

MAPPING US COVID-19 VACCINATION IN R

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 @leanmeanmishine

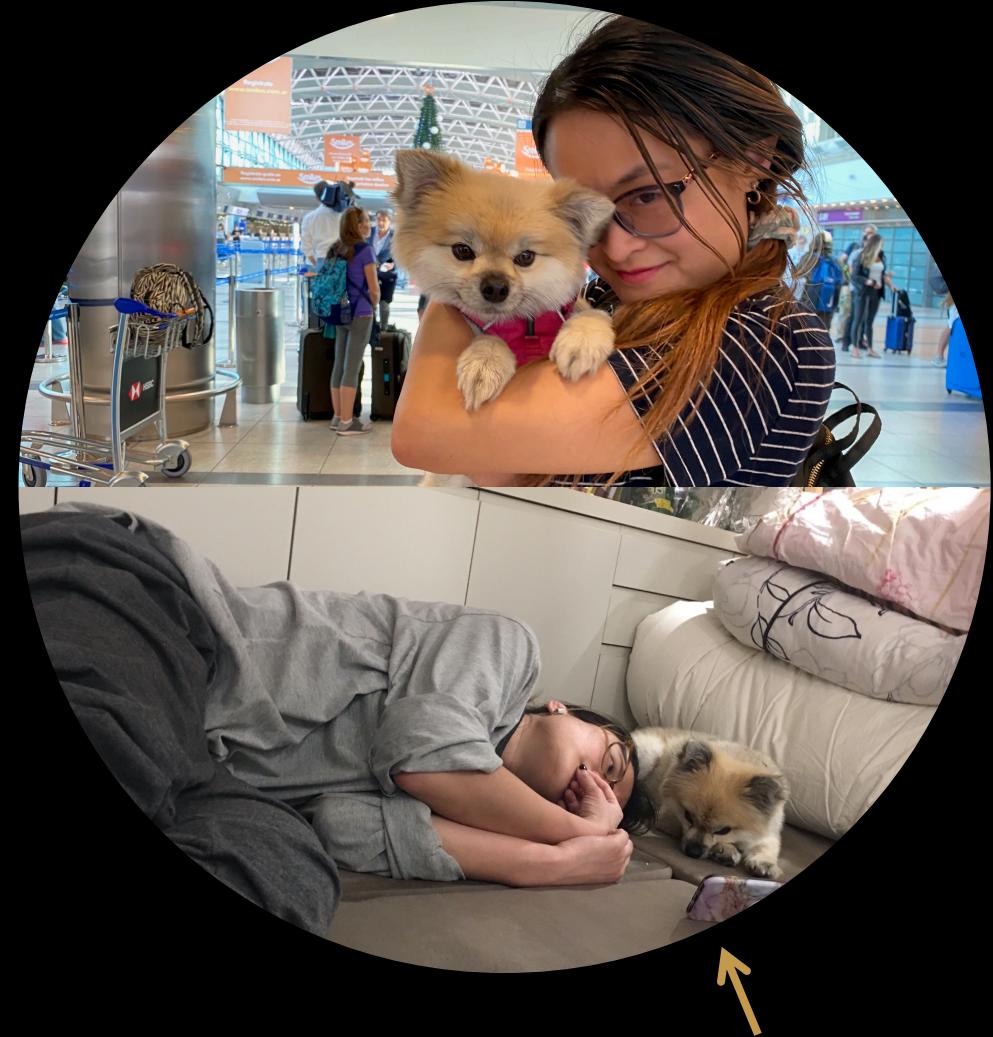


GAME PLAN

- Intro
- Getting our bearings
 - Packages
 - Using *ggplot2*
 - Using *choroplethr*
- RStudio Cloud or GitHub Repo
 - Demo
 - Hands-on Challenge!

