

CWSF 2015 - Fredericton, New Brunswick



Caleb Winder

Fusion + Fission = Future

Challenge: Energy

Category: Intermediate

Region: Lambton County

City: Camlachie, ON

School: St. Clair S.S.

Abstract: The dual purpose of this project was to: A) Construct and operate a working IEC nuclear fusion reactor and, B) Design and theoretically test a sub-critical thorium fusion-fission hybrid reactor that utilized the by-product of the fusion reaction, high energy neutrons. This proposed reactor could be built inexpensively, operate without the risk of meltdown, and could run off a wider variety of fuel sources.

Biography

I'm Caleb Winder, a grade 10 student at St. Clair S. S. in Sarnia, Ontario. This is my second year attending the CWSF. Last year, I won a bronze medal and the Excellence in Astronomy Award for my research on "Star in a Jar", a study of the effects of a specifically designed ion acceleration grid shape on the photon emission intensity of a demonstrative IEC Nuclear Fusion Reactor. Aside from Science Fair, I recently concluded a season playing for the Sarnia Minor Midget AA hockey team and I'm currently on the Michigan Young Guns U15 AA baseball team. I'm a member of the Bluewater Boxing Club. I enjoy participating in the University of Waterloo's math contests (Pascal & Fryer), as well as acting in local school and community theatre productions. I started doing Science Fair projects in Grade 7 after my teacher, Ms. Feniak, encouraged me to participate. My grandfather, Ray Chidley, an instrumentation specialist, has been a great mentor for my projects. In the future, I would like to work with the fusor and the radio isotopes to start designing the mechanical aspects of my innovative design. I'm very excited for the opportunity again this year at CWSF!

Awards

Value

Excellence in Astronomy Award - Intermediate Sponsor: Royal Astronomical Society of Canada	\$750
Excellence Award - Intermediate - Bronze Medal Sponsor: Youth Science Canada	
Western University Scholarship Bronze Medallist - \$1000 Entrance Scholarship Sponsor: Western University	\$1 000
Total	\$1 750