

# CWSF 2014 - Windsor, Ontario



## Max Yuan

### Investigating the Leidenfrost Effect on the Hydrodynamic Efficiency of a Ship

**Challenge:** Innovation

**Category:** Senior

**Region:** Northwestern Ontario

**City:** thunder bay, ON

**School:** St. Ignatius S.S.

**Abstract:** The Leidenfrost effect was tested on a ship's hull to examine increased hydrodynamic efficiency. A testing apparatus with a model ship was constructed and water flow was measured with the Leidenfrost effect. The results showed that the Leidenfrost effect significantly increased hydrodynamic efficiency by 12%. With higher efficiency, ships could use less fuel and save considerable money, thus reducing shipping costs and lowering greenhouse emissions.

#### Biography

My name is Max Yuan and I am from Thunder Bay Ontario, attending St. Ignatius High School in grade 11. I am very interested in science and love to travel. I have traveled throughout Europe, Asia, Africa, and North America. In the future I am planning on attending University, and am interested in a career in the sciences. My inspiration for this project came from the need for new and more efficient modes of transportation. I am very happy to have done well at the Northwestern Regional Science Fair and am very excited for nationals.

#### Awards

#### Value

Excellence Award - Senior - Bronze Medal Sponsor: Nuclear Waste Management Organization	\$100
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>\$2 100</b>