**PROJECT MILESTONE 3: REFINEMENT AND REPORTING**

**Instructions**

1. Have one member of your team submit your **final write-up, R Markdown files, and any relevant evidence of Shiny App functionality,** as defined in previous homework assignment instructions on Canvas by the deadline.
2. Write-ups must be no longer than 1800 words.

**Description**

In this milestone, your team will:

1) Refine the visualizations from your second milestone.

Now that you have brainstormed a variety of design approaches and received instructor and peer feedback, be selective and critical. Reflect carefully on which approaches are well-suited to your original purpose. Implement the refinements necessary to reach publication quality.

2) Unify the results of the first two milestones into a final creative work that could be shared with and understandable by those outside of this course.

This final submission is the write-up as described below.

**Write-Up**

For the Introduction and Literature Review sections, you are encouraged to draw from your Milestone 1 text, adapting as needed.

1. Introduction: Brief explanations of your topic, the main questions and purpose of your project, the dataset you use (where it's from, what it contains), and any background knowledge the viewer needs in order to understand your project.
2. Literature review. What are the strengths and challenges of existing visualizations in the literature of this topic? Provide specific examples of strengths that inspire your design choices, and common challenges that your visualizations overcome.
3. Your final report/interface. This section should make up the bulk of your write-up. The content will differ by project modality,
   * Exploratory Interface: Describe the overall design and provide a non-technical explanation of the reactivity graph(s). Illustrate with examples of how the interface can be used to generate specific, interesting findings that relate to the main questions and purpose of your project.
     + For this option, please also include in your submission screenshots/videos/public hosted link that demonstrate your app's interactivity.
   * Critical Report: Present a logical series of visualizations and associated discussion that highlight answers to the main questions of your project, anticipating potential critiques or follow-ups and presenting a variety of evidence towards your claims.

## **Recommended Roles**

There are many sub-tasks and responsibilities that go into each group project milestone, and your group is responsible for dividing them appropriately. We also encourage you to not repeat roles; if you've already been the Coordinator and/or Writer, try something new.

**Coordinator:**Set up group meetings and documents, take detailed notes on group meetings and other communications, document progress and clearly communicate responsibilities and schedules. Contribute to group discussions about how to best respond to peer and instructor feedback, e.g. which visualizations and what tweaks to move forward with. Responsible for final formatting/grammar/citation/fact-checking/overall cohesion review of write-up, as well as final submission to Canvas.

**Visualization Polishers 1 and 2:**These two group members should lead a group discussion about how to best respond to peer and instructor feedback, e.g. which visualizations and what tweaks to move forward with. These members should then implement those decisions, bringing visualizations up to publication quality. Aid writer with descriptions of relevant visualizations.

**Writer:**Writer is primarily responsible for creating and formatting the write-up. This will involve talking with the other three members as appropriate to ensure it effectively communicates the group's cohesive, high-level project approach and purpose, synthesizing work from previous milestones to connect the problem of interest, existing literature, and the project at hand.

**Lightning Talks**

Your team’s lightning talks will be delivered in class during the last two class sessions. These should be no longer than 7 minutes, but make sure all team members have a chance to speak. Treat these talks like an invitation for those in the audience to learn more — aim for creativity and accessibility rather than formality and completeness. You are encouraged to include a public link to your work (visualization, report, or code) within your slides. We will be inviting students and faculty from across the department to join these lightning talks.

12/4 – Group order TBD

12/9 – Group order TBD

**Rubric**

*Visual designs (10 points)*: The implemented designs are appropriate to the project goals, are structured into a unified whole, and are aesthetically pleasing.

*Design discussion (10 points)*: The discussion describes your work in detail and establishes links between your final product, the problem of interest, and ideas in the literature. The write-up is thorough but not overly wordy and avoids technical jargon.

*Literature review (5 points)*: The report draws from a variety of complementary resources and connects concepts across them. Commentary demonstrates a deep familiarity with prior work.

*Writing clarity and style (3 points)*: The writing is compact, well-structured, and free from technical errors.

*Submission & Formatting* (3 points): Final write-up includes any relevant static visualizations, and any necessary evidence of interactive functionality is included in the submission. Final write-up is well-formatted and readable, important features of included visualizations are easily visible.

*Lightning talk (3 points)*: The presentation delivery and materials are well-organized, creative, and reflect thoughtful preparation.

*Code logic and style (2 points)*: Code for both data preparation and visualization is readable and modular.