



# CALIFORNIA STATE SCIENCE FAIR 2015 PROJECT SUMMARY

<b>Name(s)</b> <b>Emma R. Hern</b>	<b>Project Number</b> <b>J2013</b>
<b>Project Title</b> <b>The Durability of Nail Polish</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> The goal of this project is to find the most durable nail polish utilized in various lifestyles, while minimizing exposure to harmful chemicals.</p> <p><b>Methods/Materials</b> Six nail polishes were used on two individuals with different lifestyles. The same polishes were used on ping pong balls in order to perform a rub test. Each person had both hands painted with two coats of polish. Polish was worn for one full week. Pictures were taken on days one, three, five and seven to compare results. Finally, a marked section of each ping pong ball was polished with two coats. The ping pong ball was rubbed on standard paper until it showed visible signs of wear. The results of both tests were compared to see if results were similar.</p> <p><b>Results</b> The ping pong ball test showed Wet N Wild took seven rubs to show a visible difference on the painted surface. Maybelline was second lowest with seventeen rubs. Essie was third lowest at nineteen rubs. The next polish had more than a 200% increase in rubs. Sally Hansen took forty rubs to see a visual difference, Cover Girl took forty-one and OPI took sixty-one rubs on paper until there was a visible difference on the painted surface. Throughout the finger nail tests, Wet N Wild showed noticeable chipping and damage on at least 50% of the nails by day three and significant chipping by day seven. Maybelline and Essie also showed noticeable chipping after three days of wear on at least 50% of the nails. Sally Hansen showed minor chipping on less than 30% of the nails at day three and didn't have comparable damage to Essie, Maybelline or Wet N# Wild until day five. Cover Girl showed minor chipping at day three and lasted five days until there was noticeable chipping on greater than 50% of the nails. Finally, OPI showed less than 10% chipping by day three and lasted five days until there was chipping on 50% of the nails.</p> <p><b>Conclusions/Discussion</b> The results of both tests, ping pong balls and nails, both supported the hypothesis that OPI was most durable polish and Wet N# Wild was least durable.</p>	
<b>Summary Statement</b> This project studies the most durable nail polish in a variety of situations.	
<b>Help Received</b> Testing help, data recording, proofreading and support from my mom. Proofreading and support from Mrs. Gillum. Other information as it related directly to nail polish and chemical bonds by Paul Bryson, PhD	