The research question our group would like to focus on for this project is "What are the effects of various environmental and human factors - such as CO2 and greenhouse gases, altitude, distance from the ocean, air pressure, etc. - on the temperature of a region over time?" The scope of our project, including the time period and regions that we study are yet to be determined. We intend to get this data through online databases such as NASA.gov, climate.gov, and kaggle.com. NASA has weather data dating back to about 1880, while other sources have data going back 400,000 years. Different sources can be used to compile data points as long as we are able to explicitly establish a region of study. Five questions we hope to answer are:

1. To what extent have temperatures changed over time?
2. What regions have had the most drastic changes in temperature?
3. What variable has the highest coefficient in relation to temperature?
4. Can we predict future temperatures and what will they look like?
5. What impact does the predicted temperature have

Our project will examine temperatures in various regions and the variables that may explain them in an attempt to model the changes that may occur according to various levels of each variable. Certain factors such as elevation, latitude, and various unaccounted for variables will have to be accounted for and measured to attempt to lower the error as much as possible. Our method will be simple. We plan to run individual OLS regressions on each variable with temperature and determine their coefficients. Next, we plan to run multiple linear regressions similar to Lab 3 with data points of various factors that could affect temperatures in a region. We will add or remove variables into our model depending on the factors that give us the best and most conclusive results. We also plan to model our findings using regression lines on graphs of

the variable's coefficients that resulted from our regressions. We will also model our findings based on what regions have had the most drastic changes and their correlation with our coefficients. Lastly we will use our model to make predictions on what the temperature will be in the future and what the implications of those temperatures are.