

## Analysis of Variance (ANOVA) Lecture 14

### I. Objectives

At the end of this series of lectures you should be able to:

- A. Define terms.
- B. Explain why many pair-wise comparisons are inappropriate.
- C. Recognize when an ANOVA or Kruskal-Wallis is appropriate.
- D. Understand the rationale behind an ANOVA.
- E. Perform the calculations necessary for an ANOVA and Kruskal-Wallis.
- F. Understand the necessity of multiple comparison tests.
- G. Be able to conduct parametric and nonparametric multiple comparison tests.
- H. Interpret the results of the tests.

### II. Key Concepts and Terms

Ambiguous results  
Analysis of Variance  
ANOVA  
Bonferroni inequality  
Duncan's test  
Kruskal-Wallis Test  
Multiple comparison inflation of Type I error  
Newman Keuls' test  
One-way ANOVA  
Power  
Scheffe's test  
Single Factor ANOVA  
Tukey's test  
Type I error  
Type II error  
Variability<sub>among</sub>  
Variability<sub>within</sub>  
 $\alpha$   
 $\beta$