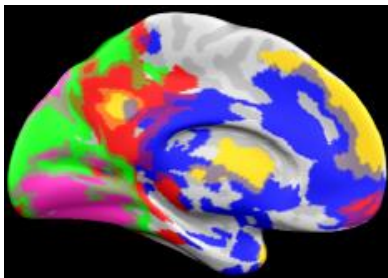




UNC
GILLINGS SCHOOL OF
GLOBAL PUBLIC HEALTH

BIOSTATISTICS SEMINAR



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Using Replicates To Learn The Structure of a Graphical Model With Latent Variables

In classical statistics, much thought has been put into experimental design and data collection. In the high-dimensional setting, however, experimental design has been less of a focus. In this work, we stress the importance of collecting multiple replicates for each subject in the high-dimensional setting. We consider learning the structure of a graphical model with latent variables, under the assumption that these variables take a constant value across replicates within each subject. By collecting multiple replicates for each subject, we are able to estimate the conditional dependence relationships among the observed variables, given the latent variables. Theoretical guarantees are established for parameter estimation. We perform extensive numerical studies to show that our proposal is able to estimate latent variable graphical models more accurately than some existing proposals. Finally, we analyze a functional magnetic resonance imaging data set obtained from multiple subjects while watching the BBC television series Sherlock.

Thursday, February 2, 2017

3:30 pm - 4:30 pm

Blue Cross Blue Shield Auditorium

0001 Michael Hooker Research Center