ECORD

EUROPEAN CONSORTIUM FOR
OCEAN RESEARCH DRILLING

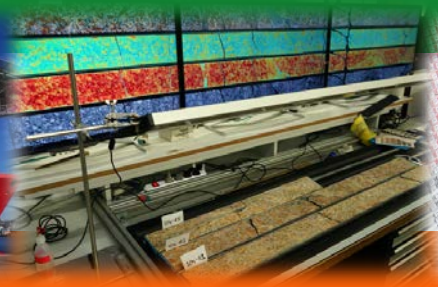
MINUTES

ECORD Council - ESSAC Meeting #7

5-6 November 2019

Geological Survey of Ireland

Dublin, Ireland



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* *Apologies*

November 5th, 2019

INTRODUCTION

1 Self introduction (All)

(9:00)

S. Guillot opened the meeting and let all the participants begin self-introductions.

2 Logistical information (K. Verbruggen/D. Hardy)

(9:06)

D. Hardy presented the logistical information.

3 Approval of the agenda (G. Camoin/S. Guillot/A. Morris)

(9:07)

G. Camoin presented the agenda and the roster. The ECORD Council approved the agenda.

ECORD Council Consensus 19-11-01:
The ECORD Council approves the agenda of the ECORD Council-ESSAC Meeting #7.

In favour: 14, **Abstain**: 0, **Against**: 0, **Absent**: 1 (Canada)

4 Objectives of the meeting (S. Guillot/A. Morris/G. Camoin)

(9:11)

G. Camoin presented the main objectives of the meeting: 1) FY20-21 and long-term MSP operational plan; and 2) post-2023: the future of scientific ocean drilling: Science Framework, Facilities and ECORD roles.

5 ECORD consensus reached by email since the Council-ESSAC #6 meeting (N. Hallmann)

(9:12)

All consensus statements reached by email since the ECORD Council-ESSAC meeting #6 that was held in November 2018 in The Hague, The Netherlands, can be found in the agenda book (pages 13-14).

ECORD Council Consensus statement 19-10-02 was missing in the agenda book:

ECORD Council Consensus 19-10-02: The ECORD Council approves the nominations of Beth Christensen (USA) and Alexandra Turchyn (UK) as incoming EFB members, starting on January 1st, 2020 to replace Ellen Thomas (USA) and Gretchen Früh-Green (SUI), respectively. (25 October 2019)

ECORD BUDGET, MEMBERSHIP AND MANAGEMENT

6 ECORD News and Budget (G. Camoin)

(9:16)

G. Camoin presented the ECORD news, the 2019 Scientific Ocean Drilling Bibliographic Database Report and the ECORD budgets for FY19 and FY20.

G. Camoin presented the rotation scheme for the ECORD Council. B. Westerop (NLD) will become ECORD Council Chair starting on 1 January 2020 and S. Guillot (FRA) will replace E. Humler (FRA) and will be outgoing Vice-Chair during the first half of 2020. A nomination is needed for an incoming ECORD Council Vice-Chair starting on 1 July 2020. Following the rotation scheme the incoming ECORD Council Vice-Chair should be from the UK.

Rotation scheme	Chair	Country	Vice Chair	Country
Oct 12 - March 13	Mike Webb	UK	Anne De Vernal	Canada
April 13 - Dec 13	Mike Webb	UK	Guido Lüniger	Germany
Jan 14 - Jun 14	Guido Lüniger	Germany	Mike Webb	UK
Jul 14 - Dec 14	Guido Lüniger	Germany	Michel Diament	France
Jan 15 - Jun 15	Michel Diament	France	Guido Lüniger	Germany
Jul 15 – Dec 15	Michel Diament	France	Magnus Friberg	Sweden
Jan 16 – Jun 16	Magnus Friberg	Sweden	Michel Diament	France
Jul 16 – Dec 16	Magnus Friberg	Sweden	Mike Webb	UK
Dec 16 – Jun 17	Mike Webb	UK	Magnus Friberg	Sweden
Jul 17 – Dec 17	Mike Webb	UK	Guido Lüniger	Germany
Jan 18 – Jun 18	Guido Lüniger	Germany	Mike Webb	UK
Jun 18 – Dec 18	Guido Lüniger	Germany	Eric Humler	France
Dec 18 – Jun 19	Eric Humler	France	Guido Lüniger	Germany
Jun 19 – Dec 19	Eric Humler	France	Bernard Westerop	The Netherlands
Dec 19 – Jun 20	Bernard Westerop	The Netherlands	Eric Humler/ S. Guillot	France
Jun 20 – Dec 20	Bernard Westerop	The Netherlands	TBD	TBD

The ECORD Council core group consists of five members: the Chair, the Vice-Chair and three additional Council delegates. The three major contributors will automatically belong to this core group. The current members of this core group are M. Webb (UK), G. Lüniger (GER), S. Guillot (FRA), M. Sacchi (ITA) and B. Westerop (NLD).

2019-23 ECORD Memorandum of Understanding (MoU):
At the moment ECORD has 15 member countries. The 2019-23 ECORD MoU has been distributed for approval and signature by the ECORD funding agencies. Only Spain and Germany still need to sign the 2019-23 ECORD MoU. Overall, the process was streamlined as now only one signature is needed and based on this an invoice will be issued each year. There is no need anymore to sign a document/an annex every year.

COMMENTS on the 2019-23 ECORD MoU:
Spain: The process is slow as the MoU has to be approved by several Ministries. At the moment the ECORD MoU is at the Ministry of Finances, which is the last Ministry stamping the MoU (C. Escutia).
Germany: The process is time-consuming as the MoU has to go through different panels (G. Lüniger).

Membership: ECORD is in contact with Israel, Poland, Belgium, Croatia and Greece concerning a potential membership. The situation in Belgium concerning a commitment to ECORD is difficult. Poland is working on a national consortium to join again ECORD. Israel is ready to come back to ECORD and invited G. Camoin to Israel. Croatia has shown interest in joining ECORD.
At the moment ECORD is negotiating with Greece. An ECORD-IODP Day was initiated by EMA and organised by Paraskevi Nomikou and Dimitris Sakellariou (University of Athens) on 3 October 2019 at the University of Athens, Greece, involving representatives from Greek authorities and institutes/universities and about 150 attendees. Gilbert Camoin (EMA), Tony Morris (ESSAC), Dave McInroy (ESO) and Katerina Petronotis (JRSO) presented ECORD and IODP and discussed with Greek scientists about a potential ECORD membership of Greece. Two ECORD scientists presented initiatives, which involve Greek scientists. Lisa McNeill presented IODP Expedition 381 'Corinth Active Rift Development' and Tim Druitt talked about proposal 932-full 'Hellenic Arc Volcanic Field'. Greek scientists from various institutes/universities and disciplines, such as microbiology, seismology, climatology, geohazards and resources research, have shown the potential mutual benefits for Greece and ECORD-IODP that a Greek membership would provide.

COMMENT on a potential Greek membership:
Dimitris Sakellariou (University of Athens) contacted D. McInroy and asked for help on how the Greek institutes could get organised and structured in order to join ECORD (D. McInroy). The ECORD members could provide a brief description on how they are organised, e.g. panel membership rotation, national and institutional funding, etc. (D. McInroy).

Action Item 1: ECORD Council and ESSAC delegates
To provide to EMA and ESO a short description on how their countries are organised in order to help Greece finding an appropriate structure to get involved in ECORD.

G. Camoin continued to summarize ECORD's partnership with the US and Japan. ECORD contributes $7.12M USD to the annual funding of the *JOIDES Resolution* and about $1M USD to the annual funding of the *Chikyu*.
The new ECORD-NSF MoU should be in place since 1 October 2019 until 30 September 2023, however, the CNRS needs further information before signing this document. ECORD and the NSF agree that for the new programme phase ECORD will continue contributing $7.12M USD per year to the *JOIDES Resolution*. There will only be a change in the number of ECORD scientists on *JR* expeditions. Seven instead of eight ECORD scientists will sail on each *JR* expedition. In the new phase Co-chief Scientists and Education/Outreach Officers are counted against participation levels on *JR* expeditions. In addition, one ECORD member is member of the *JR* Facility Board Board. The estimated number of ECORD berths for the 2020-2023 period is of 112 based on the implementation of four *JR* expeditions per year.
The ECORD-JAMSTEC MoU was not revisited as it is valid until 30 September 2023. Usually at least three ECORD scientists are sailing on a *Chikyu* expedition. Co-chief Scientists and Education/Outreach Officers are not counted against participation levels on *Chikyu* expeditions. In addition, one ECORD member is member of the *Chikyu* IODP Board. The estimated number of ECORD berths for the 2020-2023 period is of 9-21 based on the implementation of three *Chikyu* expeditions.
Concerning the MSP expeditions, eight US and five associated members, four Japanese and at least ten ECORD scientists are sailing. In addition, 1-3 berths are reserved for co-funded projects. Co-chief Scientists and Education/Outreach Officers are not counted against participation levels on MSP expeditions. In addition, one NSF and one MEXT representative are members of the ECORD Facility Board. The estimated number of ECORD berths for the 2020-2023 period is of 30-52 based on the implementation of three to four MSP expeditions. Overall, the estimated number of ECORD berths for the 2020-2023 period is of 151 to 185.

