An Icy Surprise

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Earth was just coming out of an ice age 9,300 years ago when a cataclysmic event occurred that plunged the planet into a cold “snap” that lasted for centuries. Scientists have suspected that water melted from snow and ice introduced into the North Atlantic Ocean was the cause ? but the source and volume were a mystery. A new study led by Tulane researcher Shiyong Yu pinpoints the source.

Shiyong Yu, Tulane postdoctoral fellow in earth and environmental sciences, hoists a core sample from Surprise Lake on the Sibley Peninsula, Ontario, Canada. (Photos from Shiyong Yu)

In the study, published in the June 4 issue of *Science*, Yu and his co-authors say that a natural dam on the southeast corner of Lake Superior breached, triggering a massive flood.

By dating the age of separation of small basins from Lake Superior, Yu and his research team determined the amount, timeframe and pathway of this flood. Rapidly

? perhaps in a matter of months ? Lake Superior dropped 45 meters as its waters spilled into southern Canada to the ocean, raising sea level and dropping temperatures worldwide.

“The ocean circulation might be more sensitive to freshwater perturbation than we thought before,” says Yu. “Today, we are quite concerned about global warming. The accelerated melting of the Arctic ice pack could potentially slow the ocean circulation and push the Earth into a cold snap in a similar manner.”

Yu is a postdoctoral scholar in the Department of Earth and Environmental Sciences at Tulane. He began research for this study in 2005 at the Large Lakes Observatory at the University of Minnesotaâ?“Duluth. Yu arrived at Tulane in 2008. He sees his move to New Orleans as a natural progression of his research.

“The ground is tilting, and that's why I moved here. I wanted to follow the motion of the land,” jokes Yu, referring to the slope of the Louisiana coastal plain.

At Tulane, Yu works with professor TorbjÃ¶rn E. TÃ¶rnqvist in the study of land subsidence and sea-level change on the Gulf Coast using buried marsh sediments.