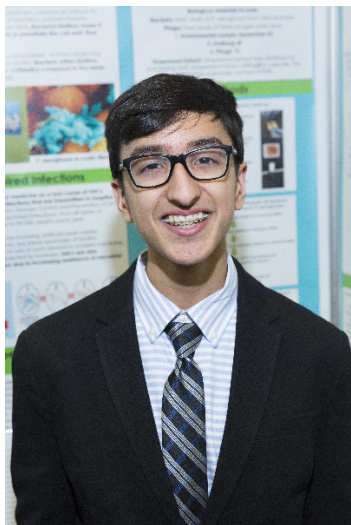


# CWSF 2018 - Ottawa, Ontario



## Krish Joshi

### Tackling Pseudomonas Biofilm Resistance: Using Bacteriophage-Phenolics Synergy

**Challenge:** Discovery

**Category:** Intermediate

**Region:** Bay Area

**City:** Waterdown, ON

**School:** Robert Bateman H.S.

**Abstract:** The aim of this project was to see whether cell-membrane disrupting grapeseed phenolics could synergize with bacteriophages to reduce biofilm formation in *Pseudomonas aeruginosa*, a multi-drug resistant pathogen that accounts for 10% of all hospital-acquired infections. In this experiment, grapeseed phenolics potentiated the lytic action of bacteriophage. In clinical settings, this synergy could be used to effectively treat a variety of these resistant superbug infections.

#### Biography

My name is Krish Joshi, and I am a Grade 9 student from Robert Bateman HS in Burlington, Ontario, completing the International Baccalaureate (IB) program. This is my second CWSF, I was awarded a silver medal last year. My scientific interests lie in medicine, botany, and microbiology. More specifically, I am fascinated by microbial biofilm formation, which gave inspiration for my project. The link between bacterial biofilms and antibiotic resistance is important to understand, and is something that I hope to communicate through my project. I would like to continue my project by testing the treatment against infected medical devices. I am also a member of the New York Academy of Sciences, through which I collaborate internationally with other students and professionals in STEM on projects ranging from climate change to malnutrition in developing countries. In school, I am involved in Model UN, and have competed provincially for DECA. When I'm not involved in STEM/school-related activities, I enjoy listening to music, reading, and playing competitive table tennis. My advice for aspiring science fair participants is to not only choose a topic you're passionate about, but to challenge yourself, and even step outside of your comfort zone just a little.

#### 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