

# Project 2 - Proposal

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**Github Repository:** [https://github.com/UC-Berkeley-I-School/Project2\\_Hahn\\_Bourgoing\\_Scott](https://github.com/UC-Berkeley-I-School/Project2_Hahn_Bourgoing_Scott)

**Data Sets:** [Trips by Distance](#), and [Work From Home \(WFH\) Map](#)

## Question:

- How have people's tendency to travel changed with (1) the COVID-19 Pandemic and (2) the new work-from-home lifestyle?
  - Which states are more likely to have work-from-home job postings? Does the number of postings in a given state have any impact on people's travel habits?
  - Did COVID-19 change the way we travel compared to the pre-pandemic era?

## Variables:

- Monthly time series data
  - Segmented by the following time periods: before the COVID Lockdown, during the COVID Lockdown, and after the COVID Lockdown
  - Period of lockdown: March 2020 to August 2020, as defined by [NIH](#)
- Percentage of population by travel distance
  - Segmented by long distance, short distance, or stayed at home
  - "Trips by Distance" data has a total population column, along with columns split up by n number of people who took trips <1 mile, 1-3 miles, 3-5 miles, 5-10 miles, 10-25 miles, 25-50 miles, 50-100 miles, 100-250 miles, 250-500 miles, and >= 500 miles away from home.
- State level data
  - We will analyze travel habits in different states to determine if the trends we see in one state are applicable to others.
- Number of WFH job postings
  - We also would like to see if a high number of work-from-home jobs tends to make people take more or less trips over time.
  - Also do people take more or less long distance trips, short distance trips, or do they stay at home more?

## Description:

The goal of this project is to determine how people's lives have changed with the COVID-19 pandemic and the emergence of the work-from-home (WFH) lifestyle. We will be using a data set that measures how far people traveled from home before, during, and after COVID-19. We would also like to understand if this is more prevalent in certain states vs others within the US. Primarily, we will be using two main datasets: Trips by Distance, and WFH Map which are linked above.

The Trips By Distance dataset is based on anonymous mobile device data that shows the population within a given region that has taken trips of certain distances. A trip is defined by any movement at a location that is not home for more than 10 minutes. This data set is broken down

by county and state level as well and is categorized by the distance that each trip took (<1 mile, 1-3 miles, 3-5 miles, 5-10 miles, 10-25 miles, 25-50 miles, 50-100 miles, 100-250 miles, 250-500 miles, >= 500 miles). The dataset includes data from January 2021 to June 2021.

The WFH Map data set gives month by month data on the number of open job postings that have some form of remote work option and is also separated by state and by county. The dataset provides time data, location data, percent of jobs that have a remote option, and number of job listings with remote option. The timeframe of this data set is from January 2019 to September 2023.

Both of these data sets will be joined together to make plots, figures, and tables to visualize the behavior of people's tendency to travel from 2019 to 2021 for different states in the United States. We will examine this trend alongside the quantity of work-from-home job postings to determine if there exists a correlation between the two variables. Statistical parameters will be utilized to draw inferences from the data, including percentage changes in travel distance or correlation coefficients between the frequency of trips and the number of work-from-home jobs.

### **Final Report Outline:**

- Introduction and Literature Review:
  - Provide an overview of the study's background, incorporating previous literature that explores shifts in travel behavior and trip frequencies before, during, and after the COVID-19 pandemic. Additionally, discuss the context of work-from-home jobs during this timeframe.
  - Include the purpose of the study: "To determine how people's lives have changed with the COVID-19 pandemic and the emergence of the work-from-home (WFH) lifestyle."
  - Include research question: How have people's tendencies to travel changed with (1) the COVID-19 Pandemic and (2) with the new work-from-home lifestyle?
- Method:
  - Explain data collection sources and variables
  - Describe the tools and procedure performed to analyze the data
- Results
  - Present findings using plots, tables, and graphs
  - Include descriptions for each figure
  - Provide statistical parameters
- Discussion
  - Interpret results and insights
  - Address the initial research question
  - Acknowledge study limitations
- Conclusion
  - Summarize the report and key findings