

MINI-SEMINAR FOR FIRST-YEAR PH.D. STUDENTS

Department of Statistics

**Controlling the False Discovery Rate:  
A Practical and Powerful Approach to Multiple Testing**

by

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**ABSTRACT**

The common multiple comparison procedures (approach to the multiplicity problem) controlling the familywise error rate (FWER). This approach, though, tend to have less power. A different approach is controlling the expected proportion of falsely rejected hypotheses---the false discovery rate (FDR). This error rate is equivalent to the FWER when all hypotheses are true but is smaller otherwise. Thus, in problems where the control of the false discovery rate rather than that of the FWER is desired, there is potential for a gain in power. A simple sequential Bonferroni-type procedure which use the observed  $p$ -values is presented as one of false discovery rate control procedures.