

## STATISTICS COLLOQUIUM

FRIDAY, APRIL 04, 2008

TALK: 11:00 A.M. — Sever Hall Rm. 103

### **“SIMULTANEOUS INFERENCE: WHEN SHOULD HYPOTHESIS TESTING PROBLEMS BE COMBINED?”**

**Bradley Efron  
Statistics Department  
Stanford University**

#### ABSTRACT

Statisticians these days are often presented with hundreds or thousands of hypothesis testing problems to evaluate at the same time, generated from modern scientific technologies such as microarrays, fMRI devices, satellite imagers, and flow cytometry machines. The relevant statistical literature tends to begin with the tacit assumption that a single combined analysis, for instance False Discovery Rate assessment, should be applied to the entire set of problems at hand. I will give examples to show the dangers of this assumption. A little bit of theory on when to separate and when to combine will be presented, but the examples make clear that actual situations can be dauntingly difficult to decide.