

# CWSF 2018 - Ottawa, Ontario



## Sophie MacDonald

### Drug Discovery from Actinobacteria Using a Temperature/Culture Mimic Approach

**Challenge:** Health

**Category:** Intermediate

**Region:** Prince Edward Island

**City:** Rice Point, PE

**School:** Bluefield High School

**Abstract:** I tested a way to make bacteria produce different compounds and antibiotics by mimicking the bacteria's natural environment to increase its product production. When bacteria is grown in a lab, they do not produce as much natural product as they could. I grew my bacteria in two different temperatures and fed them heat killed cells of other bacteria to influence their production.

#### Biography

Hello, my name is Sophie MacDonald. I am a grade 10 student from PEI at Bluefield High school. I have been a science fair participant for many years. I was inspired to do this project because I recently learned that humans are becoming resistant to many antibiotics. I fell into this category because the medication that I use to control my IBS started to have less of an effect. It made me wonder if there was a way to produce these antibiotics in a higher quantity and stronger concentration to help with this problem. I successfully found a way to do this by using a temperature variation and culture mimic approach on actinobacteria. I plan to continue my project and determine the uses of the compounds for antibiotics that I was able to produce. This project has lead me to want to peruse a career in medical sciences. I encourage all students to get involved in doing a project like this because it opens many doors for the future and it is a great learning experience.

#### Awards

#### Value

Excellence Award - Intermediate - Silver Medal Sponsor: Youth Science Canada	
Western University Scholarship Silver Medallist - \$2000 Entrance Scholarship Sponsor: Western University	\$2 000
Total	\$2 000