

## Holocene glacial activity of two marine-terminated glaciers from Ellesmere and Devon islands: atmosphere-ocean-ice interactions



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The Canadian Arctic Archipelago contains >300 glaciers that terminate in the ocean, which could contribute ~199 mm to global mean sea level rise. However, the long-term (>50 years) calving rates and glacial sediment fluxes of these marine-terminating glaciers are not well understood, and little is known about the precise mechanisms controlling the frontal changes in these glaciers. In this context, this Ph.D. project will aim to study the sedimentological, mineralogical, geochemical, palynological (dinocyst assemblages), and paleomagnetic signatures of a set of glacier-proximal sediment cores collected at the fronts of Eugenie (Ellesmere Island) and Croker Bay (Devon Island) glaciers. In these glaciomarine environments, sediments are mainly delivered by meltwater plume deposition and iceberg rafting and by meltwater-derived turbidity currents. The proposed multiproxy approach will help reconstruct glacial sediment discharges and calving activity to better understand the response of these marine-terminating glaciers to ocean-climate variability during the Holocene. The student recruited as part of this project will have the opportunity to participate in several missions in the Canadian Arctic aboard the CCGS *Amundsen*.

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