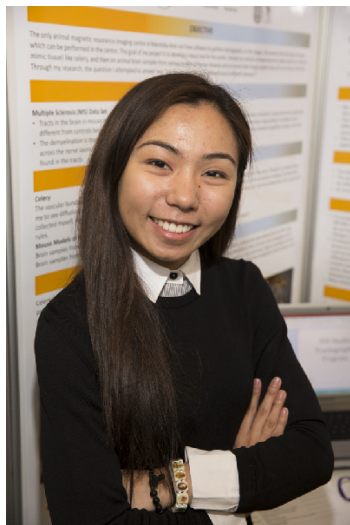


# CWSF 2016 - Montreal, Quebec



## Winnica Beltrano

### Comparison of Tractography in Mouse Models of Human Diseases

**Challenge:** Discovery

**Category:** Senior

**Region:** Manitoba Schools Science Symposium

**City:** Winnipeg, MB

**School:** Sisler High School

**Abstract:** The only animal magnetic resonance imaging centre in Manitoba does not have software to perform tractography on their images. This severely limits the types of studies which can be performed in the centre. The goal of my project is to develop a robust tool for the centre. I tested my method on known phantoms (objects meant to mimic tissue) and on animal brain samples.

#### Biography

Winnica Beltrano is a grade 12 student at Sisler High School in Winnipeg, MB who loves keeping herself busy with the world around her. Winnica finds immense fulfillment in being involved in both her school and community. She has played the clarinet for 6 years in concert band as section leader and has ran cross country competitively for three seasons. Passionate about writing to express one's creativity, Winnica is Editor of Sisler's newspaper. Outside of school, Winnica values the importance of reaching out to students who may have limited resources to pursue their goals. For 2016, Winnica is the founding President of Project Pulse Winnipeg, a conference that connects high school students to individuals in the health sciences field. Currently, Winnica does research in the field of neuroscience at University of Winnipeg's Medical Physics Lab. She is developing a method for the animal MRI centre in Winnipeg: a tractography tool that traces fibres within animal brain samples. With further research and collaboration, Winnica believes tractography can become a very powerful tool for analyzing sample sets in the future, identifying biomarkers for neurodegenerative diseases like Alzheimer's, multiple sclerosis, and brain cancer. Winnica aspires to become a physician scientist in ...

#### 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>