



**CALIFORNIA STATE SCIENCE FAIR  
2016 PROJECT SUMMARY**

<b>Name(s)</b> <b>Aidan J. Morris</b>	<b>Project Number</b> <b>J0919</b>
<b>Project Title</b> <b>Regression Analysis of Electric Output from Increasing Battery Cells</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> The objective of this experiment was to determine that if I increase the amount of cells in a battery, would the electricity produced increase in a linear relationship.</p> <p><b>Methods/Materials</b> The materials I used for this experiment were 5 pieces of copper/pennies, 5 pieces of zinc/washers, 5 pieces of felt, white vinegar, and a multimeter. I tried to use a galvanometer, but it did not work. To perform this experiment, I used the materials to create battery cells and then measured the electricity produced on the multimeter. Then graphed the results.</p> <p><b>Results</b> When I graphed the data points, I observed that none of the test results formed a straight line on the graph. Then, I performed a regression analysis and found the data points had a more linear than exponential relationship.</p> <p><b>Conclusions/Discussion</b> I can conclude from my tests, graph and regression analysis that when I increase the amount of cells in a battery, the electricity produced by the battery will increase in relatively linear proportion.</p>	
<b>Summary Statement</b> I determined that when the amount of cells in a battery increases, the electricity produced increases in a linear relationship.	
<b>Help Received</b> I conducted the experiment myself. I received my understanding of regression analysis in discussions with my father.	