ECORD
EUROPEAN CONSORTIUM FOR OCEAN RESEARCH DRILLING

Newsletter

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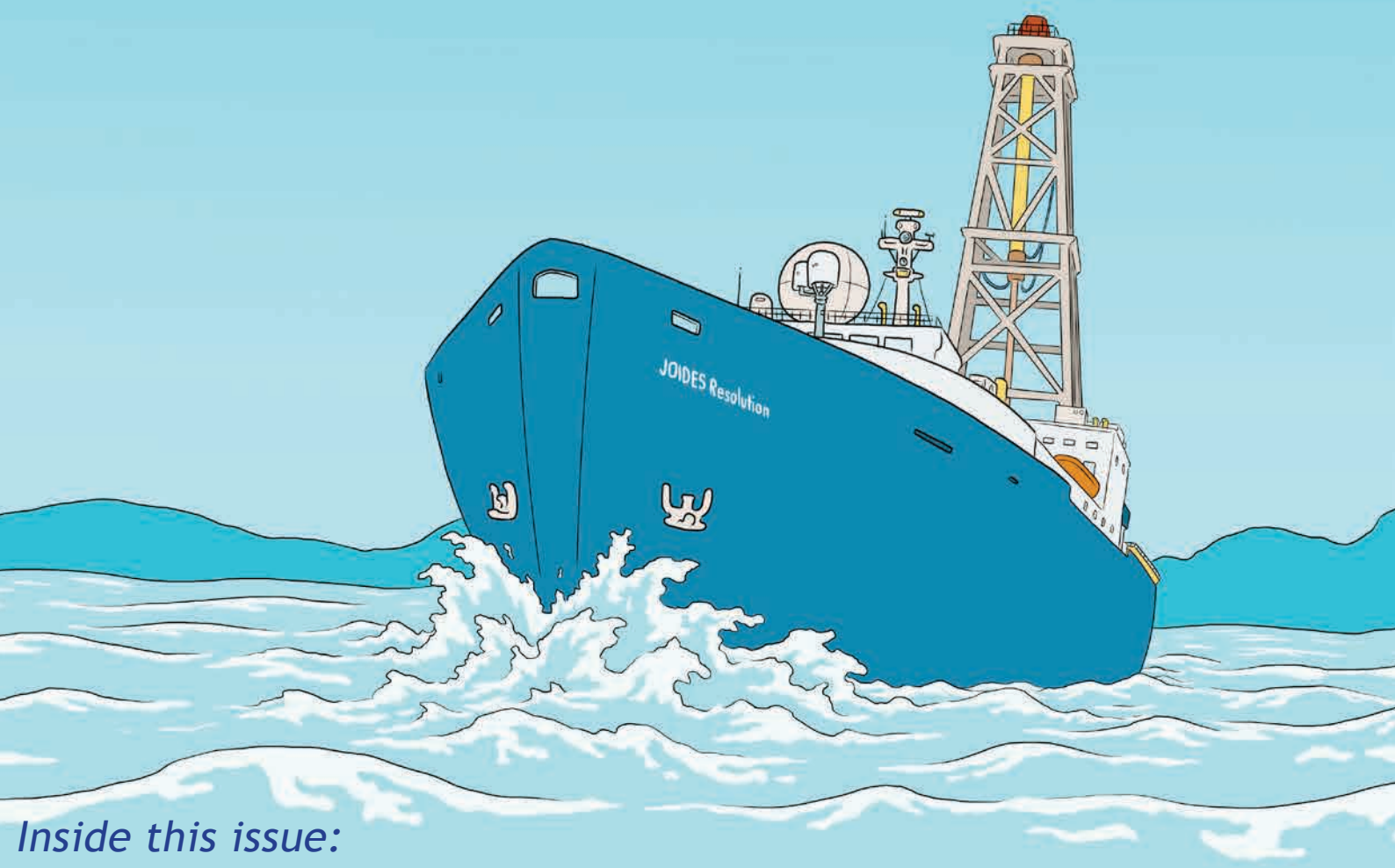
"Mysteries of the Deep" at the Lapworth Museum of Geology



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IODP
INTERNATIONAL OCEAN DISCOVERY PROGRAM

Contents

The International Ocean Discovery Program (IODP) - **http://ww.iodp.org** - is an international research programme dedicated to advancing the scientific understanding of the Earth through drilling, coring, and monitoring the sub-seafloor. The **European Consortium for Ocean Research Drilling (ECORD)** supports the participation of European and Canadian scientific communities in IODP and provides funding for the implementation of mission-specific platform expeditions. ECORD is funded by 15 countries: Austria, Canada, Denmark, Finland, France, Germany, Ireland, Italy, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

IODP is funded by the US National Science Foundation (NSF), Japan's Ministry of Education, Culture, Sports, Science, and Technology (MEXT); ECORD; the Australia-New Zealand IODP Consortium (ANZIC); India's Ministry of Earth Sciences; China's Ministry of Science and Technology; the Korea Institute of Geoscience and Mineral Resources (KIGAM); and Brazil's Ministry of Education (CAPES).

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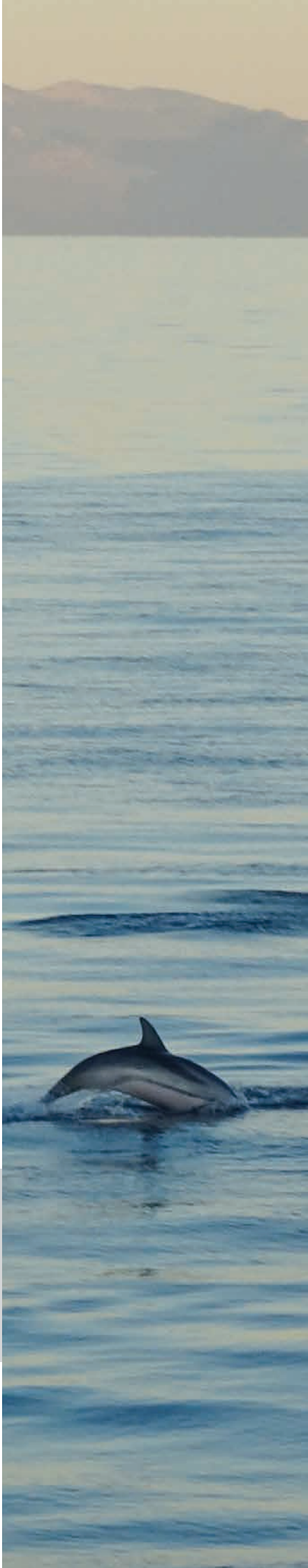
Thanks to all authors who contributed to this issue.

Cover: *The JOIDES Resolution pictured by Edward Ross - excerpt from "Mysteries from the Deep" a comic book designed for the exhibition at the Lapworth Museum of Geology (University of Birmingham, UK) see page 13.*
Right: *Dolphins at sunrise in the Gulf of Corinth during Expedition 381 Corinth Active Rift Development (photo D. Smith, ECORD/IODP).*




Gilbert Camoin


Nadine Hallmann

ECORD News


Eric Humler

ECORD in the second phase of IODP (2019-2023)

ECORD is now entering the second phase (2019-2023) of IODP with the renewed commitment of the current 15 ECORD member countries following the very positive evaluation of ECORD's structure, activities and scientific achievements by an ECORD External Evaluation Committee (EEC) in June 2017. This transition also includes the finalisation of an updated version of the ECORD Memorandum of Understanding (MoU) and the revision of the MoU between ECORD and the US National Science Foundation (NSF). The MoU linking ECORD and the Japan Agency for Marine-Earth Science and Technology (JAMSTEC) involves the two partners for the whole duration of IODP.

The outstanding intellectual contribution of the ECORD scientists to IODP is reflected by the involvement of **494 scientists in active IODP proposals**, the participation of **42 ECORD scientists on five IODP expeditions** and their leading role in the valorisation of cutting-edge results related to the successive ocean drilling programmes. The portfolio of science and educational activities that ECORD has developed over the last years has been very effective in 2018 with the **ECORD-ICDP MagellanPlus Workshop Series Programme** *(pages 18, 20-21)*. This programme supports scientists to develop innovative drilling proposals, the training of more than 130 students and early-career scientists in **ECORD Summer Schools** *(pages 12-13)* and the **ECORD Training Course**, as well as the funding of **ECORD Research Grants** to conduct research on core materials and/or data related to successive scientific ocean drilling programmes - see **ECORD Annual Report 2018** *(left)* - **http://www.ecord.org/resources/reports/activities/**

With an expected stable budget during the second phase of the programme, more than 95% being dedicated to the funding of IODP expeditions, ECORD has been in capacity to build concrete plans for 2019-2023.

Mission-Specific Platform (MSP) Expeditions

No MSP expedition has been implemented in 2018. Based on the two potential scheduling scenarios for MSP expeditions that have been considered by the **ECORD Facility Board (EFB)** *(page 5)* for FY19 and FY20, Expedition 389 Hawaiian Drowned Reefs (Proposal 716; Lead Proponent: J. Webster, Australia) has been initially scheduled in autumn 2019 as the fourth MSP expedition implemented by ECORD for IODP. However, since the preferred bidder pulled out of negotiations for business reasons at a late planning stage, Expedition 389 has been postponed and will be rescheduled at the upcoming meeting of the ECORD Facility Board that will be held in Bremen on 21-22 March 2019.

At its last meeting that was held in The Hague (The Netherlands) on 7-8 November 2018, the **ECORD Council** has endorsed the scheduling of three additional MSP expeditions before the end of IODP

1. Expedition 386 based on Proposal 866 Japan Trench Paleoseismology (Lead proponent: M. Strasser, ECORD-Austria) to be implemented in FY20 in collaboration with CDEX-JAMSTEC *(pages 6 to 9)*;
2. Expedition 377 Central Arctic Paleoceanography (ArcOP) (Co-chief Scientists: R. Stein, ECORD-Germany and K. St. John, USA) in FY21 *(page 7)*;
3. Expedition 373 Antarctic Cenozoic Paleoclimate (Co-chief Scientists: C. Escutia, ECORD-Spain and T. Williams, USA), in the last year of the current programme, *i.e.* FY23 *(page 7)*.

A higher MSP proposal pressure including different science themes and involving various potential drilling/coring systems in diverse environments will be necessary to provide additional scientific, operational and funding opportunities in the near future and to ensure a future to the MSP concept in a new programme that could be developed beyond 2023. **In-kind Contributions (IKC)** and/or external co-funding from IODP and/or non-IODP members may become a key component in the financial model for future MSP expeditions

ECORD partnership: *JOIDES Resolution (JR)* and *Chikyu* expeditions

Twenty-four ECORD scientists, including one Co-chief Scientist and more than 50% of early-career scientists, were invited to participate in three expeditions that were implemented in 2018 by the *JOIDES Resolution (JR)*:

1. **Expedition 374 Ross Sea West Antarctic Ice Sheet History** (4 January - 8 March 2018),
2. **Expedition 375 Hikurangi Subduction Margin** (8 March 8 - 5 May 2018),
3. **Expedition 376 Brothers Arc Flux** (5 May - 5 July 2018).

The *JR* is currently implementing Expedition 379 Amundsen Sea West Antarctic Ice Sheet History (18 January - 20 March 2019), with eleven ECORD scientists onboard, including one Co-chief Scientist *(see photos page 16)*.

The **JR Facility Board (JRFB)** has scheduled five additional *JR* expeditions in the Pacific and Southern Ocean before the end of January 2020 and then six expeditions in the Southern Atlantic before June 2021 *(www.iodp.org)*. Four out of the seven scheduled expeditions in FY20 and FY21 are based on proposals led by ECORD scientists. The *JR* is expected to complete its global circumnavigation in the Indo-Pacific region near the end of the programme.

