

**Department of Epidemiology and Biostatistics
Biostatistics Seminar**

Thursday, October 09, 2014
12:00pm - 1:00pm -- WG73

“Joint Modeling of Competing Recurrent Events and a Terminal Event”

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Abstract: In many settings in the medical, public health, engineering, economic areas, one is interested in the time to occurrence of a terminal event (e.g., death, failure, outbreak of an epidemic, onset of recession). Such time to event occurrence is oftentimes viewed in light of concomitant features associated with the unit and in many situations the time to event could also be right-censored. Aside from concomitant variables, however, there could be different types of recurring events occurring for the unit that could also be affecting the time to terminal event (repeated hospitalizations, tumor re-occurrence, drop of 5% in the Dow on trading days). Such competing recurrent events, which are also of interest, may be occurring according to a dynamic model. For instance, more events might mean a higher intensity of re-occurrence, and each time an event occurs, some intervention may be performed that bears on the next occurrence of the event. In this talk, I will describe a joint dynamic model for competing recurrent events and time to terminal event. I will then discuss statistical inference procedures for this joint dynamic model. The model and statistical inference methods have potential important implications in the context of personalized medicine approaches.