



**CALIFORNIA STATE SCIENCE FAIR
2010 PROJECT SUMMARY**

Name(s) Nathan P. Storey	Project Number J0914
Project Title Gauss Gun: Multi-Stage Magnetic Linear Accelerator	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals To test and demonstrate the effects of magnetic acceleration</p> <p>Methods/Materials (1) 6 foot aluminum rail (10) steel, 1/2 inch, ball bearings (12) Neodymium, 1/4 inch magnets Plastic tie wraps Tape Measure Eraser</p> <p>Results By allowing the first ball to be attracted to the first magnet, it set off a series of events that ultimately caused the final ball bearing to be shot off at increase velocity. I noticed that three magnets secured at 6 inch intervals launched the ball bearings the farthest. The best shot was the three magnets at six inches which shot the ball bearing 46 inches.</p> <p>Conclusions/Discussion I learned that magnetic propulsion is an efficient method of transportation. It is also more environmentally friendly than coal or petroleum. It can be scaled up to be applied to propel magnetic levitation trains. I have included a small scale example of a magnetic levitation train that could be propelled by magnetic acceleration.</p>	
Summary Statement To test and demonstrate the effects of magnetic acceleration	
Help Received My father cut the aluminum rail and helped build the mag lev train box. My mother helped draw on the display board.	