Research project description-2

Overview

Over the course of the semester, you will build a research project in which you will conduct a spatial analysis using the study system of your choosing. During the project development phase, your project will include a lightning talk and a short proposal. The final output for your projects will be static and dynamic maps (ultimately submitted in a shiny web application) and a presentation. You'll build your projects in small chunks, but I **strongly suggest** that you think about and work on your project over the course of the semester. I will work with you to develop your project ideas, help you find data, and assist with any coding difficulties.

Though you will have a lot of choice in the type of project that you will develop, your project must:

- Follow a modern research format (Question, Hypothesis, Prediction, Test — QHPT)
- *Meaningfully** incorporate spatial methods in the QHPT and all project elements
- Include shape (e.g, points or polygons) and raster files

**Meaningful, in this context, means that geospatial data play an explicit role in your research question, hypothesis, predictions, and tests.*

Final project assignment

Your final project will be submitted in a series of stages, from development to finished product. A detailed rubric will be provided for each submission.

- **Annotated literature review (5 points)**: You will conduct a targeted literature review to identify current literature on your research question and potential “holes” in the literature. Your submission will be a pre-formatted Excel file.
- **Proposal presentation (5 points)**: You will give a 5-minute presentation that describes the GIS project you would like to undertake this semester. The talk will include five PowerPoint or Keynote slides and there will be a short question and answer session following each presentation.
- **Written project proposal (5 points)**: You will produce a 500-word Word document that describes your intended project.
- **Data (5 points)**: You will submit project data and the code used to wrangle and clean the data.
- **Data wrangling (5 points each)**: You will submit project data and the code used to wrangle and clean the data.
- **Static maps (5 points)**: You will produce static maps to communicate spatial information about your project data and submit the assignment as an R Markdown file with all code
- **Interactive maps (5 points)**: You will produce dynamic maps to communicate spatial information about your project data and submit the assignment as an R Markdown file with all code.
- **Shiny app (5 points)**: You will create an interactive Shiny app to communicate spatial information about your project data.
- **Final presentation (10 points)**: You will give a 12-minute presentation that describes the reason for your study, the study design, methodology, and findings.