

RUTGERS UNIVERSITY
DEPARTMENT OF STATISTICS AND BIostatISTICS
HILL CENTER #501, BUSCH CAMPUS, PISCATAWAY

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Seminar

Speaker: Len Stefansky, Department of Statistics, North Carolina State University

Title: Measurement Error Models for Variance Predictors

Date: Wednesday November 11, 2009

Time: 3:20 PM

Place: 552 Hill Center

Abstract

Measurement error models assume a response Y , latent predictor X , and measured predictor $W = X + U$ with U the measurement error. The problem is to infer $E(Y|X)$ from data (W_i, Y_i) and an estimate of the measurement error variance, possibly calculated from replicate measurements W_{ij} . Implicit is the assumption that Y depends on only the subject-specific mean $X=E(W)$. Replicate measurements arise in longitudinal studies, where variation around the mean is intrinsic, not instrumental (e.g., blood pressure, weight, cholesterol) and it is reasonable to question whether Y might also depend on intrinsic variation. Such models have been studied since 1995, with only Lyles et al. (1997) addressing the measurement error aspect of the problem. This talk will highlight some problems unique to modeling with subject-specific variances and summarize approaches using standard measurement error modeling approaches.