



**CALIFORNIA STATE SCIENCE FAIR  
2004 PROJECT SUMMARY**

<b>Name(s)</b> <b>Christopher J. Gaydosh</b>	<b>Project Number</b> <b>S0707</b>
<b>Project Title</b> <b>Voltage Generation with Spinning Magnets</b>	
<b>Abstract</b> <b>Objectives/Goals</b> The project objective was to determine the impact of internal magnets, including a spherical magnet, on voltage generation more efficient. <b>Methods/Materials</b> A model generator was constructed with interchangeable armatures, stators, and internal magnet holders. The two armatures used were varied only in diameter. The stators were varied only in distance between the magnet poles, which affected the magnet to armature distance. The experiment design used fixed external magnets as the control group and measured the effect of distance, rotation (armature versus internal magnets) and internal magnet configuration. Three trials were run on each variation and the data recorded. Data results were evaluated using 2 Standard Deviations. <b>Results</b> Data evaluation shows the 2.25 inch stator significantly produced more output voltage than the 3.5 inch stator. Also, a fixed spherical magnet produces significantly more output voltage than the 1.875 inch stator with two magnet pairs. All the other comparisons show there is no statistically significant difference in output voltage. <b>Conclusions/Discussion</b> The internal magnets did not produce significantly more voltage than the stator based external magnets.	
<b>Summary Statement</b> Evaluate the effect of fixed and spinning internal magnets (disc and sphere) on an electrical generator's output voltage characteristics.	
<b>Help Received</b> Mother helped publish report and format the board; Dad helped build and test model generator; Dr. William Keig gave permission to borrow school lab equipment	