  
**Department of Information, Operations & Management Sciences**  
**IOMS Colloquium Series**

**TOPIC:** Competitive Contagion in Networks  
**SPEAKER:** Michael Kearns (University of Pennsylvania)  
**DATE:** Wednesday, November 13, 2013  
**TIME:** 12:00 PM – 2:00 PM  
**PLACE:** KMC 2-70

**ABSTRACT**

Motivated by multiparty versions of the viral marketing problem, I will discuss recent models and results for competitive contagion in networks. This work takes a game-theoretic view of settings in which two or more parties wish to seed "infections" of their competing product or service in a large network, in a way that will result in the greatest market share. I will discuss results that provide a sharp characterization of macroscopic properties of equilibrium (such as the Price of Anarchy) in terms of the details of the stochastic contagion dynamics, and will mention natural variants of the model that consider endogenous marketing budgets and connectivity among adopting users.

Joint work with Sanjeev Goyal (University of Cambridge), Hoda Heidari (Penn), and Moez Draief (Imperial College London).

**BIO:**

Since 2002 I have been a professor in the [Computer and Information Science Department](#) at the [University of Pennsylvania](#), where I hold the National Center Chair. I have secondary appointments in the [Statistics](#) and [Operations and Information Management \(OPIM\)](#) departments of the [Wharton School](#). I am the Founding Director of the [Warren Center for Network and Data Sciences](#), where my co-director is [Rakesh Vohra](#). I am the Founding Director of Penn Engineering's [Networked and Social Systems Engineering \(NETS\) Program](#); my co-director is [Ali Jadbabaie](#), and the program's curriculum chair is [Zack Ives](#). I am an active member of Penn's machine learning community [PRiML](#), and am an affiliated faculty member of Penn's [Applied Math and Computational Science](#) graduate program. Until July 2006 I was the co-director of Penn's interdisciplinary [Institute for Research in Cognitive Science](#).

I currently serve as an advisor to the companies [Yodle](#), [Wealthfront](#) (formerly known as kaChing), [Activate Networks](#), [Convertro](#), and [RootMetrics](#). I am also involved in the seed-stage fund [Founder Collective](#). I am a member of the Technical Advisory Board of [Microsoft Research Cambridge](#) and the [Scientific Advisory Board](#) of [Opera Solutions](#). I occasionally serve as an expert witness/consultant on technology-related legal and regulatory cases. With [Yuriy Nevmyvaka](#), I also lead a quantitative trading team in a New York City hedge fund.