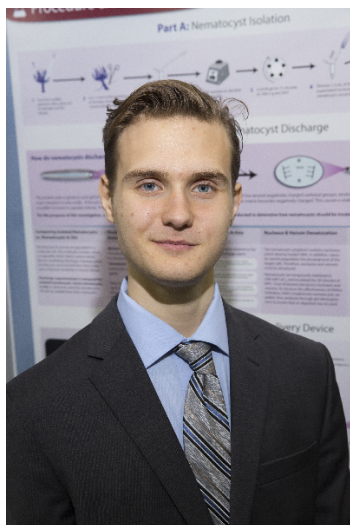


# CWSF 2019 - Fredericton, New Brunswick



## Sasha Seufert

### Delivery of DNA to Stem Cells via Nematocysts

**Challenge:** Innovation

**Category:** Senior

**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, used to inject venom into prey (Picture an injection that you received at a doctor's office, shrunk by 5000x). I used these extraordinary cells to develop a simpler, inexpensive, and less laborious gene-delivery device, capable of injecting DNA into a variety of stem cells in a less invasive manner than current technologies.

### Biography

My name is Sasha Seufert, I'm 17 years old (grade 11) and attend Centennial CVI in Guelph, Ontario. I am thrilled to be participating at CWSF for the second time! As my interest in biotechnology continuously expands, I'm often found conducting research at the University of Guelph. My main area of research revolves around developing a next-generation gene delivery system using naturally-occurring "syringes" called nematocysts, which I aim to develop into a product by the end of my high-school career. I also enjoy playing the piano and have competed in the Guelph Kiwanis Music Festival from the age of five. Every year, I frequently participate in computing competitions and organise hackathons in expression of my passion in computer science. I'm an avid long-distance cyclist and frequently embark on long trips to explore Canada's beautiful countryside. I spend most of my summers living with family in Russia and I am fluent in both English and Russian. I wish to pursue a double-degree in computer science and cellular biology at McGill, University of Waterloo, or University of Toronto. Word of advice: Work smarter, not harder! It's not the hours spent in the lab that count, but more-so the quality of work conducted.

### Awards

### Value

Excellence Award - Senior - Silver Medal Sponsor: Youth Science Canada	
Dalhousie University Faculty of Science Entrance Scholarship Senior Silver Medallist - \$2500 Entrance Scholarship Sponsor: Dalhousie University, Faculty of Science	\$2 500
UBC Science (Vancouver) Entrance Award Senior Silver Medallist - \$2000 Entrance Scholarship Sponsor: The University of British Columbia (Vancouver)	\$2 000
University of New Brunswick Canada-Wide Science Fair Scholarship Silver Medallist - \$2500 Entrance Scholarship Sponsor: University of New Brunswick	\$2 500
University of Ottawa Entrance Scholarship Senior Silver Medallist - \$2000 Entrance Scholarship Sponsor: University of Ottawa	\$2 000
Western University Scholarship Silver Medallist - \$2000 Entrance Scholarship Sponsor: Western University	\$2 000
<b>Total</b>	<b>\$11 000</b>