



The University of Chicago
Department of Statistics

Seminar Series

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**Variable Selection in Joint Modelling of Mean-covariance
Structures for Longitudinal Data**

MONDAY, October 22, 2007 at 4:00 PM
133 Eckhart Hall, 5734 S. University Avenue

Refreshments following the seminar in Eckhart 110.

ABSTRACT

Recently joint modelling of mean and covariance structures for longitudinal or clustered data has been paid an increasing attention. It is well known that correct modelling of covariance structures leads to efficient statistical modelling for the mean, and in some circumstances it can remove bias in the mean parameter estimates, for example, when data contain missing values. Like the mean structure, covariance may change from group to group. More broadly it may be dependent on various covariate variables of interest. Selection of covariate variables that are significantly contributed to modelling of mean or covariance structures is the main concern of this work.

In this talk, I will start with why and how covariance structures are modelled together with the mean, and then discuss how we should select the most important covariate variables for the mean and covariance structures using LASSO and SCAD techniques. Asymptotic properties including consistency and normality will be discussed, and various numerical comparisons will be made through real data analysis and simulation studies.