Statistics Seminar
Department of Mathematical Sciences

DATE:	Tuesday, May 2, 2017
TIME:	1:30pm to 3:00pm
LOCATION:	WH 329
SPEAKER:	Lin Yao, Binghamton University
TITLE:	James-Stein Type Optimal Weight Choice for Frequentist Model Average Estimator

Abstract

One benefit of model averaging is that it incorporates rather than ignores the uncertainty in the model selection process. One of the most important and challenging aspects of model averaging is how to optimally combine estimates from different models. In this talk, I will first introduce the general framework of model averaging and some existing weight choice methods. Then I will highlight on a procedure to obtain optimal weights choice for frequentist model average estimators based on James-Stein (JS) estimator. It is well known that the James-Stein (JS) estimator dominates the OLS estimator under quadratic loss, provided that the dimension of the parameter is greater than two. Motivated by the James-Stein estimator, we adaptively shrink the OLS estimator towards either the narrow model or the full model, and select the weights that minimize the model average estimator's estimated MSE. Asymptotic optimality of the proposed method is investigated. Next, I will focus on the optimal weights choice for frequentist model averaging estimator under the Focused Information Criterion (FIC), which is motivated by a nonparametric regression splines problem with truncated power basis function. Future work includes the extensions to general parametric models and high-dimensional linear model.