ABOUT ME

- Psychology PhD Student
(and aspiring data scientist) at Temple
- Live in Philadelphia
- Taiwanese Argentinian transplant
- Love my Pomeranian Mika



Watching Netflix with Mika

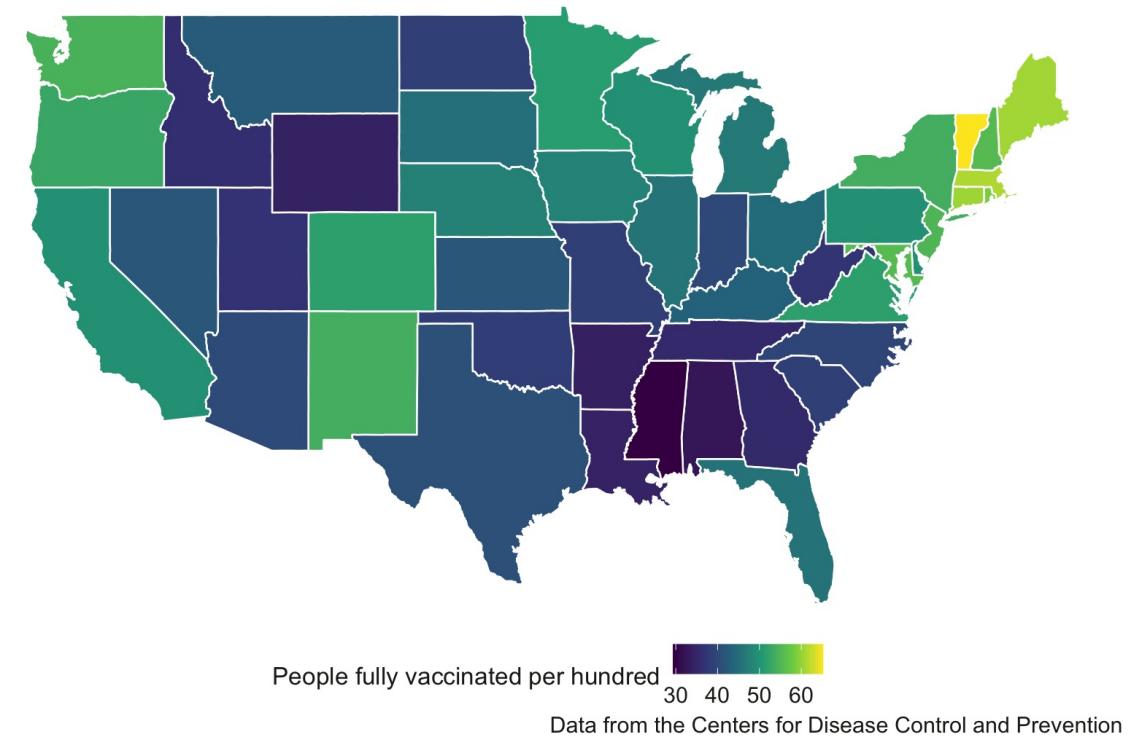


@leanmeanmishine

MAPPING COVID-19 VACCINATION IN R

Using *ggplot2* package

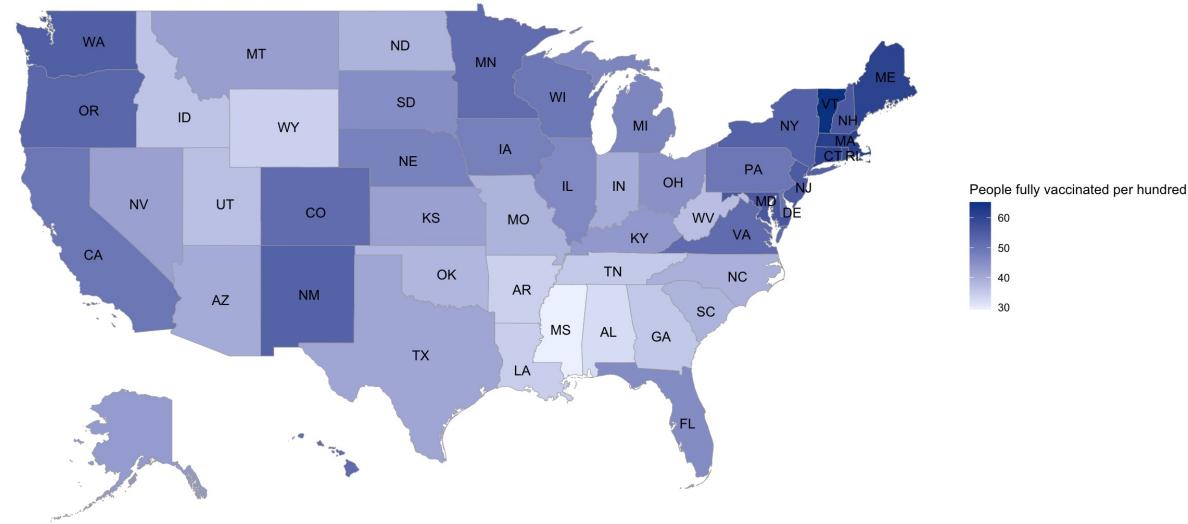
State-by-state Vaccination Across the US



MAPPING COVID-19 VACCINATION IN R

Using *choroplethr* package

State-by-state vaccination across the United States





GAME PLAN

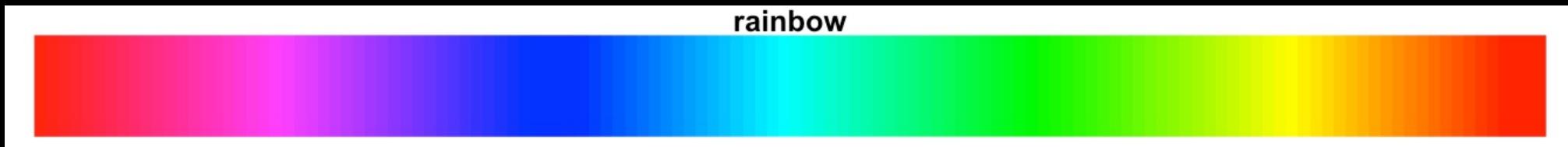
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GETTING OUR BEARINGS: PACKAGES

- *viridis*
- *tidyverse*
- *choroplethr*, *choroplethrMaps*

GETTING OUR BEARINGS: PACKAGES

- *viridis*: colorblind-friendly color palettes



versus



GETTING OUR BEARINGS: PACKAGES

- *tidyverse*, ecosystem of data science packages, including:
 - *ggplot2*, data visualization
 - *readr*, data import
 - *dplyr*, data manipulation
 - *tidyr*, data tidying



