

# CWSF 2018 - Ottawa, Ontario



## Milo Eirew

### Cardio Cardigan - A lifesaving robotic wearable to provide mobility & CPR

**Challenge:** Health

**Category:** Intermediate

**Region:** Greater Vancouver

**City:** Vancouver, BC

**School:** St John's School

**Abstract:** People with heart conditions are often scared to exercise but they need to. I created a robotic wearable vest that analyzes heartbeats and delivers life-saving chest compressions if the person suffers cardiac-arrest. This would let someone with a heart condition exercise, away from medical supervision. Future versions might have liquid compressions, give GPS location, call for help and be incorporated into a smartwatch attachment.

#### Biography

Thrilled to be here, I am passionate about Science and Math, especially where innovation meets problem-solving. I am 14, Grade 10 and from St John's School, Vancouver. I would love to study Electrical/Aerospace/Biomedical Engineering. I manage an annual chess initiative, love playing trumpet, badminton and chess nationally. My aunt was born with a heart murmur. The mission I set myself was to design a vest that would let people with heart conditions go hiking safely and remotely and give those who undergo cardiac arrest, instant help. I made a light robotic wearable that monitors heartbeats and gives chest compressions on detecting a flatline. Longterm, this vest might call for help and give 911 GPS location. Compressions will become more targeted with ferrofluids. The vest might even morph into a smartwatch adaptation which can alert the wearer and their physician to anomalies, in advance of medical distress. I took my prototype to UBC bioengineering Professor Abolmaesumi and I hope to develop it into a Capstone project. Fellow students: What problem do you most want to solve? Give yourself no restrictions to merge what you know, and where you know it from. Science gatecrashes every class! Enormous gratitude to teachers and mentors.

#### Awards

#### Value

Excellence Award - Intermediate - Bronze Medal Sponsor: Youth Science Canada	
Western University Scholarship Bronze Medallist - \$1000 Entrance Scholarship Sponsor: Western University	\$1 000
<b>Total</b>	<b>\$1 000</b>