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Department of Marine Sciences
Presents a Seminar by

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The history of the Bering Strait as told by the Arctic Ocean nitrogen cycle

The Bering Strait is a 50 m deep gateway between the Pacific and Arctic Oceans that separates Asia from North America today. At the peak of the last ice age starting 26,500 years ago, when global sea level was ~130 m lower than today, the Bering Strait was instead a land bridge and the proposed route by which humans first traveled from Asia to the Americas. However, the first formation of the Bering Land Bridge during the last ice age is unknown, in part because global sea level history is poorly constrained prior to the ice age lowstand. Here I will discuss a new sea level history of the Bering Strait obtained from reconstructing the presence of Pacific waters in the Arctic Ocean. Using foraminifera-bound nitrogen isotopes, we traced the isotopic fingerprint of Pacific-sourced nutrients in the Arctic Ocean over the last 50,000 years. Results show that the Bering Strait was open until 35,700 years ago, thus dating the last formation of the Bering Land Bridge to within 10,000 years of the ice age peak. Glacial isostatic adjustment modeling shows that this Bering Strait flooding history requires higher (by ~60 m) pre-ice age global sea level than suggested by canonical sea level reconstructions. Implications of these results for our understanding of past sea level change, the causes of the glacial cycles, and for human migration will be discussed.

Host: Julie Granger

Time & Date: 11:00 am, Friday, November 18, 2022

Place: Lowell Weicker Building, Seminar Room 103 (or WebEx)

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