



**CALIFORNIA STATE SCIENCE FAIR
2014 PROJECT SUMMARY**

Name(s) Robert C. Henning	Project Number S0911
Project Title A Sound Source Localizing System	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals Over the course of this project, I developed and tested a novel method for a device which finds a sound source.</p> <p>Methods/Materials With components collected from local and internet stores, the tested device was built from my designs and research. Testing then proceeded with the integration of the original formulas, circuit designs, code, and output system. For each of eight tests, a part of each element was manipulated so that the result on accuracy could be improved in later tests, with the final and ideal combination seen in the eighth test. The standard deviation was used to determine the average inaccuracy of each test.</p> <p>Results Although the standard deviation fluctuated significantly with different changes, the eighth test showed the highest accuracy across the board.</p> <p>Conclusions/Discussion The capabilities seen in the precision of this novel system for sound source localization reveal that is an ideal improvement over conventional systems for many applications, including teleconferencing, robot audition, and gunshot determining, because it uses simpler calculations, fewer microphones, and a more economical circuit.</p>	
Summary Statement In this project, I developed and tested my novel method for the localization of a sound source, which is composed of original formulas, circuits, and algorithms.	
Help Received Father cut out the frame for the device's board.	