Speaker:  Daniel Yekutieli, Tel Aviv University

Title:  Testing composite hypotheses with the local FDR

Abstract:
I will give two examples of using the local FDR for testing composite hypotheses. The first is a large-scale genomic example in which eBayes local FDR tests offer considerably more power than the p-value based BH procedure, partly because the p-value is a suboptimal statistic but especially because — for composite null hypotheses — the p-value distribution is stochastically larger than Uniform. For the second example I will present a Bayesian extension of the likelihood ratio test for composite alternative hypotheses that have no natural test statistic. I will apply it for testing for Simpson’s Paradox, explain its optimality property and its relation to Bayes factors.