

# CWSF 2019 - Fredericton, New Brunswick



## Abby Snodgrass

### Interoceptive Awareness and the Novel Use of VR with Arduino Based Sensors

**Challenge:** Health

**Category:** Senior

**Region:** South-East New Brunswick

**City:** Grand Bay-Westfield, NB

**School:** St. Malachy's Memorial High School

**Abstract:** I developed a system using a pulse sensor and a modified vernier gas pressure sensor that interacts with an immersive VR scene. It was based surrounding the idea of promoting interoceptive awareness, and the role that VR can play in digital medicine. The benefits of using this system can be seen as long as vital sign regulation is in play; for example, testing anxiety.

#### Biography

I am a STEM development enthusiast. My interest in science, technology, engineering and mathematics began as a young child interested in the developing space sector, and has been fostered through my incredible parents and science/math teachers. I have recently accepted an offer from UNB in the Engineering program, and I cannot wait to start. Through volunteering around the community and internationally through the Me to We foundation, I have come to appreciate the care that goes into helping others. While reading a paper about Microsoft's HoloLens and similar developments, I realized there wasn't enough quantitative data to prove the claims that it helps regulate vital signs. So I mimicked a similar system and tested it within a highschool setting to gather quantitative data on immersive technologies and vital sign regulation. I plan to continue formalizing the system and developing it further in time, to have it be as effective as possible in helping people. For students who are thinking about doing a project, dive in head first (with due research of course), you never know what will happen, and how your ideas of the world will morph based on your scientific findings.

#### 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
<b>Total</b>	<b>\$2 000</b>