

**MICHIGAN STATE UNIVERSITY**  
Department of Statistics and Probability

## **COLLOQUIUM**

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### **Feature selection with survival outcome data**

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**10:20 AM - 11:10 AM**

**Refreshments 10:00 AM**

**C405 Wells Hall**

#### **Abstract**

Detecting biomarkers that are relevant to patients' survival outcome is crucial for precision medicine. Dimension reduction is key in the process. Although regularization methods have been used for dimension reduction, they cannot handle a large number of candidate biomarkers generated by modern bio-techniques. Variable screening, which has been widely used for handling exceedingly large numbers of variables, is however much underdeveloped for censored outcome data. This talk introduces a series of new feature screening procedures that I have recently developed for survival data with ultrahigh dimensional covariates. These methods include conditional screening, integrated powered density (IPOD) screening,  $L_q$ -norm learning, and forward regression with partial likelihood. I will discuss the intuition behind and demonstrate their utilities through real data analyses.

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