

## **Manitoba**

### **Student develops new technique to measure mercury toxins in Arctic seals**

Ground-breaking research by a 16-year-old Winnipeg student reveals a new way to determine mercury pollution levels in Arctic ringed seals.

Mercury pollution is a crucial issue in the North, and especially in seals, since they are important food sources for both Inuit people and polar bears. Beth's innovation is to analyze seal claws for traces of mercury rather than the standard, more invasive practice of analyzing muscle or liver tissue.

“Growth rings on seal claws are used to determine their approximate age and I was curious to find out what other information they might provide.”

Little is known about the structure of seal claws. One of the most difficult tasks of the project was figuring out how to isolate the individual sections of the claws from the animal's flipper. Eventually Beth hit on a simple but effective method: she boiled the claws, used a wet saw to cut them in half, and finally used a sanding tool to isolate individual sections.

Mentored by Marek J Los, Associate Professor in the University of Manitoba Faculty of Medicine, Beth then analyzed the sections for their mercury content, which opened a window on the animal's life history of exposure to mercury through its food. This provides scientists with a new way to determine mercury exposure and how the element cycles through Arctic marine life.

“Before I began participating in the sanofi-aventis BioTalent Competition I was intimidated by the science lab. Lab work seemed difficult and beyond my grasp.”

Beth says she's enjoyed learning about other research conducted by other students in the competition.

“This competition has made me seriously consider the field of science, specifically Arctic biology, as a career choice. This competition has allowed me to sample the life of a researcher and I have found that I enjoy it.”