RUTGERS
School of Arts and Sciences

Department of Statistics and Biostatistics
Rutgers, The State University of New Jersey
Busch Campus
501 Hill Center
101 Frelinghuysen Road
Piscataway, NJ 08854

Web: stat.rutgers.edu
Email: office@stat.rutgers.edu
Phone: 848-445-2690
Fax: 848-445-3428

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

Seminar

Speaker: **Professor Yuhong Yang**
School of Statistics
University of Minnesota

Title**:** **l_q-Aggregation and Adaptive High-dimensional Minimax Estimation**

Time: **3:20 – 4:20pm, *Wednesday*, April 9, 2014**

Place: **552 Hill Center**

Abstract

Given a dictionary of M initial regression functions and n observations of (X, Y), we seek to achieve the performance of the best linear combination of the M functions with the coefficients satisfying a sparsity constraint: the l_q norm of the coefficients, with q between 0 and 1, is upper bounded by some constant t>0. This problem is called the l_q-aggregation of estimates, which turns out to include the previously well understood different types of aggregation problems. Here no specific assumption between M and n is made.

To solve the general l_q-aggregation problem, we first establish a sharp high-dimensional sparse linear approximation bound without any assumption on the relationship between the M initial functions. Together with general model selection/mixing results, we show that our final estimators adaptively achieve the minimax rate of convergence for l_q-aggregation simultaneously for all q in [0, 1] and t>0. Implications on adaptive high-dimensional linear regression in l_q-hulls will be given as well.

The work is joint with Zhan Wang, Sandra Paterlini and Fuchang Gao.

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