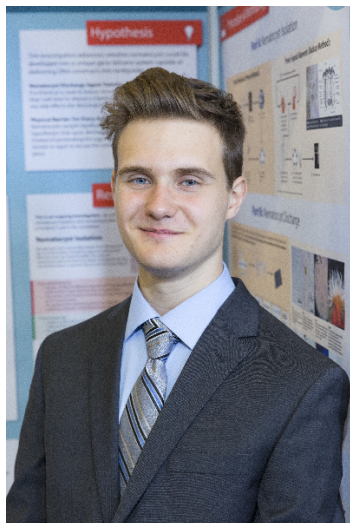


# CWSF 2018 - Ottawa, Ontario



## Sasha Seufert

### Delivering of DNA to Tardigrades via Nematocysts

**Challenge:** Innovation

**Category:** Intermediate

**Region:** Waterloo-Wellington

**City:** Guelph, ON

**School:** Centennial Collegiate & Vocational Institute

**Abstract:** Jellyfish possess millions of micro-needle like stinging cells embedded in their tentacles, often used to inject venom into prey. My goal is to determine whether or not these stinging cells can be used to deliver DNA into water bears; a micro-organism of great interest in the scientific community. This fast and low-cost injection method would help scientists study the unique genomic makeup of water bears.

#### Biography

My name is Sasha Seufert and I live in Guelph, Ontario. I am a grade 10 student at Centennial Collegiate & Vocational Institute: A secondary school well known for its excellent AP biology and biotechnology courses. My involvement in the STEAM disciplines dates back to when I was a child. My first interest was circuit design, when I received my first electronic snap circuit kit. I was shocked!! Ever since, my interests expanded to computer science, biotechnology, and hardware engineering. Currently, I am working on a faster and more cost-effective approach to delivering DNA into tardigrades, which involves nematocysts: biological "syringes" which jellyfish use to sting and deliver venom into their prey. Like many individuals in the scientific community, I gain my inspiration from journals about recent innovations in the medical industry. Once I find an interesting topic, I begin to ask myself questions: How can I improve this concept? What benefit does the innovation serve to the scientific community? And finally, does the idea hold a commercial value? If my idea meets all three criteria, I may confidently begin my scientific process. Holy piece of advice: Follow up EVERY lab session with very detailed notes of what you did!

#### 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