

MGS Luncheon Meeting

Wednesday, February 3rd

11:45 am – Billings Petroleum Club

Please join us for lunch (\$14) and the talk (no charge)

RSVP – montanageologicalsociety@gmail.com , or 406-259-8790

An email reminder will be sent 3 days prior to the talk



JULIA WELLNER

AAPG Distinguished Lecturer
Sedimentologist and Stratigrapher
University of Houston

Abstract: Antarctica's sedimentary archives of past glacial history: Tools for understanding climate change

During times of past extensive glaciations, the Antarctic ice sheet extended from its current position, reaching across the continental shelf. As the ice sheet retreated to its modern extent, the shrinking ice sheet left behind seawater, rather than ancient ice, leaving behind a sedimentary signature of deglacial history. Marine geophysical survey data, including 3.5 kHz profiles and multibeam swath bathymetry, combined with sediment cores, are used to map the extent of past ice, estimate the speed at which it was flowing, and understand the style of retreat. Radiometric dating gives ages of retreat and allows comparison to other global archives. Past periods of glacial retreat, which tend to be diachronous, are compared to the modern day retreat, which is happening across large areas in a short period of time. Ongoing work is targeting records from times of past high CO₂ conditions, like those predicted in our future.

Biography

Wellner is a sedimentologist and stratigrapher who works primarily in the Gulf of Mexico and offshore Antarctica on questions related to sediment facies, stratigraphic architecture, glacial history, and sea-level change. She earned her PhD from Rice University in 2001 where she also completed a post-doctoral fellowship. She has been at the University of Houston since 2006 where she teaches stratigraphy, sequence stratigraphy, marine geology, and oceanography. Wellner has completed over a dozen ocean-going cruises collecting seismic data and sediment cores, including eight in Antarctica.