



**CALIFORNIA STATE SCIENCE FAIR  
2016 PROJECT SUMMARY**

<b>Name(s)</b> <b>Joshua T. Manivone</b>	<b>Project Number</b> <b>J0117</b>
<b>Project Title</b> <b>Do Sail Size and Speed Affect Efficiency?</b>	
<b>Abstract</b> <b>Objectives/Goals</b> The objective of this project is to determine advantages of different sails in different scenarios. <b>Methods/Materials</b> Pool, Boat, 3 Triangular Sails, 3 Rectangular Sails, Large Circular Fan. Recorded the amount of time needed for the various sails to sail 3 and 6 meters. <b>Results</b> Triangular sails were faster in the 3 meter race with higher acceleration and maneuverability. Rectangular Sails were faster in the 6 meter race with a more constant speed as they moved further away from the fan. Repeated trials were conducted to determine the average speed of each sail. <b>Conclusions/Discussion</b> Repeated trials determined the advantages of various sized and shaped sails. These advantages can be translated to using different sails in different scenarios to make sailing more enjoyable.	
<b>Summary Statement</b> I conducted many trials with self-constructed sails and a boat which determined each sails advantages.	
<b>Help Received</b> I received help in constructing the boat and sails and running the trials from my dad.	