

Statistics Seminar  
Department of Mathematical Sciences

<b>DATE:</b>	Thursday, October 13, 2016
<b>TIME:</b>	1:15p-2:40p
<b>LOCATION:</b>	WH 100E
<b>SPEAKER:</b>	Jacob Bien, Cornell University
<b>TITLE:</b>	Graph-Guided Banding for Covariance Estimation

**Abstract**

Reliable estimation of the covariance matrix is notoriously difficult in high dimensions. Numerous methods assume that the population covariance (or inverse covariance) matrix is sparse while making no particular structural assumptions on the desired sparsity pattern. A highly-related, yet complementary, literature studies the setting in which the measured variables have a known ordering, in which case a banded (or near-banded) population matrix is assumed. This work focuses on the broad middle ground that lies between the former approach of complete neutrality to the sparsity pattern and the latter highly restrictive assumption of having a known ordering. We develop a class of convex regularizers that is in the spirit of banding and yet attains sparsity structures that can be customized to a wide variety of applications.

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