

## CWSF 2014 - Windsor, Ontario



### Alicia Macmillan

#### Microbial Fuel Cells

**Challenge:** Energy

**Category:** Senior

**Region:** Chignecto West

**City:** Brookfield, NS

**School:** South Colchester Academy

**Abstract:** Microbial fuel cells are an emerging technology which produce electricity and clean wastewater simultaneously. The conventional electrode material used in microbial fuel cells, platinum, is toxic to several microbes and overly expensive, which limits practical use. Aluminum, steel and stainless steel were tested in this experiment to try to determine a practical alternative to platinum.

#### Biography

I am Alicia Macmillan, a grade eleven student at South Colchester Academy, in Brookfield, Nova Scotia. I play soccer and basketball on my school teams and am also on the track and field team. I am a member of my school's Interac Club and was recently nominated as the female recipient of the Lieutenant Governor's Award for my school. Outside of school I figure skate, and volunteer with the Truro Figure Skating Club to teach Canskate. The inspiration for my project came from my interest in renewable energy sources, and during my investigation into that field I found out about microbial fuel cells, which immediately caught my attention. In further investigation I would like to experiment with more anode/cathode materials, to determine if other metals are more efficient. To any students thinking about doing a science fair project I would say that it is an incredibly rewarding experience, and opens so many doors. It is a lot of work but it is definitely worth it!