

# CWSF 2017 - Regina, Saskatchewan



## Nicolas Fedrigo

### Stroke Rehabilitation Exoskeleton

**Challenge:** Innovation

**Category:** Intermediate

**Region:** Vancouver Island

**City:** Victoria, BC

**School:** Claremont Secondary School

**Abstract:** The Stroke Rehabilitation Exoskeleton was designed to induce neuroplasticity in stroke survivors. The use of an exoskeleton glove and master glove allow for both unilateral and bilateral rehabilitation. This activates more regions of your brain for increased neuroplastic benefits. Engaging in this unique robotic-assisted therapy reduces the amount of time required for stroke recovery while increasing the likelihood of a full recovery.

#### Biography

My name is Nicolas Fedrigo and I am a Grade 10 student from Claremont Secondary School. This is my second time attending the Canada-Wide Science Fair and my project is the Stroke Rehabilitation Exoskeleton. My grandfather previously dealt with the difficulties of post-stroke recovery, and so I was inspired to engineer a solution. This robotic-assisted therapy glove reduces the amount of time required for stroke recovery, while also increasing the likelihood of a full recovery. In the future, I would like to implement the concept of the Stroke Rehabilitation Exoskeleton for the use of therapies for ALS and MS. This science fair project taught me about the field of biomedical engineering and I am now inspired to pursue a career in this field. The Stroke Rehabilitation Exoskeleton was the result of an inquiry I had, and so I urge science fair participants to study what they have a passion for. In my spare time I am president and founder of the Claremont Secondary Science and Engineering Club, along with other volunteering experiences. I have also been a swim instructor for elementary school children for over two years now.

#### Awards

#### Value

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