



## Department of Mathematics and Statistics

### COLLOQUIUM

Tuesday, January 28, 2014

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## Asymptotic Power of Friedman's Test Under General (Local) Alternatives

Abstract: In 1937, Milton Friedman proposed a rank-based test for differences among  $t$  treatment distributions in a randomized complete block (RCB) design. While Friedman's test has reasonably good power to detect location shifts between treatment distributions, the power of his test can be poor when differences among the distributions are not simply location shifts. In earlier talks (February 2012, April 2013), I described the rationale that led us to develop an alternative approach to testing for differences, starting from the joint distribution of the  $t!$  possible permutations of the treatment ranks within a block, and looked at simulation results comparing the small-sample power of this "new test" to Friedman's test under a variety of (not-purely-location) shifts. The current talk focuses on asymptotic distributional results for both tests, and how these results might help inform our understanding of small-sample properties of the two tests.

4:00 – 5:00 pm  
Adel Math Bldg, Room 164  
(refreshments at 3:45)

#### ACGT Seminar:

Tuesday, January 28, 11:20 – 12:25 pm, AMB 164. Speaker: Brooke Fox (NAU grad student),  
Title: Conjugacy classes of cyclically fully commutative elements of Coxeter groups (continued).

#### Applied Math Seminar (AMS)

Thursday, January 30, 12:45 – 2:00 pm, AMB 221

Speaker: Jim Swift

Title: Ridder's Method (continued).

#### Friday Afternoon Undergraduate Mathematics Seminar (FAMUS):

Friday, January 31, 3:00 – 4:00 pm, AMB 164

Speaker: TBA, Title TBA, Faculty Guest: TBA.