**Slide 1: General Intro**

Our team is proposing for portions of California’s Public Health and General annual spending to be used to make clean energy and/or environmentally conscious infrastructure changes to reduces the risk of asthma in California residents. We have used a machine learning model to investigate why certain California counties may be above (True**/!**) or below (False/check) California's collective asthma rate of 8.8% and what environmental factors may contribute.  
  
**Slide 2: Why Asthma?**

We focused on asthma to frame this a “public health issue” as opposed to an environment issue to make the vote for spending less polarizing and would increase interest for public figures to approve the spending to use in their reelection campaigns in the upcoming general election. We focused on asthma as per the Asthma and Allergy Foundation of America an estimated 262 million people suffer from asthma in the US, per a 2019 study and medical costs for people with asthma are estimated to be $3,266 higher per year compared to medical costs for people without asthma, per a 2015 study.

What can be done?

We propose to use small portions of California's $42.6 billion General Health Department Fund and $126 billion general obligation bonds to make environmentally friendly infrastructure changes, such as implementing more electrical vehicle charges per counties, to reduce the risk of asthma. We have learned through our exploratory analysis that Black communities are more effected by asthma than other demographics, if those findings are true, we will suggest that communities with higher Black populations receives additional/ the majority of the state funding.   
  
For possible Questions: In the New York City metro area, a typical installation costs **between $2,000 and $10,000 per port**, while in the rest of the state a typical installation costs between $2,000 and $5,000 per port. There are several types of charging stations.  
  
**Slide 3: Datasets**  
These are the datasets/parameters that we will be exploring in our analysis:

* Asthma Rates
* Wildfire Data
* Air Pollution Data
* Demographics
* Registered EVs
* EV Charging Stations
* Clean Energy Generation
* California Electric Substations
* Zip Code Database

**Slide 4: Questions to answer**Throughout our analysis we hope to answer:

What environmental factors have a greater impact on asthma prevalence?

What demographic(s) are at higher risk for asthma?

Is asthma prevalence lower in counties with more electrical vehicles?

**Slide 5: Data Exploration**

For our data exploration we first looked at all the California counties and whether they were above/below the 8.8% average rate.   
  
We then compared the three key factors: demographics, pollutants, and clean energy in comparison to the California counties in order to see how our data was distributed.   
  
Looking more in depth into what counties have the highest Black population. We created a distribution plot of the clean energy generated in each county. It shows that the most energy is generated in Imperial and Kern counties. Looking further at the breakdown of the clean energy infrastructure in these counties we can see that Kern relies rather evenly on traditional Solar Energy or Solar PV and Wind energy. Whereas for Imperial, nearly half of its clean energy is coming from Geothermal energy  
  
We also looked at Benzene as it is a widely used industrial chemical. Benzene is found in crude oil and is a major part of gasoline and used to make a variety of things such as plastics, detergents, drugs and pesticides. Benzene is also produced naturally by volcanoes and forest fires.