



# CALIFORNIA STATE SCIENCE FAIR 2015 PROJECT SUMMARY

<b>Name(s)</b> <b>Kevin P. Lopatka</b>	<b>Project Number</b> <b>J0211</b>
<b>Project Title</b> <b>Harnessing Kinetic Energy Efficiently</b>	
<div><div><b>Objectives/Goals</b> The objective of this project was to find the most efficient method of harvesting kinetic energy using magnets and springs. A handmade electromagnetic generator was used as a model. Currently, much of our energy is generated by burning fossil fuels. I am exploring methods of powering small electric devices through kinetic energy to help reduce the burden on fossil fuels.</div><div><b>Methods/Materials</b> A simple electric generator was created using a coil of wire with magnets suspended within the coil by two springs on either end of the magnets. When carried, the magnets will bounce up and down through the coil creating electricity. The generator is connected to an arduino which records the voltage of the electricity being generated. Six different sets of springs were tested to determine which set of springs would be most efficient in generating electricity.</div><div><b>Results</b> Each of the six different springs generated different voltages. Spring #1 contributed to generating the most electricity.</div><div><b>Conclusions/Discussion</b> Because each of the six springs created differing amounts of electricity, it is clear that the amount of electricity is dependent on the type of spring used. The best spring will bounce most rapidly through the coils with the same amount of motion. Springs that do not move much or springs that are too loose are not the most efficient. Through testing it was also seen that the same springs give different results for children and adults which means that height of people and stride length affect spring selection as well.</div></div>	
<b>Summary Statement</b> My project is to discover how to most efficiently harness kinetic energy.	
<b>Help Received</b> Father helped with arduino setup.	