

# CWSF 2014 - Windsor, Ontario



## Meagan Haugen-Koechl

### Feeding the Bumblebees: Analysis of Fatty Acids from Peace River Pollen

**Challenge:** Environment

**Category:** Senior

**Region:** Northern British Columbia

**City:** Charlie Lake, BC

**School:** North Peace Secondary

**Abstract:** Bumblebee populations are declining. Due to habitat loss and the invasion of introduced plants, native plants co-evolved with bumblebees are in decline also. Fatty acids found in pollen are important to bee development, nutrition and reproduction. Can introduced plant pollen match the fatty acid profiles of the native plant pollen? Do introduced plants have the same levels of total fatty acids as native plants?

#### Biography

I am a grade 11 student in Northern British Columbia. I have a passion for skiing and playing the piano. Skiing is my physical release and piano is my stress release. My life has revolved around science fair since grade 1. I have always been encouraged to ask questions about topics that interest me. In grade 6 I became interested in bees when I heard of worldwide declines. That year I inventoried local pollinators, and the following year, I did a statistical study of the size of pollen collected by local bumblebees. This led me into wanting to know the nutritional levels of pollen. In 2011/2012 I collected pollen and determined the protein levels. This year I developed a fatty acid profile based on native plants that bumblebees evolved with and compared it to introduced plants. In future research I would like to look into the scents of lipids in different pollen samples.

#### Awards

#### Value

Excellence Award - Senior - Gold Medal Sponsor: Youth Science Canada	\$700
Dalhousie University Faculty of Science Entrance Scholarship Senior Gold Medallist - \$5000 Entrance Scholarship Sponsor: Dalhousie University, Faculty of Science	\$5 000
UBC Science (Vancouver) Entrance Award Senior Gold Medallist - \$4000 Entrance Scholarship Sponsor: The University of British Columbia (Vancouver)	\$4 000
University of Manitoba Entrance Scholarship Senior Gold Medallist - \$5000 Entrance Scholarship Sponsor: University of Manitoba	\$5 000
University of Ottawa Entrance Scholarship Senior Gold Medallist - \$4,000 Entrance Scholarship Sponsor: University of Ottawa	\$4 000
Western University Scholarship Gold Medallist - \$4000 Entrance Scholarship Sponsor: Western University	\$4 000
<b>Total</b>	<b>\$22 700</b>