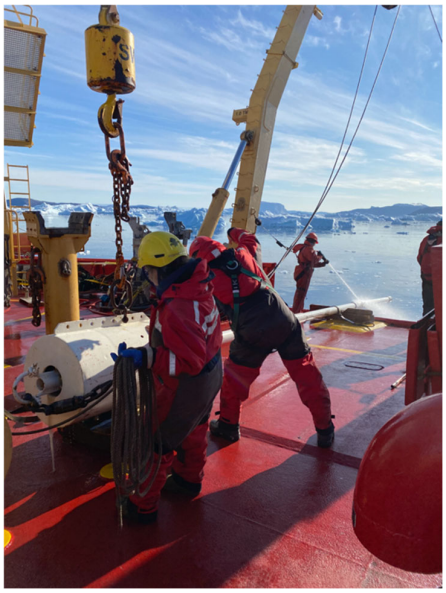
**Holocene carbon burial dynamics in Western Greenland fjords under varying depositional regimes**

The Greenland Ice Sheet is decaying in response to climate change. This ice sheet loss not only contributes to sea-level rise, but changing glacial erosion rates also change sediment influx to the ocean. Due to sparse observations and technically challenging conditions, even present-day changes in sediment flux are still poorly constrained despite their major implications for biogeochemical cycling, primary production, organic carbon sequestration, and atmospheric $CO_2$. Accelerating bedrock erosion can provide nutrients spurring primary production but also lead to the liberation of petrogenic organic carbon (OC) that may be remineralized and contribute to atmospheric $CO_2$.



Giant gravity coring during the 2026 CASCADES expedition aboard CCGS *Amundsen*. ©L. Pascal

This project aims at accurately quantifying OC fluxes from marine- and land-terminating glaciers along a latitudinal gradient in western Greenland margin during the Holocene. It will leverage sediment cores taken aboard the Canadian Coast Guard Ship (CCGS) *Amundsen* during the CASCADES-TCA expedition in summer 2026. Sediment cores retrieved from the Uummannaq, Nunatakassaaq, and Petermann fjords will be used to quantify terrestrial and marine OC fluxes and reconstruct the paleoenvironmental conditions controlling OC fluxes using a suite of organic geochemical and sedimentological techniques. Methods include elemental analysis, grain size analysis, compound-specific radiocarbon analysis, liquid chromatography mass spectrometry, gas chromatography mass spectrometry, trace element analysis.

**PIs**

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**Desired qualifications**. The candidate should hold an M.Sc. degree in Earth Sciences, Oceanography, Geology, Geochemistry, or any related discipline at the time of appointment. Experience in organic geochemistry, sedimentology, and paleoclimatology is an advantage. Applicants must be proficient in written and spoken English. As ISMER-UQAR is a French-speaking university, knowledge of French is an asset.