

## CWSF 2010 - Peterborough, Ontario



### Callum Tomkins-Flanagan, Oliver W. C. Forsyth

#### The Marvelous, Mysterious Gauss Gun

**Division:** Physical & Mathematical Sciences

**Category:** Intermediate

**Region:** Winnipeg Schools

**City:** Winnipeg, MB

**School:** Collège Churchill

**Abstract:** This project studied a collision-based magnetic linear accelerator, launching ball bearings of varying sizes and examining how size affected acceleration within the device. Effectiveness was determined by measuring the distance traveled by the ball bearings following their expulsion from the magnetic linear accelerator. Ball bearings of similar size to the magnets were found to obtain the most dramatic results.

#### Biographies

**Callum** - I am a Grade 9 student in French immersion in Winnipeg, Manitoba, looking forward to participating in my first Canada Wide Science Fair. My interests include three years of competing in Manitoba's Robot Games (Prairie Sumo, Autonomous and Tractor Pull) and four years of competing in "Invent an Alien" at the Manitoba Schools Science Symposium. I have been an avid student of TaeKwon Do for the past six years, earning my blue belt. I play alto saxophone for Churchill High School's 7:45 Jazz Band, a position which comes with the dubious joy of arriving at school one hour earlier than most and which took me to the Manitoba Jazz Festival th...

**Oliver W. C.** - I am a fourteen-year-old French immersion student at Collège Churchill in Winnipeg, Manitoba. I have been participating in science fairs since grade four, most frequently under the engineering or physics categories. I hope to take up a career in a scientific discipline. I am a member of the Churchill High School Robotics Club, and have won several awards with my robots. I have completed my Bronze Medallion in swimming and am currently taking Bronze Cross, planning to work as a lifeguard for a summer job. I am also on the school cross-country running team, and play trumpet in the school jazz band. I have no siblings but I do have five budgies...

Youth Science Canada  
PO Box 297  
Pickering ON L1V 2R4  
[www.youthscience.ca](http://www.youthscience.ca) / [info@youthscience.ca](mailto:info@youthscience.ca)  
416-341-0040