



**CALIFORNIA STATE SCIENCE FAIR
2013 PROJECT SUMMARY**

Name(s) Edwin L.L. Uglum	Project Number J1198
Project Title Clean Air... Where?	
Abstract Objectives/Goals Ground level ozone causes many health problems, so when I found this out I started thinking: what about my town? My objective was to find out how ground level ozone levels compare at various locations in my community? I believed the area around the Costco gas station in my town would have the worst ground level ozone and the area around the Thunderbird campus for my school would have the least. In my research I learned about a chemist named Christian Shoenbein who discovered ground level ozone and a type of paper used to measure ground level ozone. Methods/Materials I made Shoenbein paper, by mixing distilled water, cornstarch, and potassium iodide to make a paste that was applied on filter paper. I hung one piece of treated and untreated filter paper for two hours at each of my ten locations for four separate days. I recorded the drop off, pick up times, the weather conditions, and humidity for each day. Nine locations were outdoors and one was in my room being the control as well as the untreated filter paper so as to demonstrate that the filter paper does not react to ozone alone. Results Using the Shoenbein color scale I gave each sample a number (the higher the number the more ground level ozone present) then I averaged the numbers for each location and compared the averages to make my conclusion. Conclusions/Discussion My conclusion was that my hypothesis was half correct. The Costco gas station did by far had the most ground level ozone but the Thunderbird campus didn't have the least ground level ozone. A way for this to be changed is for greener cars that produce less pollutants, and to make the workers at the Costco gas station or other workers at similar situations more aware of the dangers they may be facing. If I were to do this experiment again I would try doing it during the warmer months, at different times of the day, or even try to put each sample higher in the air.	
Summary Statement My project is about how the ground level ozone levels compare around my town.	
Help Received Mother and father drove me to each location, mother helped with placement of items on display board.	