GAME PLAN

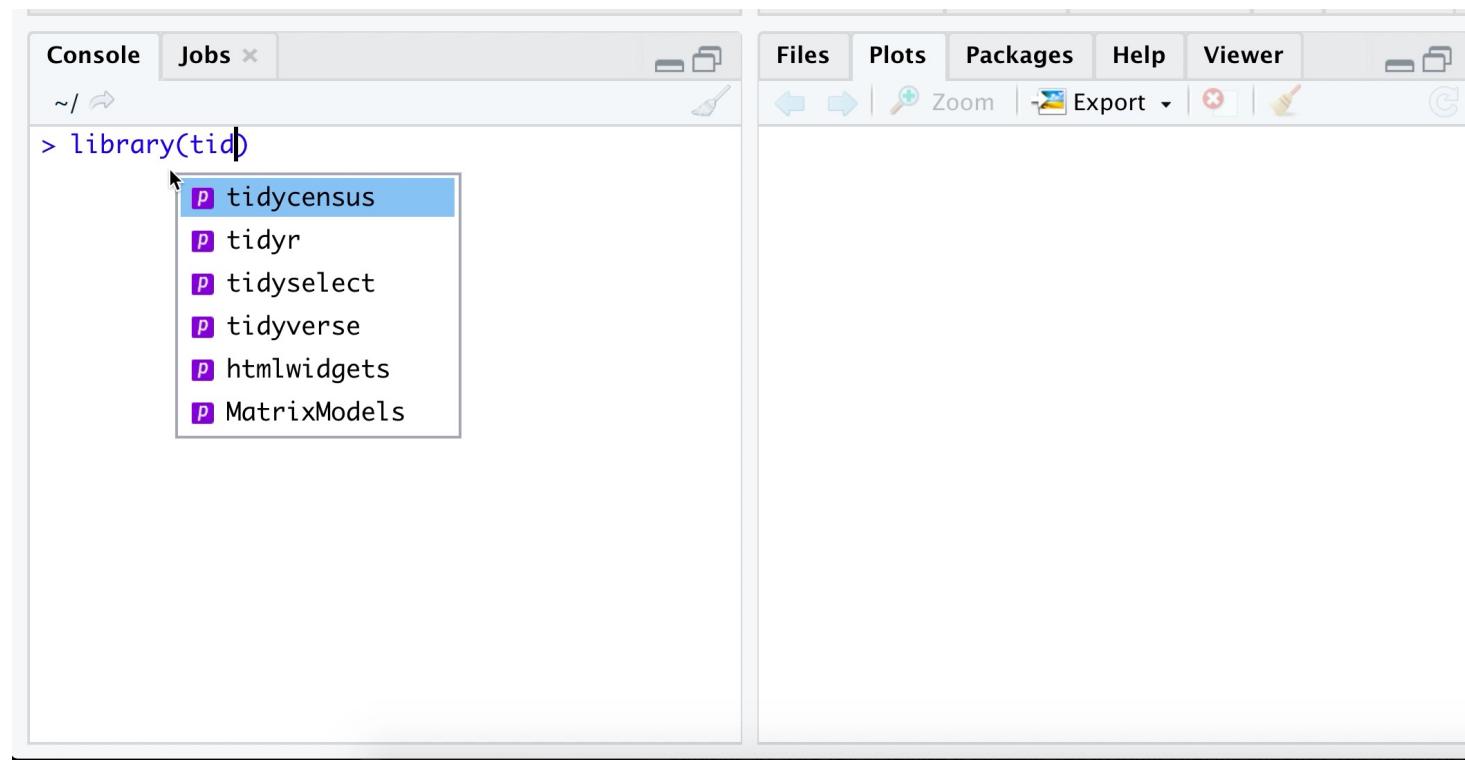
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GETTING OUR BEARINGS: *GGPLOT*

ggplot – grammar of graphics

- coordinate system (cartesian, polar)
- geometry (bar, line, point)
- aesthetics (x, y, fill, alpha)

