ABSTRACT:

Differential measurement error (DME) data often arise plausibly in epidemiology and biomedical studies, for example, when instrumental and laboratory-analysis error are only minor components of the total measurement error. A scarcity of research deals with DME explicitly. Recently Freedman, Midthune, Carroll and Kipnis (2008) and Guo and Little (2011) considered DME in parametric regression setting with interval or external calibration samples and found that regression calibration type of estimators incur nonignorable bias whereas imputation based methods can mitigate the bias considerably. We propose an estimation equation correction method in semiparametric censored linear regression to deal with DME for time-to-event data where such consideration is lacking. In contrast to the regression calibration and imputation based methods, the correction method does not require explicit modeling the true covariate using its error prone surrogate. It also leads to unbiased estimation. To successfully apply the method, we develop new theoretical results for misspecified censored linear regression models. We also address challenging computational issues associated with non-smoothness of the resulting estimating equation.

Because I intend to use this talk to introduce some of my onging research to the Department, I will also briefly present topics related to dimension reduction and variable selection in high dimensional data with structure and to causal inference for time-dependent treatment within semi-competing risks framework. All are motivated from my collaboration work with medical investigators.

TITLE:

Adjusted Regression Estimation for Time-to-Event Data with Differential Measurement Error

SPEAKER:
Professor Menggang Yu
Department of Biostatistics
UW-Madison

TIME & PLACE:
Wednesday, March 21, 2012
Room 140 Bardeeen
4:00-5:00p

Cookies & Coffee @ 3:30 in Rm 1210 MSC