

# CWSF 2016 - Montreal, Quebec



## Marvin Giang, Kevin Zheng

### Headphones: A Catalyst or Scapegoat in Adolescent Hearing Loss

**Challenge:** Health

**Category:** Senior

**Region:** Durham

**City:** Oshawa, ON

**School:** O'Neill C.V.I.

**Abstract:** Since the beginning of the 21st century, the popularization of headphones among adolescents is unarguable. This project used a standardized, objective, frequency based-method where hearing ability was determined by the amount of audible tones detected. After analysis of relevant variables such as volume and usage, we determined that there is a strong link between hearing loss and prolonged headphone usage particularly impacting high-frequency hearing ability.

#### Biographies

Marvin - My name is Marvin Giang from O'Neil C.V.I. in Oshawa, Ontario. As a music enthusiast and a heavy user of headphones, I was always curious as to the extent in which headphones impacted my hearing, and whether the symptoms of hearing loss were prevalent in a larger group. With few studies available finding a correlation between usage and hearing damage, we set out to investigate, surprised by this lack of knowledge. We surprised to find a clear link between usage and hearing loss. In the future we wish to further investigate specific model's sound pressure exposure, such as earbuds, noise cancelling headphones etc. For all students considering ...

Kevin - Kevin Zheng is a grade 11 student at O'Neill C.V.I in Oshawa, Ontario. He is an aspiring scientist, passionate debater, and above all an ambitious idealist. Kevin is also the student trustee for the Durham DSB and has proudly served on his school's student council since grade 7. He has a passion for politics and enjoys debating world issues. Kevin has played piano for 9 years and competed provincially as a finalist in OMFA and ORMTA competitions. Kevin's research into acoustics began after a heated debate with his fair partner about whether headphones actually cause hearing loss. As an avid user of headphones for both concentration and relaxa...

#### Awards

#### Value

Canadian Acoustical Association Award - Senior Sponsor: Canadian Acoustical Association	\$1 000
<b>Total</b>	<b>\$1 000</b>