*Portfolio 4: Visualizing Possible Factors for Vaccine Hesitancy in Wisconsin*

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<https://michaelkornely.shinyapps.io/Portfolio4/>

I focused on why Wisconsin residents have been hesitant to get the vaccine in this assignment. Reading this [article](https://pubmed.ncbi.nlm.nih.gov/34932583/), I found that several factors made some wary about being vaccinated including race, political leanings, income, and education level. I sought to use a spatial visualization to see if these common factors were true in Wisconsin, a swing state that includes a variety of urban and rural areas

With some initial exploration, it was clear that many of these factors have some effects on poor vaccination rates. For example, Price County voted overwhelming Republicans with very few residents holding a bachelor’s degree and had a low vaccination rate. But also, looking at Menominee County (which is predominately a Native American reservation), there are high uninsured rates, but impressive numbers when it comes to being vaccinated. When looking at these visualizations, I could not reasonably conclude that African Americans are not getting vaccinated due to perceived racism in health care as Milwaukee County had a significant African American population, and they have moderate to good vaccination rates.

These visualizations were very time-consuming and required much data preparation to get them to work correctly. Much of the data had to be manually changed due to the joining of several datasets. Using Leaflet was a new experience for me as it wasn’t covered explicitly in class, and I had to rely on Kris’s optional notes.

**Personal Reflection:**

I chose to extend my 3rd Portfolio assignment based on the feedback I got as well as fulfilling my initial desire to have this visualization be a Shiny application.

Here is a list of changes that I made in this new implementation:

* Transform the static Leaflet to a Shiny app using two different inputs as well as a reactive expression to allow users to change the color schemes and the labels put on the map
* Adding highlighting functionality and county boundary lines to the map, making it clearer which county you were clicking on
* Changing the scales of the election map to make it clearer which candidate won each county as well as adding two different scales
* Adding a scale to the COVID vaccination rate map and changing the palette to articulate which counties have lower rates of vaccination.
* Removing the single-dose vaccine data altogether since when you change the color scheme between 1 dose and a full dose, there is very little visual difference.
* Changing so that the data is downloaded from Box rather than requiring multiple files in the directory.
* Cleaning up my code with the styler package

Examples of these changes:

Graphical user interface, text, application

Description automatically generated

Figure 1:Before Changes (Portfolio 3)

Graphical user interface, text, application

Description automatically generated

Figure 2: After Changes (Portfolio 4)

**Finalized Visualization:**

My finalized visualization is hosted here: <https://michaelkornely.shinyapps.io/Portfolio4/>. The code accompanying the app is also included in my submission.

Graphical user interface, application

Description automatically generated

**Short Description:**

This interactive spatial visualization tries to help viewers understand what metrics are factoring into people not getting vaccinated in the state of Wisconsin. This Leaflet allows you to interact with each county, colored by either the 2020 election results or COVID Vaccination data, to get more demographic information that may or may not factor into the decision to get vaccinated.