



**CALIFORNIA STATE SCIENCE FAIR  
2013 PROJECT SUMMARY**

<b>Name(s)</b> Alexis M. Valtenbergs	<b>Project Number</b> <b>J1821</b>
<b>Project Title</b> <b>Using Refraction to Determine the Speed of Light through Different Substances</b>	
<b>Abstract</b> <b>Objectives/Goals</b> The objective is to determine if it is possible to use a red laser beam and the index of refraction to find the speed of light traveling through four different substances; water, vegetable oil, corn syrup, and lemon juice. <b>Methods/Materials</b> Using a laser mounted on a ring stand using a ring stand clamp, I shined the laser through different fluids. I then took measurements to calculate the index of refraction. From this information I calculated the speed that the light was traveling through the substances. <b>Results</b> My calculations showed that it was possible to calculate speeds of light that approximated known speeds of light traveling through different substances. I was able to achieve results that were near to the known indexes of refraction and speeds of light. <b>Conclusions/Discussion</b> My conclusion is that my hypothesis was correct. It is possible to use a red laser beam and the index of refraction to find the speed of light traveling through different substances. While my results were not exactly the same as the known speeds of light, they were reasonably close. I believe that with a larger scale, my results would have been more accurate.	
<b>Summary Statement</b> Using the index of refraction to find the speed of light in different substances.	
<b>Help Received</b> My mother helped me put the project together and my science teacher helped me check my calculations and equations.	