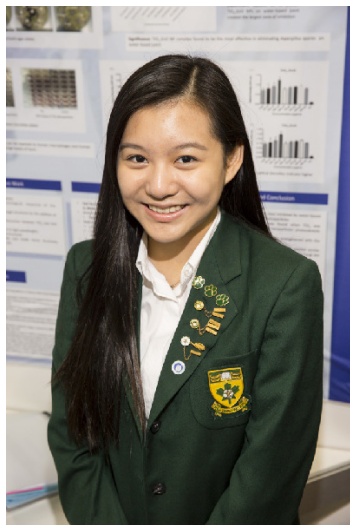


# CWSF 2015 - Fredericton, New Brunswick



## Ariana Auyeung

### The Implementation of Nanoparticles to Eliminate Aspergillus Fungi

**Challenge:** Innovation

**Category:** Senior

**Region:** Greater Vancouver

**City:** Vancouver, BC

**School:** York House School

**Abstract:** *Aspergillus fumigatus* and *Aspergillus flavus* are two common fungi that emit mycotoxins - toxic compounds to vertebrates and animals. The toxins cause human infections, induce cancer, and food spoilage. A novel solution of titanium dioxide nanoparticles combined with zinc oxide nanoparticles was created to significantly decrease the amount of *Aspergillus* spores. This solution significantly reduces the incidence of *Aspergillus*-related diseases in the community.

#### Biography

Hello! My name is Ariana and I am a grade 11 student at York House School in Vancouver, BC. I absolutely LOVE chemistry, biology, and sharing my passion for science by leading science organizations for youth across BC. When I am not at the lab running my experiments, I can be found fervently studying for exams, volunteering for different charitable organizations, playing music, and playing sports. I especially enjoy volunteering with Free the Children, which I began to work with since grade 7. My volunteer group has raised money to build a school, provide free healthcare, and build a water well for a village in Kenya. In music, I have completed my ARCT exam in piano and I have a newfound enthusiasm for the cajon. I also play badminton and ultimate. Before deciding to focus on my science fair endeavours, I had badminton training for a minimum of 15 hours every week - competing in provincial and national tournaments. These experiences have greatly shaped who I am. I am extremely excited to explore CWSF this year, to share my project that uses nanoparticles to eliminate human pathogenic fungi, and to meet young, like-minded scientists.

#### Awards

#### Value

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