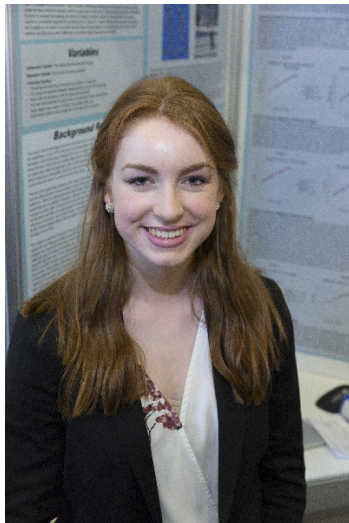


## CWSF 2018 - Ottawa, Ontario



### Erin Burt

#### The Science of Skiing: Effect of Terrain, Gender & Orthotics on Quadriceps Stress

**Challenge:** Health

**Category:** Senior

**Region:** Eastern Newfoundland

**City:** Conception Bay South, NL

**School:** Holy Spirit H.S.

**Abstract:** My project determines if there will be more stress on the quadriceps when skiing a mogul run, than on a groomed run. At these knee angles, I also wanted to determine if those with a higher Quadriceps-Angle (typically females) would experience greater quadriceps stress. In addition, it examines if the use of orthotics could reduce the Q-Angle and therefore reduce quadriceps stress.

#### Biography

I'm a Grade 12 student in early French Immersion. I started doing science fair experiments in grade 9, and received 4 gold medals and 4 awards at regional fairs. More importantly, I'm grateful for the opportunities offered to me through science fair participation and delighted to be at CWSF for the first time. I'm an active volunteer in my school, church and community. I also play on the school softball and hockey teams and have completed bronze and silver Duke of Edinburgh Awards. I work part-time as a lifeguard/swimming instructor and play violin at church, recitals and fundraisers. I love exploring the Newfoundland wilderness by snowmobile, all-terrain vehicle and boat. I'm passionate about downhill skiing and my project was inspired during a ski vacation when I experienced my 'quads burning' after skiing moguls. I would like to further investigate the anatomical differences that put women at greater risk of sports injuries. I would advise others that science is everywhere, not just in laboratories, so do a project on something that really interests you, because that makes it fun and meaningful. I look forward to participating in SHAD 2018 at Western University this summer and plan to study engineering at MUN.

#### Awards

#### Value

Excellence Award - Senior - Bronze Medal Sponsor: Youth Science Canada	
Carleton University Entrance Award Senior Bronze Medallist - \$1,000 Entrance Award Sponsor: Carleton University	\$1 000
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	\$3 000