



**CALIFORNIA STATE SCIENCE FAIR  
2014 PROJECT SUMMARY**

<b>Name(s)</b> <b>Gabriel Keith</b>	<b>Project Number</b>  34154
<b>Project Title</b> <b>Eddy Current</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> The purpose of my experiment is to demonstrate the properties of eddy currents, explore the power of eddy currents, and discover things for myself.</p> <p><b>Methods/Materials</b> The materials I used when I created this mechanism were:</p> <ul style="list-style-type: none"><li>* clear acrylic</li><li>* screws</li><li>* washers</li><li>* vice</li><li>* clamps</li><li>* camera</li><li>* timer</li><li>* hard drive bearing</li><li>* hard drive magnets</li><li>* clear tape</li></ul> <p>I did four experiments for each conductor, each experiment had 10 trials I did each trial and each experiment exactly the same except for the conductor. if the pendulum hit the side I re-ran the experiment. For the distance tests I also moved the magnets closer or farther away.</p> <p><b>Results</b> I got accurate results that followed my hypothesis. Since I did ten trials for each experiment my data is too large to show in this abstract so see my results below.</p> <p><b>Conclusions/Discussion</b> My data has definitely shown that the conductors that are solid conduct the best. I see a pattern in my data which is that the fastest trial is the solid conductor then the cut or silted conductor then the trials with no magnets. I also see a pattern in my time distance graph. this pattern looks like exponential growth meaning eddy current increases exponentially as the distance between magnets decreases.</p>	
<b>Summary Statement</b> My project demonstrates properties of eddy currents, showing the effect of conductor shape and magnet distance on eddy current strength.	
<b>Help Received</b> My Father helped with the construction of the experamental equipment.	