

# CWSF 2018 - Ottawa, Ontario



## Amal Aziz

### A Switchable, Dual-Functioning Trojan Horse for Alzheimer's Disease Photothera

**Challenge:** Innovation

**Category:** Senior

**Region:** Thames Valley

**City:** London, ON

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

**Abstract:** Blood-brain barrier drug delivery problems of existing neuropharmaceuticals can be solved using genetically engineered molecular Trojan horses. A novel tailor-made Trojan horse drug that quickly switches into an aggressive molecule to destroy even the residual amyloid plaques could be more effective than any known drug thus far developed for Alzheimer's disease.

#### Biography

Amal is enrolled in the enrichment program at Sir Wilfrid Laurier S.S. She enjoys reading, graphic designing, and playing the viola and piano. Amal has won a few honors/awards from the Gauss Contest, the Canadian Royal Legion Speech Contest, the Thames Valley Science and Engineering Fair, the Canada Wide Science Fair, and the Sanofi Biogenius Competition. In her project, Amal proposes that the blood-brain barrier drug delivery problems of existing neuropharmaceuticals can be solved using genetically engineered molecular Trojan horses. A novel, tailor-made, photoactive, Trojan horse drug that quickly switches into an aggressive molecule to destroy even residual amyloid plaques could be more effective than any other known drug developed for Alzheimer's disease thus far.

#### Awards

#### Value

Youth Can Innovate Awards - Senior Sponsor: The Gwyn Morgan and Patricia Trottier Foundation	\$1 000
Excellence Award - Senior - Gold Medal Sponsor: Youth Science Canada	
Carleton University Entrance Award Senior Gold Medallist - \$4,000 Entrance Award Sponsor: Carleton University	\$4 000
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 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>