



# STATISTICS SEMINAR



**Research Proposal for Dissertation:  
Analysis of Crossover Designs When Treatments have Unequal  
Variances**

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**Date: Thursday, June 21, 2007**

**Time: 9:30**

**Place: D 302**

**Refreshments start at 9:00 in D 108**

## **Abstract**

We can consider a crossover design is a special form of repeated measures experiments. Appropriate structures of the variance-covariance structure,  $\Sigma$ , needs to have the correct analysis of variance. Goad (1994) provided three alternative methods of analysis when  $\Sigma$  does not have type H structure and the analysis of variance tests are not valid. Following Goad (1994), Shanga (2003) considered two kinds of tests in crossover designs when the variance-covariance structure has unequal variances. First one is testing the equality of the three treatments due to treatments. Second is testing for carryover, period, and treatment effects when the variances are unequal. He focused on the first case only. He used the method of moment estimators instead of maximum likelihood estimators at second case. Sometimes maximum likelihood estimators do not have closed form solution. The object in this paper is to focus on second case at the three treatment/ three period crossover design.