**Project Title**: Emission of Atmospheric Pollutants and Asthma related hospital visits in California Counties 2011-2016

**Team Members**: Anthony Phelps, Jasmin Johal, Rama Pranadinata, Robina Shaheen

**Project Description/Outline**:

**Research Questions to Answer**:

What are the impacts of atmospheric pollutants (Ozone, carbon dioxide and particulate matter with aerodynamic diameter (PM2.5) on human health specifically asthma related hospital visits.

The incidence of wild fires has increased globally and particularly in California due to prolonged dry weather lower rainfall intensity. We will investigate how global warming has impacted the rate & size of wild-fires in California over the last decade. We will investigate the amount of PM2.5 in air

We will use CO2 as a marker for human induced (anthropogenic) activities

**Parameter to be tested:**

In order to address this challenging question, our team will analyze various indicators of changes in the atmospheric composition and how this change is impacting hospital admissions for asthma related illnesses.

1. Atmospheric composition such as ozone, carbon dioxide, PM2.5 (fine particulates) from 2011-2016 in California.
2. Health consequences such as asthma and relationship with ozone and PM2.5 and identify populations that are more sensitive to these air pollutants.
3. Incidence of global wildfires and temperature relationship (if we have time)
4. PM2.5 and potassium will be used as indicator of wildfires.
5. Make a twitter bot that queries the EPA API and if a facility is emitting pollutants above a certain PPM threshold, find facility name and tag that company in a twitter post with the graph. (if we have time)
6. Develop a map of PM2.5, Ozone and respirator illnesses

**Data Sets to be Used**:

* CHHS Asthma ED Visit Rates: <https://data.chhs.ca.gov/dataset/asthma-ed-visit-rates-lghc-indicator-07/resource/781708cb-7b25-4967-b760-54b2a4b8cfed>
* Air Quality data archive from EPA websites and world climate data.   
  https://aqs.epa.gov/api  
  <https://aqs.epa.gov/aqsweb/documents/ramltohtml.html#serviceAvailable>
* Updated air quality data from California Air resource board

<https://www.arb.ca.gov/aaqm/partic.htm>

**Rough Breakdown of Tasks**:

|  |  |
| --- | --- |
| **Team Member** | **Tasks** |
| Anthony Phelps | 1,3,4,6 |
| Jasmin Johal | 2,5,6 |
| Rama Pranadinata | 2,5,6 |
| Robina Shaheen | 1, 3,4,6 |

Tasks for each question: querying data (e.g. via API), merging datasets, cleaning up data, analyze data, create 2-3 visualizations, summarize findings, discuss implications