Topics to be covered

Statistical inference (estimates, tests and confidence intervals) in the one-sample and two-sample normal settings. This is a review of topics that should have been covered previously. Permutation tests and rank-sum tests as alternatives to the more commonly used normal-theory Student’s t-tests. One-way Analysis of Variance (“simple” ANOVA), including procedures for multiple hypothesis tests, especially the special-purpose Tukey-Kramer procedure and the multi-purpose Bonferroni procedure. Statistical analysis for “simple” regression models, and transformations of data so as to better satisfy the assumptions supporting the statistical analysis. Multiple regression, including the multiple regression interpretation of polynomial regression. Variable selection within multiple regression analyses and its benefits and dangers. Multi-way ANOVA and MANOVA (mixed ANOVA and regression models). Comparisons of proportions or odds and 2x2 and higher way contingency tables. Logistic regression as an introduction to the Generalized Linear Model.