Eighteen ECORD scientists, including one Co-chief Scientist were invited to participate in two expeditions that were implemented in 2018 and early 2019 by the *Chikyu*:

1. **Expedition 380 NanTroSEIZE Stage 3 Frontal Thrust Long-Term Borehole Monitoring System**
(12 January - 7 February 2018)
2. **Expedition 358 NanTroSEIZE Plate Boundary Deep Riser 4** *(page 10)*
(7 October 2018 - 21 March 2019).

This last expedition therefore materialises the culmination of ten years of drilling efforts to reach the plate interface fault system at seismogenic/slow slip depths. The NanTroSEIZE programme has started in 2007 and its completion will have required 12 expeditions involving more than 200 scientists from 15 countries.

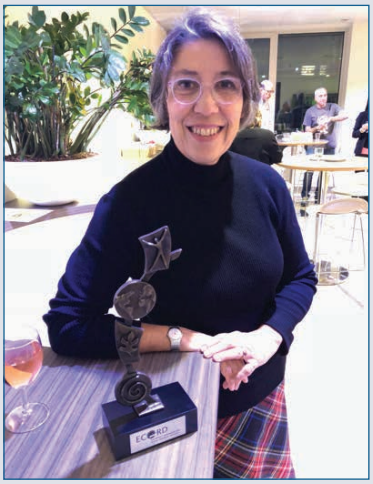
ECORD beyond 2023

Most IODP member countries and consortia are already planning efforts designed to consider the future of scientific ocean drilling beyond 2023. Based on the building phases of the current IODP (2013-2023), the planning of a scientific ocean drilling programme beyond 2023 will start this year with several initiatives taken at the national or consortia levels (ECORD, USA, Japan, ANZIC, China). The ECORD **'PROCEED' ('Expanding Frontiers of Scientific Ocean Drilling') workshop - http://www.ecord.org/science/proceed/** *(page 19),* that will be held at the Austrian Academy of Sciences, Vienna, Austria, on 6-7 April 2019 provides a unique opportunity to initiate the momentum that is needed to maintain scientific ocean drilling research in the next decade. These multiple planning efforts to continue scientific ocean drilling beyond 2023 will eventually require coordination to outline a Science Plan or to reconsider the current one, and to assess the technologies and the envisioned mix of drilling platform capabilities needed to reach its full potential.

Based on the well-established operation of its infrastructure, its successful implementation, its competitiveness in the international research landscape and maximum return from the investment, ECORD intends to play a prominent role in a future scientific ocean drilling programme.

Gilbert Camoin, Director of the ECORD Managing Agency camoin@cerege.fr; Nadine Hallmann, Assistant Director of the ECORD Managing Agency - hallmann@cerege.fr; Eric Humler, Chair of the ECORD Council - eric.humler@cnrs-dir.fr

Patricia Maruéjol received the first newly created 'ECORD Award' at the occasion of the ECORD Council-ESSAC #6 meeting in recognition of her outstanding contribution to ECORD.



Patricia Maruéjol: " For almost 16 years, I worked as Outreach Coordinator at the ECORD Managing Agency since the start of ECORD in October 2003. Before that time, I worked with Prof. John Ludden when he was in charge of ODP France and of JEODI, a EU-granted project, which set up ECORD as the "Third Leg of IODP". As Outreach Coordinator, my job was to collaborate with the different ECORD entities, IODP and ICDP partners, to better promote and communicate our research programmes. My scientific background - I am a geologist with a PhD in uranium ore-deposits - has greatly helped me unravel what is ocean research drilling and why it could be a lifetime project."

Outgoing ECORD members

Sally MORGAN EPC Petrophysics Staff Scientist /EPC Technical Manager (July 2009 - July 2018)

Jenny INWOOD - EPC Petrophysics Staff Scientist (October 2003- January 2018)

Robert GATLIFF
ESO Chair
(May 2010 - March 2018)

Incoming ECORD members

Malgo BEDNARZ - EMA Outreach Officer
since January 2019

Katharina HOCHMUTH
EPC Petrophysics Staff Scientist
since January 2019

News from the ECORD Facility Board

Gabriele Uenzelmann-Neben

The Operational Review Committee meeting for **Expedition 381 Corinth Active Rift Development** was held in Den Haag (The Netherlands) back to back to the ECORD Council meeting in November 2018. The review committee was composed of two external reviewers: Francois Cornet (Strasbourg University, France) and Alistair Robertson (Edinburgh University, UK), who unfortunately declined at the last moment, and of three members of the ECORD Facility Board (EFB) science panel: Ellen Thomas (Yale University, USA), Stephen Gallagher (University of Melbourne, Australia) and Gilles Lericolais (Ifremer, France). All parties agreed Expedition 381 was extremely successful. Despite some challenges, the drilling and coring objectives were almost completely achieved, and a total of 1,645 m of core was recovered from three sites over a 1,905 m cored interval (86% recovery). XRF data were collected at the Onshore Science Party (OSP) for the first time on a mission-specific platform (MSP) expedition. The review panel have proposed six recommendations to improve the next equivalent expedition.

Few MSP proposals are in the EFB waiting room and none were forwarded by last SEP held on January 2019 *(below)*.

Since the last newsletter summarising the 2018 EFB meeting decisions, a few things have changed in the development of the ECORD long-term scheduling strategy. While the EFB expressed an interest in realising Proposal 887 Gulf of Mexico Gas Hydrates, a Complimentary Project Proposal (CPP), the Council decided to follow the EFB's recommendation to implement Expedition 377 ArcOp as a first-priority expedition and scheduled it for FY 2021.

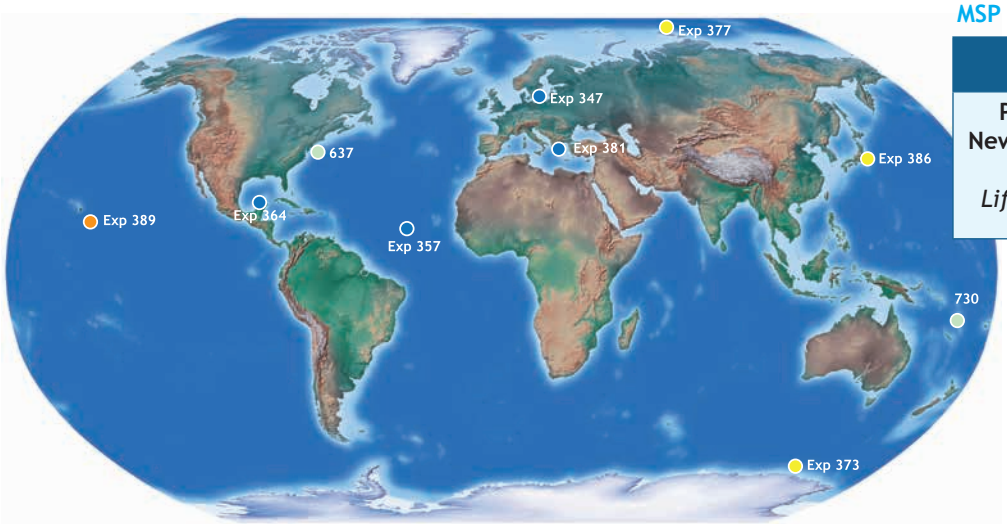
The implementation of **Expedition 389 Hawaiian Drowned Reefs** was planned for September/October this year. Unfortunately, the only bidder could not provide a tested drilling platform to ensure the success of the expedition *(page 6)*. So, in order not to jeopardise the scientific results it was decided to postpone the expedition and to send out a new call for platform services for Expedition 389. The implementation of **Expedition 386 Japan Trench Paleoseismology**, is planned by ESO in collaboration with CDEX/JAMSTEC *(pages 6 to 9)*.

Gabriele Uenzelmann-Neben, Chair of the ECORD Facility Board - gabriele.uenzelmann-neben@awi.de

MSP 2019 - 2023 Operational Plan

2013-14	2015	2016	2017	2018	2019	2020	2021	2022	2023
Exp 347 Baltic *Drillship Greatship Manisha*	Exp 357 Atlantis *RRS James Cook and Seabed drills RD2-MeBo*	Exp 364 Chicxulub *Liftboat Myrtle*	Exp 381 Corinth *Drillship Fugro Synergy*	No exp.	**Exp 389 Hawaii** *Seabed drill* *Postponed until further notice*	**Exp 386 Japan Trench** *Kamei or Chikyu*	**Exp 377 ArcOP** *Drillship*	No exp.	**Exp 373 Antarctic paleo-climate** *Icebreaker + seabed drill*

ECORD renewal



MSP proposals in the EFB waiting room

$ 11-18M	$ 6-7M
Proposal 637 New England Shelf *Liftboat/Jack up*	**Proposal 730 Sabine Bank** *Seabed drill*

- Completed MSP expeditions
- Postponed MSP expedition
- Scheduled MSP expeditions
- MSP Proposals in the EFB waiting room

http://www.ecord.org/about-ecord/management-structure/efb/


David McInroy


Sarah Davies

ECORD Science Operator
News and Views


Ursula Röhl


Dave Smith

In the previous ECORD Newsletter (#31 - November 2018), we reported on the latest planning for Expedition 389 Hawaiian Drowned Reefs. That planning continued, and new planning was initiated for expeditions scheduled by ECORD Council at its two meetings in 2018: Expedition 386 Japan Trench Paleoseismology, Expedition 377 Arctic Ocean Paleoceanography (ArcOP), and Expedition 373 Antarctic Cenozoic Paleoclimate.

In addition to preparing for scheduled and potential future expeditions, ESO staff organised and participated in other IODP-related meetings, workshops and conferences, and contributed to proponent consultation, training and programme outreach. Such activities included:

- Participation at the UK-IODP "Celebrating 50 years of Scientific Ocean Drilling" conference, London, September 2018;
- Attendance at the ECORD/IODP/ICDP booth at the AGU 2018 *(page 14)*;
- Participation at the IODP/ICDP New Caledonian Peridotite Amphibious Drilling Workshop, Montpellier, January 2019 *(page 18)*.

Expedition 381 Corinth Active Rift Development - Post expedition news
Co-chief Scientists: Lisa McNeill and Donna Shillington

The moratorium period for Expedition 381 ended on 28 February 2019, and the Proceedings of the IODP Volume 381 was published on 28 February - http://publications.iodp.org/proceedings/381/381title.html. The Science Party and their collaborators have continued their post-expedition research, and the majority of peer-reviewed papers from this expedition are expected to be submitted to journals before October 2020. Several papers are already in preparation or in press, with an early results paper recently published in *Nature Scientific Reports* entitled "High-resolution record reveals climate-driven environmental and sedimentary changes in an active rift" - https://doi.org/10.1038/s41598-019-40022-w.

Meanwhile, preparations continue for the Expedition 381 2nd Post-expedition Meeting, to be held in Greece in either fall 2019 or spring 2020. At this meeting, the Science Party will present the first results from their individual post-expedition research projects, and will coordinate their publication strategies.

http://www.ecord.org/expedition381/

Expedition 389 Hawaiian Drowned Reefs - planned 2019 MSP expedition - postponed until further notice
Co-chief Scientists: Jody Webster and Christina Ravelo

In August 2018, ESO issued a world-wide contract notice for platform and seafloor drilling services for this expedition. The drilling contract bids were evaluated in October, and a preferred bidder was identified. At the beginning of December, the preferred bidder formally withdrew their bid citing business reasons. An alternative bidder was immediately engaged, however discussions with them led to the conclusion that, at this time, Expedition 389 would carry significant technical risks.

