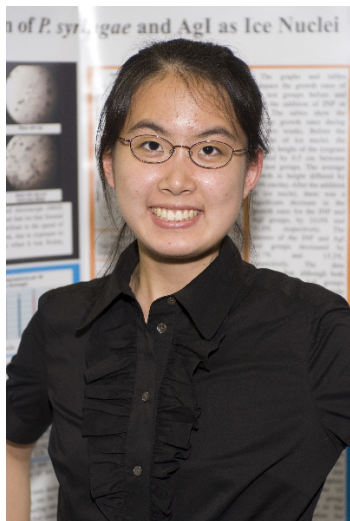


CWSF 2009 - Winnipeg, Manitoba



Mary Zhao

Grasping Water

Division: Engineering & Computing Sciences / Environmental Innovation

Category: Senior

Region: Greater Vancouver

City: Vancouver, BC

School: Sir Winston Churchill Secondary

Abstract: This project explores a novel weather modification method: replacing the current ice nucleator AgI with the Ice Nucleating Protein (INP) of *P. syringae* in cloud seeding. Replacing AgI is crucial because silver ions inhibit microorganisms' growth. AgI and INP's effects on the nitrogen intake of ryegrass and catalyzing of ice nucleation were examined. Results indicate that INP is an environmentally-friendly and commercially-viable alternative for AgI.

Biography

I am a grade 11 student in the International Baccalaureate program at Sir Winston Churchill Secondary School. I love the sciences, especially biology, because I am intrigued by the fascinating array of possibilities that science offers. I hope to enter the biomedical field. In school, I am in a variety of clubs. I am a columnist, secretary, and senior editor of the school science journal Big Bang and a member of the peer tutor club. I was a member of the Model UN club and the school orchestra in the past four years. I have participated in a variety of contests, including placing 5th in Canada for the North American Computational and Linguistics Olympiad and ranking in the top quarter for the Pascal and Cayley math contests. I was selected to write the DNA Day essay and the National Council of Teachers of English essay contests. In my spare time, I play music, read, draw, and swim. I enjoy studying different languages and have obtained Diploma of Studies in French. I am currently working towards my Teacher's diploma with the Royal Conservatory of Music. In the future, I hope to travel around the world and share my passion for science.

Awards

Value

Canadian Stockholm Junior Water Prize Sponsor: Canadian WEF Member Associations, the Canadian Water and Wastewater Association, and Jacobs	\$2 000
The Manning Innovation Achievement Award Sponsor: Ernest C. Manning Awards Foundation	\$500
Dalhousie University Faculty of Science Entrance Scholarship Senior Silver Medallist - \$2000 Entrance Scholarship Sponsor: Dalhousie University, Faculty of Science	\$2 000
UBC Science (Vancouver) Entrance Award Senior Silver Medallist - \$2000 Entrance Scholarship Sponsor: The University of British Columbia (Vancouver)	\$2 000
The University of Western Ontario Scholarship Silver Medallist - \$1500 Entrance Scholarship Sponsor: University of Western Ontario	\$1 500
University of Ottawa Entrance Scholarship Senior Silver Medallist - \$3000 Entrance Scholarship Sponsor: University of Ottawa	\$3 000
Honourable Mention - Environmental Innovation - Senior Sponsor: EnviroExpo, Presented by VIA Rail Canada	\$100
Silver Medal - Earth & Environmental Sciences - Senior Sponsor: Petro-Canada	\$700
Total	\$11 800