

The Pacing of Antarctic Iceberg Rafted Debris During the Early Pleistocene from Iceberg Alley Site U1537

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Understanding the timing and variability of Antarctic Ice Sheet (AIS) melt and collapse in the past can help inform our understanding of future ice sheet melting. To understand past AIS instabilities, we will look at IODP Expedition 382 Site U1537 in the heart of Iceberg Alley. Iceberg Alley is a region that got its name due to the large numbers of icebergs that are calved in that region. I am studying climate change during the Early-to-mid Pleistocene to paint a better picture of global change in relation to AIS behavior. This period is understudied. There is not much information on this time period, so this work is important because I am completing a record of IRD counts to provide and compare information on a global scale. The methods I will be using include counting IRD grains in > 150 um in sieved samples, after removing diatoms. The samples are all from IODP Site U1537 and the cores are dated using the magnetostratigraphic record from O'Reilly et al. (2021). Not every iceberg IRD count is the same. Past research has shown that there is a relationship between the number of icebergs calved and IRD deposits. Warming of the surface waters may align with IRD peaks in Antarctica. With the help of information that has already been plotted from the shipboard and globally, we will see the relationship between IRD and the warming/cooling of the surfaces and the behavior of iceberg calving. This information can be used to inform future projections of sea level rise and in turn, can inform others to take action to know the needs of future work mitigated towards preserving indigenous coastal communities.