These risks were presented to the ECORD Council and the ECORD Facility Board in February 2019, to inform a 'go/no-go' decision, and in March the ECORD Council decided to postpone Expedition 389.

Preparation of permitting paperwork continued, is now ready for submission, but is currently on hold. The work invested in permitting will be applicable in the event of rescheduling.

Options for rescheduling Expedition 389 will be considered at the ECORD Facility Board Meeting in March. Further announcements will be made via IODP-related channels in due course, and it is envisaged that a new Call for Scientists will be issued in the event that Expedition 389 is rescheduled.

http://www.ecord.org/expedition389/

Expedition 386 Japan Trench Paleoseimology - scheduled for 2020
Co-chief Scientists: *Selection in progress*

This expedition aims to use multiple Giant Piston Coring (GPC) to test and develop submarine paleoseismology in the Japan Trench *(see Highlights of IODP Proposal 866, pages 8-9)*. Eighteen primary sites are proposed with GPC to 40 mbsf at each site, in water depths between 7250 and 8030 m.

In November, the ECORD Council scheduled Proposal 866 (now Expedition 386) for summer 2020, and instructed ESO to investigate how major expedition facilities might be provided by combining In-Kind Contributions (IKCs) with existing ESO facilities. Initial discussions have taken place between ESO and JAMSTEC/CDEX, and there is scope and a strong desire within

More information about IODP MSP expeditions:
http://www.ecord.org/expeditions/msp/2013-2023

Research Vessel Kaimei is equipped with sophisticated equipment, facilities and laboratories to analyse core samples soon after collection. The vessel can also perform many other functions to contribute to climate change research, and studies for prevention and reduction of disaster risks associated with earthquakes and tsunamis (photo ©JAMSTEC).

both agencies for cross collaboration, operational knowledge exchange, as well as efficient co-delivery of Expedition 386.

The Japanese research vessel *Kaimei (above)*, which is already equipped with a GPC, has been identified as the potential coring vessel. Excitingly, there is potential for the *Chikyu* being available as the location for the Onshore Science Party, as an alternative to the Bremen Core Repository.

At this time, ESO and CDEX/JAMSTEC are working together on a joint operational plan, and it is hoped that this will lead to an MoU between ECORD and JAMSTEC, and a collaboration between the IODP operators to jointly implement this expedition.

http://www.ecord.org/expedition386/

Expedition 377 Arctic Ocean Paleoceanography (ArcOP) - scheduled for summer 2021

Co-chief Scientists: Rüdiger Stein and Kristen St. John

The overall goal of this expedition is to recover of a complete stratigraphic sedimentary record on the southern Lomonosov Ridge to study the continuous, long-term Cenozoic climate history of the central Arctic Ocean. Sedimentation rates two to four times higher than those at the Expedition 302 (ACEX) sites permit higher-resolution studies of Arctic climate change in the Pleistocene and Neogene.

After postponing this expedition in 2018, the ECORD Facility Board reaffirmed that Expedition 377 remains a first-priority expedition, and recommended its implementation before the end of the current phase of IODP.

In November, ECORD Council rescheduled Expedition 377 for summer 2021, and committed a new budget that removed the expedition's dependence on IKCs for primary icebreaker services.

This triggered a new phase of expedition planning by ESO, which included the publication in February of a 'Prior Information Notice' on the online version of the Supplement to the Official Journal of the EU, a website dedicated to European public procurement. The Prior Information Notice provides the market place with early notification of intent to award an ice management contract, which can lead to early supplier discussions to help inform the development of the project specification. The drilling and logging contract notices for this expedition will follow later this year

http://www.ecord.org/expedition377/

Expedition 373 Antarctic Cenozoic Paleoclimate - scheduled for 2023

Co-chief Scientists: Trevor Williams and Carlota Escutia

This expedition seeks to recover shallowly-buried strata under the George V and Adélie Land shelf of Antarctica, containing records of Antarctica's climate and ice history from the Eocene greenhouse to the dynamic ice sheet margins of the Neogene. Over these times, Antarctica and the Southern Ocean have played a central role in controlling sea level, deep-water formation, ocean circulation, and exchange of carbon dioxide with the atmosphere.

In ECORD Newsletter #31, we reported on our efforts to contract a suitable platform and drilling system to implement this expedition in the 2019/21 Antarctic summer season. The contract notice exercise in 2018 revealed that no affordable or compliant platform options are available to implement this expedition in the 2019/20 or 2020/21 Antarctic summer seasons. As a consequence, ESO reverted to the EFB consensus to implement Expedition 389 Hawaiian Drowned Reefs as an alternative 2019 expedition *(see section above)*.

At its November meeting, the ECORD Council reaffirmed its commitment to this expedition by rescheduling for FY23. ESO are continuing to investigate platform opportunities that may allow implementation of this expedition in this phase of the programme.

http://www.ecord.org/expedition373/

David McInroy, ESO Science Manager, Sarah Davies, EPC Manager, Ursula Röhl, ESO Curation and Laboratory Manager, and Dave Smith, ESO Operations Manager
http://www.ecord.org/about-ecord/management-structure/eso

http://www.ecord.org/expeditions/msp/

Highlights of IODP Proposal 866

TRACKing past earthquakes in the sediment record along the Japan Trench: Testing and developing submarine Paleoseismology in the deep sea

Michi Strasser*

Short historical and even shorter instrumental records limit our perspective of earthquake maximum magnitude and recurrence, and thus are inadequate to fully characterise Earth´s complex and multi-scale seismic behaviour and its consequences. 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. Submarine Paleoseismology is a promising approach to investigate deposits from the deep sea, where earthquakes leave traces preserved in stratigraphic succession. J-TRACK Paleoseismology is motivated by the mission to fill the gap in long-term records of giant subduction zone earthquakes and aims at testing and developing submarine paleoseismology in the hadal deep-sea environment of the Japan Trench (JT).

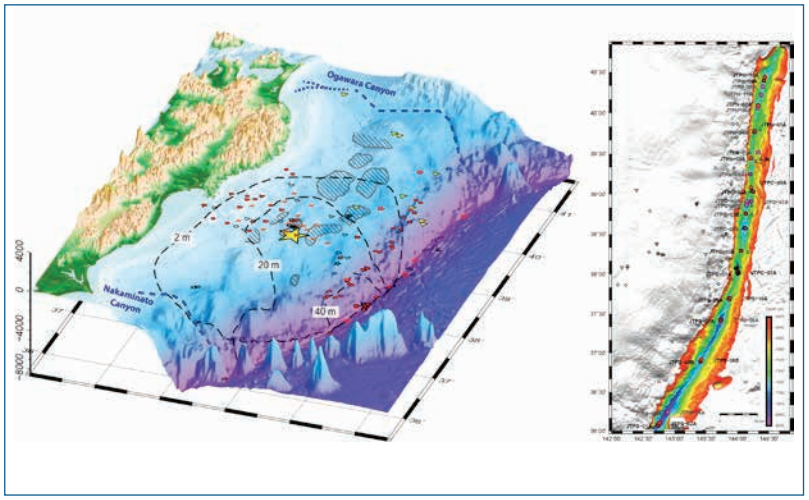


Figure 1: Overview of the Japan Trench subduction margin and 2011-Tohoku-oki earthquake slip distribution (left) and high-resolution bathymetric map of the hadal trench (right) with IODP Expedition 386 primary (red) and secondary (purple) coring sites.

There, the giant 2011-Mw-9.0-Tohoku-oki earthquake has been documented to remobilise fine-grained, young surface sediment enriched in organic matter from the slope into the >7 km deep Japan Trench, where respective deposits are preserved in isolated trench basins, formed by flexural bending of the subducting Pacific plate *(Figure 1, Kioka et al., 2019; Ikehara et al., 2016)*. These basins are excellent study areas for testing event-deposits for earthquake triggering, because they are poorly connected for sediment-transport from the shelf, experience high sedimentation rates and low benthos activity (and thus high preservation potential) in the hadal environment. Results from conventional coring covering the last ~1.500 years reveal good agreement between the sedimentary record and historical documents *(Ikehara et al., 2016; Bao et al., 2018)*. Sub-bottom profiles images are consistent with basin-fill successions of episodic muddy turbidite deposition, thus defining clear targets for paleoseismologic investigations on longer time scales accessible only by IODP coring *(Figure 2)*.

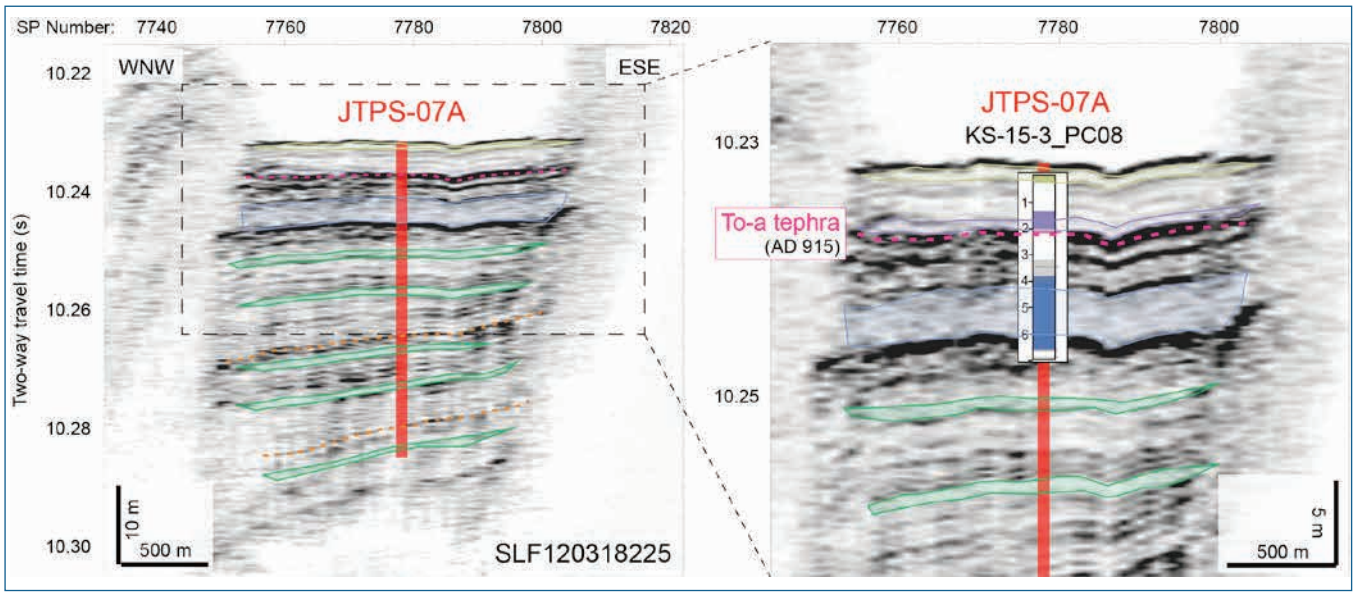


Figure 2: Parasound lines defining clear event-deposit targets for IODP coring (coloured bodies, the uppermost three of which have already been cored and correlated to historic earthquakes and volcanic eruption, Ikehara et al., 2016; see Fig 1 for location)

*University of Innsbruck, Austria - michael.strasser@uibk.ac.at

IODP Expedition 386 will apply a multi-coring approach by mission-specific platform shallow-subsurface (40m) piston coring *(ESO page 6-7)* to recover the continuous Upper Pleistocene-to-Holocene stratigraphic successions of trench-fill basins along an axis-parallel transect of the 7 - 8km deep trench. The cores from 18 proposed primary (and/or 13 alternate) sites will be used for multi-method applications to characterise event-deposits, for which the detailed stratigraphic expressions and spatio-temporal distribution will be analysed for proxy-evidence of earthquakes.

