



Colloquium Series



A Fast and Scalable Implementation
Method for Competing Risks Data

Eric Kawaguchi
UCLA

Abstract: Advancements in medical informatics tools and high-throughput biological experimentation make large-scale biomedical data routinely accessible to researchers. Competing risks data are typical in biomedical studies where individuals are at risk to more than one cause (type of event) which can preclude the other events from happening. The Fine-Gray model is a popular and well-appreciated model for competing risks data and is currently implemented in a number of statistical software packages. However, current implementations are not computationally scalable for large-scale competing risks data. We have developed a novel forward-backward scan algorithm to significantly reduce the computational complexity for parameter estimation by exploiting the structure of the subject-specific risk sets. Numerical studies compare the speed and scalability of our implementation to current methods for unpenalized and penalized Fine-Gray regression and show impressive gains in computational efficiency.

Keywords: Bio Statistics.

Wednesday September 18th, 1:05 - 1:50pm in 4-1-314