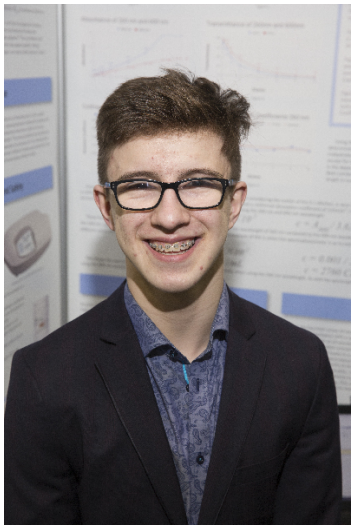
# CWSF 2019 - Fredericton, New Brunswick



## Lucas Crupi

### Spectrophotometry for Concentration Testing on E. coli Using Relative Absorbance

**Challenge:** Innovation
**Category:** Intermediate
**Region:** Northwestern Ontario
**City:** Thudner Bay, ON
**School:** St. Ignatius S.S.
**Abstract:** I studied how ultraviolet light reacts when it passes through E. coli. A formula was made to find how much E. coli is in water if how much light passes through is known. It is interesting because a lower wavelength can detect lower amounts of E. coli. This is important because trace amounts of E. coli is a sign of fecally contaminated water.

## Biography

I attend Saint Ignatius High School in the city of Thunder Bay. My passion is both for biology and computer aided design (CAD). I remember reading biology books since the age of 5. As well I am the youngest certified expert in the CAD program Solidworks in the world. This has opened many opportunities such as travelling to their world conference in Dallas. The first inspiration for my project came when doing a school project on environmental issues facing the world. I read in a World Health Organization web article that over 2 billion people are using water sources contaminated with feces. There are two main things I plan on doing to further my research. Firstly I want to do testing with a variety of wavelengths (190 - 600 nm) such that the absorbance at all wavelengths are known. As well I am working on a mobile device to detect E. coli in water with formulas derived in my project. My advice for students thinking about doing about a project is to just start with something you like. Starting something is half the job and if you like what you are pursuing the other half will be a cake walk.

| Awards | Value |
|---|---|
| Excellence Award - Intermediate - Bronze Medal<br>Sponsor: Youth Science Canada | |
| Western University Scholarship<br>Bronze Medallist - $1000 Entrance Scholarship<br>Sponsor: Western University | $1 000 |
| Total | $1 000 |