



Toronto student wins Manning Innovation Achievement Award at 2014 Canada Wide Science Fair

WINDSOR, ON (May 15, 2014) -- A successful Science Fair effort to co-synthesize two valuable biofuels resulted in a 68 per cent increase in the production of ethanol, a fuel additive that has been growing in commercial use. It also earned 17 year-old Grade 12 Havergal College student **Mikaela Preston**, of North York, Ontario, a \$500 cash prize as one of eight Manning Innovation Achievement Award winners at the 53rd annual Canada Wide Science Fair held this week at the University of Windsor.

Mikaela also won the Senior Excellence Gold Medal, as well as the Renewable Energy Award; the Challenge Award, and six offers of university entrance scholarships.

“Acetic acid is a common inhibitor of the enzymatic-hydrolysis of paper waste products into bioethanol by yeast,” explained Mikaela. “Purple non-sulphur bacteria (PNSB) can consume acetic acid and produce hydrogen, another biofuel. In this project, these two organisms were co-cultured to remove the acetic acid inhibition, increase ethanol production, and co-synthesize two valuable biofuels. When the yeast was cultured with the bacteria, ethanol production increased up to 68 per cent.”

Mikaela designed and built her own reactors and incubators from scratch to help co-synthesize the two biofuels with the use of yeast and PNSBs. This project has the potential to create valuable biofuels that are more powerful than gasoline using natural organisms. Up until now, environmentally harmful chemicals are used to clean the waste or very slow fungal solutions which require money, extra effort and a lot of time. The use of PNSBs and yeast together greatly decreases the time and effort required and has minimal costs. From the production of the biofuels, this also reduces the need for using crops as a source of biofuels.

This year the Canada Wide Science Fair brought together 463 young scientists in grades 7-12 to compete for close to \$1 million in cash, prizes and scholarships and to showcase bright minds that are innovating for Canada.

“Canada’s economic and social future depends on the proper investment and mentorship of young innovators who are emerging visionaries and change agents. The encouragement of organizations like Youth Science Canada and the Ernest C. Manning Innovation Awards Foundation is a fundamental commitment to the realization of the economic and social opportunities that innovative minds create for Canada, and indeed globally, starting with our youngest innovators. We are pleased to be recognizing and fostering that mindset among Canadian youth,” said Jennifer Diakiw, president, Ernest C. Manning Innovation Awards Foundation.

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The Ernest C. Manning Innovation Awards Foundation introduced its Young Canadian Program in 1992 to recognize innovative Canada-Wide Science Fair projects. Each year a judging team selects eight winning projects, four of which earn the \$4,500 Manning Young Canadian Innovator Awards, and four others earn \$500 Manning Innovation Achievement Awards. For more information about the Foundation and its awards visit www.manningawards.ca Follow on Twitter @ManningAwardsCA Like on Facebook/Manning Awards.

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