GGPLOT GEOMETRY



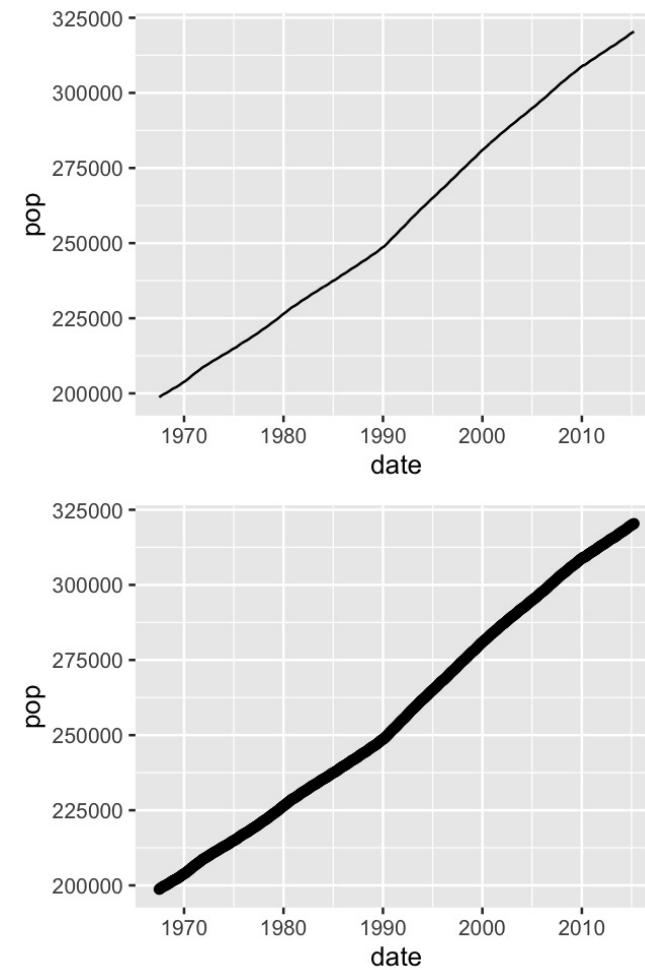
GGPLOT

`library(tidyverse)`

```
econ <- ggplot(economics, aes(date, pop))
```

```
econ + geom_line
```

```
econ + geom_point
```



AESTHETICS

- data-driven, changing **variables** go inside `aes()`

```
geom_point(aes(colour = cyl, size = gear), ...)
```

- constant, fixed **values** go outside

```
geom_point (aes(...), colour = "violet", size = 3)
```

AESTHETICS



Adapted from [Jake Riley's data viz talk](#)

GETTING OUR BEARINGS: *CHOROPLETHR, CHOROPLETHEMAPS*

- *Choroplethr* – choropleth map + R programming language
