



**CALIFORNIA STATE SCIENCE FAIR
2013 PROJECT SUMMARY**

Name(s) Raleigh E. Pot	Project Number 33484
Project Title Degradation of Hair Strength over Time	
Objectives/Goals For this project, I tested whether or not hair got weaker over time by testing the amount of weight a top shaft of hair would hold verses the bottom shaft of the same hair. I thought the hair would get weaker over time. This is because split ends start at the end of the hair shaft. There is also the factor that a big part of the material in your hair is keratin and I thought that, as the shaft of hair got older, the keratin would start to degrade. Abstract Methods/Materials First, I built the "Ri2013", which is a device with clamps and a weight pan that tests the tensile strength of hair. Then I created sample sheets and data sheets which obtained important information about the subject and held the hair that I collected. It also was a place where I recorded my results. Finally, I tested the hair by cutting the shaft in two and adding weight to see how much it could hold. Results The results I found were almost as I expected from my hypothesis. Six of the seven subjects had hair that was stronger at the top than at the bottom. However, there was one outlier that had hair that was stronger at the bottom than at the top. I do happen to know that this subject had repeated damaging hair treatments, such as bleach and dye. Conclusions/Discussion Although I did have one outlier, I found that usually hair is stronger at the top of the shaft than the bottom of the shaft. I was very interested to see that the subjects with dark hair had significantly stronger tensile strength. I did not look at the genetics, hair treatments, shampoos, etc., because I felt like sticking to one variable. In this case, top verses bottom. In the future, I would like to see if dark hair is stronger than light hair.	
Summary Statement To test if the top of a human hair is stronger than the bottom shaft of a human hair.	
Help Received Mother helped type report but all words were mine, as per IEP.	