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Sidney Smith Hall, Room 1074

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## **Challenges in modeling longitudinal smoking cessation data, and a proposed approach for modelling multivariate longitudinal data from smoking cessation studies**

Longitudinal smoking cessation studies present a number of methodological and analytic challenges, including defining an observable event of interest, misclassification of various common event types, and potential faulty logic when determining the smoking status of those who withdraw before end of follow-up. We will discuss these issues, and try to provide some guidelines on analyzing data from these types of studies. We will present an analysis of a completed pharmacotherapy longitudinal smoking cessation trial, where we model a bivariate longitudinal response with mixed hidden Markov modelling (MHMM) using a Bayesian approach via MCMC. Time permitting, we will also show some simulation results investigating the properties of our proposed MHMM method for modelling multivariate longitudinal data.

Joint work with Jesse D. Raffa, University of Washington.