

## CWSF 2009 - Winnipeg, Manitoba



### Leah Natalie Rosetti

#### Designing a Novel SAM Mimic as an Inhibitor of AHL Synthase

**Division:** Biotechnology / None

**Category:** Senior

**Region:** Niagara

**City:** Thorold, ON

**School:** Denis Morris High School

**Abstract:** Quorum sensing occurs in *Pseudomonas aeruginosa* as a result of the synthesis of 3-oxo-C12-acyl-homoserine lactone (AHL), a messenger chemical. Inhibition of quorum sensing was examined by creating a mimic of the AHL substrate S-adenosyl methionine using computational methods. This generated two likely candidates, acycloantiquosensinA and antiquosensinA, which promise to guide the synthesis of an antibiotic to make pneumonia and other bacterial infections more treatable.

#### Biography

I am a proud resident of Thorold, yoga fiend, outspoken volunteer, pancake making goddess, and backyard scientist. Throughout high school I've tried to gain as much of a saturated experience as possible, leading me to act in the Sears Drama Festival, and as a devoted (and massively competitive) participant with Reach for the Top. I am one of the founding members of my city's Mayor's Youth Advisory, and currently serve as co-mayor, organizing events and promoting volunteerism for young people in the region. My love of science has been amassed through several amazing experiences with exceptionally patient mentors, namely in engineering at General Motors, physics research at Mount Allison University and computational chemistry research at Brock University. Since 2007 I have volunteered and fundraised with the Wells of Hope Organization and had the opportunity to travel to Guatemala for a short term mission building homes and teaching English. This stands out as my most formative experience yet. As a National Millennium Excellence Award Winner and Bell Scholar I will be attending Mount Allison University in the fall to study chemistry, with the eventual goal of becoming a doctor for MSF.

#### Awards

#### Value

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| The Canadian Society for the Weizmann Institute of Science Scholarships<br>The Maurice Pollack Foundation Scholarship<br>Sponsor: The Canadian Society for the Weizmann Institute of Science (Weizmann Canada) | \$9 400         |
| The University of Western Ontario Scholarship<br>Bronze Medallist - \$1000 Entrance Scholarship<br>Sponsor: University of Western Ontario                                                                      | \$1 000         |
| University of Ottawa Entrance Scholarship<br>Senior Bronze Medallist - \$1000 Entrance Scholarship<br>Sponsor: University of Ottawa                                                                            | \$1 000         |
| Bronze Medal - Biotechnology & Pharmaceutical Sciences - Senior<br>Sponsor: Youth Science Canada                                                                                                               | \$300           |
| <b>Total</b>                                                                                                                                                                                                   | <b>\$11 700</b> |