**Final Project**

During the semester we have been exploring different analytical and visualization methods. In this assignment, you will analyze a dataset using either real or simulated data. The goal of this paper is to synthesize these techniques into a coherent form that will help you practice design and analysis of experiments. To this end, you will put together a final paper which is a minimum of 9 double spaced pages. In addition to the paper, you will give a final presentation in the form of a conference style 10-minute talk.

Please use the following outline to help structure your final paper:

1. Introduction
   1. Brief project description (2-3 pages)
      1. Who is the audience?
      2. What is the rational?
   2. Discrete objective or hypothesis
2. Materials and Methods (2-3 pages)
   1. Data Collection
      1. What is the experimental design?
         1. Include a schematic figure of the design
      2. Measurements
         1. What is being sampled?
         2. What is being measured as a response?
   2. Data analysis
      1. Data processing
      2. Linear model
      3. Mean separation if applicable
      4. Packages used
   3. Code for analysis
3. Results and Discussion (2-5 pages)
   1. At least four different results (figures or tables)
   2. Clear written interpretation of each result
4. Conclusion (1 page)
   1. What is the major take home message?