



**CALIFORNIA STATE SCIENCE FAIR  
2004 PROJECT SUMMARY**

<b>Name(s)</b> <b>Tamar J. Freeland</b>	<b>Project Number</b> <b>J0811</b>
<b>Project Title</b> <b>Toil With Oil</b>	
<b>Abstract</b> <b>Objectives/Goals</b> I believe that medium textured human hair will adsorb the most oil because it is not too coarse, but not too fine and thin. <b>Methods/Materials</b> First I collected different types of hair. I then put a constant weight of hair into a piece of nylon and weighed it. Next I put the hairball into a beaker of oil and water and let it sit for three minutes. When the time was up, I immediately took the hairball out of the liquid and calculated the percent of oil adsorbed. Materials; Human hair, donkey hair, horse hair, mule hair, cow hair, goat hair, dog hair, 250 ML beaker, vegetable oil, water, scale, nylons, and calculator. <b>Results</b> All of the hair, excluding medium textured human hair adsorbed 60% or more of the oil. None of the hair adsorbed any measurable water. Donkey hair adsorbed the most oil, adsorbing 96%, and medium human hair the least, adsorbing 47%. <b>Conclusions/Discussion</b> I believe that animal hair adsorbed more oil than human hair because of its light weight. The lighter it was, the more hair went into a nylon, hence, more surface area, so more oil was adsorbed. As for the results of the human hair, I believe it had to do with texture. I did this project because I am interested in ways to promote a healthy environment.	
<b>Summary Statement</b> My project deals with adsorbing oil with different types of hair to see what kind of hair adsorbs the most.	
<b>Help Received</b> My dad helped me find a way to do my experiment and payed for equipment, and my science and math teacher gave me guidance and help along the way.	