



**CALIFORNIA STATE SCIENCE FAIR
2006 PROJECT SUMMARY**

Name(s) Lauren S. Pierce	Project Number J1126
Project Title Don't Let Your Memories Fade Away	
Abstract Objectives/Goals Digital photography and home-based printing methods now allow anyone to produce photographs. This study examines how the photo printer used, the paper selected, and the image color printed impacts the fading of photographs when they are exposed to UV light in accelerated aging studies. Methods/Materials Create a simple digital test image that has three pure color stripes: red, green and blue. Print image using multiple home inkjet printers with their recommended photo paper and multi-purpose inkjet paper. Also, obtain prints from two professional processes. Stress all photographs in a UV chamber and measure their colors over multiple exposure times using a scanner and image processing software to quantitatively determine the degree of fading versus control images. Repeat a portion of experiment using glass photo covers as a means to protect the photographs. Results A wide range of fading potential exists in prints from today's home printers. Fade-resistance did not depend very much, however, on whether photo paper or cheaper multi-purpose inkjet paper was used. Professional prints were at both extremes of fade resistance. In addition, the color red was usually the least fade-resistant and the color blue was usually the most fade-resistant across the materials tested. Finally, covering photographs with glass slows the fading process almost completely relative to uncovered photographs. Conclusions/Discussion Given the fading tendency of today's photo prints, choosing printing methods carefully for lightfastness and/or covering prints with glass in a frame gives you the best chance of keeping your memories from fading away.	
Summary Statement This study examines how the photo printer used, the paper selected, and the image color printed impacts the fading of photographs when they are exposed to UV light in accelerated aging studies.	
Help Received My parents assisted me in many aspects of this project, though I was the boss when deciding exactly what experiments to do. My mom helped me to obtain all of the supplies and books that I needed. She worked with me to find many light, color, and fading references on the Internet. My dad helped me to understand	