



**CALIFORNIA SCIENCE & ENGINEERING FAIR  
2018 PROJECT SUMMARY**

<b>Name(s)</b> <b>Thomas A. Wheelock</b>	<b>Project Number</b> <b>S1020</b>
<b>Project Title</b> <b>Could Seismometers Be Used as a Security System?</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> The objective of this project was to determine whether a seismometer could be used as a form of security system. By doing this project, I hoped to achieve the knowledge of what is needed to build a seismometer, as well as what it would take to turn it into a security system.</p> <p><b>Methods/Materials</b> A casing, a soldering iron, some scrap wires, and a Piezo Element were used to make the seismometer. A free program Wave Pad was used to record the data.</p> <p><b>Results</b> With the data that was collected from the seismometer, it can be mildly, or very sensitive. The seismometer was able to pick up just about anything from doors opening and closing, to the slightest ground movements produced by people walking.</p> <p><b>Conclusions/Discussion</b> The data from the seismometer proves that it could very well be used as a form of security system. The sensitivity is adjustable within the capsule, which makes it fit to the owner's needs. Compared to a seismometer, or other security systems that could be bought online, this is a much cheaper alternative, as most of the components to the seismometer could be found around the house, and if not, then could be bought at a local hardware store.</p>	
<b>Summary Statement</b> I built a very cheap seismometer and used it as a home security system.	
<b>Help Received</b> I designed and built the seismometer myself after hours of research on Piezo elements on the internet.	