**Research Proposal**

# Research Question:

For our project, we want to explore the connection between COVID-19 cases and deaths, population vulnerability, and county-level disaster planning. Our research question is Do U.S. counties that have emergency response plans that include provisions for pandemics have lower death rates?

# Methods:

We will use Carto to create a map that shows which US counties have pandemic response provisions in their disaster plans, how robust those plans are, the number of deaths and cases per county, and how vulnerable the county’s population is. We will use the NIH article “State Plans for Containment of Pandemic Influenza” as a guide for our own analysis of each state’s pandemic influenza plan which we will conduct using NLTK, a natural language processing package in Python. We will also create a vulnerability index based on the specific age group and health characteristics of the county’s population. The age group characteristics we will use is the percent of the county population aged 60 and over. The health characteristics we will use, which are based on the “People Who Need to Take Extra Precautions” page of the CDC website, are the prevalence of diabetes, asthma, obesity and HIV by county.

# Sources:

Reference article #1: [https://reader.elsevier.com/reader/sd/pii/S1201971220301363?token=703E044404E365D16112](https://reader.elsevier.com/reader/sd/pii/S1201971220301363?token=703E044404E365D16112304208ACDB6F14A1C2D726186B66DBC7F8B21B4A37D568890834FA4E9FB527414021427ABC77) [304208ACDB6F14A1C2D726186B66DBC7F8B21B4A37D568890834FA4E9FB527414021427](https://reader.elsevier.com/reader/sd/pii/S1201971220301363?token=703E044404E365D16112304208ACDB6F14A1C2D726186B66DBC7F8B21B4A37D568890834FA4E9FB527414021427ABC77) [ABC77](https://reader.elsevier.com/reader/sd/pii/S1201971220301363?token=703E044404E365D16112304208ACDB6F14A1C2D726186B66DBC7F8B21B4A37D568890834FA4E9FB527414021427ABC77)

(CDC) Reference article #2:

<https://www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/people-at-higher-risk.html>

U.S. % Over 65 by county: [https://data.census.gov/cedsci/table?g=0100000US.050000&t=Age%20and%20Sex&tid=ACSS T5Y2018.S0102&y=2018&hidePreview=false&vintage=2018&layer=VT\_2018\_050\_00\_PY\_D1& cid=S0101\_C01\_001E](https://data.census.gov/cedsci/table?g=0100000US.050000&t=Age%20and%20Sex&tid=ACSST5Y2018.S0102&y=2018&hidePreview=false&vintage=2018&layer=VT_2018_050_00_PY_D1&cid=S0101_C01_001E)

U.S. HIV prevalence by county:<https://www.countyhealthrankings.org/app/alabama/2020/measure/outcomes/61/data?sort=sc-0> US Diabetes prevalence by county:<https://www.countyhealthrankings.org/app/alabama/2020/measure/outcomes/60/data>

US Asthma prevalence by county: <https://healthdata.gov/dataset/asthma-prevalence> US Obesity prevalence by county: <https://www.countyhealthrankings.org/app/alabama/2020/measure/factors/11/data>

State Pandemic Influenza Plans: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3294751/>