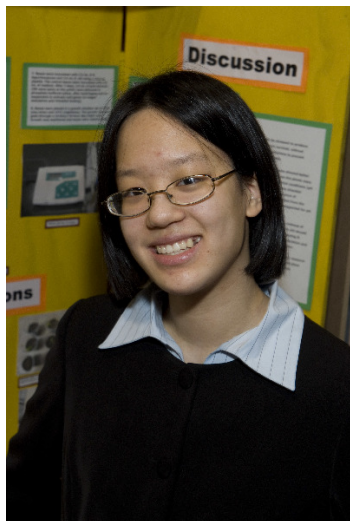


CWSF 2008 - Ottawa, Ontario



Grace Wang

"Sour Soil": the resiliency of nitrogen fixation capabilities of Rhizobia in a

Division: Engineering & Computing Sciences / None

Category: Senior

Region: South Fraser

City: Surrey, BC

School: Johnston Heights Secondary

Abstract: Nitrogen (N₂) deficiencies in plants reduce crop yields. The Haber-Bosch process converts N₂ to plant-utilizable compounds, but burns fossil fuels. Rhizobia can convert N₂ for legumes while raising soil N₂ levels. Comparing two species of rhizobia, the experiment concludes *Rhizobium leguminosarum* performs greater nitrogen fixation within acidic/alkaline soil conditions in symbiosis with *Phaseolus vulgaris*, and has the potential to become a replacement for nitrogen fertilizers.

Biography

Grace Wang is a grade 11 student at Johnston Heights Secondary in Surrey, British Columbia. A member of her school's KIVA club (which helps to raise funds for entrepreneurs in developing nations) and of her school's "REACH" student council/global issues group, Grace enjoys helping to tackle social issues. She believes that science truly holds some of the answers to the world's most complicated problems, and would like to major in Biology for post-secondary studies. Aside from science, Grace co-founded and leads her school debate team, which qualified and competed in the BC Provincial Debate Championships/Law Foundation Cup, despite it being the club's inaugural year! She and her partner ranked 6th in the province for this tournament. Grace is also an active volunteer in Surrey, and a member of the city's Youth Council.

Awards

Value

Agriculture and Agri-Food Award - Senior Sponsor: Youth Science Foundation Canada	\$1 000
The University of Western Ontario Scholarship Bronze Medallist - \$1000 Entrance Scholarship Sponsor: University of Western Ontario	\$1 000
University of Ottawa Entrance Scholarship Senior Bronze Medallist - \$1000 Entrance Scholarship Sponsor: University of Ottawa	\$1 000
Bronze Medal - Earth & Environmental Sciences - Senior Sponsor: Petro-Canada	\$300
Total	\$3 300