

thebigchill

GEOLOGIST SERVES SCIENCE AND STUDENTS



PHOTOGRAPH COURTESY OF ANDRILL

It's Sunday morning and Kate Pound is kneeling on the ice at the west end of Big Lake.

She and her crew need to pull a second sediment core from the bottom of this Sherburne County lake and then Pound is off to pull sediment core samples from Crooked Lake in neighboring Anoka County.

This is life at a dead run for a Minnesotan just returned from Antarctica. This is life for a scientist dedicated to helping the world understand climate change from a geologic perspective. This is life for an educator committed to sharing her knowledge with students and teachers at a dozen Minnesota and Wisconsin schools.

Pound, an associate professor of earth and atmospheric sciences, is expert at analyzing sediment on ocean and lake floors. Her 2007 work in Antarctica included curating samples of a 3,734 foot long sediment core from the floor of McMurdo Sound. The samples are being analyzed by scientists worldwide.

Sediment cores retrieved from Minnesota and Wisconsin lake floors in 2008 will be studied by K-12 students, as well as by students in Pound's college geology courses. They'll also be stored in a national repository at the University of Minnesota's Limnological Research Center.

"We're deducing a history of climate change as it's recorded in Antarctica," Pound said of her work for the 80-member ANDRILL (ANTarctic geological DRILLing) team. "We're using all the tools in the geoscientist's toolkit."

The tools include radiometric dating, fossil study, sediment description and magnetic character analysis. Scientists will compare their findings to seafloor samples from more frequently drilled areas near the Equator. The result will be a better understanding of the world's evolving climate, going back tens of millions of years, Pound said.

Closer to home, Pound is sharing her knowledge of sedimentology and stratigraphy with teachers such as Adam Pelot '05, a geology and astronomy teacher at Big Lake High School in Big Lake. Pelot will use cores collected Feb. 24 from Big Lake in his two geology classes. Students will discuss why the core collected from beneath 6.3 feet of water holds coarse sediment, while the core collected from 14.8 feet is finer grained and more silty. The students will search the shallow sample for evidence of agriculture. That portion of the lake was a hay field during dry years, according to Pelot.

The biology teacher down the hall from Pelot will have his students search the samples for small crustaceans called copepods and microscopic creatures called diatoms. The samples will be shared with classes at Big Lake's middle school, too.

"It's going to have a huge, huge impact, not only on my classroom, but, I would venture to say, on the whole school district," Pelot said.

Mike Steiner's students pulled a five-foot core from Lake Chetek and a similar-sized core from Bass Lake Feb. 19. The Chetek, Wis., science teacher and his middle school students hope to date sediment layers in the Lake Chetek sample by pinpointing the effects of an 1863 dam on the Chetek River.

"I'm pretty excited and the kids are excited to get the samples," said Steiner.

Serving the world's scientists with seafloor samples from the Southern Ocean. Helping students in Minnesota and Wisconsin learn about limnology, the study of lakes. Not bad for a professor teaching a full course load at Minnesota's second-largest university.



PHOTOGRAPH BY JEFF WOOD

Above: Crew members unscrew pipe sections as a sample is pulled from the lake floor four meters below the ice surface. From left: Adam Brenteson, a junior at Big Lake High School, Adam Pelot '05, a geology and astronomy teacher at Big Lake High School, and Megan Jones, a geology professor at North Hennepin Community College.



PHOTOGRAPH BY JEFF WOOD

Left: Kate Pound and Aubrey Lee, right, examine a sediment core pulled from the bottom of Big Lake. Lee is a geology student at North Hennepin Community College.

Below: Kate Pound talks about drilling into the sea floor of McMurdo Sound, Antarctica, during a February episode of KARE 11's "Simply Science" with meteorologist Sven Sundgaard '03, left.



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