The primary research objectives of JTRACK-Paleoseismology are to apply, further refine and implement new methods for establishing event-stratigraphy in the deep sea and for recognising giant vs. smaller earthquakes vs. other driving mechanism. The results of this proposal can potentially produce a fascinating record unravelling an earthquake history that is 10 to a 100 times longer than currently available information, along with new constraints on sediment and carbon flux of event-triggered sediment mobilisation to a deep-sea trench and its influence on the hadal environment.

IODP Proposal 866 Proponents: M. Strasser, K. Ikehara, T. Kanamatsu, S. Kodaira, C. McHugh, Y. Nakamura, A. Cattaneo, T. Eglinton, C. Goldfinger, T. Itaki, A. Kioka, A. Kopf, J. Moernaut, J. Mori, Y. Nagahashi, V. Spieß, W. Szczuciński, M. Underwood, K. Usami, S. Wiemer

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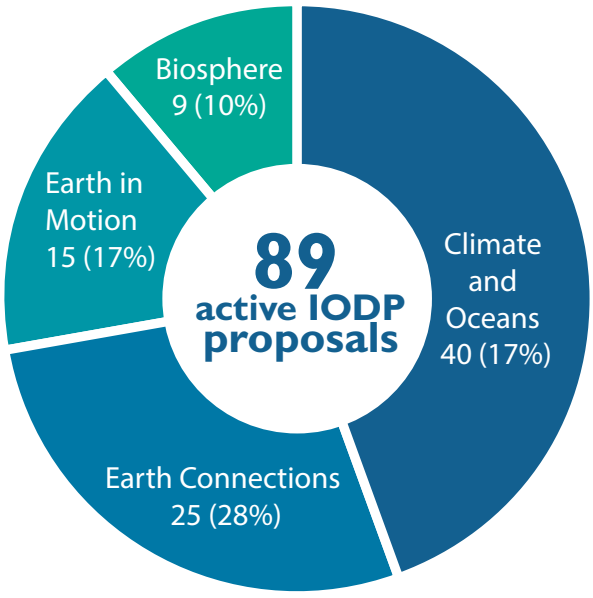
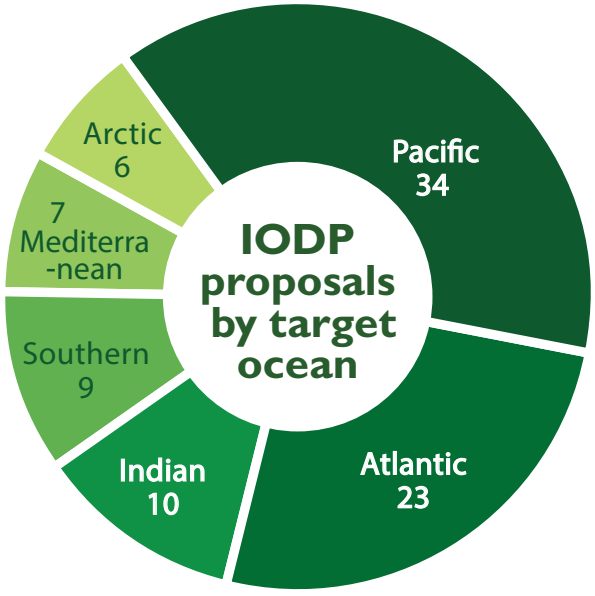
Kioka et al (2019). Nature Scientific Reports, 9, 1553. doi:10.1038/s41598-019-38834-x

IODP Proposals

How to submit a proposal? http://www.iodp.org/proposals/submitting-proposals

Active IODP proposals: http://www.iodp.org/proposals/active-proposals





Proposal statistics as of January 2019

Antony Morris

ESSAC News

Hanno Kinkel

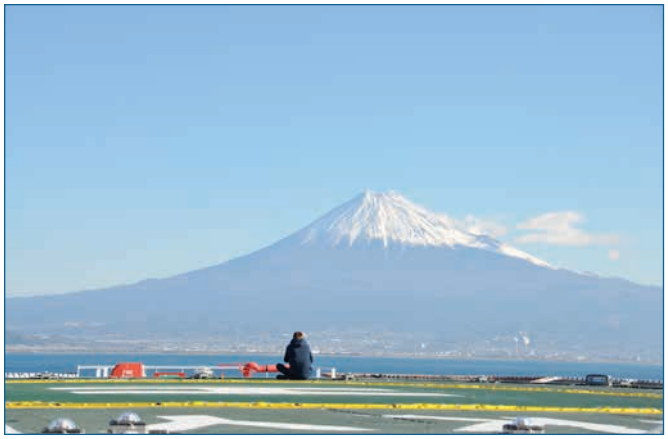
Four IODP expeditions were completed in 2018, using the *JOIDES Resolution*. Two expeditions were carried out using the *R/V Chikyu*, with IODP **Expedition 358 NanTroSEIZE Deep Riser Drilling: Nankai Seismogenic/Slow Slip Megathrust** *(top right)* being the longest ever in IODP history, lasting for six months. As part of ECORD's mission-specific platform (MSP) programme, IODP Expedition 381 Corinth Active Rift Development successfully completed its onshore phase at the Bremen Core Repository in March 2018 *(bottom right)* and first results as well as the Proceedings volume have now been published **http://publications.iodp.org/proceedings/381/381title.html**.

In 2018, a total of 42 scientists (including two Co-chief Scientists) from ECORD member countries participated in IODP expeditions. Nine of these scientists were selected following special calls for participation. So far this year, the *JOIDES Resolution* is currently drilling in the Amundsen Sea on IODP Expedition 379 Amundsen Sea West Antarctic Ice Sheet History, with an ECORD Co-Chief Scientist (Karsten Gohl, Germany), nine other ECORD scientists and an ECORD Outreach Officer in the shipboard Science Party *(pages 11 and 16)*.

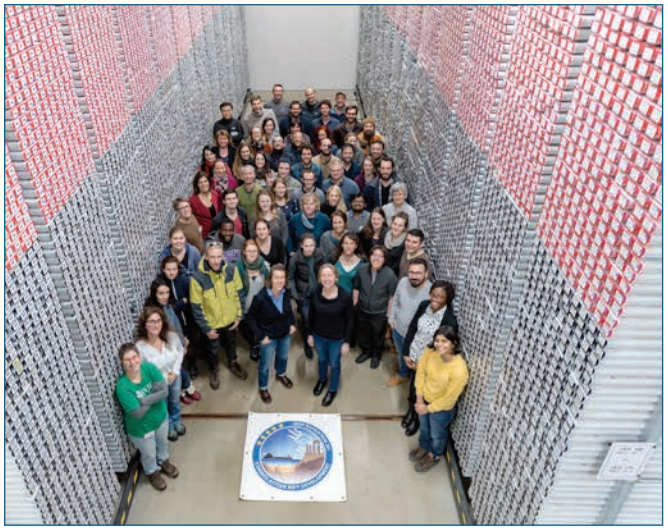
The selection of ECORD scientists to participate in upcoming expeditions by the *JOIDES Resolution*, the *Chikyu* and MSPs during 2019 has been completed or is ongoing. Applicants for these IODP expeditions have greatly benefited from information provided by online, interactive "webinars", which have become an integral part of the application process for all IODP expeditions.

We are pleased to be able to provide many students and early-career researchers with the opportunity to participate in IODP expeditions. Young scientists continue to make up approximately 50% of the ECORD participants. More information about the scientific objectives and dates of all expeditions can be found in the table below and on the IODP website at **http://www.iodp.org/expeditions**.

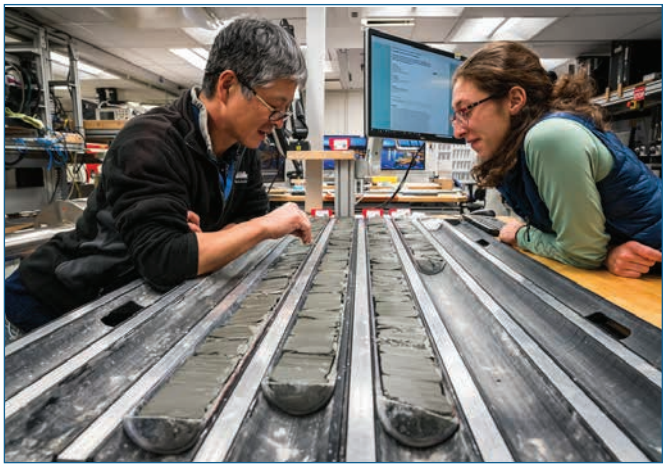
The development of drilling proposals within IODP *(page 9)* is overseen by the Science Evaluation Panel (SEP) that meets twice a year to review proposals, encourage and monitor their progress and eventually identify the strongest proposals to pass to the facility boards for scheduling. ECORD has nine members in the SEP Science sub-group and five members in the SEP Site sub-group (link). As we enter the renewal process for a future implementation of IODP *(page 17)* and the development of a new Science Plan, we need to demonstrate to national funding agencies that there is continued proposal pressure from the international scientific ocean drilling community if we are to succeed in securing the future of IODP. So, there is a pressing need for the community to continue to develop new drilling proposals - now is the time for ECORD scientists at all career stages to push forward with developing exciting, innovative proposals to take us beyond 2023. The progress of proposals through the evaluation system in recent years has been streamlined and optimised, so this is an ideal opportunity for ECORD scientists to lead new expeditions, and we should not be taking our eye off the ball as we approach the end of the current IODP phase.



Mount Fuji pictured from the helipad of the Chikyu in Shimizu harbour at the end of Expedition 358 NanTroSEIZE (JAMSTEC/IODP).



Science Party of Expedition 381 Corinth Rift Active Developement in the Bremen Core Repository (photo V. Diekamp, ECORD/IODP).



Expedition 379 Amundsen Sea W Antarctic Ice Sheet History: scientists examine fresh cores onboard the JOIDES Resolution (photo V. Cumming & IODP).

The **2019 ECORD Distinguished Lecturer Programme** covering the major themes defined in the IODP Science Plan has just started to be delivered by the our new group of four outstanding lecturers. In total, 25 lectures are planned in this phase, and further information is available at **http://www.ecord.org/education/dlp/**.

ESSAC continues to support initiatives to train the next generation of ocean drilling scientists through the ECORD Summer Schools *(pages 12 and 13)*. In 2018, early-career scientists had the opportunity to participate in three Summer Schools sponsored by ECORD and related to marine science research and ocean drilling. As in previous years, ESSAC provided ECORD Scholarships to attend these events, with 15 awards made in 2018. The deadline for the 2019 round of awards will be 30 April 2019 *(page 12)*.
http://www.ecord.org/education/summer-schools/ and
http://www.ecord.org/education/scholarship/

The ESSAC Office also issued a call for applications for **ECORD Research Grants**, to support outstanding early career scientists in IODP-related research, with a deadline of 30 January 2018. These short-term, merit-based awards contribute to travel and laboratory expenses, and are particularly intended to support studies that promote new collaborations and/or the acquisition of new scientific expertise. The applications are presently being evaluated by ESSAC.
http://www.ecord.org/education/research-grant/

Other ESSAC activities include the EGU 2019 General Assembly in Vienna, Austria (7 - 12 April 2019), where a session entitled "Achievements and Perspectives in Scientific Ocean and Continental Drilling (Session SSP1.2)" has been jointly organised with the International Continental Drilling Program (ICDP) (*below and page 22*). This session has now become a regular event at EGU and continues to attract a large number of oral and poster contributions. More information about ECORD, IODP and ICDP, and possibilities to get involved in the programmes, is available at the joint ECORD-IODP-ICDP #51-53 booth in the exhibition hall, and at the IODP-ICDP Town Hall Meeting… see you there!

