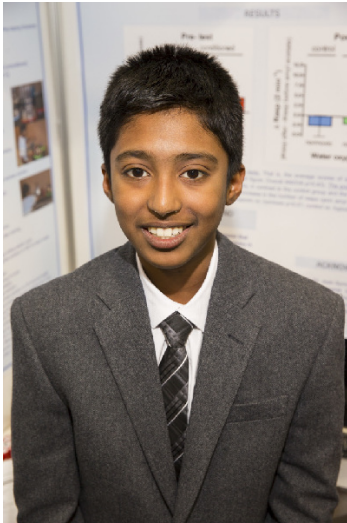


# CWSF 2015 - Fredericton, New Brunswick



## Faris Fizal

### Effect of Hypoxia on Learning and Memory

**Challenge:** Environment

**Category:** Junior

**Region:** Calgary Youth

**City:** Calgary, AB

**School:** Westmount Charter School

**Abstract:** Oxygen plays an important role in general physiological processes including memory formation; therefore hypoxia might impact the latter. The objective of this study was to identify the hypoxic effects on memory in the pond snail, *Lymnaea stagnalis* by conditioning them under normoxic or hypoxic conditions using a non-aversive appetitive learning model. The study revealed that hypoxia improves learning and long-term memory, probably by inducing stress.

#### Biography

I am Faris Fizal, currently in grade eight at Westmount Charter School. I am originally from India, and came to Canada in 2006. I have always been fascinated with science and math, but mainly astronomy. I did my first science fair project on wind turbines in grade four. In grade six, I did an experimental science fair project on airfoils and in grade seven, I experimented on whether or not intelligence is inherited. In grade seven, I also won a science award in school. This year I did experimentation on learning and was selected as one of the finalists to represent Team Calgary and be part of the Canada Wide Science Fair! I am very passionate about science and hope to become an Astrophysicist. I was inspired to do my experiment on learning because of the scarcity of oxygen in our current environment due to carbon emissions. I tested how hypoxia affects learning to see how this affects our society. In future, I would like to find out which other factors affect learning. Lastly, I would like to advise all science fair participants to have a mentor to receive guidance and support.

#### Awards

#### Value

Excellence Award - Junior - Silver Medal Sponsor: Youth Science Canada	
Western University Scholarship Silver Medallist - \$2000 Entrance Scholarship Sponsor: Western University	\$2 000
Total	\$2 000