



**CALIFORNIA STATE SCIENCE FAIR
2017 PROJECT SUMMARY**

Name(s) Amanda Li	Project Number J0907
Project Title Effect of the Santa Ana Winds on Carbon Dioxide Concentrations over the Los Angeles Basin	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The objective of this experiment was to examine the effects of wind patterns on carbon dioxide concentrations by using data showing the effect of the Santa Ana winds on the LA Basin.</p> <p>Methods/Materials Weather data of the data set presenting the effect of Santa Ana winds on the LA Basin were obtained from a DAVIS Vantage Pro 2 while CO2 data was gathered from a Picarro Isotopic CO2 Analyzer. This data was transferred to Excel where it was then averaged hourly and graphed, thus showing the inconsistencies in its standard patterns. These inconsistencies, days where there was Santa Ana winds, were then compared to days without Santa Ana winds.</p> <p>Results The graphs showed that the carbon dioxide levels did not increase as they normally would have. Instead, while the Santa Ana winds were blowing, the graph showing the carbon dioxide concentrations plateaued.</p> <p>Conclusions/Discussion The Santa Ana winds brought very significant decreases in CO2 levels that were very dramatic at times. Based on the sample group, when monitoring greenhouse gases, wind patterns play a crucial part in the changes of CO2 concentrations. The origins of the winds as well as the speeds of the wind show how it will affect the carbon dioxide concentrations over a specific region.</p>	
Summary Statement I showed that based on the origin and speed of different wind patterns, they had a large impact on carbon dioxide concentrations.	
Help Received I worked in Dr. Sally Newman's lab to collect the data. I designed the experiment and analyzed the experiment myself.	