Antony Morris, ESSAC Chair, and Hanno Kinkel, ESSAC Science Coordinator - essac@plymouth.ac.uk

IODP-ICDP sessions at EGU 2019

TM3 - ICDP-IODP Townhall Meeting - Tue 9 April, 1900-20:00, Room N2

SSP1.2 - Achievements and perspectives in scientific ocean and continental drilling
Thu 11 April, 8:30-12:30, room 0:31 & posters 16:15-18:00, Hall X1

EOS4.2 - Outreach in Geosciences: what does it mean to you?
Thu 11 April, posters 14:00-15:45, Hall X4

http://www.ecord.org/science/get-involved/
http://www.ecord.org/education/

ECORD Summer Schools 2019

Petrophysics Summer School, Leicester (UK)
29 June - 5 July 2019

deadline for application to the Summer School: 22 April 2019

website: https://www2.le.ac.uk/departments/geology/research/gbrg/projects/iodp/petrophysics-summer-school-2019

Apply for an ECORD Scholarship to attend a Summer School

http://www.ecord.org/education/scholarship/
deadline: 30 April 2019

16th Urbino Summer School in Paleoclimatology
10-26 July 2019

deadline for early registration to the Summer School: 15 April 2019

website: http://www.urbinossp.it/

Bremen Summer School - Subduction Zone Processes: magma, volcanoes, ore deposits, geohazards
16 - 27 September 2019

deadline for application to the Summer School: 19 June 2019

website: https://www.marum.de/en/education-career/ECORD-training/ECORD-Summer-Schools/2019.html

http://www.ecord.org/education/

ECORD Outreach Task Force

News and Activities

Since November 2018, the ECORD Outreach Task Force (EOTF) has promoted ECORD and IODP at the AGU 2018, and continues the production of resources for various audiences.

Activities

An exhibition booth presenting ICDP and IODP under a "Scientific Drilling" banner was co-organised at the **AGU 2018** (10-14 December), in Washington, DC (USA), in collaboration with colleagues from ICDP, USSSP and CDEX/JAMSTEC. This event is the largest earth-sciences conference and brought together more than 23,000 participants from all over the world.

ECORD participants of the EOTF meeting in Aix en Provence. From left, Chiara Trabella, Ulrike Prange, Hanno Kinkel, Malgo Bednarz, Patricia Maruéjol, Carol Cotterill, Nadine Hallmann, Gilbert Camoin and Tony Morris.

Vivien Cumming (UK) is currently at sea as **Education Officer** onboard **Expedition 379 Amundsen Sea W Antarctic Ice Sheet History** (Co-chief Scientists Karsten Gohl, ECORD-Germany and Julia Wellner, USA). Vivien will produce outreach resources for a public audience and several of her photos are presented on page 16. ECORD also supports the exhibition at the Lapworth Museum of Geology, University of Birmingham (UK) *(page 15)*.

The EOTF met on 28 February-1 March in Aix en Provence *(above)*. The Task Force welcomed Malgo Bednarz, ECORD Outreach Officer, who will replace Patricia Maruéjol after she retires on 30 June 2019, Chiara Trabella, currently Outreach Trainee at EMA, and Ursula Heidbach *(page 22)* who recently joined the outreach team at ICDP. The EOTF will meet again at the EGU 2019 in Vienna.

Resources

A TV documentary highlighting IODP science of the final NanTroSEIZE Expedition 358 will be broadcast late April on the French public television (France.TV) *(page 23)* and an article was published in the January issue of the French magazine *Science et Avenir*.

ECORD/IODP information materials (Annual Report 2018, Newsletter, and flyers) - http://www.ecord.org/resources/ - were distributed to the ECORD community. IODP/ODP core replicas were loaned to university courses and displays *(page 15)*. New core replicas arising from **Expedition 364 Chicxulub K-Pg Impact Crater** will be delivered in April.

Following EMA's proposition that has been approved by the ECORD Council to address stakeholders, funding agencies and the general public, the EOTF is working on two new brochures and a video produced with Alex Ingle - https://www.alexingle.com.

ECORD online

The **ECORD website** has had an average of 400 visitors per day during February/March 2019 with a peak of 879 visits on 28 February. Visual resources will continue to be uploaded on the **ECORD photo gallery** - http://www.ecord.org/resources/gallery/photos/ and **ECORD TV** - http://www.ecord.org/resources/gallery/ecord-tv/. ECORD has recently set up its own **Instagram account: ecord_iodp**

Upcoming events / activities

ECORD / IODP - ICDP exhibition booth will be co-organised at the **EGU 2019** (7-12 April, Vienna, Austria), in conjunction with outreach and science sessions *(below and page 11)*. The renewal of the ECORD Information Database has started on late February and should be available to the public on September 2019. The fall EOTF meeting will be held on 7 November 2019 in Dublin, Ireland, in collaboration with our outreach colleagues from USSSP, CDEX/JAMSTEC and ICDP.

Patricia Maruéjol, Malgo Bednarz, Nadine Hallmann, EMA, Carol Cotterill and Ulrike Prange, ESO and Hanno Kinkel, ESSAC - info@ecord.org

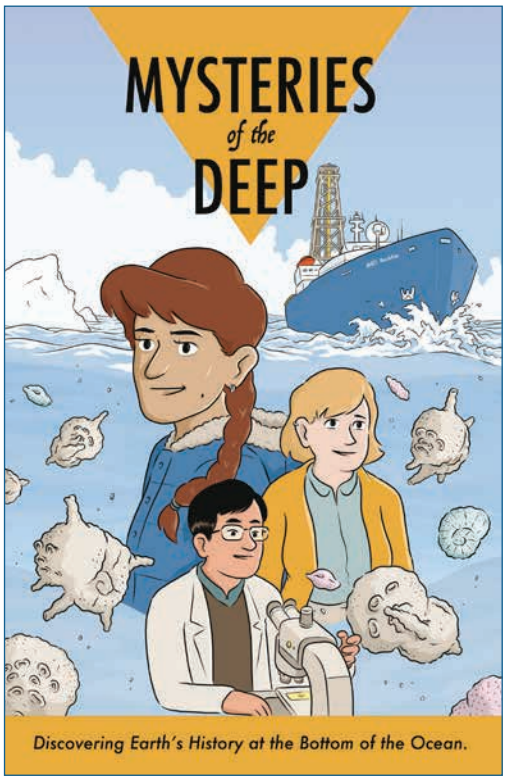
@ECORD_IODP ECORD IODP YouTube ECORD_IODP ecord_iodp

EGU 2019
EOS4.2 - Outreach in Geosciences: what does it mean to you
Thursday 11 April, posters 14:00-15:45, Hall X4

Mysteries of the Deep: An exhibition at the Lapworth Museum of Geology Birmingham (UK)

Tom Dunkley Jones*

University of Birmingham researchers involved in IODP science - including recent participants Kirsty Edgar (Exp. 369), James Bendle (Exp. 355), Gael Lymer (CLSI@Sea workshop), Marco Maffione (Exp. 351, 381), Marcelo Mota (Exp. 379) and Tom Dunkley Jones (Exp. 363, 388) - have had the exciting opportunity of working with a graphic artist - Edward Ross (www.edwardross.co.uk) - to express some of the wonder and excitement of IODP science. Partly inspired by the 50-year anniversary of scientific ocean drilling, and the opportunity to curate and design a "Temporary Exhibition" for four months within the **Birmingham Lapworth Museum of Geology from 11 March to 17 June 2019**, the Birmingham team designed a new outreach comic about palaeoclimate science and a set of specially-designed exhibition interpretive panels.



The comic, entitled **"Mysteries of the Deep"** *(right)*, focuses on the reconstruction of Eocene Greenhouse climate states, and seeks to lead the reader on a journey through the *JOIDES Resolution,* a journey from core to data, and a journey back in time - from modern to ancient climate conditions. With this publication, we aim to explain the process and importance of palaeoclimate science to a wider readership, but especially Secondary School / High School aged students.

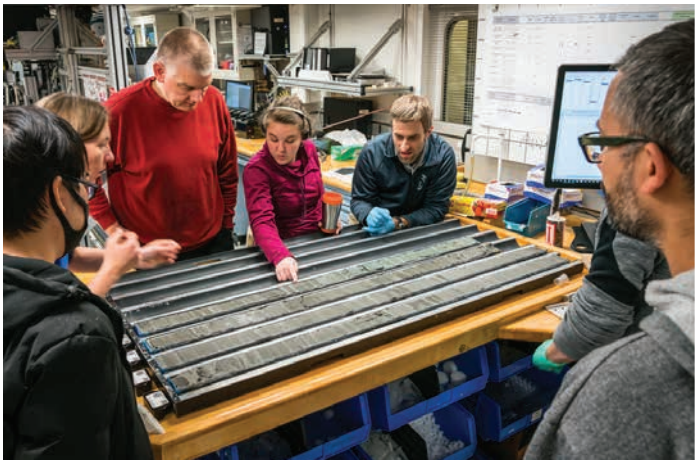
Pulling together the exhibition text built on some of the excellent work undertaken by the USIO outreach team – especially Sharon Cooper and Nicole Kurtz. We're also very grateful to the ECORD outreach team and Patricia Maruéjol, for the loan of core replicas as part of the exhibition. We hope that some of the exhibition materials produced can be used in other locations in the coming months and years.

As well as the temporary exhibition at the Lapworth Museum www.birmingham.ac.uk/facilities/lapworth-museum we are making the comic and the exhibition content available to the wider public, teachers, students and the IODP science community to use in their own outreach activities. These are available at the exhibition website: **www.mysteriesofthedeep.org** but also can be provided individually at high resolution for use in other exhibits or outreach activities - please contact Tom Dunkley Jones for details - t.dunkleyjones@bham.ac.uk. We hope these are of use to ECORD researchers and would appreciate any feedback or follow up for future ECORD-based outreach activities. There is a short-survey available on the website which we'll use to gather this information.

* Senior Lecturer in Palaeoclimates and Palaeobiology, School of Geography, Earth and Environmental Sciences, University of Birmingham - t.dunkleyjones@bham.ac.uk

Views of Expedition 379 Amundsen Sea W Antarctic Ice Sheet History

Vivien Cumming*





1	2
3	4
5	6

Captions and credits: ***1****- Members of the science party crowd around the sampling table as soon as the core is split to make their first observations and decide where to sample;* ***2*** *- Icebergs drift past the sampling sites in the Amundsen Sea on a daily basis;* ***3*** *- Two humpback whales come close to the JOIDES Resolution to see what we are doing, we have seen many humpback whales in the distance and occasionally they come close and give us a show;* ***4*** *- French PhD Student, Margot Courtillat studying foraminifera under the microscope;* ***5*** *- Co-chief Scientist Karsten Gohl (Germany) expresses his excitement as new core comes on deck;* **6.** *Celebrating Valentine's Day with the crew.*
All photo credits: Vivien Cumming & IODP.