 - choropleth is any map that shows **regions** and expresses **values** for those regions with color

GETTING OUR BEARINGS: *CHOROPLETHR, CHOROPLETHMAPS*

- *Choroplethr* – choropleth map + R programming language
 - choropleth is any map that shows **regions** and expresses **values** for those regions with color.
- *ChoroplethMaps* – maps used by *Choroplethr* (US states, US counties, countries of the world) from US Census Bureau and Natural Earth Data

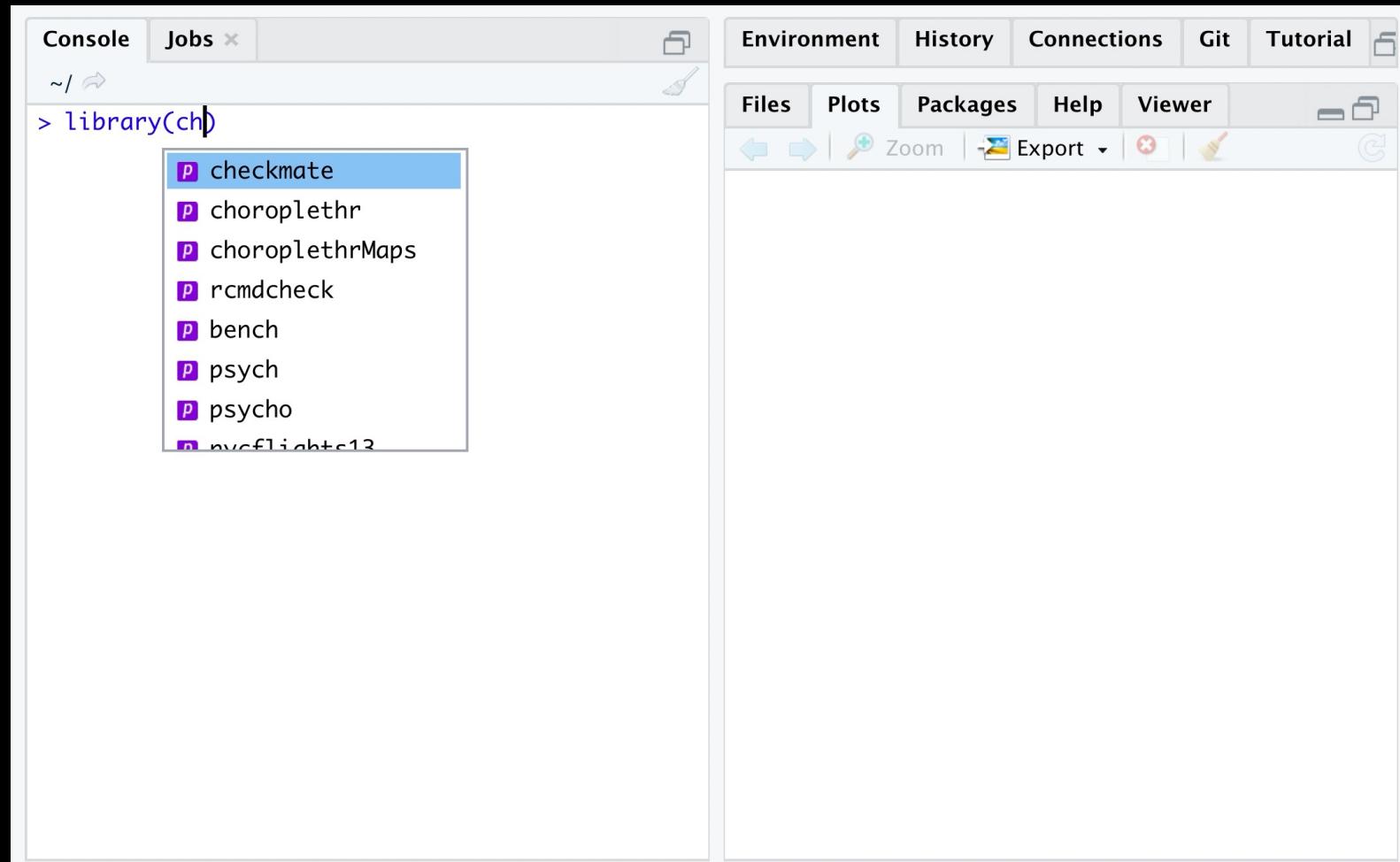
GETTING OUR BEARINGS: *CHOROPLETHR, CHOROPLETMAPS*