2019 Scientific Ocean Drilling Bibliographic Database Report:
(see http://iodp.tamu.edu/publications/AGI_studies/2019_Pub_Impact.pdf)
ECORD contributed 11,310 publications related to all ocean drilling programs (1969-September 2019). There are two MSP expeditions among the eight most productive expeditions since IODP-1: Expedition 302 'Arctic Coring' and Expeditions 310/325 'Tahiti Sea Level' and 'Great Barrier Reef Environmental Changes'. About half of the papers on the ocean drilling programmes are published in high-impact journals with an impact factor of more than 4.0. MSP Expeditions 302 and 310 are among the most cited IODP Expeditions. Of the ten most cited IODP expedition-related publications five are related to MSP Expeditions 302 and 310. Based on the number of publications, Earth Connections and Climate and Ocean Change are the primary themes (2013-2019).

G. Camoin presented the content of the ECORD Annual Report 2019. The call for contributions will be distributed in mid-November. The deadline for submission of contributions will be on 15 January 2020. The review of all sections will be done until 31 January 2020 and the further editing until the end of February. Printed copies will be sent on 16 March 2019.

G. Camoin listed the upcoming ECORD and IODP meetings.

G. Camoin presented the ECORD FY19 and FY20 budgets (Tables 1-4). At the moment ECORD has 15 member countries. ECORD's annual budget usually ranges between $17M and $19M USD, mainly due to fluctuations in the currency exchange rates, because not all countries are paying in dollars. France, Ireland and Spain are paying in euros, Denmark in krones and the UK in pounds. However, this budget range does not include additional project-based cash and in-kind contributions. Annual national IKCs and science costs which are in the order of about $7M USD are also not included. About 95% of the ECORD budget is spent on IODP expeditions. ECORD contributes $7.12M USD to the annual funding of the *JOIDES Resolution* and $1M USD to the annual funding of the *Chikyu*. Every year ECORD has a budget of $6.5M to $7M USD available to implement MSP expeditions. Since FY09 ECORD lost 18.6% of its budget as some countries are paying a lower contribution, but there is also a loss due to the currency exchange rates.

COMMENT on ECORD's budget loss:
Since 2004 the ECORD budget decreased by 42% (J. Allan).

G. Camoin summarized the ECORD budget situation for FY19 (Tables 1, 2).

Table 1: FY19 member contributions

FY19 Contributions (US$)	
DFG (Germany)	5,600,000
CNRS (France) *	3,920,000
UKRI (United Kingdom) *	3,330,000
Forskningsradet (Norway)	1,100,000
FNS (Switzerland)	600,000
NWO (The Netherlands)	600,000
CNR (Italy)	500,000
VR (Sweden)	400,000
MINECO (Spain) *	168,000
DAFSHE (Denmark) *	152,000
GSI (Ireland) *	115,000
ÖAW (Austria)	100,000
FCT (Portugal)	90,000
Academy of Finland	80,000
CCOD (Canada)	80,000
TOTAL	16,835,000

Table 2: ECORD FY19 budget

	(USD)	(USD)
FY 18 balance	15,792,091	
FY 19 contributions	16,835,000	
ECORD-NSF MoU		7,000,000
ECORD-MarE3 MoU		3,000,000 *
ESO		2,657,116
EMA		356,700
MagellanPlus		81,326
IODP Chairs Support		144,000
IODP publ. Support **		15,000
ESSAC		315,606
BCR		353,109
Outreach basic		66,400
Outreach stakeholders **		11,200
Outreach expeditions **		30,000
ECORD database **		18,000
TOTAL	32,627,091	14,048,457
Expected FY19 balance	18,578,634	

** Payments 2017 - 2019*

*** Non-recurrent budget items*

FY18 ended with a positive balance of $15.79M USD, which was carried over to FY19. Together with the FY19 member contributions of $16.83M USD (Table 1), the FY19 income will yield $32.62M USD. The expenses will be of $14.05M USD without the implementation of an MSP expedition in 2019. The FY19 budget includes the 3-year payment (2017-2019) for the *Chikyu*. FY19 should finish with a positive balance of $18.57M USD (Table 2). Potential additional contributions (cash, IKCs) are not considered in this calculation.

The assumed FY20 contributions will be of $16.83M USD (same as FY19, see Table 1).

ECORD Council Consensus 19-11-02:
The ECORD members approve the table of FY20 contributions as shown below:

FY20 Contributions	
DFG (Germany)	5,600,000 US$
CNRS (France)	3,541,000 €
UKRI (United Kingdom)	2,600,000 GBP
Forskningsradet (Norway)	1,100,000 US$
FNS (Switzerland)	600,000 US$
NWO (The Netherlands)	600,000 US$
CNR (Italy)	500,000 US$
VR (Sweden)	400,000 US$
MINECO (Spain)	150,000 €
DAFSHE (Denmark)	1,000,000 DKK
GSI (Ireland)	100,000 €
ÖAW (Austria)	100,000 US$
FCT (Portugal)	90,000 US$
Academy of Finland	80,000 US$
CCOD (Canada)	80,000 US$

In favour: 15 (Canada by email), **Abstain**: 0, **Against**: 0, **Absent**: 0

Table 3: ECORD FY20 budget

	(USD)	(USD)
FY 19 balance	18,578,634	
FY 20 contributions	16,835,000	
ECORD-NSF MoU		7,120,000
ECORD-MarE3 MoU		3,000,000 *
ESO		3,149,515 *
EMA		305,880
MagellanPlus		86,800
IODP Chairs Support		169,000
ESSAC		319,064
BCR		392,162
Outreach basic		66,400
TOTAL	35,413,634	14,608,821
Expected FY20 balance	20,804,234	

** Including operational costs X386*

Together with the positive FY19 balance the FY20 income will yield $35.41M USD (Table 3). The ESO FY20 expenses include the implementation of Expedition 386 'Japan Trench Paleoseismology'. Potential additional contributions (cash, IKCs) are not considered in this calculation.

Scientific Ocean Drilling Program 2050

Three online-only documents will be produced: 1) 60-70 pages Science Framework document; 2) 6-12 pages summary document; and 3) 2 pages pamphlet. The total costs for design, illustration and production by Geo Prose Inc. (without printing and shipment) are of $110,000 USD. USSSP, ECORD and J-DESC are supposed to contribute $30K USD each. IODP-China, IODP-Korea, IODP-India and ANZIC should contribute $5K USD each.

DISCUSSION on the production of the new Science Framework:

The production of the new Science Framework is a first step and essential for a post-2023 programme (D. Kroon). For the previous science plan only two documents, but many hard copies were produced (G. Camoin). A new science plan is needed for a new drillship (C. Neal). F. Abrantes asked how many hard copies are calculated in the presented cost estimate. The presented costs include only the production of the Science Framework (D. Kroon). Hard copies can be produced in each country (G. Camoin). Hard copies are maybe not needed at all (F. Abrantes). The different platform providers may modify and translate this document (D. Kroon).

ECORD Council Consensus 19-11-03:
The ECORD Council approves ECORD's contribution to the design, illustration and production of the new Science Framework by Geo Prose Inc. (without printing and shipment) in the amount of $30,000 USD. This budget will be administered by the ECORD Managing Agency at the CEREGE, Aix-en-Provence, France.

In favour: 14, **Abstain:** 0, **Against:** 0, **Absent:** 1 (Canada)

7 ESSAC News (A. Morris)

(9:46)

A. Morris gave an overview of ECORD members on panels and boards, and the procedure for the post-2023 IODP Science Framework.

There is following change in the ESSAC membership: Michael Strasser (Austria) is new ESSAC delegate replacing Werner Piller. A call for a new ESSAC Chair will be reissued in January 2020. By the middle of 2020 a new ESSAC Chair will be selected and serve as incoming ESSAC Vice-Chair in 2021 before becoming ESSAC Chair in 2022. Jan Behrmann is outgoing ESSAC Vice-Chair until the end of 2020.

ECORD members on SEP: Since April 2019 Lisa McNeill is the new Co-Chair of SEP Science. Four new SEP Science and three SEP Site members started in June 2019. Kevin Pickering will be the next SEP Science member to rotate off in May 2020. In addition, two SEP Site members will also rotate off in May 2020. In January 2020 a call for three new SEP members will be issued.

Table 4: ECORD members on SEP

Name	Country	Term	Expertise
SEP SCIENCE:			
McNeill, Lisa (Co-Chair)	UK	Apr 19 – Mar 22	Tectonics
Bassetti, Maria-Angela	FRA	Jun 18 – May 21	Stratigraphy/Sedimentology
Delacour, Adélie	FRA	Jun 18 – May 21	Petrology/Geochemistry
Pickering, Kevin	UK	Jun 17 – May 20	Sedimentology
Tachikawa, Kazuyo	FRA	Jun 18 – May 21	Geochemistry/Paleoclimate
Bauersachs, Thorsten	GER	Jun 19 – May 22	Geomicrobio/org geochem
Gohl, Karsten	GER	Jun 19 – May 22	Geophys/structure/ice-sheets
Prytulak, Julie	UK	Jun 19 – May 22	Geochem/magmatism
Vannucchi, Paola	UK	Jun 19 – May 22	Structure/subduction/transforms
SEP SITE:			
Rebesco, Michele	ITA	Jun 17 – May 20	Seismics
Bell, Rebecca	UK	Jun 16 – May 20	Seismology/Seismics
Ceramicola, Silvia	ITA	Jun 19 – May 22	Seabed mapping/sed/tectonics
Hübscher, Christian	GER	Jun 19 – May 22	Marine geophysics
Schwenk, Tilmann	GER	Jun 19 – May 22	Submarine fans/contourites

ECORD members on the JRFB: Marguerite Godard (FRA) has been approved as new JRFB member (USFY20-USFY22).

