

# CWSF 2018 - Ottawa, Ontario



## Selina Zhou

### How Stressed Are You?

**Challenge:** Innovation

**Category:** Senior

**Region:** Greater Vancouver

**City:** North Vancouver, BC

**School:** Collingwood School

**Abstract:** This project evaluates the effectiveness of using skin volatile organic compound (VOC) emission as a psychological stress indicator. A VOC gas sensor was built and tested, which monitored the skin VOC emission from volunteers' foreheads. Results showed that although VOC can be indicative of stress, its performance is not similar to other existing stress indicators such as electrodermal activity, heart rate variability, and self-perceived stress.

### Biography

My name is Selina Zhou and I'm a grade 11 student from Collingwood, West Vancouver. I am an active member of my school's science club and enjoy going to competitions with my team. Besides science, I am passionate about art and giving back to my school community through working with the student arts committee and writing in our art publications Arts Mag. In my free time, I enjoy drawing, photography, table tennis, piano, and working on random projects. My project was inspired by the people around me who often complain about stress, which leads me to wonder if there's an easier way to measure people's stress level. I plan on continuing this project by expanding sample size, and if data is supportive, by developing an actual instrument. What I have learned through this project is that you shouldn't be afraid of not having enough knowledge to do what you want, because you can learn so much along the way.

### Awards

### Value

Excellence Award - Senior - Silver Medal Sponsor: Youth Science Canada	
Carleton University Entrance Award Senior Silver Medallist - \$2,000 Entrance Award Sponsor: Carleton University	\$2 000
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 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>\$10 500</b>