

# CWSF 2018 - Ottawa, Ontario



## Christopher Lamont

### Use of Technology to Reduce Medical Complications: Development of a Smart Cast

**Challenge:** Innovation

**Category:** Junior

**Region:** Bay Area

**City:** Hamilton, ON

**School:** St. Margaret Mary E.S.

**Abstract:** I developed a smart cast to help with identifying acute compartment syndrome (ACS). ACS is a medical complication that happens when a cast on a broken arm or leg is too tight, cutting off blood supply and leading to possible limb amputation. Currently, there is no device available to detect ACS. My Smart Cast provides a new way to recognize ACS and prevent limb amputation.

#### Biography

My name is David Christopher Lamont - I go by Christopher. I am 12 years old and in Grade 7 at St. Margaret Mary School in Hamilton, Ontario. My favourite subjects are math and science. I enjoy working with computers and built my very first computer this year. Outside of school, I spend most of my time playing competitive hockey, but really I love all sports. I entered science fair because I wanted an opportunity to learn more about technology and its applications. I heard a very sad story of a young child who suffered an amputation of her arm after she developed something called acute compartment syndrome (ACS) because the cast that was placed on her broken arm was too tight. I was surprised that there currently is no way for doctors and nurses to measure pressures within a cast to prevent ACS. I knew that I could develop something to help. I built a Smart Cast to measure pressures and detect ACS before it occurs to prevent limb amputations. I am working on patenting my Smart Cast and hope to test it with patients in the future. My advice to other students - do Science Fair, it's awesome!

#### Awards

#### Value

Youth Can Innovate Awards - Junior Sponsor: The Gwyn Morgan and Patricia Trottier Foundation	\$500
Excellence Award - Junior - Silver Medal Sponsor: Youth Science Canada	
Western University Scholarship Silver Medallist - \$2000 Entrance Scholarship Sponsor: Western University	\$2 000
<b>Total</b>	<b>\$2 500</b>