A critical component of the Earth's climate system is the formation of dense, saline water near Antarctica. This water (known as Antarctic Bottom Water) is thought to be a major driver of global ocean circulation, yet little is known about how bottom water forms during warmer periods of Earth's history. Triple oxygen isotope data from biogenic silica in an Antarctic marine sediment core record variable cryogenic brine flux/seawater mixing during the mid-Pliocene. Understanding brine formation in terrestrial regions such as the McMurdo Dry Valleys and hydrogeologic connections with the Ross Sea (Antarctica) may provide insight to ocean-ice interactions and ice sheet variability during warm intervals in Earth's past (and future).

Dr. Justin Dodd, Associate Professor
Department of Geology & Environmental Geosciences
Northern Illinois University

Monday, Dec. 4, 2017
4 to 5 p.m. in 1118 Rood Hall

A Pliocene marine diatom oxygen isotope record of terrestrial-marine feedbacks and orbitally-paced cryogenic brine formation in the McMurdo Dry Valleys