



**CALIFORNIA STATE SCIENCE FAIR  
2008 PROJECT SUMMARY**

<b>Name(s)</b> <b>Aubryn R. Butterfield</b>	<b>Project Number</b> <b>S0803</b>
<b>Project Title</b> <b>Wind Farming the Fertile Pavement of the San Joaquin Valley: Stage 3</b>	
<b>Abstract</b> <b>Objectives/Goals</b> I observe that I need to eliminate or reduce the cut in wind speed requirement of my Savonius wind turbine. I plan to create a hybrid unit by utilizing solar power, and to re-design my wind turbine for increased efficiency. <b>Methods/Materials</b> I improved the design of my wind turbine by decreasing the blade depth and reducing the wobble of the dowel. Next, I affixed a small solar powered 3 volt motor to the dowel. I took numerous readings along the freeway fence line and at a designated control, which was 12 meter away from the test site. The readings consisted of windspeed and volts obtained when the solar powered motor was turned on as well as when it was turned off. Additionally, I took readings when the motor was completely removed from the dowel. <b>Results</b> All the reading at the freeway fence line: with solar, without solar, and without the motor attached all produced more voltage than thier associated control readings. <b>Conclusions/Discussion</b> I conclude that the addition of a solar powered motor and the improved design did eliminate the cut in wind speed requirements of my wind turbine.	
<b>Summary Statement</b> Capturing wind generated by freeway traffic through a hybrid solar and wind powered Savonius turbine.	
<b>Help Received</b> Parents providid financial resources, transportation, an extra pair of hands and questioned my process.	