ECORD members on the EFB: Beth Christensen (USA) and Alexandra Turchyn (UK) will replace Ellen Thomas (USA) and Gretchen Früh-Green (SUI), respectively.

Post-2023 IODP Science Framework:
International workshops (J-DESC, PROCEED, ANZIC, NEXT, IODP-China) have been organised and a total of about 650 participants attended these workshops. Representatives from each of these workshops were nominated to attend the Science Plan Working Group Meeting that took place in New York. This meeting led to the structure and roadmap of new science plan. Anthony Koppers (USA) and Roz Coggon (UK) were appointed as lead and deputy lead editors, respectively. The outcomes of the New York meeting were discussed, modified and approved by the IODP Forum. The Science Framework Writing Team selected by the editors was appointed. Besides the deputy lead editor from the UK, eight ECORD members (3 GER, 3 UK, 1 FRA, 1 SWE) are contributing to the writing or the review of the new Science Framework.

8 Updated 2020 budgets of ECORD entities (G. Camoin/D. McInroy/A. Morris/U. Röhl/M. Bednarz)

(9:54)

The 2020 budgets for all ECORD entities (ESO, BCR, ESSAC, OTF, EMA including MagellanPlus, IODP Forum Chair and SEP Co-chair support) did not change since the ECORD Council Spring Meeting #5 (see agenda book pages 46-52).

A 2019 overpayment of $50,000 USD will be deduced from the EMA FY20 budget of $355,880 USD, i.e. the corrected amount is of $305,880 USD (see ECORD Council Consensus 19-06-04).

9 News from ECORD member countries (Council & ESSAC Delegates)

(9:59)

ECORD Council and ESSAC delegates presented the news from their respective country.

B. Plunger (**Austria**): The Austrian scientific ocean drilling community is developing well. Many new, young scientists from four different institutions are participating in various calls. Michael Strasser and Dominik Jäger have been involved in IODP Expedition 358 'NanTroSEIZE Plate Boundary Riser 4'. M. Strasser will be the first Austrian Co-chief on IODP Expedition 386 'Japan Trench Paleoseismology'. Werner Piller rotated off as ESSAC Delegate and he was replaced by M. Strasser. The PROCEED – Ex**p**anding F**ro**ntiers of S**cie**ntific Oc**e**an **D**rilling – workshop was hosted on 6-7 April 2019 at the Austrian Academy of Sciences in Vienna. Austria signed the 2019-23 ECORD MoU.

> *<u>COMMENT</u>: G. Camoin announced that Werner Piller will receive the next ECORD Award at the EGU 2020 Townhall Meeting.*

M.-S. Seidenkrantz (**Denmark**): Denmark is still benefitting from IODP Expedition 347 'Baltic Sea Paleoenvironment'. Danish scientists are working on material from this expedition with collaborations across many countries and several papers have been published or will still be published. Denmark is involved in IODP proposal 909 on Greenland ice sheet evolution with a Danish scientist as lead proponent. A MagellanPlus workshop was organised in September 2018 to develop 909-full. Site survey data needed to be expanded and therefore, this summer additional seismic data have been collected with a Danish military vessel so that the SEP requirements should be now fulfilled. One Danish young scientist received an ECORD Research Grant to work on IODP material.

M. Räisänen (**Finland**): The financial situation is stable.

J. Virtasalo (**Finland**): The Finnish community benefitted from IODP Expedition 347 'Baltic Sea Paleoenvironment'. Discussion have been started concerning a new drilling proposal targetting the Precambrian sandstone units in the Baltic Sea Basin. J. Virtasalo

will sail on IODP Expedition 386 'Japan Trench Paleoseismology'.

G. Camoin (**France**): France is committed until the end of the current programme and the financial situation is stable.

G. Ceuleneer (**France**): The main event in 2019 was the organization of the French Geological Society (SGF) Scientific Drilling Days on 16-17 October at the Natural History Museum in Paris. This was the first meeting in France entirely devoted to scientific drilling bringing the IODP and ICDP communities together. Six keynote speakers from the UK, Austria, Canada and France have been invited. Up to 150 participants have been expected, 90 have been registered and 60 attended the symposium. Since 2015 IODP France supports three to four Postdocs per year to work on material from recent IODP expeditions, but also on DSDP material. IODP France can distribute 200K € per year without any deadline. So far, 12 young scientists have benefitted from the Postdoc support programme. This support motivates scientists to participate in IODP expeditions. For example, two out of the three French scientists sailing on IODP Expedition 386 'Japan Trench Paleoseismology' will receive Postdoc support by IODP France.

G. Lüniger (**Germany**): The renewal is in progress and Germany is confident to fund ECORD at the current level until the end of 2023. Scientific projects related to ICDP and IODP are funded with about $2.6M USD per year.

D. Hardy (**Ireland**): Ireland signed the 2019-23 ECORD MoU. Two Irish scientists sailed on IODP Expedition 372 'Creeping Gas Hydrate Slides and Hikurangi LWD'. Ireland has a small, but interested community.

A. Argnani (**Italy**): Italy signed the 2019-23 ECORD MoU and the Italian contribution to ECORD is secured for the next financial year. There is a large number of applicants for IODP expeditions and the IODP-Italy commission should consider increasing its annual contribution to ECORD. Recently, Italian scientists participated in IODP Expedition 383 'Dynamics of Pacific Antarctic Circumpolar Current (DYNAPACC)'. Several Italian scientists successfully applied for ECORD Research Grants and ECORD Scholarships. Since June 2019 Silvia Ceramicola is a new SEP Site member. Three grants for 2-year positions for early-career scientists have been recently assigned: two for the Ocean and Climate Change theme and one for the Earth Connections theme. The IODP booth at the Festival del Mare festival was very popular.

B. Westerop (**Netherlands**): The Netherlands signed the 2019-23 ECORD MoU. The Dutch community is very enthusiastic.

M. Ziegler (**Netherlands**): The Dutch community is very active. There is also money that came in through other sources, such as recent grants centered around IODP material.

The virtual institute was renewed, the Netherlands Earth System Science Centre (NESSC – http://www.nessc.nl), and many of the 15 new PhD students are working on IODP material. Several young scientists could not sail due to the overquota situation, however, the Dutch community is also actively working on old material.

> *COMMENT: NIOZ and NWO have funds to replace their research vessel and the new vessel will have excellent seismic capabilities (D. Kroon).*

M. Engelhardt (**Norway**): Norway signed the 2019-23 ECORD MoU and the FY19 invoice was paid. Norway is largely underquota. The most important expeditions for Norway are the polar expeditions. Norway tries to keep its contribution to ECORD until the end of the current programme. The post-cruise meeting for IODP Expedition 379 'Amundsen Sea West Antarctic Ice Sheet History' will be held in Norway.

J. S. Laberg (**Norway**): Norway has a very active IODP community. Norwegian scientists participated in the two Antarctic expeditions: IODP Expedition 374 'Ross Sea West Antarctic Ice Sheet History' and IODP Expedition 379 'Amundsen Sea West Antarctic Ice Sheet History'. Besides the Antarctic expeditions, Norwegian scientists sailed on several other cruises, for example, IODP Expedition 381 'Corinth Active Rift Development'. The Norwegian community is currently involved in five IODP proposals.

F. Abrantes (**Portugal**): Portugal signed the 2019-23 ECORD MoU. An IODP activity report was submitted in order to get more financial support for the Portuguese scientists. At the moment, Portugal is mainly paying for the participation of scientists in IODP expeditions. Portugal is waiting for the scheduling of the Iberian Margin proposal to further excite the community and to get support from the National Science Foundation.

A. Voelker (**Portugal**): The community is actively working on material from IODP Expedition 339 'Mediterranean Outflow'. Publications concerning IODP Expeditions 359 'Maldives Monsoon and Sea Level' and 366 'Mariana Convergent Margin & South Chamorro Seamount' will be published soon. IODP was promoted at the National Science Meeting. A MagellanPlus workshop on the role of lithospheric inheritance on subduction initiation (RELICT) was organised in September 2019 in Lisbon and the proponents submitted a pre-proposal. Rebecca Bell gave a lecture in the frame of the ECORD DLP.

