



**CALIFORNIA STATE SCIENCE FAIR
2014 PROJECT SUMMARY**

Name(s) Kate J. Ba	Project Number 34508
Project Title Snapping Depth	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The objective of the experiment was to test and analyze the answer of the cause and effect question: How does changing the amount of light a 35 mm SLR camera takes in affect the clarity of the depth of a picture shot using a high shutter speed? It was expected that the trials with the additional light would have a higher overall depth of field.</p> <p>Methods/Materials The five different trial sets were 100% flash power (control), 50% flash power (variation one), 25% flash power (variation two), 12.5% flash power (variation three), and finally, 6.25% flash power (variation four). Ten different pictures were taken for each of the different trial sets- five with the Fresnel lens and five without. Each picture was shot at relatively the same time (3:45 p.m.). They were shot indoors, where the shut blinds created a dim room. The subject of the pictures was a regular measuring tape. At the end of the picture taking, the clarity was measured and inputted into data tables.</p> <p>Results The trials with the Fresnel lens had a higher depth of field than the ones without. Additionally, it was found that the 50% flash power trials were the clearest.</p> <p>Conclusions/Discussion In conclusion, the hypothesis was correct. The additional lighting did result in a higher depth of field. To go beyond photography, the Fresnel lens could be installed on a light bulb, therefore increasing its output while maintaining the same power input. This creates a method that is environmentally beneficial.</p>	
Summary Statement By using a Fresnel lens, I created a means of having a clear depth of field while maintaining a high shutter speed.	
Help Received Father provided the 35 mm SLR camera	