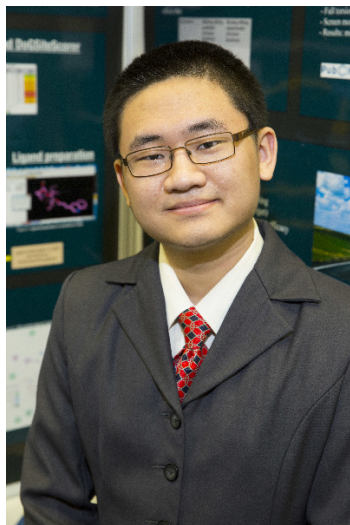


# CWSF 2014 - Windsor, Ontario



## Edward Wang

### Identification of FtsW Lipid II Flippase Inhibitors using Computational Virtual

**Challenge:** Discovery

**Category:** Senior

**Region:** Peel

**City:** Mississauga, ON

**School:** Port Credit S.S.

**Abstract:** Using molecular docking, potential antibiotics are screened in silico which target the FtsW Lipid II translocase, an facilitated diffusion flippase involved in transporting cell wall peptidoglycan precursors across the bacterial inner membrane, resulting in a powerful antibiotic with a novel action mechanism. Preliminary results suggest the theoretical existence of such inhibitors, although further experimental work to confirm the binding prediction are necessary.

#### Biography

Edward Wang is a Grade 12 student attending the SciTech program at Port Credit S.S. A self-motivated, self-directed and independent problem solver, he has been a two-time veteran at the Canada-Wide Science Fair, winning silver in 2012 and gold in 2013. He was one of the Grand Prize Winners of the Google Code-In 2012 competition as well as Gold medallist in the 2012 Virtual Robotics challenge at the Ontario Technological Skills Challenges. During his spare time, Edward is also involved as one of the lead developers of the VLC for Android port. This year, he has decided to try a new theme for his project and as a result decided to do this virtual screening project. After reading reports on the news about the development of antibiotic resistance, Edward researched and found out about the advances of modern medicine that we would lose if antibiotics were lost. As a result, he became interested in molecular and microbiology and after some searching this project was created.

#### Awards

#### Value

Excellence Award - Senior - Bronze Medal Sponsor: Nuclear Waste Management Organization	\$100
University of Ottawa Entrance Scholarship Senior Bronze Medallist - \$1000 Entrance Scholarship Sponsor: University of Ottawa	\$1 000
Western University Scholarship Bronze Medallist - \$1000 Entrance Scholarship Sponsor: Western University	\$1 000
<b>Total</b>	<b>\$2 100</b>