

## DEPARTMENT OF STATISTICS AND BIOSTATISTICS

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*Open Challenges in Statistical Network Analysis***March 7, 2018****3:20 – 4:20pm**

Light refreshments will be served

**110 Frelinghuysen Road****Hill Center, Room 552**

**Abstract:** Over the past 10 years network analysis has become a popular area of study in both theoretical and applied statistics, with motivating problems from a wide range of disciplines including neuroscience, finance, genetics, and social science. Statistical methods for network analysis are not new -- they have been around since the 1970s in the social science literature -- but there remain a number of fundamental challenges to the development of sound statistical theory and methods. In this expository talk, I will explain the shortcomings of current theory and methods, and discuss some potential avenues of future research in this developing discipline. I will focus especially on the difficulty of accounting for the sampling scheme in network analysis.

This material is taken from my forthcoming book on *Probabilistic Foundations of Statistical Network Analysis*, to be published in May 2018.

**Bio** Harry Crane is an Associate Professor and Co-Director of the Graduate Program in Statistics and Biostatistics at Rutgers University. Before Rutgers, Harry received his PhD in Statistics from the University of Chicago and BA in Mathematics and Economics from the University of Pennsylvania. He has previously held positions as a Visiting Scholar in Mathematics at UC Berkeley, Research Associate at the RAND Corporation, and Research Fellow at the Foreign Policy Research Institute.

