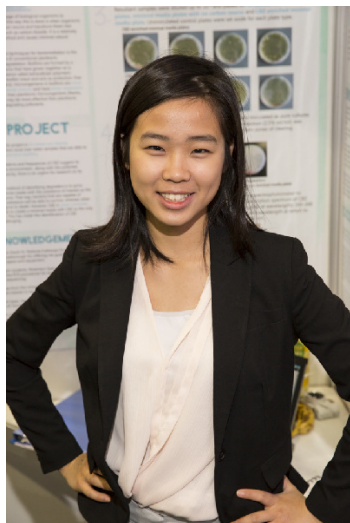


CWSF 2015 - Fredericton, New Brunswick



Nicole Zhao

Identification of Carbamazepine Degraders

Challenge: Discovery

Category: Senior

Region: York

City: Markham, ON

School: Markville S.S.

Abstract: The antiepileptic drug carbamazepine (CBZ) is the most frequently detected pharmaceutical pollutant in the Great Lakes Basin. CBZ can trigger allergic reactions that may lead to severe skin and organ damage. Bioremediation uses biological organisms to biodegrade pollutants. This project aims to find naturally occurring bacteria in the Great Lakes Basin that could biodegrade CBZ. Microbacterium oxydans was identified as a putative degrader.

Biography

Nicole Zhao is a grade 11 student at Markville Secondary School. Her passions lie in environmental science and developing the world in a sustainable way. She was inspired to research environmental issues due to pollution in rivers that were once pristine during her childhood. Environmental issues always strike on a global scale; thus, she believes that it is important for today's scientists to have a global perspective when dealing with pressing environmental issues. Impact change requires the united effort of global industry leaders and government policy makers; thus, she encourages young people to foster the skills of a global leader. She believes that working together with the environment and employing sustainable developments and innovations is the only way that we can sustain the prosperity and advancements that we make today. She is inspired by nature, which, to quote Alexander McQueen, "is the best designer"; thus, she believes in looking to nature for design inspiration as well as solutions to some of our biggest problems. She is honored to be able to pursue scientific research, and she is very thankful that science fairs gave her the opportunity to discover her passion.

Awards

Value

Canadian Stockholm Junior Water Prize - Senior Sponsor: Canadian WEF Member Associations, the Canadian Water and Wastewater Association, and Jacobs	\$2 000
Excellence Award - Senior - Bronze Medal Sponsor: Youth Science Canada	
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
Total	\$4 000