

# CWSF 2015 - Fredericton, New Brunswick



## Katherine Teeter

### Extracorporeal Sonic Wave Therapy for Inoperable Tumours

**Challenge:** Health

**Category:** Senior

**Region:** Bluewater

**City:** Markdale, ON

**School:** Grey Highlands S.S.

**Abstract:** This project investigated the development of an Extracorporeal Sonic Wave Therapy Device. Audible sound waves were propagated through simulated body tissues from multiple sources to a focal target where constructive wave interference energy amplification degraded cells. Experimental observations, decibel meter measurements, and calculations quantified sound pressures, intensities, and energies to determine the optimum sound wave frequency and device calibration specifications with applications for carcinoma ablation.

#### Biography

My name is Katherine Teeter and I am a grade eleven student at Grey Highlands Secondary School in Flesherton, Ontario. This is my fifth consecutive Canada Wide Science Fair competition and my sixth science fair project. My keen interest in physics and biology led to this year's project, which focussed multiple audible sound wave frequencies onto target cells to inflict degradation. I enjoy being outside, swimming, music, reading, sports and spending time with family and friends. I play clarinet in concert band and piano with the RCM at a grade nine level. I love playing co-ed fastball, girls' hockey and volleyball competitively and recreationally. I enjoy umpiring younger fastball games at my home centre and judging the Bluewater Regional Junior Science Fair. I assist my dad every day on the family farm during the summer. Science fair has and always will continue to positively change my life. My future endeavours may include doctoring or researching.

#### Awards

#### Value

Excellence Award - Senior - Silver Medal Sponsor: Youth Science Canada	
Challenge Award - Health - Senior Sponsor: AstraZeneca Canada	
Dalhousie University Faculty of Science Entrance Scholarship Senior Silver Medallist - \$2500 Entrance Scholarship Sponsor: Dalhousie University, Faculty of Science	\$2 500
UBC Science (Vancouver) Entrance Award Senior Silver Medallist - \$2000 Entrance Scholarship Sponsor: The University of British Columbia (Vancouver)	\$2 000
University of New Brunswick Canada-Wide Science Fair Scholarship Silver Medallist - \$2500 Entrance Scholarship Sponsor: University of New Brunswick	\$2 500
University of Ottawa Entrance Scholarship Senior Silver Medallist - \$2000 Entrance Scholarship Sponsor: University of Ottawa	\$2 000
Western University Scholarship Silver Medallist - \$2000 Entrance Scholarship Sponsor: Western University	\$2 000
<b>Total</b>	<b>\$11 000</b>