Ship's log from Expedition 379: **https://joidesresolution.org/expedition/379/**

* IODP Outreach Officer - viviencumming@gmail.com

A message from the Chair of the IODP Forum

Dick Kroon*

IODP is a very strong global community programme. There are brilliant people in our community, scientists, engineers, outreach staff, and other tremendous support staff in all IODP partner countries. Scientists from all over the world submitted almost 200 abstracts that mentioned the acronym IODP to the last AGU Meeting in Washington. That is a tremendous achievement.

The current IODP phase (2013-2023) based on a collaborative approach is working well. A Forum consensus statement formulated during the last IODP Forum meeting in Goa, India (September 2018) encapsulated this as follows:

Forum Consensus Item 18-01: *In response to presentations from IODP platform providers, the Forum notes their positive reaction to IODP multiple platform coordination and collaboration, streamlined program panel review, and nurturing of drilling proposals submitted by the international community. The Forum applauds this funding agency enthusiasm, which should underpin nascent planning efforts by multiple member countries/consortia to support scientific ocean drilling over the long term (i.e. post-2024).*

We should have the confidence to make plans for the future. The mid-term renewals of individual members/consortia for the second phase of this programme are well underway. For instance, the National Science Foundation just recently announced an instance of funding for the *JOIDES Resolution* to cover for the second part of the current programme.

Not many scientists are aware of the role of the IODP Forum within IODP. I asked the governing councils of consortia how the Forum could play a vital role for the future of IODP. The governing council of the Australia-New Zeland IODP Consortium (ANZIC) came back with a very positive reply including interesting statements on the potential leadership of the Forum in IODP.
I am very happy to share their list:

1. Organise a new decadal science plan;
2. Reporting on movement toward the Science Plan aims;
3. Coordinating disparate efforts and identify future directions
4. Leadership in strategic directions;
5. Continue as an early warning system, two years heads up of potential issues;
6. IODP Forum can be more agile: whereas the Facility Boards and the Science Evaluation Panel have a task that they focus on;
7. Equipment! What does the community need with respect to analytical capacity; IODP Forum to coordinate community needs.

This is a very nice list informing on the functioning of the IODP Forum, and not far away from its current mandate. All the above mentioned issues relate to long-term planning of IODP. I agree that it is time to work hard on a plan for post-2023, *i.e.* a new decadal science plan. The IODP Forum is the place to start planning for post-2023. In fact, discussion on the long-term future of IODP featured highly on the agenda of last IODP Forum meeting in Goa, India (September 2019). The previous IODP Forum Chairs Keir Becker and Jamie Austin have made long-term planning central, amongst other issues, to Forum discussions. I intend to follow this approach. The Forum is the place within the current IODP structure where coordination of long-term planning would take place.

The long-term regional workshops are very important in this endeavour, guaranteeing a bottom approach for the next generation of scientists. The IODP Forum has encouraged these workshops. Many young and mid- career scientists would attend one or the other workshop, ventilating big ideas for future drilling:

2 - 3 April - Scientific Ocean Drilling beyond 2023, Yokohama, Japan

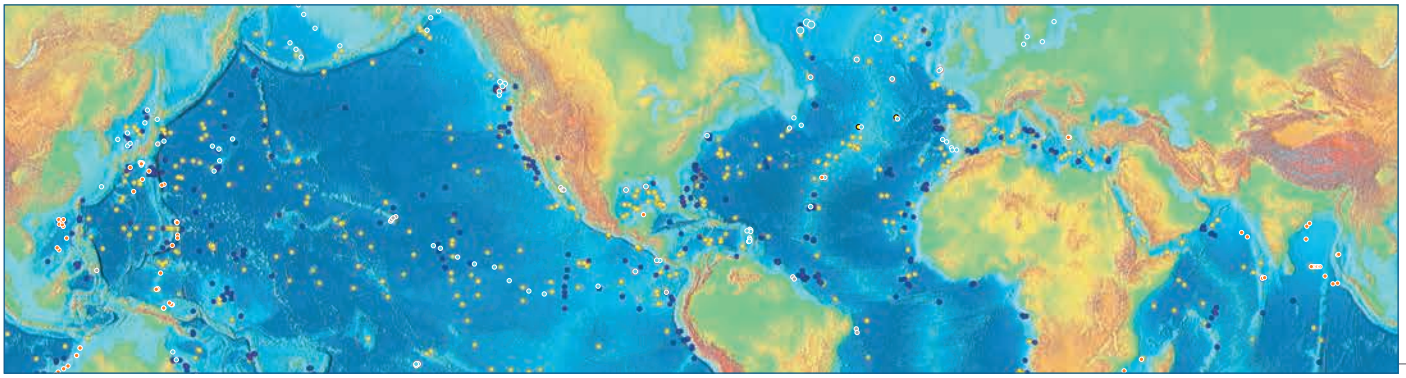
6 - 7 April - PROCEED, Vienna, Austria *(page 19)*

14-16 April 2019 - OCEAN Planet, Canberra, Australia

6 - 7 May - NEXT: Scientific Ocean Drilling beyond 2023, Denver, USA

The outcomes of the workshops will be discussed at the next IODP Forum meeting in Osaka, Japan (September 2018). The Forum will be able to formulate approaches towards a new/or rewritten Science Plan for the next decade after 2023. Deadline for the new/rewritten Science Plan would be end 2020/early 2021. We can all be very optimistic that there will be a new phase of drilling after 2023. The Forum is very excited about this, and it will embrace every opportunity to help making this a reality.

* IODP Forum Chair, Regius Professor of Geology, University of Edinburgh, UK - dick.kroon@ed.ac.uk



Calendar of Workshops and Conferences

2019

22 - 24 January
MagellanPlus Workshop New Caledonia Peridotite ADP
Montpellier, France
www.ecord.org/science/magellanplus/

2 - 3 April
Scientific Ocean Drilling beyond 2023
Yokohama, Japan
j-desc.org/eng/beyond2023-ws-2019

6 - 7 April
PROCEED
Vienna, Austria
www.ecord.org/science/proceed/

7 - 12 April
EGU 2019
Vienna, Austria
egu2019.eu

14 - 16 April
Ocean Planet
Canberra, Australia
iodp.org.au/event/ocean-planet-registration-closing-25th-march/

6 - 7 May
NEXT: Scientific Ocean Drilling beyond 2023
Denver, USA
usoceandiscovery.org/next_workshop/

26 - 30 May
JpGU 2019
Chiba, Japan
www.jpgu.org/meeting_e2019/

18 July - 2 August
AOGS 2019
Singapore
www.asiaoceania.org/aogs2019/

18 - 23 August
Goldschmidt 2019
Barcelona, Spain
goldschmidt.info/2019/

2 - 6 September
ICP 13
Sydney, Australia
www.pastglobalchanges.org/calendar/2019

10 - 13 September
IAS
Rome, Italy
iasroma2019.org/

22 - 25 September
GSA 2019
Phoenix, AZ, USA
www.geosociety.org/gsa

9 - 13 December
AGU 2019
San Francisco, CA, USA
meetings.agu.org/upcoming-meetings/

2020

2 - 8 March
IGC #36
Delhi, India
36igc.org/

3 - 8 May
EGU 2020
Vienna, Austria
egu2020.eu/

24 - 28 May
JpGU 2020
Chiba, Japan
www.jpgu.org

5 - 10 July
ICRS 2020
Bremen
www.icrs2020.de/

18 June - 4 July
AOGS 2020
Gangwon, South Korea
www.asiaoceania.org/

7 - 11 December
AGU 2020
San Francisco, CA, USA
meetings.agu.org/upcoming-meetings/

2021

25 - 30 April
EGU 2021
Vienna, Austria
www.egu.eu/meetings/calendar//

2019 ECORD & IODP Meetings

SEP
8-10 January 2019
La Jolla, CA, USA

ECORD Outreach TF #15
28 February - 1 March 2019
Aix en Provence, France

EPSP
12 February 2019
College Station, TX, USA

ECORD Facility Board
21-22 March 2019
Bremen, Germany

***JOIDES Resolution* Facility Board**
8-9 May 2019
Denver, CO, USA

ESSAC #12
27-29 May 2019
Bergen, Norway

***Chikyu* IODP Board**
11-12 June 2019
Kobe, Japan

SEP
25-27 June 2019
Edinburgh, UK

EPSP
4-5 September 2019
College Station, TX, USA

IODP Forum #6
11-13 September 2019
Osaka, Japan

Program Member Offices
14 September 2019
Osaka, Japan

ESSAC
4 November 2019
Dublin, Ireland

ECORD Council-ESSAC #7
5-6 November 2019
Dublin, Ireland

ECORD Outreach TF #16
7 November 2019
Dublin, Ireland

SEP
8-10 January 2019
La Jolla, CA, USA

http://www.ecord.org/about-ecord/events-calendar/

http://www.iodp.org/

ECORD
EUROPEAN CONSORTIUM FOR OCEAN RESEARCH DRILLING

PROCEED
EXPANDING FRONTIERS OF SCIENTIFIC OCEAN DRILLING

ÖAW ÖSTERREICHISCHE AKADEMIE DER WISSENSCHAFTEN

IODP will soon successfully enter its second phase (2019-2023). However, based on the preparatory phase of the current IODP (2013-2023), it is already time to think of a potential scientific ocean drilling programme beyond 2023. However, the challenges to build a successor programme to the current IODP are huge. To respond to such a challenge, ECORD has decided to organise a 2-day workshop directed at initiating concepts and defining new goals for its participation in a future international scientific ocean drilling programme to be developed beyond 2023. Special emphasis will be on new science frontiers and technological developments in a multiple drilling platform approach.

The workshop, entitled **PROCEED – EXPANDING FRONTIERS OF SCIENTIFIC OCEAN DRILLING**, will be held at the Austrian Academy of Sciences, Vienna (Austria), on 6 -7 April 2019, right before the 2019 EGU.

The objective of the PROCEED workshop is to produce a White Paper, which will summarise the scientific, technological and programmatic goals for ECORD beyond 2023. This document will constitute the foundation for interactions with our IODP partners who will also start to get organised in 2019 at their national/consortium level. The coordination of all these actions to build a new programme is still to be defined.

Scientific committee: C. Boschi, R. Coggon, A. Delacour, T. Dunkley-Jones, M. Forwick, M. Godard, P. Grunert, M. Harris, V. Heuer, H. Kleiven, W. Kurz, A. McCaig, J. Mueller, U. Nicholson, M. O'Regan, A. Sluijs, M. Strasser

Organising committee: G. Camoin (EMA), N. Hallmann (EMA), D. McInroy (ESO), A. Morris (ESSAC), G. Uenzelmann-Neben (EFB), W. Piller (ESSAC).

