



**CALIFORNIA STATE SCIENCE FAIR  
2015 PROJECT SUMMARY**

<b>Name(s)</b> <b>Sarah Danon; Nicole Dersahakian</b>	<b>Project Number</b> <b>J0607</b>
<b>Project Title</b> <b>Which Blonde Is Best?</b>	
<div><div><b>Objectives/Goals</b> The experiment was to measure the amount of force that hair which has been bleached, dyed, and lightened with hydrogen peroxide can withstand before breaking. It was expected that the bleached hair would be able to withstand the least amount of force because bleach penetrates the outer cuticle layer of the hair to remove the natural pigment leaving the hair dry and brittle.</div><div><b>Methods/Materials</b> Four groups of hair from the same person were each treated once with either bleach, dye, or hydrogen peroxide, leaving one group as a controlled. Each group was then studied under a microscope and tested using a spring scale for the amount of force that the different strands can withstand.</div><div><b>Results</b> The bleached group of hair withstood the least amount of force and the controlled group withstood the most amount of force. It is to be noted that the different between the amounts of force were so minute that the results may be slightly inaccurate.</div><div><b>Conclusions/Discussion</b> The conclusion is that bleaching hair is the most harmful method of lightening hair, whereas hydrogen peroxide is the least harmful.</div></div>	
<b>Summary Statement</b> In our experiment, we lightened hair using hydrogen peroxide, dye, and bleach to see which method of lightening left the hair with the most amount of tensile strength.	
<b>Help Received</b> Our science teacher, Mrs. Van Zyl, allowed us to use a microscope and spring scale for our experiment.	