



CALL FOR APPLICATIONS

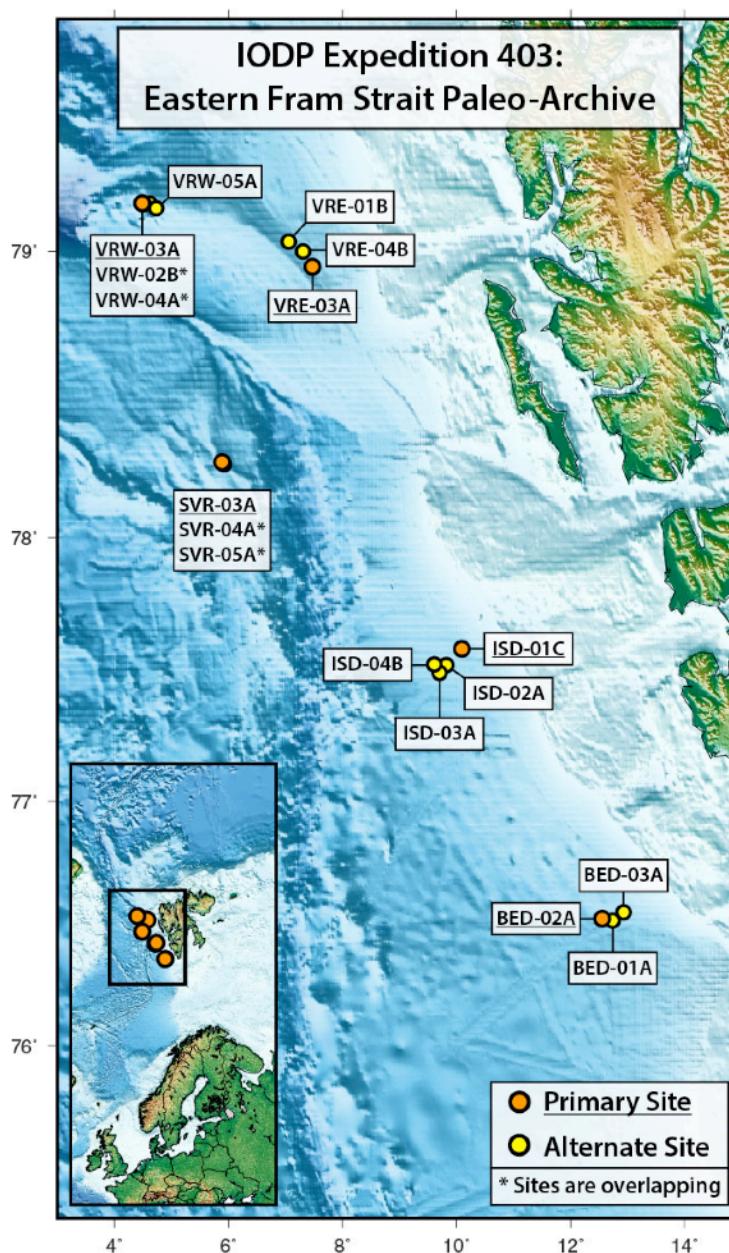
JOIDES Resolution Expedition 403: Eastern Fram Strait Paleo-Archive

4 June – 2 August 2024

DEADLINE to apply: 1 March 2023

The **European Consortium for Ocean Research Drilling** (ECORD) offers you the unique opportunity to sail on Expedition 403 on-board the *JOIDES Resolution* in the framework of the International Ocean Discovery Program (IODP), an international research program for drilling at sea.

