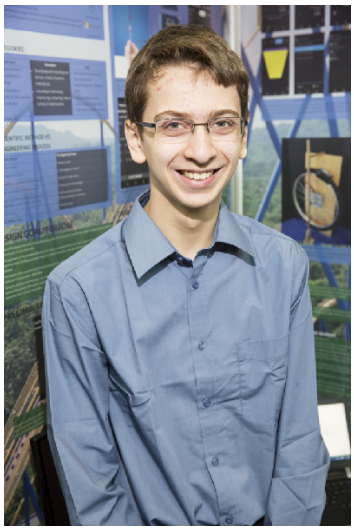
CWSF 2015 - Fredericton, New Brunswick



Nicolas Gnyra

Physics Accelerometer Lab: Your Amusement Park PAL

Challenge: Innovation
Category: Intermediate
Region: Durham
City: Whitby, ON
School: École secondaire Saint-Charles-Garnier
Abstract: Physics Accelerometer Lab (PAL) is an educational smartphone app which uses the accelerometer and gyroscope in smartphones to help students understand physics using real-time animations. The app can be used at an amusement park or with models which take your phone for a ride. PAL is better than anything on the market for many reasons including that it replicates mechanical accelerometers.

Biography

I live in Whitby, Ontario and attend the École Secondaire St-Charles-Garnier. For me, the CWSF is a continuation of a tradition of science which started seven years ago at the University of Québec at Trois Rivières with a summer day camp called Les Débrouillards. Every year since then, I spent part of the summer in science camps. Last summer was exceptionally urban: two weeks at the Montreal Polytechnique Engineering camp (Folie Technique), two weeks at the University of Ottawa (Teen Tech) and a week at York University (Helix Summer Science Institute). As part of Teen Tech, I volunteered working with elementary students and eight 3D printers. At the Helix Institute I was thrilled to learn from a computer game specialist. Regarding the science fair, I was inspired by a Youth Science Canada poster which included a description of the CWSF 2014 Blackberry App Development Award. I considered a variety of game ideas based on both accelermometers and gps sensors which are part of all smartphones. It occurred to me that the most useful application would be an innovation based on the basic PASCO mechanical accelerometer used by Physics classes at amusements parks across North America.