The DIVISION OF BIOSTATISTICS
of the
MEDICAL COLLEGE OF WISCONSIN

Proudly Presents
A Special Talk

By:

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Estimating and Testing High-Dimensional Mediation Effects in Epigenetic Studies

DNA methylation is an important epigenetic mechanism to regulate gene expression. Genome-wide DNA methylation markers, e.g., measured by Illumina Infinium HumanMethylation450 BeadChip, are ultra-high dimensional (around 480K). DNA methylation markers may mediate pathways linking environmental exposures with health outcomes. However, there is a lack of analytical methods to identify significant mediators for high-dimensional mediation analysis. Based on sure independent screening and minimax concave penalty (MCP) techniques, we have developed a permutation-based joint significance test. We demonstrate its practical performance using Monte Carlo simulation studies and apply this method to investigate the extent to which DNA methylation markers mediate the causal pathway from smoking to reduced lung function in the Normative Aging Study.

Tuesday, March 1, 2016
3:30 – 4:30 PM
Medical College of Wisconsin
Room M2050 – 2nd floor of the MEB
Refreshments 3:00 – 3:30 PM in H2030