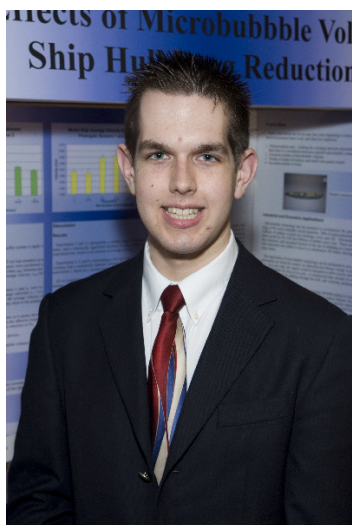


# CWSF 2008 - Ottawa, Ontario



## Mark Stothers

### The Effects of Microbubble Volume on Ship Hull Drag Reduction

**Division:** Health Sciences / Environmental Innovation

**Category:** Senior

**Region:** Greater Vancouver

**City:** Surrey, BC

**School:** Lord Tweedsmuir Secondary

**Abstract:** The effects of streaming five different microbubble volumes along a model container ship hull were assessed. Tests were conducted in a 3.4 m drag tank equipped with digital photogate sensors, and a small blower. Intermediate microbubble volumes of approximately 30-80 ml/sec were found to reduce ship drag by 4%. Hypothesis test of means, and confidence intervals, found these results to be statistically significant.

#### Biography

My name is Mark Stothers, and I am a grade 12 student living in Surrey, BC. I attend Lord Tweedsmuir secondary school. During the past six years science fair has been a major part of my life. In grade 7 I began competing in the GVRSF, and have been enthralled ever since. Science fair has given so much to me; I decided to give back to it, becoming the BC SMARTS Coordinator in June 2007. In this position I have played a crucial role in the creation and development of the SMARTS promotional disc, a key element of future SMARTS promotion across Canada. Sports that I am involved in include Curling, Floor Hockey, Track, and Badminton. This year I skipped my curling team in division 1. In grade 7 I had an amazing band teacher, and have been playing trumpet ever since. In addition, I volunteer my time teaching math students at my school, as well as co-chairing the Causes Committee (supporting Doctors Without Borders) in student's council. I am also the captain of my school's Kwantlen Science Challenge, and UBC Physics Olympics teams.

#### Awards

#### Value

Honourable Mention - Engineering - Senior Sponsor: Youth Science Foundation Canada	\$100
<b>Total</b>	<b>\$100</b>