SPECIAL CALL FOR APPLICATIONS

for a geochemist and a microbiologist based in an ECORD Member Country to participate in

IODP Expedition 386: Japan Trench Paleoseismology

An IODP Mission Specific Platform Expedition organised by the **ECORD Science Operator (ESO)** and jointly implemented with the Institute for Marine-Earth Exploration and Engineering (MarE3) within the Japan Agency for Marine-Earth Science and Technology (JAMSTEC)

MarE3

www.ecord.org / www.jamstec.go.jp/chikyu/e/

DEADLINE 25 September 2020

Applications are invited from scientists in ECORD member countries to join both the offshore phase and the Onshore Science Party for IODP Expedition 386: Japan Trench Paleoseismology.

The proposal this expedition is based upon was submitted as IODP Proposal #866 *'TRACKing past earthquakes in the sediment record along the Japan Trench: Testing and developing submarine Paleoseismology in the deep sea (JTRACK- Paleoseismology)'*.

The proposal describing the primary coring sites, as well as up-to-date expedition information, can be found on the Expedition 386 webpage http://www.ecord.org/expedition386/.

The Co-Chief Scientists for this expedition are Prof. Michael Strasser (University of Innsbruck, Austria) and Dr. Ken Ikehara (Geological Survey of Japan, AIST).

Background and Objectives

Expedition 386 aims to test and develop "submarine paleoseismology" in the Japan Trench, a promising approach that overcomes the limitations of short historical and instrumental records in revealing earthquake maximum magnitude and recurrence. Examining prehistoric events preserved in the geological record is essential to reconstruct the long-term history of earthquakes and to deliver observational data that help to reduce epistemic uncertainties in seismic hazard assessment for long return periods. Expedition 386 will adopt a multi-coring approach using a mission-specific platform equipped with a giant piston corer to sample the shallow-subsurface at up to 40 mbsf to recover the continuous Upper Pleistocene to Holocene stratigraphic successions of trench-fill basins along an axis-parallel transect of the 7-8km deep Japan Trench. The cores from 18 proposed primary (and/or 13 alternate) sites will be used for multi-method applications to characterize event deposits, for which the detailed stratigraphic expressions and spatio-temporal distribution will be analysed for proxy evidence of earthquakes. Expedition 386 can potentially lead to a fascinating record unravelling an earthquake history that is 10 to 100 times longer than currently available. This would contribute to a tremendous advance in the understanding of the recurrence pattern of giant earthquakes and earthquake-induced geohazards globally.

The project has three major objectives:

1. To identify the sedimentological, physical, chemical, and biogeochemical proxies of event- deposits in the sedimentary archive that allow for confident recognition and dating of past Mw9-class earthquakes vs. smaller earthquakes vs. other driving mechanisms.
2. To explore the spatial and temporal distribution of such event-deposits to investigate along- strike and time-dependant variability of sediment sources, transport and deposition processes, and stratigraphic preservation.
3. To develop a long-term earthquake record for giant earthquakes.

Platforms, locations and timing

Until the Expedition 386 platforms are confirmed, all timings are provisional.

The mission-specific platform for this expedition will be the JAMSTEC-operated Research Vessel *Kaimei*, which is equipped with its own 40m giant piston corer. The R/V *Kaimei* will be mobilised and demobilised at ports to be decided in Japan.

At this time, it is envisaged that the offshore phase of Expedition 386 will take place on the R/V *Kaimei* for up to 50 days in spring and/or summer of 2021 (April - June), please watch the Expedition 386 webpage for schedule updates, http://www.ecord.org/expedition386/).

Only a subset of the Science Party will participate offshore. Offshore activities will focus on core recovery, curation, sampling for ephemeral properties, physical properties, and preliminary lithostratigraphy and biostratigraphy (through liner and/or on core catcher samples). The cores will be sectioned offshore, but will not be not opened or split.

Subsequently, an Onshore Science Party (OSP) will be held on board the JAMSTEC-operated Drilling Vessel *Chikyu*, which will be docked in the Port of Shizuoka, Japan. The OSP is expected to last a maximum of 30 days in the period October to November 2021, the exact length will be dependent on core recovery.

During the OSP, the cores will be split and IODP Mission-Specific Platforms Standard Measurements taken. All members of the Science Party must attend the Onshore Science Party.

Please see http://www.ecord.org/expeditions/msp/ (and linked pages within) for an overview of Mission Specific Platforms in IODP. Please note that the Expedition 386 OSP will be held onboard the D/V Chikyu. The link above refers to our usual OSP location at the Bremen Core Repository, located at the University of Bremen in Germany. However, the same OSP principles will still apply.

Expertise sought

This Special Call seeks applications from: **a)** organic or inorganic geochemists available to participate offshore to assist with pore water acquisition and initial offshore analysis (alkalinity [pH], ammonium, and

salinity). Their personal sample request and research focus does not necessarily need to be pore water focussed; and **b)** microbiologists.

The selected candidates have to participate in both the offshore phase (late April to early June 2021) and the Onshore Science Party (starting mid-October 2021 for a maximum duration of 4 weeks).

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

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

Please, fill out all applicable fields and send it to the ESSAC office by email (essac@plymouth.ac.uk) with the following additional documents by the deadline of **25 September 2020**:

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. Young 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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