

**The DIVISION OF BIOSTATISTICS
of the
MEDICAL COLLEGE OF WISCONSIN**

Proudly Presents
A Special Talk
By:

Youngjoo Cho, PhD
Assistant Professor
Department of Biostatistics
University of Wisconsin - Milwaukee

Regression Trees for Cumulative Incidence Functions

The use of cumulative incidence functions for characterizing the risk of one type of event in the presence of others has become increasingly popular over the past decade. The problems of modeling, estimation and inference have been treated using parametric, nonparametric and semi-parametric methods. Efforts to develop suitable extensions of machine learning methods, such as regression trees and related ensemble methods, have begun only recently. In this paper, we develop a new approach to building regression trees for estimating cumulative incidence curves in a competing risks setting. Following Steingrimsson et al. (2016), the proposed methods employ augmented estimators of the Brier score risk as the primary basis for building and pruning trees. The proposed methods are easily implemented using the `rpart` procedure, available as part of the R statistical software package. Simulation studies demonstrate the utility of our approach in the competing risks setting. Data from the Radiation Therapy Oncology Group (trial 9410) is used to illustrate these new methods.

Tuesday, September 12, 2017
3:30 – 4:30 PM
Medical College of Wisconsin
Room M2050 – 2nd floor of the MEB
Refreshments are provided