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## **Seminar**

Speaker: **Professor Patrick Perry**  
**NYU Stern School of Business**

Title: **Point process modeling for directed interaction networks**

Time: **2:00 – 3:00pm, Tuesday, April 30, 2013**

Place: **552 Hill Center**

## **Abstract**

Network data often take the form of repeated interactions between senders and receivers tabulated over time. A primary question to ask of such data is which traits and behaviors are predictive of interaction. To answer this question, a model is introduced for treating directed interactions as a multivariate point process: a Cox multiplicative intensity model using covariates that depend on the history of the process. Consistency and asymptotic normality are proved for the resulting partial-likelihood-based estimators under suitable regularity conditions, and an efficient fitting procedure is described. Multicast interactions--those involving a single sender but multiple receivers--are treated explicitly. The resulting inferential framework is then employed to model message sending behavior in a corporate e-mail network. The analysis gives a precise quantification of which static shared traits and dynamic network effects are predictive of message recipient selection. This is joint work with Patrick J. Wolfe.

A preprint is available at <http://arxiv.org/abs/1011.1703>

**\*\* Refreshments will be served at 1:40pm in Room 502 Hill Center \*\***

