



**CALIFORNIA STATE SCIENCE FAIR
2007 PROJECT SUMMARY**

Name(s) Alisa Smith	Project Number J0519
Project Title Temperature and a PEM Fuel Cell Model Car	
Abstract Objectives/Goals I wanted to see if temperature effected how fast a fuel cell model car would run. Methods/Materials I used heaters and opened windows to make my garage the appropriate temperature. Once the temperature was right, I used a solar panel and a light to make hydrogen for my fuel cell. I then set my car up on a 3 meter track and recorded its speed for each trial. Results My car was clearly slowest in the coldest temperature, but in the medium and hottest temperatures the car's average speed was so close that it is impossible to tell which one really was going faster. Conclusions/Discussion My hypothesis was correct in the sense that my car was slowest in the coldest temperature, but I can't be entirely sure about the other two temperatures. In other words, the average speed for the medium and hot temperatures were so incredibly close that I am not able to tell which one would really go faster in the future. In the medium temperature, the speed stayed pretty steady but in the hottest, the speeds were really jumpy! The fastest speed for the hot was faster than the fastest speed for the medium, but the hot temperature's slowest speed was also slower than the medium's! My hypothesis was partly correct, but it was also partly unanswered.	
Summary Statement My project tests how temperature effects a Proton Electron Membrane fuel cell model car's speed.	
Help Received My grandpa set the model car on the track for me so I could actually time the car, my dad taught me how to make graphs on the computer, and my mom helped me arrange my project on the board.	