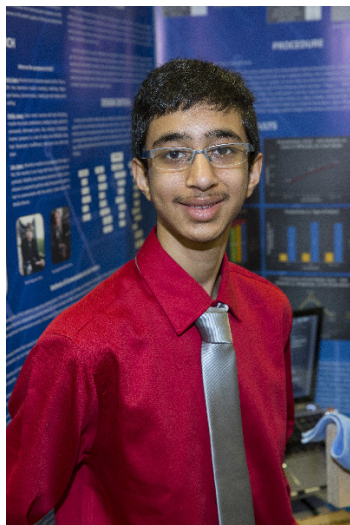


## CWSF 2014 - Windsor, Ontario



### Abhi Gupta

#### iWriter: A Novel Method of Communication for ALS Patients

**Challenge:** Innovation

**Category:** Intermediate

**Region:** Windsor

**City:** Windsor, ON

**School:** Massey S.S.

**Abstract:** As Amyotrophic Lateral Sclerosis (ALS) progresses, the individual loses his independence as well as his connection with his family. Alternative/Augmentative Communication (AAC) devices do exist, however, are not able effectively assist patients in expressing their thoughts. This project addresses these challenges of communication by creating a cost-effective device called the iWriter, which can accurately track the user's pupil to type on a virtual keyboard.

#### Biography

Abhi Gupta is a grade 9 student in Windsor, Ontario who is currently enrolled in the enriched program at Vincent Massey Secondary School. Unlike his previous award-winning science fair projects that focused on energy and environmental science, this year he has decided to explore the technology of image processing and object tracking. His inspiration came from his uncle's inability to speak because of a tube from the ventilator that interfered with his vocal chords. After conducting more research, he realized that the issue of speech was more prominent in patients affected by Amyotrophic Lateral Sclerosis (ALS) and Multiple Sclerosis (MS). Thus, he created this novel assistive device known as the "iWriter". Besides from his scientific curiosity of the world, he has a passion for basketball, soccer and playing the electric and bass guitar. He is also involved in many sports and clubs such as Kids' Alliance, Robotics and Mind Force that allow him to help his community. He suggests that students should do a science fair project that will feed their inner curiosity as well as help them discover their own interests.

#### Awards

#### Value

Excellence Award - Intermediate - Silver Medal Sponsor: Youth Science Canada	\$300
Western University Scholarship Silver Medallist - \$2000 Entrance Scholarship Sponsor: Western University	\$2 000
<b>Total</b>	<b>\$2 300</b>