

# CWSF 2007 - Truro, Nova Scotia



## Mark Thomas Onderwater

### What Makes A Scary Sound Scary?

**Division:** Physical & Mathematical Sciences / None

**Category:** Senior

**Region:** Peterborough

**City:** Lakefield, ON

**School:** Peterborough Collegiate

**Abstract:** More than how loud or sudden a sound is contributes to how scary it is. To further examine what characteristics of a sound induce stress, this experiment tested frequency content. The heart rate of human test subjects was monitored while they were exposed to sound stimuli with the frequency contents altered. It was determined that low frequencies are more effective in inducing stress

### Biography

In my science fair project I was lucky enough to combine my passion for music with my academic interests. My interest in psychology started in an introductory course. As interesting as the psychological experiments we looked at were, they rarely answered why or how these thoughts and behaviors are happening. I found that it was almost repetitive that these experiments were answered by theorizing that humans evolved or were conditioned to have these traits. At the time the only sciences I was taking were chemistry and physics. It wasn't until I took biology that I realized science could sometimes answer the why, but most of all the how of human behavior. Biology quickly became another interest of mine and when combined with psychology I became very interested in the field of Neuroscience. My passion for music started at an early age. It wasn't until I started experimenting with musical recording that I realized like everything, there is science in music. By combining the technical side of music with science, I was able to create a psycho-acoustic perception experiment. Though I enjoyed this experiment, I intend to keep my passion and career separate and study Neuroscience in the future.

### Awards

### Value

Dalhousie University Faculty of Science Entrance Scholarship Senior Gold Medallist - \$4000 Entrance Scholarship Sponsor: Dalhousie University, Faculty of Science	\$4 000
UBC Science (Vancouver) Entrance Award Senior Gold Medallist - \$4000 Entrance Scholarship Sponsor: The University of British Columbia (Vancouver)	\$4 000
The University of Western Ontario Scholarship Gold Medallist - \$2000 Entrance Scholarship Sponsor: University of Western Ontario	\$2 000
Gold Medal - Life Sciences - Senior Sponsor: Pfizer Canada	\$1 500
<b>Total</b>	<b>\$11 500</b>