

# CWSF 2012 - Charlottetown, Prince Edward Island



## Adelina Corina Cozma

### Novel Learning in the Brain: Insights from Neuroimaging & Augmentative Training

**Challenge:** Health

**Category:** Senior

**Region:** York

**City:** Richmond Hill, ON

**School:** Bayview S.S.

**Abstract:** This project investigated the brain spatio-temporal dynamics involved in learning novel language words using magnetoencephalography and magnetic resonance imaging, and correlated the findings with results from augmentative training accomplished through three innovatively developed software programs. The study shows how the brain processes novelty and learns foreign words in relation to familiar native words, and how augmentative communication technology can improve receptive and

#### Biography

I am a grade 11 student at Bayview Secondary School in Richmond Hill, Ontario. By participating in science fairs each year since seventh grade, I have developed a great passion for neuroscience research and I am motivated to become a neurosurgeon/scientist. I represented Canada at the 2010 and 2011 Intel International Science and Engineering Fairs, winning first place awards from the American Psychological Association and the International Honour Society in Psychology, and either second or third place in Behavioural and Social Sciences. In 2008 and 2009, I won gold and silver medals in Health Sciences at the Canada-Wide National Science Fairs and best-in-fair awards at the regional competitions. Since September 2011, I have been a student researcher in the Department of Neurology at the Hospital for Sick Children. I am also involved in activities like French tutoring, my school's Prefect Organization, Science Expo, Science Olympics and the International Student Editorial Board for the Canadian Young Scientist Journal. For my community involvement and volunteering, I was awarded the Ontario Principals' Council Award for Student Leadership. This July I will participate in the Shad Valley program at Université Laval. In my spare time, I enjoy playing tennis, reading and learnin...

#### Awards

#### Value

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| The Manning Innovation Achievement Award<br>Sponsor: Ernest C. Manning Awards Foundation   | \$500           |
| The Manning Innovation Achievement Award and \$4000 Manning Young Canadian Innovation Award<br>Sponsor: Ernest C. Manning Awards Foundation                              | \$4 000         |
| Excellence Award - Senior - Gold Medal<br>Sponsor: Youth Science Canada  | \$1 500         |
| Dalhousie University Faculty of Science Entrance Scholarship<br>Senior Gold Medallist - \$5000 Entrance Scholarship<br>Sponsor: Dalhousie University, Faculty of Science | \$5 000         |
| UBC Science (Vancouver) Entrance Award<br>Senior Gold Medallist - \$4000 Entrance Scholarship<br>Sponsor: The University of British Columbia (Vancouver)                 | \$4 000         |
| University of Manitoba Entrance Scholarship<br>Senior Gold Medallist - \$5000 Entrance Scholarship<br>Sponsor: University of Manitoba                                    | \$5 000         |
| University of Ottawa Entrance Scholarship<br>Senior Gold Medallist - \$4,000 Entrance Scholarship<br>Sponsor: University of Ottawa                                       | \$4 000         |
| Western University Scholarship<br>Gold Medallist - \$4000 Entrance Scholarship<br>Sponsor: Western University  | \$4 000         |
| <b>Total</b>   | <b>\$28 000</b> |