



**CALIFORNIA STATE SCIENCE FAIR
2017 PROJECT SUMMARY**

Name(s) Cara E. Wilson	Project Number J0625
Project Title Comparing the Heat Energy of Bio-Fuel to Conventional Fossil Fuels	
Abstract Objectives/Goals The objective of this study is to determine the heat energy of different fuels in relation to motor oil, a fossil fuel. Methods/Materials 3 ring stand, Styrofoam cup, cotton cord, 3 different fuels (motor oil, vegetable oil, bio-fuel). Cultured algae and used it as fuel because algae has a high lipid content. Timed the length of each fuels burn time, and measured the change in temperature. Results Several fuels were burned and heat energy was calculated. Repeated trials were run to determine the average. The motor oil had the highest heat energy, meaning it was the most efficient. Conclusions/Discussion Repeated trials with multiple fuel revealed a difference in heat energy of 3 fuels. It is concluded that Bio-Fuel is not a viable fuel because of its lack of heat energy.	
Summary Statement As measured by the heat energy, I found that bio-fuel is not as efficient as motor oil or vegetable oil.	
Help Received I designed the preliminary experiment myself, but due to safety concerns my science teacher helped me re-design it. I did all the rest myself, including building the apparatus.	