- county_choropleth, state_choropleth, country_choropleth
 - state_choropleth creates a choropleth of US states using state.map from *choroplethrMaps*

GETTING OUR BEARINGS: *CHOROPLETHR, CHOROPLETMAPS*

- county_choropleth, state_choropleth, country_choropleth
 - state_choropleth creates a choropleth of US states using state.map from *choroplethrMaps*
- Requires a specific dataframe
 - *region* and *value* column
 - *region* elements must exactly match names in *region* column of state.map (“california,” not “California” or “CA”)

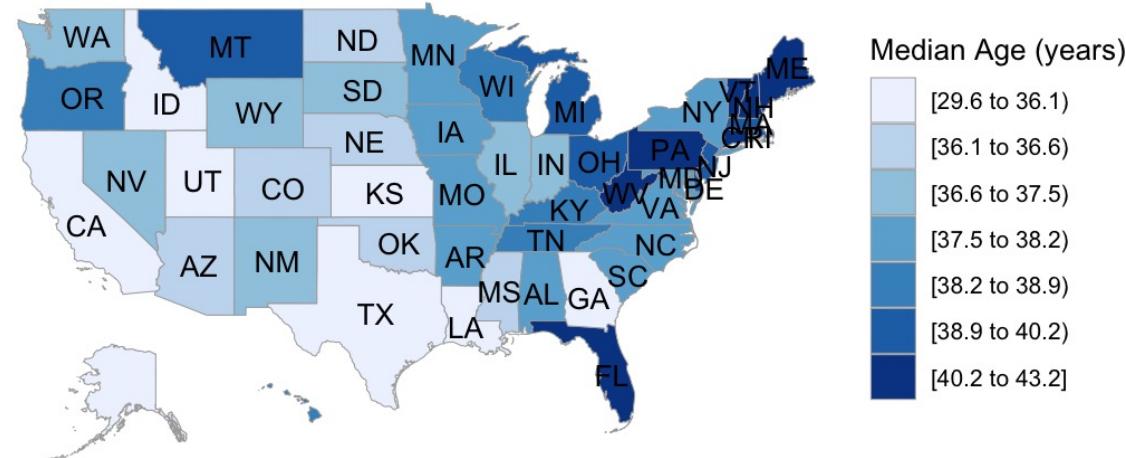
GETTING OUR BEARINGS: *CHOROPLETHR, CHOROPLETMAPS*



