



## CWSF 2011 - Toronto, Ontario



## **Biography**

My name is Ella Thomson. I am 15 years old and live in Winnipeg, Manitoba. For as long as I can remember I have had a keen interest in science. I began participating in science fairs at the age of 11. Since then, I have entered numerous competitions, such as the Manitoba Schools Science Symposium and the Biotechnology Challenge. I received a scholarship awarded to the student who has contributed the most to the science program. Recently, I discovered my fascination with the field of biotechnology and its applications in sustainability. For the past 3 years I have been working with mentors in the Biotechnology department labs at the University of Manitoba. I have been thoroughly enjoying the experience, and having the opportunity to work with advanced equipment and knowledgeable graduate students and professors. This past summer, I also held a job at the University of Manitoba and worked as a lab assistant in the Microbiology and Biotechnology labs. My goals for the future are to obtain a degree in medicine, and then move on to become a biomedical researcher. Apart from science, I partake in several other activities including debate and public speaking, piano, tennis and highland dance.

## Ella Thomson

## **Genetic Modification of Clostirdium thermocellum for Improved Biofuels Production**

Challenge: Energy Category: Intermediate

Region: Manitoba Schools Science Symposium

City: Winnipeg, MB

School: Balmoral Hall School

**Abstract:** Biofuel production in Clostridium thermocellum was enhanced by genetic

modification. Plasmids were extracted from E-coli, PFL gene was knocked out of plasmids. The plasmids were reintroduced into E-coli and were transferred into Clostridium thermocellum by conjugation. The ethanol, formate, lactate and acetate production was measured. The gene increased the amount of ethanol produced and can be used for enhanced biofuels

production in Clostridium thermocellum.

Awards	Value
Excellence Award - Intermediate - Bronze Medal	\$300
Sponsor: Youth Science Canada	
The University of Western Ontario Scholarship	\$1 000
Bronze Medallist - \$1000 Entrance Scholarship	
Sponsor: University of Western Ontario	
Total	\$1 300





