

## CWSF 2016 - Montreal, Quebec



### Emily Isabelle Rafuse, Julia Marie Sampson

#### "E-cigarettes: A Risk Factor for ALS?"

**Challenge:** Health

**Category:** Junior

**Region:** Halifax

**City:** Halifax, NS

**School:** Elizabeth Sutherland School

**Abstract:** E-cigarettes produce up to 10X more formaldehyde than tobacco cigarettes. Formaldehyde is a risk factor for amyotrophic lateral sclerosis (ALS), a disease that kills motor neurons (MNs). We used wild-type MNs and ALS-predisposed MNs to show that low levels of formaldehyde can cause motor neuron death, and that ALS-MNs are more severely affected. These results suggest a possible role for e-cigarettes in triggering ALS.

#### Biographies

Emily Isabelle - Emily Rafuse is in grade 8 French Immersion at Elizabeth Sutherland School in Halifax, Nova Scotia. Her favourite extracurricular activities include riding horses and agility training with her dog. She also has an interest in music, playing piano for the past 10 years and the flute in her school band. Emily and her partner Julia Sampson, working together for the past two years, have won awards for "Passion for Science" and "Best Chemistry", researching the effect of e-cigarettes on motor neurons and ALS. They are now very excited to showcase their work at CWSF. Emily has always been interested in neuroscience, starting from her first ...

Julia Marie - Julia Sampson is a grade 8 student attending Elizabeth Sutherland School in Halifax Nova Scotia. She is 14 years old and has been trained in dance and piano, as well competitive ski racing for the past 10 years. She recently competed in the Kiwanis music festival for voice, and is currently involved in her school musical. Last year Julia and her classmate Emily Rafuse decided to team up for their school's science fair. From there they continued on to the HSTE, where they won 2 excellence medals, a passion for science award and best chemistry project. They'd heard about E-Cigarettes, and after discovering that they contained a lot of formaldeh...

#### Awards

#### Value

The Society of Toxicology Award - Junior Sponsor: The Society of Toxicology	\$500
<b>Total</b>	<b>\$500</b>