Guidelines for Independent Projects

This course will culminate in an independent project using R that each of you will submit at the end of the semester. The hope is that you will challenge yourself to get something productive towards your thesis/dissertation. There are only a few loose criteria: (1) it should go beyond what we have gone over in class or done in your assignments, and (2) it should involve you learning to do something you did not know how to do before.

In order for this to be as productive as possible for everyone, I am going to keep the choice of research projects very flexible. I am going to give you 3 general options, but this is negotiable. Also, if there is a research project that you have already been working on during this semester, you can propose to keep working on this if that is the most productive option for you. I encourage you to try to tackle problems that might require you to learn new functions or packages—this is a great time to challenge yourself!

Option 1: Conduct analysis and generate visualizations of your own dataset

If you have your own data, you can conduct analyses of this dataset. Aside from traditional statistics, you might also consider conducting randomizations or simulations to compare your model with null expectations.

Option 2: Take a publication with open access data and conduct analyses, test assumptions or create alternative figures

Another productive project for those with or without their own data is to take publicly available datasets. You could conduct alternative analyses, ask questions that are not addressed in the paper, or generate figures/analyses that are not included in the study. There's often a lot you can do with these datasets, and you will learn a lot this way. If you do this, you should go beyond what we did for Assignment 4

Timeline (see guidelines for each item):

By Thursday, October 10: Submit a short idea (a few sentences) for a proposed project. You can do this as a "Quick Note" on Box.

Thursday, October 17: Submit Project Proposal

Thurday, November 7: Submit Progress Report I

Thursday, November 21: Submit Progress Report II

Tuesday, December 10: Submit Final Project

Some details:

Project proposal:

Step (1): Submit short project idea (by October 10). This can be a few sentences just outlining the overall concept of the paper and what you think the final product will be (e.g., plots, statistical analyses, a model. Add this as a Box Note within your "independent projects" Box folder

Step (2): Draft Project Proposal (by October 17): This should be a first pass at your project proposal. It should be an approximately 2-page document that contains the following information:

- An Introduction that sets the context
- An Objectives section that lays out what you are trying to accomplish in your project.
- A Methods section that includes information on where the dataset is coming from (publication or your own), and how the data was collected.
- References Cited

Progress Reports (November 7 & November 21): You will add notes in the Independent Projects folder on Box with updates on (1) what aspects of your proposed project you have accomplished so far, (2) significant roadblocks on your project, (3) any changes from your proposal (e.g., due to unanticipated roadblocks).

Final Project:

You will conduct your project over the course of about 7 weeks. You will work on the project on your own, but we will also reserve at least half of the lecture time after Fall Break towards working on your projects.

On (or before) December 10th (Tuesday of Finals Week), you will submit through google docs **a final report, written in R Markdown and rendered into pdf or html (we will cover how to do this between now and the due date)**. The report should have an introduction that lays out the question and dataset, and it should present codes as needed for the reader to be able to re-create your analyses. **Importantly, it should be fully reproducible—so any images or data that is required for the codes to work and document to render should be included in the uploaded folder**.