



## Colorado Science and Engineering Fair

## 2025 Individual Project Abstract Form

**Please print 2 copies of the completed form. Sign both copies, keep 1 for your notebook and submit 1 copy to your Regional Fair Director with your other paperwork.**

Title of Project: My Hair!

Finalist's Name: Padya Harris

School and City: Limon Jr/Sr High School

Sponsor's Name: Becky Thompson

Category: Biomedical & Health Sciences

Division: Senior (grades 9 - 12)

Abstract (250 words or less):

Before getting their hair dyed, salon clients usually ask, "what will be the damage to my hair once it is dyed?", and most stylists don't know what the answer is. The researcher wanted to be able to give stylists the answer to that question.

A blonde, all human hair, non dyed wig for this experiment; using gel and cream dyes in the color 5NN to dye the wig. 10 and 20 developers were used with the dyes. The researcher dyed the hair in sections and used each developer with each color. After the dying process, heat was used on the wig consistently for a little over two weeks. Every other day the wig would be washed, blow dry and styled with either a flat iron or curling iron. Once the two weeks were done, 4 strands were taken of each dye and developer and compared them to a non dyed section of hair under a microscope.

The results were not what was expected. The hypothesis was that the 20 developer would be more damaging. The researcher thought that the 20 developer would be more damaging than the 10 because the 20 developer lifts two shades instead of one. The 10 developer with the gel dye was more damaging. These results will help stylists understand how to answer to clients when they ask how the dye will affect their hair.

Future experiments would include the use of a range of natural hair color wigs, vibrant dyes and different hairstyles on the wigs. The researcher would find more ways to test the hair strands and get better results. The researcher wanted this experiment to give stylists a way to answer questions their clients have about hair dye damaging their hair. They feel as though they accomplished that goal.

*I hereby certify that the above statements are correct and the information provided in the Abstract is the result of one year's research. I also attest that the above properly reflects my own work.*

Finalist's Signature:

Date:

In addition, all students must complete the ISEF Student Checklist (1A), Research Plan, Approval Form (1B), and Checklist for Adult Sponsor (1), and any other ISEF forms required for this type of project. See the International Rules and Guidelines for form requirements. Return COPIES of all of these forms to your Regional Fair Director with you Finalist Verification/Permission Form. **A signed copy of this form must be included in your notebook.**