Brief report on Portuguese IODP activities submitted by A. Voelker on 11 November 2019:
Post-cruise scientific activities in Portugal concentrate mostly on studies of samples from Exp. 339 – Mediterranean Outflow, Exp. 346 – Asian Monsoon and Exp. 366 – Mariana Convergent margin resulting in numerous conference presentations (e.g., MedPalyno, 20th INQUA, 13th ICP, 42nd CIESM, AGU). PhD student Aline Mega, who is studying planktonic foraminifer faunal changes during the Early to Mid-Pleistocene Transition at IODP Site U1387 (Exp. 339), won a prestigious Outstanding Student Poster

and PICO (OSPP) Award for her EGU poster presentation. The first results on sea-surface temperature and productivity changes during the middle Pleistocene at Exp. 356-Maldives monsoon IODP Site U1467 were published by Alonso-Garica et al. (2019) in Palaeogeography, Palaeoclimatology, Palaeoecology.
The MagellanPlus workshop RELICT - *The Role of Lithospheric inheritance on Subduction Initiation on a Passive Margin* took place at IPMA (Lisbon) in early September and resulted in the submission of IODP pre-proposal 977 (October 1st deadline). In late September, ECORD distinguished lecturer Rebecca Bell gave her lecture "*Unlocking the secrets of slow slip using next-generation seismic experiments and IODP grilling at the north Hikurangi subduction zone, New Zealand*" at the Instituto Dom Luiz of the University Lisbon. Her presentation was well attended and perceived by the academic community, including many graduate students, and streamed live for the broader international community. During her 1.5 days long visit, Rebecca interacted with several researchers and post-graduate students –both at the University Lisbon and at IPMA–, discussing exciting science and developing future collaborations within the scope of the ECORD/IODP activities. These included discussions on the development of new seismic processing methods and new strategies for tackling complex marine geology and geodynamic processes such as slow slip events and subduction initiation.
During the National Science and Technology Summit in Portugal (Ciência 2019), an annual meeting of Portuguese researchers, which occurred in early July in Lisbon, FCT´s Ocean Office promoted IODP and ECORD and informed the scientific community and the young students that attended the event of the program and its activities.

> *<u>COMMENT</u>: There is a good list of proposals for the central/northern Atlantic and the Mediterranean (C. Neal).*

C. Escutia (**Spain**): The Spanish ECORD Council Delegate José Ramón Sánchez Quintana will rotate off and the Ministry will announce a new ECORD Council Delegate. Spain has a very healthy IODP community with many actively involved institutions submitting applications for sailing on IODP expeditions, ECORD Research Grants and ECORD Scholarships. The last Spanish scientist participated in IODP Expedition 382 'Iceberg Alley and Subantarctic Ice and Ocean Dynamics'. In 2020 the National Geological Meeting will be organised, including an IODP-ICDP session and a townhall meeting.

J. Henderiks (**Sweden**): Sweden signed the 2019-23 ECORD MoU. Several delegates from the Swedish community attended the PROCEED workshop in Vienna in April 2019. Matt O'Regan is member of the Science Framework Writing Team. In 2020 Swedish scientists will sail on IODP Expeditions 386 'Japan Trench Paleoseismology', 387 'Amazon Margin' and 388 'Equatorial Atlantic Gateway'. In October 2019 a two-day workshop on Arctic Ocean drilling was organised. Twenty-five scientists from a wide range of research fields attended this workshop. A White Paper was written in order to support the negotiations of the Polar Research Secretariat with ESO.

M. Kern-Lütschg (**Switzerland**): Switzerland signed the 2019-23 ECORD MoU and secured its ECORD membership until the end of the current programme in 2023.

G. Früh-Green (**Switzerland**): At the beginning of October 2019 a Swiss Drilling Day was organised where different IODP and ICDP projects were presented. About 50 participants attended this symposium. At the 2018 Swiss Geosciences Meeting a special session related to the 50th anniversary of scientific ocean drilling has been organised. In 2019 one Swiss scientist sailed on IODP Expedition 382 'Iceberg Alley and Subantarctic Ice and Ocean Dynamics'. One Swiss scientist has been invited for IODP Expeditions 386 'Japan Trench Paleoseismology' and there are at least two more applicants for sailing on IODP expeditions. Several Swiss scientists participated in MagellanPlus workshops. Swiss scientists were involved in the Oman Drilling Project and appreciated the good collaboration between IODP and ICDP and the use of the *Chikyu* as a lab. Switzerland has a small and steady community.

J. Surma (**UK**): The UK contribution to ECORD has been approved until the end of the current programme. Funding for the national programme to support UK participants on IODP expeditions was secured. A call for a knowledge exchange fellow was issued to promote IODP in the UK. The selected person will be announced soon.

A. Morris (**UK**): The UK maintains a very strong interest in the programme. There is a strong application pressure from the UK leading to a very competitive situation for the scientists concerning the staffing of expeditions. For example, 50% of the applicants for IODP Expeditions 390 and 393 'South Atlantic Transect' are from the UK. Several UK Co-chief Scientists have been selected. A funding scheme for post-cruise science is maintained where scientists and PhD students can get up to 25K pounds of support for moratorium period research and for Postdocs it is even twice that amount to cover their salaries for six months. This support is funded by NERC.

(10:37)
coffee break
(11:05)

FUTURE MSP OPERATIONS

10 Update on future MSP expeditions (D. McInroy)

(11:05)

D. McInroy presented an update on the planning and scoping of 1) Expedition 386 'Japan Trench Paleoseismology', 2) Expedition 377 'Arctic Ocean Paleoceanography' and 3) Proposal #637 'New England Shelf Hydrogeology'.

D. McInroy summarized the ESO activities since November 2018. ESO continued the joint expedition planning with MarE3 and JAMSTEC for IODP Expedition 386. In March 2019 the EFB decided to support the scheduling of Expedition 377 in 2021 and encouraged renewed IKC efforts before 30 September 2019 (EFB Consensus 19-03-02). New England was the preferred alternative 2021 expedition (EFB Consensus 19-03-03). The revised proposal for Expedition 377 was scoped (addendum in July 2019). ESO was assisted by the EVTF, ECORD Council members and national contacts in the investigation of IKC options for Expedition 377. ESO continued vessel and ice management scoping for this expedition with potential suppliers. Planning for Proposal #637 continued and ESO exchanged with the proponents.

IODP Expedition 386 'Japan Trench Paleoseismology':
The joint planning with MarE3 reached its detailed stage. Regular video calls with the Japanese colleagues are organised. A joint ESO-MarE3-Co-chief meeting was held in Osaka in September 2019 to continue with the operational and science planning. The Science Party staffing was conducted. ESO had further visits to JAMSTEC facilities.
GPC trials onboard the RV *Kaimei* will take place in the Japan Trench or if the weather is bad in the Nankai Trough on 17-25 February 2020. In March, ESO will transport and install its equipment on the RV *Kaimei* while the vessel is in dry dock in Shimonoseki. Another GPC training exercise will be conducted on the RV *Kaimei* in the Japan Trench on 2-16 April. ESO mobilisation will take place in Yokosuka on 16-21 April when the scientists will join. The expedition will take place from 22 April to 9 June. There will be a port call in Sendai on 15 May before finishing the second half of the expedition. The demobilisation will be done in Yokosuka on 9 June and the cores will be temporarily stored. In July 2020, the cores and the equipment will be taken to the *Chikyu* in Sasebo and the CT scanning will start. The *Chikyu* will be moved to Shimizu where the OSP will start on 14 October 2020 lasting until mid-November.
ESO provides the overall expedition management, the expedition database, some containers and consumables, and onshore and offshore staff. JAMSTEC provides the RV *Kaimei* including the GPC and consumables, the *Chikyu* for the OSP, labs and accomodation for both vessels as well as some staff as IKC. Additional staff, equipment, containers, permitting and some management support are supplied under the ECORD-JAMSTEC MoU.
The Science Party staffing will be completed in the next couple of weeks. Two Special Calls were issued. So far, 19 male and 12 female scientists were selected, including the Co-chief Scientists. Thirteen participants are junior scientists and 18 are senior scientists. The detailed planning continues and includes the GPC system, core flow and labs, and database/IT.

IODP Expedition 377 'Arctic Ocean Paleoceanography (ArcOP)':
The revised proposal for Expedition 377 was scoped (addendum in July 2019) and ESO continued to solicit IKCs. ESO had informal discussion with potential suppliers and discussed with UK SBS about various contracting approaches.

The primary borehole was repositioned based on newly acquired seismic data. The new drilling plan includes one deep borehole (LR-06B) instead of two. The scientific objectives remain unchanged. From an operational point of view the time on site is reduced from 48 to 34 days.
In-kind contributions: The BGR is willing to supply a $1.1M USD contribution to the fuel costs. In March 2019 ESO had a video conference with the Swedish Polar Research Secretariat (SPRS), which offered an IKC in the amount of $900K USD in the form of their staff. ESO proposed a staffing model to encourage a greater IKC from Sweden. In addition to the three IKC berths, three early-career researcher training positions could be offered to support the Science Party or the ESO staff. A workshop on Arctic Ocean Drilling was organised on 15-16 October 2019 to define cross-disciplinary interests and opportunities for the Swedish IODP community on future missions with the RV *Oden*. An ESO-EMA-SPRS video meeting was held on 24 October 2019 and SPRS stated that they are not in the position to offer an additional IKC in the form of full costs for the RV *Oden*.
The total RV *Oden* transit from Luleå to the ArcOP sites is 32 days (22 days can be shared with the NABOS project). There are various options for the lead icebreakers: 1) contract a single nuclear icebreaker in Murmansk with an eight-day return transit time to the ArcOP sites; 2) two diesel-electric icebreakers from Saint Petersburg with a 26-day return transit time per icebreaker. The second option would have large implications on the fuel costs. Potential options for the drillship include vessels from the European or the Singapore region. The choice of the drillship will also have large implications on the budget.

