



**CALIFORNIA STATE SCIENCE FAIR  
2006 PROJECT SUMMARY**

<b>Name(s)</b> <b>Kate M. Borchard</b>	<b>Project Number</b> <b>J1107</b>
<b>Project Title</b> <b>Polyester vs. Nylon: Which Material Is Best for Swimsuits?</b>	
<b>Abstract</b> <b>Objectives/Goals</b> My objective was to learn if the type of material and care procedures used on swimsuits repeatedly exposed to chlorine affected the swimsuits durability. I believe that the polyester material would be the most durable swimsuit material and that washing in cold water with Woolite would be the best care procedure. <b>Methods/Materials</b> Four swatches of nylon fabric and four swatches of polyester fabric were immersed in the local community pool for one hour, four days a week, for approximately eight weeks. Each of the fabric swatches were labeled with one of the four different care procedures and washed with this method after the immersion period. The four different care procedures were: Cold water, cold water with Woolite, warm water, and warm water with Woolite. <b>Results</b> I examined the fabric samples under a microscope and looked at four different criteria. The different washing procedures did not seem to affect the polyester fibers, but all the polyester samples did show minimal fading equally. As for the nylon, the different washing procedures did affect the fabric. Washing in warm water alone caused the most damage, shown by the largest amount of fiber changes. The nylon samples washed in cold water or cold water with Woolite showed the least fiber changes. <b>Conclusions/Discussion</b> In conclusion, the best care of your suit is to wash it in cold water or cold water with Woolite. Also, the polyester fabric is more durable than the nylon fabric and would therefore last longer.	
<b>Summary Statement</b> I examined what type of swimsuit material and what care procedures were the best for swimsuits repeatedly exposed to chlorine.	
<b>Help Received</b> I used the microscope at Mesa School under the supervision of Dr. Dunn; TYR swimsuit manufacturer provided the fabric samples; my mother helped me design the board; my father helped me with computer difficulties.	