CHOROPLETHR, CHOROPLETHMAPS

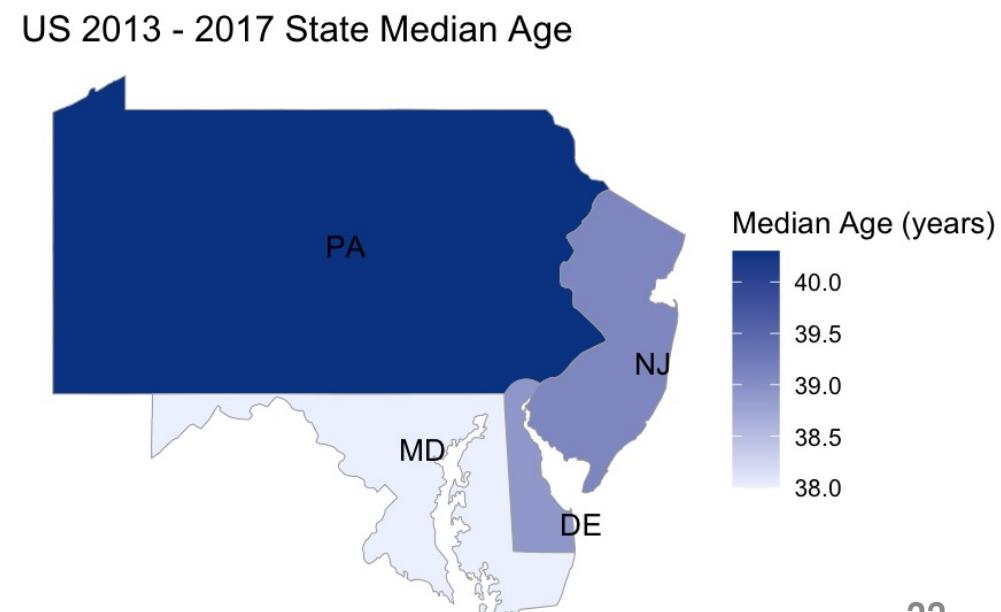
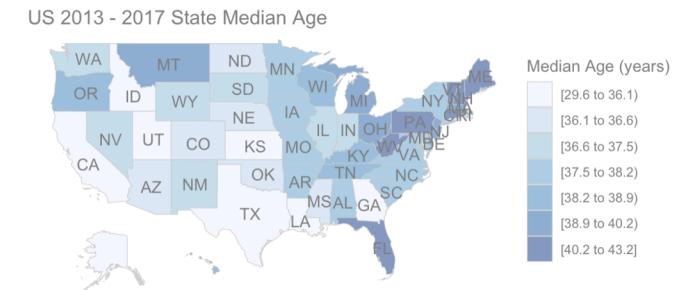
```
df_state_demographics$value = df_state_demographics$median_age  
state_choropleth(df_state_demographics,  
                  title = "US 2013-2017 State Median Age",  
                  legend = "Median Age (years)")
```

US 2013 - 2017 State Median Age



CHOROPLETHR, CHOROPLETHR MAPS

```
state_choropleth(df_state_demographics,  
                  title = "US 2013 - 2017 State Median Age",  
                  legend = "Median Age (years)",  
                  num_colors = 1,  
                  zoom = c("pennsylvania", "new jersey",  
                          "delaware", "maryland"))
```





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R STUDIO CLOUD OR GITHUB REPO

- Rstudio Cloud Project: <https://rstudio.cloud/project/2703108>
- GitHub Repo: https://github.com/mchiu91/us_vaccination_rladies