

## CWSF 2013 - Lethbridge, Alberta



### Nicholas Barrett

#### Hit The Ground Running

**Challenge:** Innovation

**Category:** Senior

**Region:** Cape Breton

**City:** Sydney, NS

**School:** Riverview High School

**Abstract:** A piezoelectric running shoe system was designed and built to measure foot strain runners endure while running. An experiment was conducted to compare the amount of foot strain sustained at various speeds and slopes. Results suggest runners sustain more strain at slower paces than faster paces and on flat surfaces compared to inclined slopes. This system has potential as training tool for runners and trainers.

#### Biography

My name is Nicholas Barrett and I am a grade ten french immersion student at Riverview High School in Sydney, Nova Scotia. I have played soccer with a local club for many years. I am a member of my school cross country running team. I also love biking and down hill skiing. I play the alto saxophone and I am a member of my school orchestral band and the jazz combo. I am also involved in a regional youth development movement in my community. I volunteer in the apprenticeship program at the Fortress of Louisbourg National Historic Site. My idea for this project came from my experiences as a certified Nova Scotia soccer referee and a soccer player. I wanted to design an innovation that would make soccer and other sports more accessible for people who may have difficulty hearing referees' commands. I won first place in my division at my school science fair and a gold medal at the regional fair. I also won an engineering award. When I attend university in the future I hope to find ways to combine my interests in science, technology, engineering and math with my love of sports and music.

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