

# CWSF 2017 - Regina, Saskatchewan



## Charles Wang, Spencer Zezulka

### Solar-Powered Production of Clean Fuel by the Fermentation of *C. acetobutylicum*

**Challenge:** Energy

**Category:** Senior

**Region:** South Fraser

**City:** Surrey, BC

**School:** Semiahmoo Secondary, Elgin Park Secondary

**Abstract:** The need for a source of clean energy is a pervasive one. Our project seeks to do so through the bio-systemic manipulation of a photosynthetic biomass source and a metabolizing agent to produce carbon-neutral fuel. Possible applications of this project, especially because of its highly-scalable nature include the cleaning of the atmosphere by sequestration of carbon dioxide, or the production of return fuel for Mars.

#### Biographies

Charles - Hi! My name is Charles Wang, and I am a grade 11 student at Semiahmoo Secondary. I am also in the full IB program, so my daily hobbies include doing homework and cramming even more homework. In addition, I also enjoy bugging my partner, Spencer Zezulka, about working on our project. The inspiration for our project came from many sources. This includes an article by the University of Berkeley and also a video about Elon Musk's plan to colonize Mars. After CWSF, we plan to conduct more specific studies, and also improve our system. Because our current design is just a prototype, there is definitely a lot of room to improve. As for my long term ...

Spencer - Hi there! My name is Spencer. I'm currently in Grade 11 at Elgin Park Secondary, in Surrey, British Columbia. I love science (obviously), and I hope to major in physics or biomedical engineering after I (hopefully :3) graduate. In my spare time, I like to look at memes and play piano. In fact, I got the inspiration for my project during the latter, as most of my ideas do. I find piano very peaceful, a place where I can meditate and concentrate, and a place that is free from the oppressive shackles of internet-induced procrastination. For anyone planning to do a project, I suggest he or she does something he or she is passionate about; the mor...

#### Awards

#### Value

Youth Can Innovate Awards - Senior Sponsor: The Gwyn Morgan and Patricia Trottier Foundation	\$1 000
Youth Can Innovate Awards - Senior Sponsor: The Gwyn Morgan and Patricia Trottier Foundation	\$7 000
Excellence Award - Senior - Bronze Medal Sponsor: Youth Science Canada	
University of Ottawa Entrance Scholarship Senior Bronze Medallist - \$1000 Entrance Scholarship Sponsor: University of Ottawa	\$1 000
Western University Scholarship Bronze Medallist - \$1000 Entrance Scholarship Sponsor: Western University	\$1 000
<b>Total</b>	<b>\$10 000</b>

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