Title: Efficient quantile marginal regression for longitudinal data with dropouts
Speaker: Dr. Hyunkeun Cho, Western Michigan University
Date: Monday, January 23rd
Time and Location: 3:00-3:50pm in 6-113

Abstract: In many biomedical studies, independent variables may affect the conditional distribution of the response variable differently in the middle as opposed to the upper or lower tail. Quantile regression evaluates diverse covariate effects on the conditional distribution of the response with quantile specific regression coefficients. This talk will describe an empirical likelihood inference procedure for longitudinal data that accommodates both the within-subject correlation and informative dropouts under missing at random mechanisms. We borrow matrix expansion idea of quadratic inference functions and incorporate the within-subject correlation under an informative working correlation structure. The proposed procedure does not assume the exact knowledge of the true correlation structure nor does it estimate parameters associated with the correlation structure. Theoretical results show that the resulting estimator is asymptotically normal and more efficient than one attained under a working independence correlation structure. We expand the proposed approach to account for informative dropouts under missing at random mechanisms. The methodology is illustrated by empirical studies and a real life example of HIV data analysis.