

Mathematical Sciences Colloquium Series

Friday (April 4, 2008)

3:00pm WA 103A

Dr. Kirsten Doehler

Assistant Professor

Department of Mathematics and Statistics
University of North Carolina at Greensboro

Title: The Basics of Survival Analysis and How the SNP Density Can Help

Abstract:

Survival analysis is an important area of statistics. If you have ever taken a prescription drug, then the analysis of survival data has had an effect on your life. This is because time-to-event data from clinical trial studies of prescription drugs must be thoroughly investigated by statisticians before a drug goes on the market. I will talk about different types of survival data that are commonly encountered, and discuss some popular ways to estimate a survival function.

I will also introduce a new procedure that can be used for estimating the survival function of a time-to-event random variable. This procedure uses a semi-nonparametric (SNP) density to represent the density of failure times. With only mild assumptions this method allows a unified approach to handling different kinds of censored data, while in many cases increasing efficiency. An SNP test statistic is also available to compare two survival functions. Performance of the SNP techniques has been tested through simulation studies. I will show results from several simulations and from the analysis of biomedical data sets.