



Mid-Semester Project

Presentation Due Date: March 15th – 24th (assigned presentation date)

Individual written report: **Two days** after your presentation in your Data Viz journal folder as a Google Doc or MS Word Doc (*For Monday presentations, your written report is due Wednesday. For Wednesday presentations, your written report is due Friday*)

Deliverables:

Class presentation

Tableau files (loaded on Tableau online)

Individual written report

PDFs of any science papers referenced

Overview:

For your midsemester project, you and your partner will select a topic where inspiration and data are already easily available: the global challenges tackled by the nonprofit based at the University of Oxford: [Our World in Data](#) (OWID).

Your task is to recreate and explore additional approaches for data visualization using OWID datasets available on a biological topic in their collection. You will use your Tableau skills to each recreate **a visualization in your selected topic area (one per person)** and detail your design choices in replicating and improving on the visualization available. Using the OWID datasets (and additional sources if desired) **each person will create one novel visualization** that presents either a different component of the data or approach to looking at the data. Finally, you will compare your visualizations and those available from OWID to figures that you find in scientific publications on the same topic.

The Data:

To understand global problems, we need to use research and data to make these challenges understandable and communicate about ways the world is changing. Our World in Data is an online publication that focuses on presenting data and research findings on global problems. One of its features is being completely open source from the data, code, visualizations, and published text.

You and your partner will select one subtopic from the following categories: Health, Food and Agriculture, Energy and Environment. Available topics are listed at the bottom and you will provide your preferences on a Google Form. No two groups can select the same subtopic.

Source: Grayson, K., Hilliker, A. (2021). [Teaching Data Viz and Communication as an Undergraduate Biology Course: Assignments and Projects. Calling Bull - a resource sharing and teaching community](#), QUBES Educational Resources. [doi:10.25334/5C87-YE71](#)

Teaching materials from a co-developed for an upper-level undergraduate biology course at University of Richmond to teach data exploration and communication.

Instructions:

- 1) Once assigned a partner and a subtopic, review your selected page on Our World in Data.
- 2) Select two of the figures on your page to recreate in Tableau (one per person). Be creative in your selection of a chart type and design choices. You may tweak the selected data partially, but your goal is to replicate the general input parameters and mainly adjust the visualization choices.
- 3) Using one or more datasets from your subtopic, use principles of exploratory data analysis to identify questions and look for patterns or other interesting comparisons. Each person will create one novel figure to present.
- 4) Finally, examine some of the scientific literature on your topic using the references provided on your page or found through your own searches. Examine the figures and conclusions in the literature and select at least one figure in the scientific literature to present for comparison. You likely will need to narrow to a specific aspect of your topic (aligned with the figures and data exploration you choose) to avoid an excessively large scope of literature.

You should compare the stylistic choices and inferences drawn from the data presented in the scientific literature to the summary provided by Our World in Data and your own exploration. Each person should present at least one comparison.

Deliverables:

Your group will give a 15 – 20 minute presentation to the class. Your presentation should include a short introduction to the topic, your selected figures from Our World in Data that each group member recreated, the data exploration of each group member, and your comparison to the scientific literature (each group member should present at least one figure for each component).

In addition to submitting your slides and Tableau files, you will write an individual brief report (2 – 3 pages) that outlines your design choices for each component, your impressions and comparisons from browsing the scientific literature, and the sources you used. For any scientific papers, please also submit the full PDFs on Google Drive, in addition to providing the citations in your report.

Our World in Data Project Topics:

Energy and Environment: [Renewable Energy](#), [Fossil Fuels](#), [Plastic Pollution](#), [Air Pollution](#) (also see separate pages on Outdoor and Indoor sources), [Ozone Layer](#), [Forests and Deforestation](#), [Natural Disasters](#)

Food and Agriculture: [Crop Yields](#), [Environmental impacts of food](#) (also see separate pages on Meat and Dairy Production and Seafood Production)

Health: [Life Expectancy](#), [Cancer](#), [Smoking](#), [Illicit Drug Use](#), [HIV/AIDS](#), [Smallpox](#), [Diarrheal diseases](#)