The North Atlantic and Arctic Oceans are major players in the climatic evolution of the Northern Hemisphere and in the history of meridional overturning circulation of the Atlantic Ocean. The establishment of modern North Atlantic water has been identified as one of the main forcing mechanisms for the onset of the Northern Hemisphere glaciation. Many uncertainties remain about the establishment, evolution, and role of the northern North Atlantic-Arctic Ocean circulation in relation to the opening of the Fram Strait, and its impact on the Earth's global climate during major climatic transitions that have occurred since the Late Miocene. Understanding system interactions between ocean currents and the cryosphere under changing insulation and CO₂ conditions of the past is particularly important for ground truthing climate models. The reconstruction of the paleo Svalbard-Barents Sea Ice Sheet (SBSIS) is critical as it is considered the best available analogue to the West Antarctic Ice Sheet, whose loss of stability is presently the major uncertainty in projecting global sea level in response to present-day global climate warming induced by rapidly increasing atmospheric CO₂ content. Reconstructing the dynamic history of the western margin of Svalbard and eastern side of the Fram Strait at the gateway to the Arctic is key to understanding the linkage between atmospheric CO₂ concentration, ocean dynamics, and cryosphere as main drivers of climate changes.





The key scientific objectives of Expedition 403 are:

(1) the development of a high-resolution chronostratigraphic record of the Late Miocene-Quaternary; **(2)** the generation of multi-proxy data sets to better constrain the forcing mechanisms responsible for Late Miocene to Quaternary climatic transitions; **(3)** the identification of orbital, sub-orbital, millennial scale climate variations such as Heinrich events and possible associated meltwater; **(4)** the evaluation of impacts and feedbacks involving past sediment-laden prominent meltwater events on water masses properties, ocean circulation, ice sheet instability, slope stability, and biota; **(5)** the reconstruction of paleo SBSIS dynamic history in relation to changes in the ocean current pathways and characteristics as mechanisms inducing ice sheet instability and fast retreat; **(6)** the study of glacial and tectonic stresses and their effect on near-surface deformation and Earth systems dynamics; and **(7)** the linkages between large-scale environmental changes and microbial population variability. These objectives will be accomplished through coring and borehole logging multiple holes at five sediment drift sites to create a composite stratigraphy.

For more information on the expedition science objectives and the JOIDES Resolution schedule see <http://iodp.tamu.edu/scienceops/>. This page includes links to the individual expedition web pages with the original IODP proposals and expedition planning information.

APPLICATION DEADLINE: 1 March 2023

WHO SHOULD APPLY: We encourage applications from all qualified scientists. ECORD is committed to a policy of broad participation and inclusion, and to providing a safe, productive, and welcoming environment for all program participants. Opportunities exist for researchers (including graduate students) in all shipboard specialties, Opportunities exist for researchers (including graduate students) in many shipboard specialties, including sedimentologists, biostratigraphers (siliceous, calcareous, and organic-walled microfossils and palynomorphs), organic and inorganic geochemists, microbiologists, physical properties specialists/borehole geophysicists (including downhole measurements and stratigraphic correlation), and paleomagnetists.. Good working knowledge of the English language is required.



The Application Process is open to scientists in all ECORD member countries. Please download the *Apply to Sail* general application form from the ESSAC webpage:

<http://www.ecord.org/expeditions/apply-to-sail/>

Please, fill out all applicable fields and send the form to the ESSAC office by email (essac@ogs.it) with the following additional documents by the deadline of **1 March 2023**:

1. **A letter of interest** outlining your specific expertise, previous involvement in DSDP/ ODP/ IODP expeditions, research interests, primary research goals of your proposed participation.
2. **CV and publication list.**
3. **Early career researchers** must additionally provide a **letter of support** from their host institution, including information on post-cruise science support.

All applications should state how you intend to achieve your proposed scientific objectives, with information on the funding scheme and support from your institution or national funding agencies. More information can be found under: <http://www.ecord.org/expeditions/apply-to-sail/>

In addition to the ESSAC application, all applicants must inform their national office or national delegate and send them a copy of their application documents. The national offices or national delegates can also provide information regarding travel support, post-cruise funding opportunities, etc.

See <http://www.ecord.org/about-ecord/about-us/> for a list of the national contact persons.

For further information or questions, please contact the ESSAC Office:

ECORD Science Support & Advisory Committee

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