RUTGERS UNIVERSITY
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HILL CENTER #501, BUSCH CAMPUS, PISCATAWAY

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Seminar

Speaker: Ying Wei, Department of Biostatistics, Columbia University

Title: Quantile Regression With Measurement Error

Date: Wednesday October 21, 2009

Time: 3:20 PM

Place: 552 Hill Center

Abstract

Regression quantiles can be substantially biased when the covariates are measured with error. In this paper we propose a new method that produces consistent linear quantile estimation in the presence of covariate measurement error. The method corrects the measurement error induced bias by constructing joint estimating equations that simultaneously hold for all the quantile levels. An iterative EM-type estimation algorithm to obtain the solutions to such joint estimation equations is provided. The finite sample performance of the proposed method is investigated in a simulation study, and compared to the standard regression calibration approach. Finally, we apply our methodology to part of the National Collaborative Perinatal Project growth data, a longitudinal study with an unusual measurement error structure.

This is joint work with Ray Carroll at Texas A&M.