

# CWSF 2019 - Fredericton, New Brunswick



## Amal Aziz

### Smart Photo-Active Trojan Horse Nanoparticle for Alzheimer's Vascular Therapy

**Challenge:** Innovation

**Category:** Senior

**Region:** Thames Valley

**City:** London, ON

**School:** Sir Wilfrid Laurier S.S.

**Abstract:** The major obstacle current neuroactive drugs face is their impaired penetration through the blood-brain barrier (BBB). Use of a novel photoactive drug that utilizes a Trojan horse as a BBB carrier could have significant clinical impact in reducing the active A $\beta$  polymerization and increasing target specificity in deep-brain neurons in Alzheimer's patients' brains.

#### Biography

Amal is enrolled in the enrichment program at Sir Wilfrid Laurier S.S. Amal always tries to be a positive role model, whether it is through achieving distinctions in 13 high school courses or assisting scientists/clinicians research Duchenne muscular dystrophy. Amal has been placed first in The Royal Legion Remembrance Day Poster Contest, second in The Royal Canadian Legion Speech Competition, received Outstanding Achievement award in the Gauss Contest, published a poem in the Polar Expressions poetry collection, and been selected to attend the Leadercast Live event by Laurier. Being the head of Laurier's Robotics Media Team, Amal promotes events that bring awareness to a social issue and encourages elementary students to pursue their interest in STEM-related fields. Lastly, Amal has come up with multiple solutions to reduce elderly suffering. The potential of which has been recognized by various regional and national forums, such as the Thames Valley Science Fairs, Canada-Wide Science Fairs, and the Sanofi Competitions, winning her gold, best in life sciences, best in fair, special awards, several guest speaker invitations, and interview requests.

#### Awards

#### Value

Excellence Award - Senior - Gold Medal Sponsor: Youth Science Canada	
Dalhousie University Faculty of Science Entrance Scholarship Senior Gold Medallist - \$5000 Entrance Scholarship Sponsor: Dalhousie University, Faculty of Science	\$5 000
UBC Science (Vancouver) Entrance Award Senior Gold Medallist - \$4000 Entrance Scholarship Sponsor: The University of British Columbia (Vancouver)	\$4 000
University of Manitoba Entrance Scholarship Senior Gold Medallist - \$5000 Entrance Scholarship Sponsor: University of Manitoba	\$5 000
University of New Brunswick Canada-Wide Science Fair Scholarship Gold Medallist - \$5000 Entrance Scholarship Sponsor: University of New Brunswick	\$5 000
University of Ottawa Entrance Scholarship Senior Gold Medallist - \$4,000 Entrance Scholarship Sponsor: University of Ottawa	\$4 000
Western University Scholarship Gold Medallist - \$4000 Entrance Scholarship Sponsor: Western University	\$4 000
<b>Total</b>	<b>\$27 000</b>