

# ESPC 2012 - Charlottetown (Île-du-Prince-Édouard)



## Benjamin Friedman

### A Turn for the Better

**Défi:** Découverte

**Catégorie:** Sénior

**Région:** Cariboo Mainline

**Ville:** Kamloops, BC

**École:** Kamloops Secondary

**Sommaire:** I used mathematics to predict that a magnetic dipole suspended inside a current-carrying coil of turn-density linearly varying with height would experience a force proportional to the magnet's length. I constructed a novel electromagnetic coil with linearly varying turn-density and confirmed the theory experimentally using neodymium magnets. I ran the experiment at three different heights in the coil and controlled with constant turn-density.

### Biographie

Hello. My name is Benjamin Friedman. My main interest is science, specifically physics. I also enjoy mathematics. I enjoy mathematics conceptually: my least favourite thing about math is when I have to use actual numbers. This is why I absolutely detested math in elementary school. There was too much computation and not enough creativity. This interest in math is very compatible with my passion for physics, as physics employs a lot of math. I like physics because it is, in my opinion, the most conceptually interesting and fundamental of the sciences. I spend a lot of my time reading about physics, or watching online lectures through Khan Academy and MIT OpenCourseWare. I am very involved in my school: I play clarinet in the school band, sing in the school choir, and am the president of the school science club. Some of my hobbies include skiing, chess, and reading. I am a particularly avid reader of J.R.R. Tolkien and Arthur C. Clarke. I enjoy music by Bach, Herbie Hancock, and Michael Nyman, among others. I am still afraid of the dark, so I carry a flashlight everywhere I go.

### Prix

### Valeur

Prix de l'École d'été internationale pour les jeunes physiciens Commanditaire: l'Institut Périmètre pour la physique théorique	2 500,00 \$
Prix d'excellence - Senior - Médaille de bronze Commanditaire: Société de gestion des déchets nucléaires	300,00 \$
Bourse d'admission de l'Université d'Ottawa Médaille de bronze, sénior ? Bourse d'admission de 1 000 \$ Commanditaire: Université d'Ottawa	1 000,00 \$
Bourse d'études de Western University Médaille de bronze - Bourse d'admission de 1 000 \$ Commanditaire: Université Western	1 000,00 \$
<b>Total</b>	<b>4 800,00 \$</b>