Nadine Hallmann, Assistant Director of the ECORD Managing Agency - hallmann@cerege.fr

http://www.ecord.org/science/proceed/

PROGRAMME

Day 1 - 6 April

8h15: Registration

8h45: Introduction to PROCEED
9h00: Plenary Session: Our progress towards achieving the Challenges of the Science Plan
Climate and Ocean Change: Heiko Pälike
Earth Connections: Chris MacLeod
Breakout Session A (Parts 1 & 2): Climate and Ocean Change/ Earth Connections
Report
12h30: Lunch
Plenary Session: Our progress towards achieving the Challenges of the Science Plan
Biosphere Frontiers: Verena Heuer
Earth in Motion: Lisa McNeill
Breakout session B: Biosphere Frontiers/Earth in Motion
Report
Plenary Session: Introduction to Day 2 - Future platforms, technology, opportunities & IODP management
SOD+23: A potential New US facility beyond 2023: Anthony Koppers and Jim Wright
J-DESC PROCEED Workshop Summary report: Masa Kinoshita

18h00: Reception

Day 2 - 7 April

9h00: Wrap Up Session: Day 1 summary and introduction to Day 2 - Future platforms, technology, opportunities & IODP management
Plenary Session: Technologies and opportunities to expand IODP Science
Achim Kopf
Panel Session: Future technologies, techniques, methods, and opportunities: Panelists: ICDP - Ulrich Harms Paleoclimate/IPCC - Tina van de Flierdt European Marine Board - Gilles Lericolais Minerals/Resources - Sabina Strmic Hydrocarbon Exploration Insights from IODP - Andrew Davies
Breakout Session C: Future technologies, techniques, methods and opportunities
Report
12h30: Lunch
Panel Session: What is missing from the Science Plan?
Breakout Session D: Expanding the Frontiers of IODP - identifying the new(?) challenges for each Theme (including any new Themes developed during the workshop)
Report
Plenary Session: summary of the PROCEED survey and open scientific questions, comments, ideas & wrap up

Workshop close

Greenland Ice Sheet evolution revealed by drilling a transect on the Baffin Bay – West Greenland Margin - 12-14 September 2018, Copenhagen, Denmark

Convenors: Paul Knutz, Joseph Stoner, Anne de Vernal, John Hopper, Mads Huuse, Anne Jennings

A three-day workshop was held 12-14 September 2018 at the Geological Survey of Denmark and Greenland (GEUS) in Copenhagen with a prime focus on developing IODP Proposal 909 Cenozoic Evolution of the Northern Greenland Ice Sheet. The scope of Proposal 909 is to retrieve a composite late Cenozoic sedimentary succession by transect drilling on the Baffin Bay - West Greenland margin that can elucidate the evolution and past dynamics of the Greenland Ice Sheet.

Group photo of the participants of the workshop in Copenhagen.

The workshop was attended by **33 participants from Denmark, USA, UK, Germany, Canada and Italy**, of which 10 were early-stage researchers. Presentations by keynote speakers and participants interchanging with plenary discussions occupied the agenda of the first two days, while the third day focussed on revising Proposal 909-Full1. This revision included clarifying linkages between hypotheses and methods, improving the integrated experimental design, discussing operational issues and selecting alternate sites. The workshop also included proponents of US-led Proposal 814 Assessing the History of the South Greenland Ice Sheet and its Interaction with Ocean Circulation, Climate, and Sea Level and provided an opportune forum for discussing scientific, technical and logistical challenges that are shared by both proposals.

The MagellanPlus workshop was successful in building up the multidisciplinary expertise needed to fully address the critical issues concerning the integrated experimental design and site characterisation data of IODP Proposal 909-Full1. The scientific input and solutions that were generated during the meeting proved to be crucial for the ensuing revision phase. Proposal 909-Full2 was submitted on 1 October 2018 followed by additional data submitted to the IODP Site Survey Data Bank. The response from SEP on 25 January 2019 was that the proposal was significantly improved, and that the panel recommends an external review. As the next step, we will submit a Proponent Response Letter in May 2019 and then aim for submission of a **Full-3 IODP Proposal in October**. Also, more drill sites will be added to the Site Survey Data Bank. High-resolution seismic profiles that can support the identification of addendum sites on the shelf margin will be acquired in August 2019, as part of a scientific expedition to West Greenland/Baffin Bay with the Danish navy vessel *Lauge Koch*.

Contact: **Paul Knutz**
pkn@geus.dk

Full reports of MagellanPlus workshops are posted on:
http://www.ecord.org/science/magellanplus/

ECORD
EUROPEAN CONSORTIUM FOR OCEAN RESEARCH DRILLING

icdp

ECORD/ICDP MagellanPlus Workshop Series Programme

Call for Proposals

The **ECORD/ICDP MagellanPlus Workshop Series Programme** invites proposals to organise workshops to support the development of IODP/ICDP proposals.

MagellanPlus particularly welcome proposals for workshops that integrate scientific marine and continental coring with scientific topics such as Earth's Surface Environmental Change, Processes and Effects; the Deep Biosphere & Sub-Seafloor Ocean, as well as Solid Earth Cycles & Geodynamics, as outlined in the science plans of IODP and ICDP.

The contribution of the MagellanPlus Workshop Series will not exceed **15,000 €** per workshop. Proponents are encouraged to seek co-funding from other sources. Workshops will be held no later than12 months after approval by the MagellanPlus Science Steering Committee.

Proposals must include:

1) Short summary (max 500 characters) stating the purpose of the proposed workshop, its location and expected impact;
2) Full description (max. 2 pages) of the proposed workshop outlining the purpose, rationale, expected impact and number of participants;
3) Preliminary workshop programme;
4) List of keynote speakers;
5) Flyer of the workshop;
6) Full budget for the workshop;
7) CV (max. 1 page) plus a list of international, peer-reviewed publications for the last five years, of main applicant.

Proposals must be submitted as a single, combined pdf-document and email attachment to magellan.plus@uu.nl and to ema@cerege.fr

The deadline for applications is **15 May 2019**.

For further information, please contact **MagellanPlus via** magellan.plus@uu.nl.

http://www.ecord.org/science/magellanplus

Thomas Wiersberg

News and Views

ICDP at EGU 2019 General Assembly

In addition to the joint IODP-ICDP session scheduled on Thursday 11 April, and the joint ICDP-IODP Town Hall Meeting on Tuesday 9 April *(right and details page 11)*, there will be several ICDP-related sessions at the EGU 2019 General Assembly:

- **GMPV4.3 - The formation and modification of oceanic crust and the upper mantle: Insights from the Oman Drilling Project and related investigations in the oceanic lithosphere**

Tuesday 9 April
Orals 16:15-18:00 Room 2.91
Posters 8:30 -10:15, Hall X2

- **EOS4.2 - Outreach in Geoscience: what does it mean to you?**

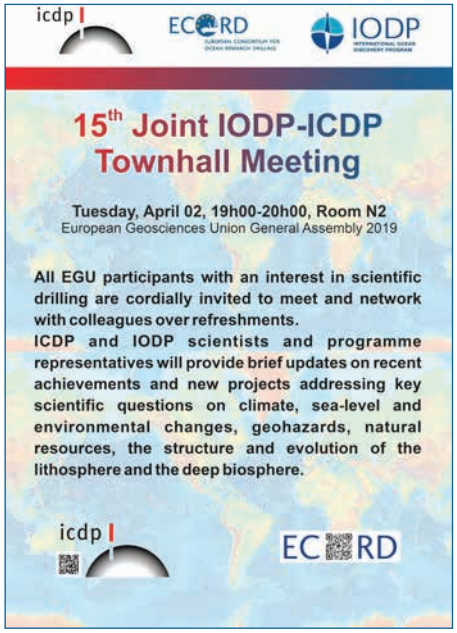
Thursday 11 April
Posters14:00-15:45, Hall X4

- **SSP3.1/BG4.4/CL1.29- Limnogeology - reading the geological record of lakes**

Monday 8 April
Orals 8:30-10:15, Room D3
Posters 10:45-12:30, Hall X1

- **NH2.1/ GMPV5.18 - Submarine Volcanic Activity and Associated Hazards: Recent and ancient perspectives**

Wednesday 10 April
Orals 8:30-10:15, Room L8
Posters 10:45-12:30, Hall X3



Reinforcement of the ICDP Outreach Team

Starting mid-February 2019, ICDP will reinforce its outreach activities with the help of **Ursula Heidbach** *(left)*, who has a background in Communication Design and Scientific Outreach.

Ursula, who has longtime experience in visualising scientific projects in the field of Arctic research for the Alfred-Wegener-Institute and climate research at the Potsdam Institute for Climate Studies, will be shaping the ICDP profile with a focus on social media and will visualise ICDP's media content for the coming two years.

@icdpDrilling **ICDP**

More information about ICDP:
www.icdp-online.org

News from ECORD Member Countries

Sweden

The **Swedish Scientific Drilling Program** - **www.ssdp.se** - supports Swedish interests in continental and ocean scientific drilling. In October 2018, a two-day workshop was held at Uppsala University, to discuss the Swedish engagement in and strategies for international scientific drilling (IODP and ICDP) and the recently established EPOS (European Plate Observing System) research infrastructure. In total, 23 representatives from eleven different institutes and industry entities attended the meeting that proved to be an informative combination of general programme presentations followed by group discussions with the aim to consolidate collaborative efforts. We wish to thank Henning Lorenz (Department of Earth Sciences, Uppsala University) for a smooth organisation and hosting of the meeting.

In more current news, **Benedict Reinardy** (Department of Physical Geography, Stockholm Univ.) is one of the shipboard sedimentologists on Expedition 379 Amundsen Sea West Antarctic Ice Sheet History *(right and page 16)*. At the time of writing, the expedition is still two weeks away from its successful completion - but exciting preliminary results are anticipated and will be presented at EGU 2019 in Vienna in the IODP-ICDP session *(page 11)*.

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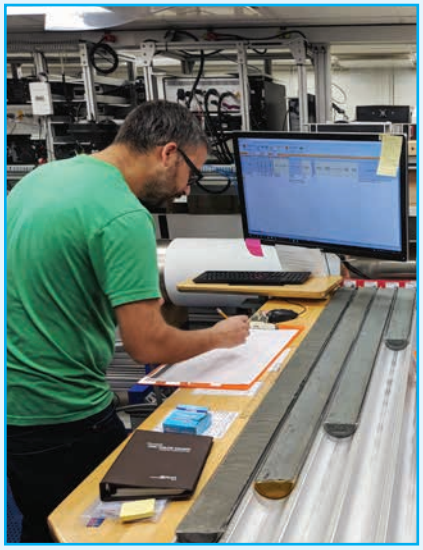

Sedimentologist Benedict Reinardy describes a core from Expedition 379 (photo Anna Halberstadt & IODP).

France

Expedition 358 to the Nankai fault aiming at understanding of great earthquake's mechanism has recently been highlighted by the French media. Drilling operations are still in progress but scientists and public alike eagerly await the first conclusions from the scientific team. Last October, a French television team was invited onboard to film the *Chikyu* and to interview Marianne Conin (Univ. of Lorraine) *(right)*. The interview will be part of a documentary television series "Terres Extrêmes Japon" on tsunamigenic hazards in Japan produced by Frédérique Mergey and to be broadcast in April 2019. It was also published as an article in the magazine *Science et Avenir* (January issue) addressing a large public.

The French community is actively preparing the PROCEED Workshop *(page 19)*. A **"Pre-PROCEED" brain storming meeting** was hosted in Montpellier by Marguerite Godard (Géosciences Montpellier) and Adélie Delacour (LMV, St Etienne) who are part of the PROCEED science committee. This event was an opportunity for the French marine geosciences community to collectively discuss the future of IODP and its connection with the French oceanographic fleet. Ideas and recommendations that have emerged from this meeting were compiled by Marguerite and Adélie and will contribute to feed discussions at the PROCEED Workshop in Vienna next April.

Marianne Conin (Univ. of Lorraine) is interviewed by French journalists close to the drill rig of the Chikyu during Expedition 358 (photo Heïdi Sevestre).

