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Interdisciplinary Data Sciences Consortium



* IDSC Seminar Series *

January 20, 2017 2:00pm-3:00pm

Location: CUTR 102

Presentations

Dr. Huang Yangxin

Epidemiology & Biostatistics

Public Health, USF Health

Title: Bayesian inference on mixture joint models for survival-longitudinal data with multiple features

Abstract: In longitudinal studies, it is of interest to investigate how repeatedly measured markers in time are associated with a time to event of interest and, in the meantime, the repeated measurements are often observed with the features of a heterogeneous population, left-censoring due to a limit of detection (LOD) and covariate measured with error. Statistical analysis may complicate dramatically when one analyzes survival-longitudinal data with these features together. In the literature, there are relatively few studies accommodating heterogeneity, LOD and measurement error in covariate simultaneously arose in longitudinal-survival data setting. Under the umbrella of Bayesian inference, this article explores a finite mixture of hierarchical joint models for longitudinal measures with an attempt to mediate homogeneous characteristics, tailor observations below LOD as missing values and mediate accuracy from measurement error in covariate as well as overcome shortages of confidence in specifying a time-to-event model. The Bayesian mixture of joint modeling offers an appropriate avenue to estimate not only all parameters of mixture joint models, but also probabilities of class membership. A real example is analyzed to demonstrate the methodology and the results are reported by comparing potential models with various scenarios.



Biography: Dr. Yangxin Huang is Professor of Biostatistics in Department of Epidemiology and Biostatistics, College of Public Health, University of South Florida. Dr. Huang's research focuses on Bayesian methodology and Markov chain Monte Carlo; Mixture joint analysis of skewed-longitudinal and survival data; Quantile regression-based joint models for longitudinal and survival data; Parametric and nonparametric mixed-effects models for skewed-longitudinal data; Missing data analysis and measurement error modelling; Statistical methods for differential equation models; HIV/AIDS dynamic modelling and prediction; Clinical research of infectious diseases and AIDS; AIDS clinical trial studies; Community-based data analysis. Dr. Huang has published more than 70 peer-reviewed articles since 2010 in both statistical and scientific journals including *Biometrics*, *Annals of Applied Statistics*, *Statistics in Medicine*, *AIDS and Journal of Infectious Disease*. As PI, Co-PI or Co-I, Dr. Huang had and has been working on a number of funded projects from the various sources including NIH, NSF and NSA. Dr. Huang received his BSc in Mathematics at Wuhan University of Technology, China, MSc in Statistics at Huazhong University of Science and Technology, China and PhD in Statistics at Liverpool John Moores University, UK.

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