



## Waterloo-Wellington Science & Engineering Fair 2010 Annual Report

### Developing Environmental Advocates & Researchers

The theme for our afternoon program in 2010 was *No Time to Waste*. Junior exhibitors attended workshops on landfill design, recycling myths, problems with plastic and home waste audits, and participated in a tour to the Waterloo Region landfill & recycling centre. Secondary exhibitors lunched with graduate students and visited labs at UW and UG.

### In the Community

Several of our senior exhibitors organized Science Expo 2010, an evening to advocate for science opportunities, to about 100 younger students.

Two groups of youth participated in Science Rendezvous at Stone Road Mall, and on campus at UG.

WWSEF exhibitors wowed supporters at 2 Optimist meetings.

### International Showcase

Brian Krug, Janelle and Vivienne Tam were selected to the 16-member Team Canada for the International Science and Engineering Fair in San Jose. Janelle and Vivienne won a Third Place award.

Zach Elgood, Leslie Bothwell and Jenny Tian were 3 of 6 Canadians to attend the International Sustainable World (Energy, Engineering, Environment) Project Olympiad in Houston. Zach won a Gold Medal; Lesley and Jenny won a Bronze.

Brian Krug and others also entered the Sanofi-Aventis BioGENEious Challenge. Brian won the Regional competition, came second in the National competition in Ottawa and was 1 of the 14 to attend the International competition in Chicago.

### Distinguished Service Award

Arthur Prudham, a member of our council for over 20 years, was a recipient of the Distinguished Service Award from Youth Science Canada. Arthur is the 4<sup>th</sup> WWSEF volunteer to receive this recognition.

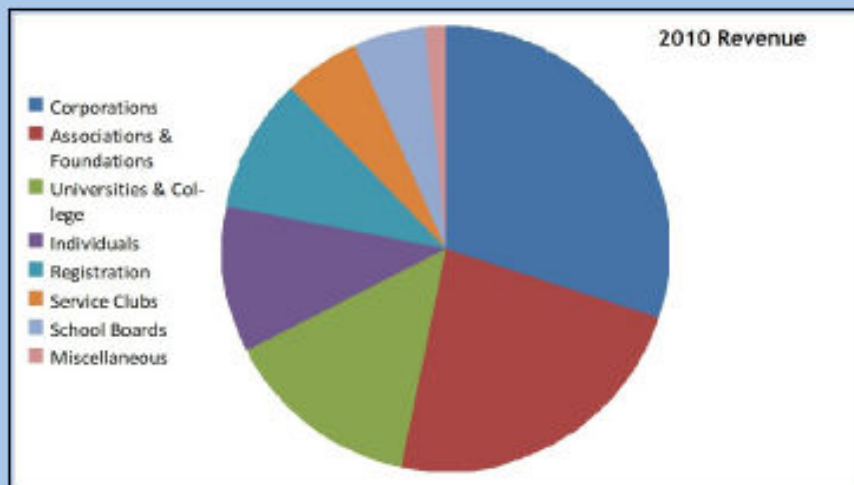
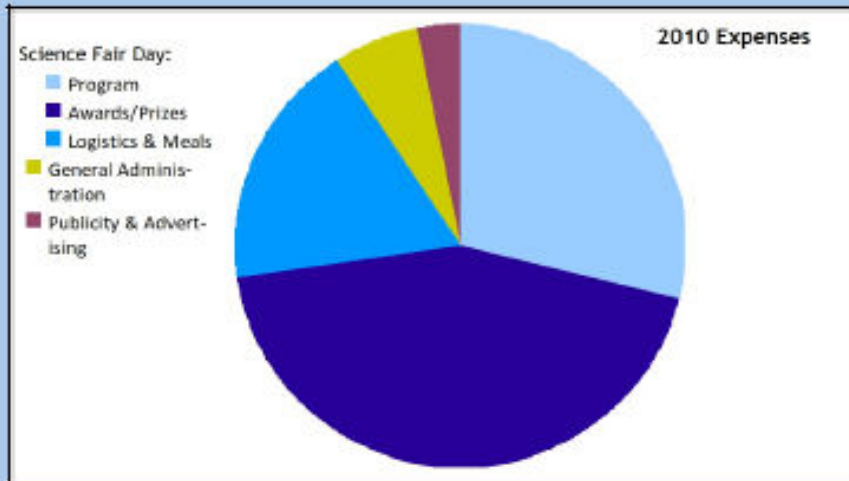
Visit us on the web at  
[www.wwsef.ca](http://www.wwsef.ca)



Youth Science Canada  
Sciences jeunesse Canada

WWSEF is affiliated with Youth Science Canada

# 2010 Financials...



## Canada-Wide Science Fair Peterborough...



Mackenzie Carter, Maryhill, St. John's Kilmarnock School  
*STOL 'n' Lift*

This project tested a new wing design that augmented short take off and landing characteristics for aircraft by redirecting high velocity air from the engines over top of the wings. The effect of the design on both thrust and lift were tested to determine that the stall speed of any aircraft can be greatly reduced.

Gold Medal, Senior Engineering, \$1500

Entrance Scholarships: University of Ottawa \$20,000,  
University of Western Ontario \$4000, Dalhousie University  
\$4000, Perimeter Institute International Summer School for  
Young Physicists



Jenny Tian and Leslie Bothwell, Guelph, Centennial CVI

*The Relation of Total Resistant Starch Concentration in Potatoes*

This project determined the effects of variations in environmental conditions to the resulting concentrations of resistant starch in the potatoes tested. Results indicated that refrigerated potatoes contained higher resistant starch and slowly digestible starch content.

Honourable Mention, Senior Biotechnology & Pharmaceutical  
Sciences



**Sofia Oke & Noorain Shethwala, Guelph, Centennial CVI**  
**Chemosensitizers: The Answer to Cancer**

This project aimed to reduce the overall side effects of chemotherapy drugs by lowering the dosage of drug used. A BAX tumour suppressor gene and a fowl adenovirus were used as chemosensitizers to induce apoptosis in colon cancer cells. This showed that chemotherapy side effects can be lowered if patients are administered drugs in tandem with a functional BAX gene or a fowl adenovirus.

Sofia has been named one of Canada's Top 20 under 20.  
Bronze Medal, Senior Health Science \$300  
Entrance Scholarships: University of Western Ontario \$1000,  
University of Ottawa \$1000

**Zach Elgood, New Hamburg, Cameron Heights CI**  
**Methane Production & Removal in a Denitrifying Streambed**  
Denitrifying bioreactors are efficient methods of removing surface water nitrate in agricultural areas. This study demonstrated a method for limiting methane emissions from a stream bed reactor.

Bronze Medal, Earth & Environmental Sciences \$300  
University of Western Ontario Entrance Scholarship \$1000



**Steven Liu & Kevin Peng, Waterloo, Centennial PS**  
**Stick It to the Man**

The strength of different adhesives were investigated, including our all-natural and edible glue, GLeu, composed of 3 active ingredients: water, sugar and mochiko (sweet flour rice). Once microwaved, a translucent paste is created that showed a 1.5N advantage over LePage's children's glue.

**Daniel Moholia, Kitchener, Cameron Heights CI**  
**Solar Wind Hybrids**

The Solar Wind Hybrid is a wind turbine with solar cells on its blades designed to harness the energy of the wind as well as the sun in an efficient way.



*Science Fairs have allowed me to work on projects of my interest and to share my love of science with the larger community.*

*-Zach Elgood*