Final Project: Service Learning Data Analysis
Biology 340: Biometrics

Professor Kodner

Objective:

This project is an opportunity for you to demonstrate the skills and curriculum knowledge you have gained over the quarter in a single project working with real world data. You will take data collected by our Service Learning partners from the raw data stage though summary statistics, hypothesis testing, and possible through some multivariate statics to explore more complicated data sets. Be demonstrating these skills on real data that needs to be analyzed, you are not only reinforcing what you know, but also engaging with your community and providing a service to an organization that can benefit from your help.

Process:

- We will rank project choices and I will try to get everyone their first or second choice

- Your groups will meet and find out if there is a time you can meet with your partner to go over the data set and their goals. If not in person, this will be done over email.

- Your group will meet to come up with an analysis plan and divide up the project. You will have some class time for this but you should also plan to meet out of class.

- I will be checking in with each group and approving analysis plans.

- Your group will give a group presentation on your data and analysis on the last day of class.

-Your group will write up a final report that will be presented back to your partner.

-I will evaluate your final report and you will also be evaluating each other though a peer review process

Just to make sure it is totally clear, your final report does not have to look like a scientific paper. It should somewhat resemble the example report on CANVAS.

Final Report Outline:

Background Information/Introduction

This section should be a few paragraphs to a page or two describing your partner, how the data was collected, general goals and rational for the project.

Summary Statistics

You should define your variables in this section, include the general visualizations of the data, and summary statistics. It may be helpful to create a table to described what you were working with or what years you had what data, etc....

Statistical Analysis and Hypothesis Tests

State your hypothesis, assumptions and tests of assumptions, and tests of hypotheses, and results of tests.

Synthesis/Summary

You should synthesize the data into some take home messages and general principles you learned about the data and the project. Try to weave the different analyses together. You all have already done a nice job of that in your presentations so you know what to put here.

Future work and/or Suggestions to Partners

In this section, you will make suggestions for future analysis or data collection for your partners. This is especially important if your data analysis led to dead ends or the data was challenging to work with, which lead to no significance in results. Not getting significance in your tests does not mean poor data or there was a problem (sometimes data is just complicated). In some cases, the data you got from your partner was messy and you can make suggestions for improvement. Sometimes the messiness is out of their hands (like when projects are getting off the ground with Volunteers), but all the information you have is useful to them. Just make sure this part has a professional tone. Even if you aren't making suggestions you can talk about what you would do in the future with more time, as most of you did in your presentations already.

Final Report Rubric

Background Information/Introduction – 10 pts

Summary Statistics – 10 pts

Statistical Analysis and Hypothesis Tests – 20 pts

Synthesis/Summary – 20 pts

Future work and/or Suggestions to Partners – 10 pts

Visuals – 15 pts

Layout – 15 pts

Peer Evaluation (was given as a CANVAS quiz)

You will give your peers and yourself a score from 0-5 on:

(1) their/your level of participation in completing the assignments

(2) their/your level of contribution to the creative process or intellectual development of the final project.

0 means no contribution, 5 means a significant contribution that is greater than or equal to the maximum effort of all students.

This evaluation is anonymous.