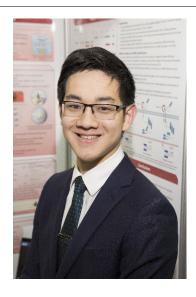




## CWSF 2019 - Fredericton, New Brunswick



## **Charley Cai**

Chagas Disease: Decoding Vector-Based Pathogen Recognition

Challenge: Discovery Category: Senior

**Region:** Greater Vancouver **City:** Burnaby, BC

School: Burnaby North Secondary

**Abstract:** Chagas disease is a human tropical disease commonly spread by kissing

bugs. While this insect can defend itself from some pathogens, the Chagas parasite seems to elude its immune system. This project investigated new components within kissing bug's immune system and determined their role in pathogen recognition. This knowledge may help future scientists exploit the insect's immune mechanisms to reduce the transmission of the disease.

## **Biography**

Charley is a concurrent student and volunteer researcher at Simon Fraser University while completing his studies as a grade 12 student in Burnaby. Although Charley has had a keen interest in many fields of science, his passion for Molecular Biology and academic research stemmed from his prior experience at the University of California, Santa Barbara where he explored the genetic basis for ribosome biogenesis in nematode C. elegans as well as his ongoing project investigating immunology in Rhodnius prolixus. Outside the laboratory, he enjoys helping other people as an academic and piano tutor, in addition to helping the impoverished in Vancouver through founding his branch of the Hygiene for the Homeless charity organization in Burnaby. Furthermore, he enjoys music and sports, playing percussion, piano, badminton and glides recreationally in his free time. As he progresses into post-secondary education, Charley hopes to continue his research endeavours and wishes to pursue a MD/Ph.D. as a physician-scientist.

Awards	Value
Canadian Young Researcher Award - Senior	\$1 000
Sponsor: Canadian Science Publishing and STEM Fellowship	
Excellence Award - Senior - Silver Medal	
Sponsor: Youth Science Canada	
Dalhousie University Faculty of Science Entrance Scholarship	\$2 500
Senior Silver Medallist - \$2500 Entrance Scholarship	
Sponsor: Dalhousie University, Faculty of Science	
UBC Science (Vancouver) Entrance Award	\$2 000
Senior Silver Medallist - \$2000 Entrance Scholarship	
Sponsor: The University of British Columbia (Vancouver)	
University of New Brunswick Canada-Wide Science Fair Scholarship	\$2 500
Silver Medallist - \$2500 Entrance Scholarship	
Sponsor: University of New Brunswick	
University of Ottawa Entrance Scholarship	\$2 000
Senior Silver Medallist - \$2000 Entrance Scholarship	
Sponsor: University of Ottawa	
Western University Scholarship	\$2 000
Silver Medallist - \$2000 Entrance Scholarship	
Sponsor: Western University	
Total	\$12 000





Youth Science Canada

