

# CWSF 2017 - Regina, Saskatchewan



## Janani Venkat

### Antibacterial Effects of Microemulsified Essential Oils & Chitosan Nanoparticles

**Challenge:** Health

**Category:** Junior

**Region:** Halifax

**City:** Bedford, NS

**School:** Bedford Academy

**Abstract:** Antibiotic resistance of bacteria and low bioavailability of many drugs are serious problems. Nano-sized microemulsions of three essential oils were created to address these problems. The antibacterial efficacy of the three essential oils, microemulsions, and combinations with chitosan nanoparticles were tested using the Kirby-Bauer assay. The findings show that microemulsions of essential oils could be a potential solution to both antibiotic resistance and low bioavailability.

#### Biography

Hi, my name is Janani Venkat, and I'm a grade 8 student at Bedford Academy in Bedford, Nova Scotia. I like to read, draw, and dance. I dance ballet and bharatanatyam, an Indian classical dance, for 6 hours each week. This is my eleventh year of dancing ballet, and I recently earned my pointe shoes. I was inspired to do this project when I heard that antibiotic resistance causes 700,000 deaths each year, but there is no solution. I was curious and researched more, and this led me to do a science fair project that found a potential solution to antibiotic resistance and might save many lives in the future. I won two Medals of Excellence, Best Junior Biology, and Best (Human) Health Project at my regional science fair for my work over the past two years. I also won an honourable mention in the Exploravision Science Fair, and placed 32nd in the international Caribou Mathematics Competition. I like many different subjects at school, but science is definitely my favourite. I love learning how things work and have always been interested in microorganisms, such as bacteria. I'd like to be a microbiologist or biomedical engineer. Can't wait for CWSF!

#### Awards

#### Value

Excellence Award - Junior - Gold Medal Sponsor: Youth Science Canada	\$250
Western University Scholarship Gold Medallist - \$4000 Entrance Scholarship Sponsor: Western University	\$4 000
<b>Total</b>	<b>\$4 250</b>