The French Geological Society (SGF) and the IODP-France office, will honour scientific drilling programmes during a two-day **IODP-ICDP conference,** on 16-17 October 2019, hosted by the prestigious National Museum of Natural History, Paris. The meeting will be an opportunity for French scientists involved in IODP and ICDP to meet and share their latest achievements

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Switzerland

50 Years of Scientific Ocean Drilling.
The Swiss-based scientific ocean drilling family celebrated 50 years of International Ocean Drilling (1968-2018) with a full-day symposium during the December 2018 Swiss Geosciences Meeting. Topics spanned the entire temporal and spatial range of Earth Systems Sciences concluding with a special round-table discussion featuring anecdotes and interviews of pioneers in ocean drilling. In particular, Helmut Weissert led a conversation with Daniel Bernoulli and Albert Matter, both shipboard scientists during the first ten years of the Deep Sea Drilling Program (DSDP). Although not an official member at the time, Switzerland sailed a significant number of shipboard scientists during the early years of DSDP, starting in 1968-69 with Kenneth J. Hsü and Hans M. Bolli on DSDP Legs 3 and 4, respectively *(above)*. An additional ten scientists from Swiss institutions sailed on the *Glomar Challenger* within the first twelve years of DSDP, often multiple times and five times as Co-chiefs. Albert Matter reminded us that, although Switzerland is a land-locked country, ocean-drilling methodologies and associated scientific hypotheses resulted in the development of a major lake-research programme to study Swiss-wide lacustrine systems, today hosted within ICDP. The Swiss National Science Foundation (SNF) has just funded participation in the next five years of IODP and ICDP, enabling many more scientists to join this successful international endeavour. Celebrations ended with a much-appreciated apéro sponsored by the Swiss Commission for Limnology and Oceanography (KOL).


Left: Co-chief Scientists Kenneth Hsü, ETH-Zurich (left) and William Ryan, Columbia Univ. (right) together with Charles Simon, Glomar Challenger drilling crew (middle) holding evaporite core recovered during DSDP Leg 13 in the Mediterranean Sea (1970).
Right: Shipboard Paleontologists Hans Bolli, ETH-Zurich and Isabella Premoli, Univ. Milano examine the drill bit during DSDP Leg 15 in the Caribbean Sea (1970).

Miriam Andres, SwissDrilling
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Italy

The Italian Advisory Committee IODP-Italia has been recently renewed with new members and assignments, in order to implement a joint **IODP-ICDP support** to the Italian participation in the international scientific drilling programmes. E. Erba (Univ. of Milan) has been appointed the President of the new committee named Commissione CNR "ECORD-IODP e ICDP". Last February post-doc scientists applied for a call promoted by IODP-Italy aiming at supporting IODP-related scientific activities. Three research grants will be assigned in the next months.

IODP-Italia scientists. C. Boschi (CNR-IGG) has been involved in the ECORD PROCEED as a member of the Scientific Committee *(page 19)*. S. Satolli (Univ. of Chieti) *(right)* participated in the Expedition 368-X Return to Hole U1503A in the S China Sea as an expert in paleomagnetism, while I. Raffi (Univ. of Chieti) and E. Malinverno (Univ. of Milano-Bicocca) will sail as nannofossil micropaleontologists on Expedition 378 South Pacific Paleogene Climate and Expedition 383 Dynamic of Pacific-Antarctic circumpolar currents, respectively. I. Mazzini (CNR-IGAG) visited the US Geological Survey to collaborate on the project "Understanding the Corinth Active Rift Development through micropaleontology" as part of IODP Expedition 381, and analyse ostracods from the sediment cores.

Workshops-conferences. Last January, Patricia Maruéjol (EMA) was invited by S. Andò to give a talk titled "Getting involved in IODP: an overview" at the Univ. of Milano-Bicocca. A. Garzarella and A. Notaro (Univ. of Chieti) and M. Vallefuoco (CNR-ISMAR) have been selected to attend the 2019 edition of the ECORD Training Course.

Annalisa Iadanza, IODP-Italia Scientific Secretariat and the national IODP-Italia Committee
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Norway

On 29-30 October, 37 Norwegian scientists, representatives from industry, from the oil directorate and the Research Council of Norway gathered at the Geological Survey of Norway in Trondheim for the first **Colloquium on Norwegian Research Activities within the International Ocean Discovery Program (IODP)**.

The goal of the Organizing Committee was to establish a common arena for Norwegian researchers, industry representatives, students and programme representatives to present results from the latest IODP expeditions, discuss important scientific results based on borehole material, and create a forum for new IODP drilling proposals led by Norwegian researchers. Presentations and plenum discussions around themes like "new and planned drilling operations in high northern latitudes" and "the future of IODP Norway" gave valuable input to the upcoming PROCEED meeting in Vienna *(page 19)*. Based on the attendance and feedback we will plan this as a yearly Norwegian IODP activity.

Icebreaker RV Kronprins Haakon literally breaking ice on an expedition to the northern Barents Sea, September 2018. (photo Dr. Katrine Husum, Norwegian Polar Institute).

Kikki Kleiven, ESSAC Delegate - kikki@uib.no

Finland

Finnish students and researchers remain active in IODP. **Ekaterina Kaparulina** (University of Oulu) completed her PhD thesis building on Expedition 302 Arctic Coring - ACEX materials.

Outi Hyttinen (Univ. of Helsinki) and Aarno Kotilainen (Geological Survey of Finland), participants of the Expedition 347 Baltic Sea Paleoenvironment, continued their work to publish the expedition materials.

The Academy of Finland has appointed **Joonas Virtasalo** (Geological Survey of Finland) as ESSAC Delegate (former alternate) and **Christoph Beier** *(left)* as ESSAC Alternate for 2019-2021. Christoph Beier is a Professor of Geochemistry at the Department of Geosciences and Geography at the University of Helsinki. His research areas include igneous geochemistry of mid-ocean ridges, intraplate environments and subduction zones. Christoph has been previously involved in IODP in participating in Expedition 330 Louisville Seamount Trail and using igneous rock samples available in the core repositories.

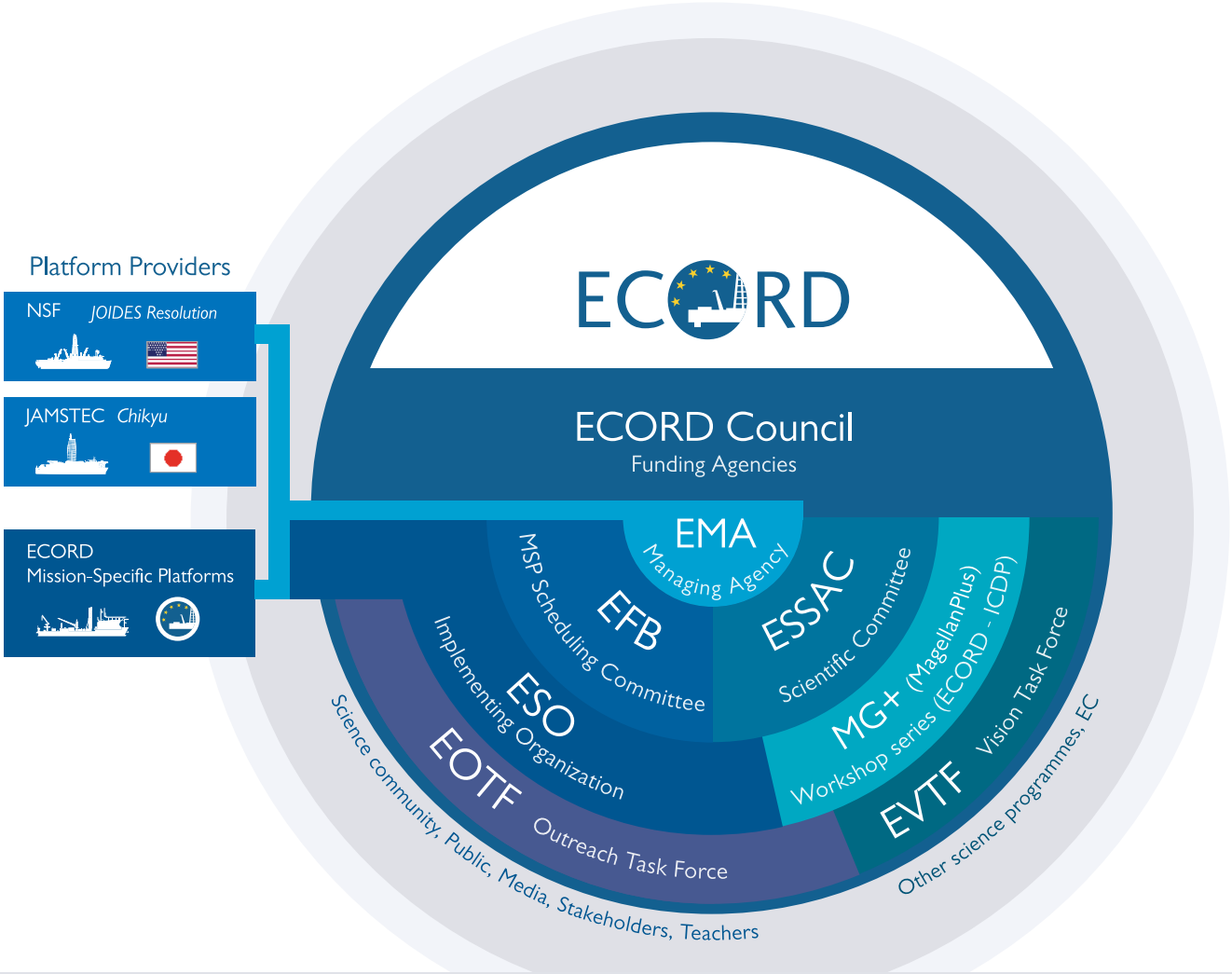
Joonas Virtasalo, ESSAC Alternate joonas.virtasalo@gtk.fi

Germany

Since the current IODP will end in 2023, first meetings are now taking place to frame a succeeding programme to be launched in 2024. On 23 and 24 January 2019, a **DFG round table** was organised by the German IODP Office in order to gather scientific ideas and visions for a future ocean drilling programme at a national level. Thirty-three geoscientists from Germany across all relevant disciplines attended the roundtable meeting in Barendorf close to Lüneburg in northern Germany. In a very productive and constructive atmosphere, future key objectives were defined in break-out groups for the following themes **(1)** geohazards/geodynamics, **(2)** petrology/ocean crust, **(3)** deep biosphere/ organic geochemistry and **(4)** paleoceanography/ biogeology. As a result of this meeting a white paper is currently written. This paper will provide German scientists, who are actively involved in forming an IODP successor, with a guideline when they represent the German scientific community at the upcoming international workshops, *e.g.* the PROCEED (Expanding Frontiers of Scientific Ocean Drilling) workshop *(page 19)* that will be held on 6-7 April preceeding the EGU General Assembly 2019 in Vienna.

IODP Germany website: https://www.bgr.bund.de/DE/Themen/MarineRohstoffforschung/IODP/Home/iodp_node.html

André Bornemann, ESSAC Alternate Andre.Bornemann@bgr.de



Austria	1	Österreichische Akademie der Wissenschaften (ÖAW)
Canada	2	The University of British Columbia (UBC)
Denmark	3	Uddannelses- og Forskningsministeriet
Finland	4	Suomen Akatemia
France	5	Centre National de la Recherche Scientifique (CNRS)
Germany	6	Deutsche Forschungsgemeinschaft (DFG)
Ireland	7	The Geological Survey of Ireland (GSI)
Italy	8	Consiglio Nazionale delle Ricerche (CNR)
Netherlands	9	Nederlandse Organisatie voor Wetenschappelijk Onderzoek (NWO)
Norway	10	Forskningsradet
Portugal	11	Fundação para a Ciência e a Tecnologia (FCT)
Spain	12	Ministerio de Economía y Empresa (MINECO)
Sweden	13	Vetenskapsradet (VR)
Switzerland	14	Fonds National Suisse (FNS)
United Kingdom	15	United Kingdom Research and Innovation (UKRI)

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