IODP Proposal #637 'New England Shelf Hydrogeology':
D. McInroy summarized the operational planning. The drilling plan includes three primary sites at water depths of 33-79 m and penetration depths of down to 550 mbsf at each of the three sites. A drillship or a liftboat could be used. Various coring method options might be used: mining-style, API with seabed control and API with seabed control with piggyback. All these can be provided with a suite of different coring tools. Another option is sonic coring with piggyback.

P637 New England Shelf Hydrogeology Lead proponents: Brandon Dugan and Mark Person			
Water depths:	33 – 79 m	Timing:	March - August
Penetration:	3 x 550 mbsf (1 hole at each site)	Constraints:	Avoid hurricanes and winter storms
Lithologies:	Sands, silts and clays.	Permitting:	US Federal and State
# of sites	3 primary, 1 alternate	IKC Potential	None identified to date

This expedition involves coring, logging and pump tests and these activities need to be carefully sequenced. Unstable boreholes are predicted and boreholes are expected to have an overpressure. The lead proponent is assessing the potential for overpressure

using existing velocity data. ESO is discussing with the proponents the pump test requirements. The lead proponent attended an observatories workshop on 16-17 October 2019 where he exchanged with others about shallow water downhole tests and infrastructure.
Hazard site survey is required and included in the cost estimates. ESO would aim to contract the hazard site survey one year ahead of the expedition. The lead proponent has reached out to the USGS to see what/if multibeam or backscatter data are available over the sites.
The lead proponent has submitted has submitted a *JR* APL to drill two sites on the slope. This could be a stand-alone project and could also provide the seaward end-member for P637. This could de-risk the expedition.
The project duration estimates from potential contractors are variable from 50 to 78 days. If this expedition would be scheduled for 2021, ESO would need to immediately tender for the hazard survey, and amend the 2020 budget accordingly.

DISCUSSION on IODP Proposal #637 'New England Shelf Hydrogeology':
J. Allan asked if costs for the installation of infrastructures like CORKs are included in the current cost estimate as such outside infrastructures are platform provider costs. The proponent Brandon Dugan tried to request funding from the NSF for pump testing (D. McInroy). The current cost estimate includes contracting pump tests and finishing off the hole afterwards (D. McInroy). Any CORK installation was never part of the proposal (D. Smith).

11 Views from the ECORD Facility Board (G. Uenzelmann-Neben)

(11:39)
G. Uenzelmann-Neben gave an update on the ECORD Facility Board (EFB) activities.

The EFB members with voting rights are 1) the six Science Board members: EFB Chair Gabriele Uenzelmann-Neben (GER), EFB Vice-Chair Gilles Lericolais (FRA), Gretchen Früh-Green (SUI), Ellen Thomas (USA), Yasuhiro Yamada (JPN) and FengPing Wang (CHN); 2) the members of the ECORD Vision Task Force: ECORD Council core members, EMA, ESO and ESSAC; and 3) NSF and MEXT with one representative each. Gretchen Früh-Green (SUI) and Ellen Thomas (USA) will rotate off the Science Board at the end of 2019.

G. Uenzelmann-Neben summarized MSP proposals at the SEP:

Proposal#	type	Short Title	PI	Country
796	ADP	NADIR: Nice Amphibious Drilling	Kopf	ECORD (Germany)
863	MDP	ISOLAT Southern Ocean Paleoclimate	Peterson	USA
915	Full (MSP or JR)	North Atlantic Fjord Sediment Archives	Giraudeau	ECORD (France)
931	Pre	East Antarctic Ice Sheet Evolution	Shevenell	USA

796-ADP 'NADIR: Nice Amphibious Drilling': needs to be revised.

863-MDP 'ISOLAT Southern Ocean Paleoclimate': needs to be revised.

915-Full 'North Atlantic Fjord Sediment Archives'

931-Pre 'East Antarctic Ice Sheet Evolution': needs to be developed as full proposal.

G. Uenzelmann-Neben gave an overview of MSP proposals at the EFB:

Proposal	type	Short Title	PI	Country	Exp.
637	Full2	New England Shelf Hydrogeology	Duggan	USA	
708	Full	Central Arctic Paleoceanography	Stein	ECORD (Germany)	377
716	Full2	Hawaiian Drowned Reefs	Webster	ANZIC (Australia)	389
730	Full2	Sabine Bank Sea Level	Taylor	USA	
813	Full	Antarctic Cenozoic Paleoclimate	Williams	USA	373
866	Full2 (MSP)	Japan Trench Paleoseismology	Strasser	ECORD (Austria)	386

637-Full2 'New England Shelf Hydrogeology': in the EFB waiting room.

Expedition 377 'Arctic Ocean Paleoceanography': in the EFB waiting room.

Expedition 389 'Hawaiian Drowned Reefs': in the EFB waiting room.

730-Full2 'Sabine Bank Sea-Level': in the EFB waiting room.

Expedition 373 'Antarctic Cenozoic Paleoclimate': in the EFB waiting room.

Expedition 386 'Japan Trench Paleoseismology': scheduled for 2020.

IODP Expedition 377 'Arctic Ocean Paleoceanography':

The EFB supports the scheduling of this expedition, however, the budget cap should not be exceeded and the EFB instructed the EVTF to attempt to secure IKCs before 30 September 2019 (ECORD FB Consensus 19-03-02). The proponents descoped the proposal from two deep sites to one deep site (900 mbsf) and one shallow site (40 mbsf). The initial site was relocated from LR-06A to LR-11A. The proponents stated that

all objectives can be met. A proposal for additional sites has been submitted for the Korean RV *Araon* for 2021.

MSP concept:

The implementation is different for every MSP expedition. Clustering MSP expeditions regionally or regarding the drill tool is one possibility to increase the attractivity of the MSP concept, for example, the same platform provider could be used for several MSP expeditions spread over some years. Expensive MSP expeditions are strongly dependent on IKCs and the flow of IKCs still needs to be increased. The EFB decided to schedule maximum two years ahead to avoid cancellation and postponement of MSP expeditions, and to encourage proponents to submit new MSP proposals. More MSP proposals would increase ECORD's flexibility.

Possibilities to increase the flow of MSP proposals are under discussion. The community needs to be better informed about MSPs. A general presentation of the MSP concept will be developed to better advertise the MSP concept. More post-drilling mentioning of MSPs is needed and more information on possibilities and chances of MSP expeditions, such as drilling in shallow-water, ice-covered areas, environmentally sensitive regions and the use of seafloor drills, needs to be disseminated. One advantage is that MSPs do not have to follow a ship track. Another possibility is to strengthen the link to ICDP, to follow the same scientific objectives and to drill more amphibious proposals. In a new post-2023 programme a special MSP niche could be identified. Furthermore, the implementation in steps should be encouraged to allow a realization in several phases.

DISCUSSION on the MSP concept:

The flow of MSP proposals needs to be increased as the last two calls for proposals brought only one each (C. Neal). A baseline expedition with a threshold of minimum science needs to be emphasized in the proposal guidelines (C. Neal). The low number of submitted MSP proposals is a concern, maybe emphasizing a facility or regional track could help to increase proposal pressure (C. Neal). The Memoranda on berth exchange state that one MSP expedition will be implemented per year (J. Allan). NSF consistently stated that the implementation of one MSP expedition per year is not the most important, but doing science that is most transformative is crucial (J. Allan). Implementing more MSP expeditions is not better than implementing less but very successful MSP expeditions (J. Allan). MSP expeditions have been very successful and at the end of the current phase seven MSP expeditions will have been implemented in ten years (G. Camoin). A certain proposal pressure is needed, but not too much (G. Camoin). At the moment the proposal pressure is low as the community has the feeling that there are enough proposals and that the programme is already done (G. Camoin). A higher proposal pressure might be expected before the end of the programme when the new Science Framework is published (G. Camoin). Several expeditions have been deferred due to budget constraints and the budget allocation, the relationship between the EFB and the ECORD Council in terms of setting the budget, is maybe not clear for an outsider (J. Allan). Most of the proposals forwarded to the EFB by SEP are excellent in terms of science and then the budget plays a role how many

MSP expeditions can be implemented (G. Camoin). Furthermore, ECORD is a consortium of 15 countries and the visibility is important, how many expeditions are implemented in how many years (G. Camoin). Different funding agencies have very different perspectives (J. Allan). ECORD already started at the ECORD Council level to define a strategy for the current phase, but also for the next programme (G. Camoin).

