



# CALIFORNIA STATE SCIENCE FAIR 2012 PROJECT SUMMARY

<b>Name(s)</b> <b>Brandon H. Brown</b>	<b>Project Number</b> <b>J2106</b>
<b>Project Title</b> <b>Dripping Wet: Which Swimsuit Fabric Is Fastest?</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> The objective is to determine if there is a difference between swimsuit fabrics and their speed. The hypothesis is that if the five different swimsuit fabrics are tested for changes in speed, then the speed of the Speedo FaskSkin Pro will be the fastest, because it has the highest percentage of spandex in its swimsuit fabric giving the Speedo FastSkin Pro more compression (body stability) and water repellency, and therefore creating the least amount of drag.</p> <p><b>Methods/Materials</b> Five different swimsuits, with different amounts of spandex in the fabric, were tested. The first swimsuit had 0% spandex and the fifth swimsuit had the highest percentage of spandex at 30%. The swimsuits were the same size, cut to have just one leg, and sewed closed at the bottom of the leg. They were each placed over three different weights (1162g, 1370g, 1715g), dropped in a PVC pipe (25.4cm diameter) filled with water, and timed for a specific distance (2.7432m). Each swimsuit was tested 15 times at each of the three weight levels.</p> <p><b>Results</b> In the trials with the three weights, swimsuits 4 &amp; 5 recorded the fastest averages. Swimsuit 5, with the highest percentage of spandex, recorded the fastest time of any of the trials at 1.56 seconds, the lowest range at .22 seconds, the lowest average range at .46 seconds, and the fastest median speed at 1.75 seconds. Swimsuit 1, with no spandex in the fabric, recorded the slowest times in all the tests. Swimsuit 2, with the next least amount of spandex, was the second slowest.</p> <p><b>Conclusions/Discussion</b> My conclusion is that the spandex in the swimsuit fabrics created a faster swimsuit, and the Speedo FastSkin Pro (swimsuit 5) with the highest percentage of spandex was the fastest. Spandex allowed the swimsuit to be tight against the weight and to be more water repellent, which created less drag. With the controversy over swimsuits in the last Olympics, and with the Olympics coming this summer, the scientific importance of the experiment was to see if one swimsuit fabric really is faster than another to help improve swimming performance. In swimming, hundredths of a second matter in a race, and swimsuit fabric does make a difference when it comes to speed.</p>	
<b>Summary Statement</b> As a competitive swimmer, I wanted to determine if there is a difference between swimsuit fabrics and their speed, because the best swimsuit fabric may give a swimmer a competitive edge.	
<b>Help Received</b> Dallin Loder, a general contractor helped secure PVC Pipe for testing, parents helped with testing & editing report and board, brother helped with graphs, and science teacher taught me science terms and how to do a science fair project.	