

# GRADUATE SEMINAR

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## Survival and Longitudinal Modelling for Combined Cohorts

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**3:30 PM**

**RI 209**

**Abstract:** A primary goal of survival analysis is modelling the time from an initial event to a failure event and the factors which affect the hazard rate. We consider data drawn from an incident cohort study with follow-up and a prevalent cohort study with follow-up, yielding right-censored failure time data and left-truncated right-censored failure time data, respectively. In addition to the failure/censoring times, we assume the survival data include other measured covariates, for example, longitudinal measurements collected throughout the failure/censoring time durations. We review the methods of estimation for the proportional hazards model, the linear mixed effects model, and the joint model, to determine the association between the survival and the longitudinal processes. We introduce novel estimation methods for the joint model when incident and prevalent cohort data are combined.