THE SECOND PHASE OF IODP (2019-2023) - IODP News and ECORD Partnership

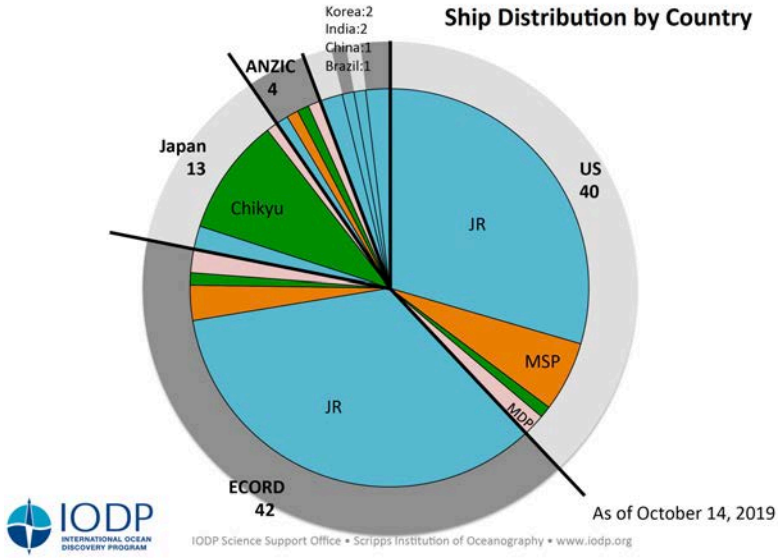
12 IODP Forum - Progress towards IODP Science Plan challenges (D. Kroon) (12:00)

The IODP Forum Chair maintains a document on the progress of IODP towards fulfillment of the 2013-2023 Science Plan (http://www.iodp.org/iodp-forum). D. Kroon presented how completed/scheduled expeditions and full proposals at SEP and the Facility Boards address the 14 challenges of the IODP Science Plan. However, post-expedition assessment is not included and should be addressed. The IODP Forum proposed to evaluate the first five years of the current programme using existing documents that could be summarized in a succinct manner. D. Kroon with the help of two or three IODP Forum attendees will look at the new Science Framework in the light of what has been drilled over the last five years. They will review the main publications and summarize the science outcomes and scientific discoveries over the last five years. The Science Framework has to be new and different from the current Science Plan. The proposal pressure is relatively stable and needs to be kept up for a new programme post-2023.

DISCUSSION on the new Science Framework:

It is crucial to include new ideas into the new Science Framework (F. Abrantes). The programme cannot afford a new Science Framework that copies only from the current Science Plan (D. Kroon). The Science Framework is new and inclusive and allows the incorporation of new ideas, which is important to evolve science more quickly (C. Neal). New proposals coming into the system should also be reviewed as they may contain new ideas (J. Henderiks). The assessment of the scientific achievements over the last five years has to be done in the right time when writing the Science Framework, i.e. before the final polishing (A. Morris). B. Clement asked about the product of this 5-year post-expedition assessment. This assessment will be part of the review of the new Science Framework, i.e. to see if the new Science Framework is novel enough relative to what was already done (D. Kroon). Scientific drilling programmes are relatively expensive and it is important to show why it is important to invest in such a programme and what are the scientific outcomes (S. Guillot). It is important to communicate about the main achievements, especially outcomes linked to the social aspect, which is crucial for funders (S. Guillot). In the future outreach needs to be improved (D. Kroon). Publications on a long-term are very important (S. Guillot).

D. Kroon summarized the proposal statistics (see agenda book pages 158-162). At the moment (as of 14 October 2019) there are 105 active IODP proposals in the system: 76 *JR*, 13 *Chikyu*, 10 MSP and 6 multiple proposals. Of those, 41 are at the Facility Boards and 57 are at SEP (7 are in the holding bin). ECORD and the US are nearly equal in the number of lead proponents (ECORD: 42, US: 40, Others: 23). ECORD has the highest number of unique proponents (ECORD: 519, US: 387, Japan: 156, Others: 195). Of the 105 active proposals, 60 are full proposals and 26 are pre-proposals, plus 13 APL and 6 umbrella proposals.



105 active IODP proposals: ship distribution by country.

(12:32)
lunch break
(13:40)

13 PMOs (N. Eguchi)

(13:40)

N. Eguchi presented the action and consensus items of the Program Member Offices (PMO) meeting #4, which was held on 14 September 2019 in Osaka, Japan. N. Eguchi was Chair of the PMO meeting #4.

Action and consensus items can be found in the agenda book (page 71):

- PMO Consensus Item 1909-01 on PMO meetings as a valuable tool to network and discuss, should be held in conjunction with the IODP Forum meeting
- PMO Consensus Item 1909-02 on the nomination of A. Morris as Chair of the next two PMO meetings
- PMO Action Item 1909-01 on requesting funds for the production of the new Science Framework (DONE)

- PMO Action Item 1909-02 on the IODP harassment policy (the latest draft was circulated on 6 November 2019 to all ECORD Council-ESSAC #7 meeting attendees)

14 NSF (T. Quinn/J. Allan)

(13:47)

T. Quinn: One year ago the renewal for the Texas A&M as *JR* operator through 2023 was successful and NSF agreed to pay 240M USD over this period. The *JR* and its science are highly respected at the NSF. The past scientific discoveries and achievements are significant. There are ongoing challenges, such as fluctuations in the *JR* consortium membership. There is also a challenge of timely payment of consortium fees. More important is the drawing down on the savings account for operational expenses. CPPs in the past allowed to bank some funds that could be used. A sustainable business model is important. The demonstration of a sustainable business model in the current phase of the programme and in a post-*JR* programme is critical. From an NSF perspective a compelling and dynamic science plan is required for a post-*JR* programme. IODP has to compete at higher levels in the government with other programmes, etc. The 2050-time frame of the science plan allows growth and intellectual freedom. Scientific achievements need time and energy and such a time frame is positive and a vote of confidence to the community. The new science plan needs to be dynamic with regular reexaminations, considering new discoveries and changing priorities. NSF stands for bottom up science planning with transparent and open science review and operational scheduling. A sustainable business model for the new vessel must have a realistic financial approach. The berths costs are a fundamental constrain. A post-*JR* needs significant and documented financial support from the partners. The decision on a post-*JR* is coming in a much shorter time frame. The goal is not to have a hiatus in scientific ocean drilling. In order to achieve that, NSF has to make a decision in late spring/early summer 2021. Both a compelling and dynamic science plan and a sustainable business model need to be worked out in parallel as the NSF decision will be in 18 months.

<u>DISCUSSION on a post-JR world:</u>

What does sustainable exactly mean (J. Behrmann)? Maybe the operational costs of the new vessel will be of $90M USD and if 30 berths would be available the costs per berth can be easily calculated (T. Quinn). At the moment NSF pays 78% of the JR operational costs (T. Quinn/J. Allan). A commitment from the partners is needed to operate 8, 10 or 12 months and this would be a sustainable model, but six months of operation are not sustainable (T. Quinn). Numbers are needed (D. Kroon). The $90M USD is a rough, but reasonable estimate as right now the JR costs $65M USD per year for eight months of operation (J. Allan). Ten months of operation with a more expensive ship will increase the costs and all partners need to significantly increase their contributions to the JR otherwise the business model does not work (J. Allan). Losing members, delayed payments and spending down the savings account have been challenges and need to be addressed (T. Quinn). From the

operator's point of view it has to be made clear that the minimum is six months of operation per year (B. Clement). A sustainable business model has to allow for some flexibility (fluctuations in the membership, exchange rates, etc.) and this variance has to be taken into account to guarantee a minimum of six months of operation/three expeditions per year (B. Clement).

The JR is getting older and after 2028 it cannot be renewed anymore as the Environmental Impact Statement will run out and this would be the end of the JR (C. Neal). Running the JR until 2028 is unclear as the maintenance costs will increase. A new programme needs a new commitment to get the new, more expensive vessel (C. Neal). ECORD's planning for the future needs to consider the JR and the MSPs (C. Neal). The fiscal reality is that more money is needed. The new facility will increase the scientific output, but operating the new vessel will be more expensive (C. Neal). However, the operational costs for the JR are increasing now (C. Neal).

What is the timeline for the sustainable model (L. Armand)? There are near-, mid- and long-term goals which would play into the sustainable model (T. Quinn). A start could be a written commitment for a few numbers of years with an expectation to commit until the end of the term, i.e. 2050 (T. Quinn).

What would be the timeline for the new ship being ready for future operations (G. Camoin)? The award is through 2024 and the programme runs through 2023 (J. Allan). The MoU is in the process of being signed and includes an optional year, 2024, in the annex as the National Science Board is used to five-year authorisations. (J. Allan). The added bonus it that it allows the programme to run fully through 2023. The Environmental Impact Statement is valid until 2028 and as environmental regulations, etc. have changed a new Environmental Impact Statement after 2028 is unlikely (J. Allan). The critical point is that the operator may choose not to offer the ship because operational costs are increasing. Many pieces and equipment on the JR are no longer manufactured and replacement parts are not available but need to be fabricated. At some point this may not be feasible for the owner of the ship as the return from the day rate would not be adequate (J. Allan). The availability of the ship until 2028 is uncertain (J. Allan). In order to sell the new dynamic and compelling science plan it will be a challenge to use an old vessel (T. Quinn). Some parts of this new science plan will require new technologies and the JR cannot do the whole plan (T. Quinn).

It is a quite risky business plan to rely on the guarantee from Europe, which may vary over the years, but maybe commercial work could be a possibility (D. Smith). All countries have fiscal constrains (T. Quinn). The JR was used commercially and the savings were enormous, between $10M and $12M USD (J. Allan). In addition to the savings from the commercial work, JRSO spent less money ($5M-$6M USD per year) and four CPPs were implemented. Without the CPPs the business model would have been unsustainable (J. Allan). NSF provides $48M USD per year and the ship costs $65M USD per year, plus $1.3M USD per year for the SSO. The difference between $66.3M USD and $48M USD is $18.3M USD. However, the annual contributions from the partners have been $14.5M USD, but now they are only of $10.5M USD (J. Allan). NSF needs to issue a Dear Colleague Letter to seek interest from the community, both commercial and academic, for a new vessel to

implement a science plan (T. Quinn). A flexible business model may contain X months of academic drilling and X months of commercial drilling (T. Quinn). The new platform will be more expensive, but it will also have a higher efficiency, i.e. more core/science per dollar (B. Clement).

