

RUTGERS UNIVERSITY
DEPARTMENT OF STATISTICS AND BIOSTATISTICS
www.stat.rutgers.edu

Seminar

Speaker: **Professor Ray-Bing Chen**
Department of Statistics
National Cheng-Kung University, Taiwan

Title: **Bayesian Sparse Group Selection**

Time: **3:20 – 4:20pm, Wednesday, October 14, 2015**

Place: **552 Hill Center**

Abstract

This article proposes a Bayesian approach for the sparse group selection problem in the regression model. In this problem, the variables are partitioned into different groups. It is assumed that only a small number of groups are active for explaining the response variable, and it is further assumed that within each active group only a small number of variables are active. We adopt a Bayesian hierarchical formulation, where each candidate group is associated with a binary variable indicating whether the group is active or not. Within each group, each candidate variable is also associated with a binary indicator, too. Thus the sparse group selection problem can be solved by sampling from the posterior distribution of the two layers of indicator variables. We adopt a group-wise Gibbs sampler for posterior sampling. We demonstrate the proposed method by simulation studies as well as real examples. The simulation results show that the proposed method performs better than the sparse group Lasso in terms of selecting the active groups as well as identifying the active variables within the selected groups.

**** Refreshments will be served @2:50pm in Room 502 Hill Center ***