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Representing more than 10,000 years of evidence of changes to our climate in 1.4 kilometers of ice core samples, the Canadian Ice Core Collection at the University of Alberta represents invaluable potential for researchers around the world to answer critical climate change questions.

With a well-established reputation for research excellence in the Canadian north, researchers from the University of Alberta have spent decades getting to the bottom of what is happening at the top of the Earth, a region increasingly recognized for its valuable water, mineral, and energy resources.



The Canadian Ice Core Lab



Facilities and Equipment

Archive

Our -40°C archive room currently contains 1.4 km of ice predominantly from the Canadian high Arctic, including core samples from the Penny Ice Cap, Devon Ice Cap, Prince of Wales Icefield, and Agassiz Ice Cap. The archive also includes ice core samples from Mount Logan, Yukon Territory, the highest mountain in the country.

Working Freezer

Our -25°C working freezer houses bandsaws, chop saws, a horizontal saw, planar, and two ice core scanning systems (an Intermediate Layer Core Scanner, and a Large Area Scan Macroscop), both designed specifically for the digital scanning of ice.

Analytical Lab

The room-temperature analytical lab houses various instruments and systems for measuring the chemical and isotopic composition of liquid ice core samples (e.g., ion chromatography (ICS-5000), cavity ringdown spectroscopy (Picarro L2140-i), fluorescence spectroscopy (Horiba Scientific Aqualog), particle size analysis (Beckman Coulter Multisizer 4e coulter counter).

Ice Coring Field Equipment

We have an inventory of ice core drills and related field equipment available for use and collaboration. This includes two Eclipse ice coring drills, a shallow coring Kovacs Mark II system with 30m of fiberglass extensions, a drill shelter (floorless Weatherhaven series 4A), and much more.

Contact

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