15 *JOIDES Resolution* Operations (B. Clement/C. Neal)

(14:10)

B. Clement presented a JRSO and C. Neal a JRFB update.

In FY19 five IODP expeditions were implemented:

- Expedition 379 'Amundsen Sea West Antarctic Ice Sheet History'
- Expedition 382 'Iceberg Alley and Subantarctic Ice and Ocean Dynamics': 5 sites, 18 holes, 2809 m of core, 87% recovery
- Expedition 383 'Dynamics of Pacific Antarctic Circumpolar Current': 6 sites, 2636 m of core
- Expedition 385T 'Panama Basin Crustal Architecture (504B) and Restoring Hole 896A': The plan was to remove the CORKs from two holes and to reenter the holes to do further measurements and logging. The packers were not removed and prevented access to the deeper part of the holes. No downhole measurements were made.
- Expedition 385 'Guaymas Basin Tectonics and Biosphere'

DISCUSSION on JR outreach:

A. Voelker asked about outreach activities when the JR is in San Diego. The JR was in San Diego on 16 September 2019 before implementing Expedition 385 and several tours and outreach activities were organised, including tours for higher administration (B. Clement). It is important to continue building internal support. Holly Given from SSO organised a symposium. NSF representatives will come to the next port call and a 1-day School of Rock will be organised (B. Clement).

C. Neal summarized the consensus statements from the May 2019 JRFB meeting (see agenda book pages 78-80):

- JRFB Consensus Statement 1: record number of proposals submitted to SEP on 1 April 2019, need for sustained proposal pressure in the coming years
- JRFB Consensus Statement 3: consider expeditions for scheduling to the end of FY24
- JRFB Consensus Statement 4: encourage the community to keep proposal pressure up
- JRFB Consensus Statement 5: Proposal 910 'Continental Margin Methane Cycling' scheduled for October-November 2021
- JRFB Consensus Statement 12: streamlining amphibious drilling proposals (land-sea transects)

C. Neal presented the revised *JR* schedule:

Expedition Name	#	Dates	Ports
Dynamics of Pacific Antarctic Circumpolar Current	383	May 20 - July 20, 2019	Punta Arenas / Punta Arenas
Panama Basin Crustal Architecture (504B) and Restoring Hole 896A	385T	Aug 18 - Sept 16, 2019	Antofagasta / San Diego
Guaymas Basin Tectonics and Biosphere	385	Sept 16 - Nov 16, 2019	San Diego / San Diego
South Pacific Paleogene Climate	378	Jan 3 - Mar 4, 2020	Fiji / Papeete
JOIDES Resolution Engineering Testing	384	Mar 4 - Apr 26, 2020	Papeete / Barbados
Amazon Continental Margin	387	Apr 26 - June 26, 2020	Barbados / Recife
Equatorial Atlantic Gateway	388	June 26 - Aug 26, 2020	Recife / Recife
South Atlantic Transect #1	390	Oct 5 - Dec 5, 2020	Rio de Janeiro / Cape Town
Walvis Ridge Hotspot	391	Dec 5, 2020 - Feb 4, 2021	Cape Town / Cape Town
Agulhas Plateau Cretaceous Climate	392	Feb 4 - Apr 6, 2021	Cape Town / Cape Town
South Atlantic Transect #2	393	Apr 6 - June 6, 2021	Cape Town / Rio de Janeiro
Continental Margin Methane Cycling	394	October-November, 2021	TBD

C. Neal listed *JR* proposals to be scheduled (in black: at the JRFB, in grey: should be at the JRFB until May 2020):

#	Stage	Name	Lead
771	Full2	Iberian Margin Paleoclimate	Hodell
851	*Full*	*Cenozoic Northwest Atlantic Transect*	*Lyle*
857C	*Full*	*DREAM: Lago-Mare Deposits*	*Bertoni*
874	Full2	Neogene Newfoundland Sediment Drifts	Friedrich
892	Full2	Reykjanes Mantle Convection	Parnell-Turner
909	*Full2*	*NW Greenland Glaciated Margin*	*Knutz*
929	*Add*	*Blake Nose Subseafloor Life*	*D'Hondt*
932	*Full*	*Hellenic Arc Volcanic Field*	*Druitt*
943	Full	Galicia Margin Rifting	Reston
944	*Full2*	*Mid-Norwegian Continental Margin Magmatism*	*Huismans*
945	*Full2*	*Brazilian Equatorial Margin Paleoceanography*	*Giovane*
962	*Full*	*Greenland Ice Sheet*	*Stoner*

C. Neal summarized the *JR* track record. The *JR* is the multi-faceted work horse of the programme with non-riser capability. Since 2003, 61 IODP expeditions have been implemented and more than 110 legs in the Ocean Drilling Program. The *JR* is a global ranging vessel since more than 44 years with a global science party. However, the *JR* is getting old and maintenance issues are anticipated to be more frequent in the future. Therefore, a higher day rate will be required. The Environmental Impact Statement expires in 2028 and will not be renewed.

16 MEXT (T. Watanabe)

(14:43)

T. Watanabe presented the Japanese renewal process, a review of the current programme structure and ambitions for a post-2023 programme structure.

Renewal process in Japan:
In May 2018 the Basic Plan on Ocean Policy of Japan was adopted by the cabinet members and entered the 3rd term (2018-2023). This policy includes the promotion of a comprehensive understanding of the ocean, Earth and life, especially the promotion of IODP. Mantle drilling in the future and international collaboration through Japan's active participation in IODP are important. The JAMSTEC mid-term Objectives and Activities Plan has been revised for seven years (April 2019 – March 2026) taking into account the 3rd Basic Plan on Ocean Policy of Japan (2018-2023). The objectives, set by the Minister, mention the deployment of ocean research and observation platforms and advancing technologies, including ultra-deep water and ultra-deep drilling, and the enhancement of the international cooperation under IODP. The Activities Plan, proposed by JAMSTEC and accepted by the Minister, sets a timeframe until FY25 for the development of equipment and the implementation of 'pilot' drillings to reach the mentioned objectives.

Current programme structure:
In general, the current structure is working well: single science plan, IODP Forum, SEP, EPSP, SSO, the three Facility Boards and core repositories, partnership with ECORD, open access to samples and data, bottom-up approach, and berth exchange. Collaboration with industry has not been well realized. The number of programme partners may still be expanded (countries, consortia, industries, etc.).

Post-2023 programme structure:
Combining expeditions, platforms and facilities, as it was done for the NanTroSEIZE project, the Oman drilling project (ICDP and the use of the *Chikyu* as lab), Expedition 386 'Japan Trench Paleoseismology' (MSP and RV *Kaimei* GPC), is a very successful approach. With the future Science Framework, there will be many possibilities to use this interdisciplinary approach, and it will be necessary for the 'Flagship Initiatives' of the new Science Framework and could be regarded as a 'Project'. A single drilling expedition might be a component of a 'Project'. Project themes might be Tsunami early warning systems, including LTBMS, mantle drilling, etc. The combination of allied programmes, big data science and new technologies might imply new participants (scientific communities, industries) and long-term funding.
A single, international post-2023 programme framework is needed and the 2050 timeframe with reviews every five years is acceptable. The major elements of the current programme structure might be kept. The partnership with ECORD is important and collaborations with new partners have to be explored. Japan is in favor of the collaboration between IODP and ICDP.

COMMENT:
The collaboration between JAMSTEC and ESO planning Expedition 386 'Japan Trench Paleoseismology' is very impressive (J. Allan).

QUESTION:
C. Neal asked about the collaboration of JAMSTEC with the Japanese Space Agency regarding ocean drilling. JAMSTEC invited scientists to a workshop, but the contact still needs to be improved (N. Eguchi). ECORD should connect with the European Space Agency to get new communities and new collaborations (C. Neal).

17 *Chikyu* Operations (N. Eguchi)

(14:58)
N. Eguchi presented the consensus items from the 2019 CIB meeting, reported on IODP Expedition 358 and the restructuring of JAMSTEC.

The last CIB meeting was held on 11-12 June 2019 in Kobe. N. Eguchi presented six out of 12 CIB Consensus Items (see agenda book pages 85-86):

- CIB Consensus 0619-03 on the linkage between IODP and ICDP
- CIB Consensus 0619-04 on NanTroSEIZE
- CIB Consensus 0619-05 on the three riser proposals CRISP/IBM/Hikurangi (no implementation in the near future)
- CIB Consensus 0619-06 on a seismogenic zone workshop
- CIB Consensus 0619-07 on the wording for the next IODP Call for Proposals (no new riser projects until the end of the current programme)
- CIB Consensus 0619-08 on IODP Policy and Guidelines

Current CIB Members are David Goldberg (USA) and Ryo Anma (JPN). A new member selection is ongoing (two for Japan, including the Chair, one for ECORD and one for the USA).

IODP Expedition 358 'NanTroSEIZE Plate Boundary Riser 4':
The expedition started on 7 October 2018 and lasted until 31 March 2019. The aim was to access a subduction plate boundary fault system and its wall rocks at likely seismogenic depths for the first time. This expedition had nine Science Leaders (five Japanese, three U.S. and one ECORD), three Expedition Project Managers and 39 Science Party members, of those 32% from ECORD countries, 26% from the USA and 40% from Japan. There are two ongoing reviews, one about the management of this project and the second one is a technical review.

