

## CWSF 2010 - Peterborough, Ontario



### Debbie Wang, Nicholas Moore

#### Advanced Fluorescence Spectroscopy of Myelin Using Novel

**Division:** International

**Category:** Senior

**Region:** Calgary Youth

**City:** Calgary, AB

**School:** Bishop Carroll High School, Western Canada Senior High School

**Abstract:** Lipid-rich myelin ensheathes axons. Monitoring its integrity would enable improved detection of neurodegenerative pathologies such as multiple sclerosis. The lipophilic probes Nile red, DiOC6, FM4-64, and Laurdan were imaged in mammalian myelin using a Nikon C1si. Relative fluorescence intensity and excitation/emission spectra were measured in damaged and healthy myelin. DiOC6 emission intensity increases in damaged myelin, making it a potential marker for myelin damage.

#### Biographies

Debbie - I am currently a grade 12 student, and this is my first year participating in the Canada-Wide Science Fair. Last summer, I had the opportunity to spend 6 weeks at a neurology lab at the University of Calgary, and it was a fantastic experience! Apart from research, I'm active in my community, volunteering for several municipal organizations. In my spare time, I enjoy swimming and hanging out with friends.

Nicholas - Nick is a Grade 12 IB student at Western Canada High School who loves fencing enough to compete at the national level and volunteer to coach. He's a peer tutor at school and a leader in environmental groups such as Youth Earth Ambassadors. Reading The Economist and participating in Amnesty International Club keep him updated on world affairs, and he has always been passionate about literature and creative writing. Involved in Model United Nations and science competitions, Nick likes to explore any field in which he can immerse himself. He aspires to one day enter an MD/PhD program and specialize in neuroscience as a researcher and a physician...

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