

---

**SHAHEENA BASHIR**, University Health Network, Toronto  
*Joint Tests of Effect Size in Multivariate Meta-Analysis*

Multivariate meta-analysis combines estimates of several related parameters over several studies. This work investigates the feasibility of obtaining an F-statistic that can test for differences among more than two groups in a meta-analysis context. The question of obtaining a general F-statistic arose in a meta-analysis of gene expression microarray data with 4 treatment groups and 6 possible pairwise comparisons across 2 studies. We evaluate the performance of our test statistic in comparison to standard random effect meta-analysis approaches in simulations. The simulations show that the quadratic form of the pairwise t statistic from random effect model is distributed as F.