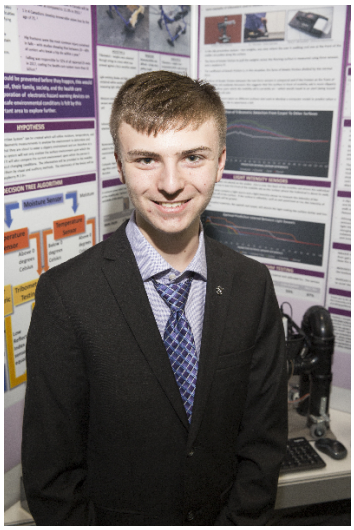
CWSF 2019 - Fredericton, New Brunswick



Brent Charron

Slip Prevention System Using Tribometric, Light, Moisture, and Temperature Sensors

Challenge: Innovation
Category: Senior
Region: Windsor
City: Windsor, ON
School: Massey S.S.

Abstract: The Slip Prevention System attaches to mobility aids to determine the slip risk of the surface ahead. Audio and visual alerts are issued notifying the user of wet or icy conditions. Input from four sensors combines into a computer algorithm to determine the slip risk. An 88.8% accuracy on trained surfaces was obtained. Accuracy of 92.0% was achieved by incorporating a neural network.

Biography

My name is Brent Charron and I am a Grade 11 student at Vincent Massey Secondary School in Windsor, Ontario. My hobbies include playing trumpet with the Windsor Symphony Youth Orchestra. I also enjoy playing piano and painting. My inspiration for the Slip Prevention System came from an elderly relative who due to her poor vision slipped on ice and fractured her hip while using her walker. The Slip Prevention System warns the user and those around them of the slip hazards which are in their environment, in an effort to prevent falls before they occur. My advice to students who want to participate in Science Fair is to look for situations in which you or someone else says "if only" something could work this way it would be so much better - and then find a way to make that "if only" a reality.

Awards	Value
Excellence Award - Senior - Bronze Medal Sponsor: Youth Science Canada	
University of Ottawa Entrance Scholarship Senior Bronze Medallist - $1000 Entrance Scholarship Sponsor: University of Ottawa	$1 000
Western University Scholarship Bronze Medallist - $1000 Entrance Scholarship Sponsor: Western University	$1 000
Total	$2 000