Chikyu operation in 2019 and 2020:
During 2019 *Chikyu* is tied up in Shimizu. In early 2020 two SCORE (non-IODP), shallow piston coring, operations will be implemented in the Nankai Trough and the Kikai Caldera with about five days each. A long period of repair, maintenance and inspection, including a sea trial, will start mid-January 2020 and it will end in August 2020. No IODP expedition is planned.

Restructuring of JAMSTEC:
JAMSTEC was reorganised along with the launch of its mid-to-long term plan (seven years until the end of JPFY25). In April 2019 CDEX (Center for Deep Earth Exploration) and MARITEC (Marine Technology and Engineering Center) have been merged to MarE3 (Institute for Marine-Earth Exploration and Engineering). The Director General is S. Kuramoto. The three departments are: Planning and Coordination Department (S. Oshima), Engineering Department (K. Kawaguchi) and Operations Department (N. Eguchi). Besides the *Chikyu* MarE3 covers several research vessels and vehicles (AUVs, ROVs, etc.).

QUESTION about the Lord Howe Rise (LHR) project:
A. Voelker asked about the status of the LHR project. This project has been postponed due to Australian financial aspects (N. Eguchi). Geoscience Australia needs to get funds from their government (N. Eguchi).

COMMENTS on Expedition 358:
The efforts for Expedition 358 are very much appreciated (A. Morris). Although the main target was not reached, the deepest sample ever was recovered from a completely underexplored environment and plenty of new data have been collected (M. Strasser). The NanTroSEIZE project was one of the five highlights in terms of publications (M. Strasser). An independent review of the operations is ongoing and MarE3 will gain valuable operational experience for the future in drilling deep holes (C. Neal). The review of this operation is impressive and how willing the Japanese colleagues have been to share with Lamont what worked and what did not work during Expedition 358 (J. Allan).

18 *JR* Associate Members (L. Armand/G. Young Kim)

ANZIC
(15:18)
L. Armand presented recent events and renewal activities post-2020.

Recent events:
The ANZIC Ocean Planet Report will be soon available online. The Annual Report 2018 is available online and hard copies will be sent on request. There are four ANZIC members on the writing team for the new Science Framework. Recently, the 2019-23 ANZIC-NSF MoU has been signed to continue the relationship under new participation unit conditions. ANZIC is now 0.375 associate member. In early December 2019 an ANZIC Geoscience Masterclass will be organised in Sydney for 30 top undergraduate students.

Last ANZIC expedition participants:
ANZIC's funding runs out in December 2020. The last expedition participants under ANZIC funding will sail on Expeditions 378 'South Pacific Paleogene Climate' (1 ANZIC

scientist, 1 observer, 1 Education Officer), 386 'Japan Trench Paleoseismology' (1 ANZIC scientist), 387 'Amazon Margin' (1 ANZIC scientist), 388 'Equatorial Atlantic Gateway' (1 ANZIC scientist) and 390 'South Atlantic Transect' (ANZIC candidate forwarded). Currently, ANZIC is not advertising any other expedition opportunities as ANZIC cannot fund the participants.

Renewal for post-2020:

In mid-July 2019 a first request concerning the Oceania Scientific Drilling Program (OSDP, 2021-2030) has been submitted to the Australian Government NCRIS (National Research Infrastructure for Australia) Program. The request concerns ten years of funding with 5-year review periods. All Australian universities and government agencies re-signed in principle. New Zealand is currently under request. The second submission to NCRIS was done in late September and a third submission in early October. In November, NCRIS recommendations from the Department of Education & Training have been sent to the Minister. The announcement will be done in April 2020. There are two possible outcomes: 1) no funding and ANZIC has to close at the end of December 2020, or 2) funding is received and the programme can continue from July 2021.

There are four different OSDP models. The original application contained two different models with $8M and $6.5M of funding from NCRIS, including full *JR* and ECORD subscriptions. In contrast to the $6.5M model, the $8M contains also a *Chikyu* subscription. The incremental ($3M from NCRIS) and base (current platform 2016-20, $2M ARC LIEF) models include a 0.375 *JR* subscription and a 0.3 *Chikyu* subscription.

ANZIC Governance Update:

The Governing Council meeting will be held in Canberra on 19 November 2019. The discussions will focus on the final year of funding under the ARC LIEF grant. Final ANZIC pre-proposal submissions are encouraged. Actions to initiate post-April 2020 depending on the outcome of its NCRIS renewal bid will be discussed. Suggestions for IODP activities in 2020 that might be considered for ANZIC early-career scientists, e.g. how to write a proposal.

Ian Poiner will remain as the Chair of the Governing Council for 2020. Joanna Parr will be the new ANZIC Science Committee Chair from 1 January 2020 replacing Mike Coffin. Chris Elders will stay on SEP Site for 2020.

ANZIC will hold a final ANZIC event in the third quarter of 2020.

Korea IODP

(15:37)

G. Young Kim from the Korea Institute of Geoscience and Mineral Resources (KIGAM) presented recent activities of K-IODP. The K-IODP Office is composed of a Project Manager (G. Young Kim) and two staff. The 2019 budget is of $2.4M USD. Three institutes and five universities are participating in K-IODP. The Science Committee is composed of seven people and determines the Korean expedition participants. Another

working group, composed of 20 people covering all four IODP science themes, are working on the science plan of K-IODP. Five people from the Ministry and the Geological and Oceanographic Society of Korea are forming an Advisory Council. There are two Korean members on SEP.

Shipboard scientists: Every year three or four Korean scientists participate in IODP expeditions. Since 1997 55 Korean scientists participated in ODP/IODP expeditions. Between September 2018 and November 2019 four Korean scientists sailed on four different IODP expeditions (379, 382, 383, 385). K-IODP funds travels and post-cruise research.

Education: The K-IODP Summer School is organised every year. In August 2019, 19 graduate students from 15 Korean universities participated in the Summer School. Every year K-IODP sends 3-4 students to the J-DESC Core School. In March 2019, three Korean students attended the J-DESC Core School. Overall, 28 students participated in the Japanese J-DESC Core School.

Conferences: K-IODP organised the Western Pacific Drilling (WEPAD) meeting in Busan on 11-13 September 2019. In 2019, an IODP special session and a promotional booth have been organised at domestic conferences. On 28 June – 4 July 2020 the Asia Oceania Geosciences Society (AOGS) meeting will be held in Hongcheon. K-IODP together with Japan and China proposed an IODP session.

QUESTION:
C. Neal asked about the outcomes of the WEPAD workshop. The plan is to develop an IODP proposal in 2020 (G. Young Kim).

The meeting was closed at 15:43.

(15:43)
coffee break
(16:07)

ECORD CLOSED SESSION (*ECORD representatives only*)
(16:07)

- MSP scheduling
- The future of scientific ocean drilling

(17:30)

November 6th, 2019

ECORD CLOSED SESSION (*ECORD representatives only*)
(9:01)

- MSP scheduling
- The future of scientific ocean drilling

ECORD Council Consensus 19-11-04:
The ECORD Council decides to schedule Expedition 377 'Arctic Ocean Paleoceanography (ArcOP)' in FY21.

In favour: 14 (Canada by email), **Abstain:** 1 (UK), **Against:** 0, **Absent:** 0

COMMENT by the UK on ECORD Council Consensus 19-11-04 (Jessica Surma by email on 21 November 2019):
"The UK abstaining was more than just about the lack of any assessment of the risk for the delivery of this very complex programme, the development of which would be considered best practice by NERC. Without this assessment, NERC could not endorse the increase in budget above the existing cap. The development of the risk assessment now is considered to be a good thing. I did agree to having a second vote, but made it clear that it was unlikely that the UK position would change due to other factors."

See ECORD Council Consensus 18-11-04 for the increase of the budget cap for Expedition 377 'Arctic Ocean Paleoceanography (ArcOP)'.

ECORD Council Consensus 19-11-05:
The ECORD Council requests the submission of a related Risk Assessment from ESO to be received by 22 November 2019.
The ECORD Council agrees on a final electronic vote concerning the implementation of this expedition before 29 November 2019 in light of the additional information provided. If the submission of the Risk Assessment document is delayed, there will be "the backstop" of this decision voted on 6 November 2019 during the ECORD Council-ESSAC meeting #7.

In favour: 14, **Abstain:** 0, **Against:** 0, **Absent:** 1 (Canada)

Action Item 2: ESO
To produce a Risk Assessment document for Expedition 377 'Arctic Ocean Paleoceanography (ArcOP)' and send it to the ECORD Council. ESO will communicate directly with NERC in relation to this document.

Electronic vote related to the ECORD Council Consensus 19-11-05 (28 November 2019):

ECORD Council Consensus 19-11-10:
The ECORD Council confirms the scheduling of Expedition 377 'Arctic Ocean Paleoceanography (ArcOP)' in FY21 in light of the Risk Assessment document provided by ESO.
The ECORD Council thanks ESO for providing this informative and exhaustive document on time.

In favour: 13, **Abstain:** 1 (UK), **Against:** 0, **Absent:** 1 (Spain)

The electronic vote confirms the ECORD Council Consensus 19-11-04 by which the ECORD Council decided to schedule the ArcOP expedition in FY2021.

(11:05)
S. Guillot opened the meeting.

THE FUTURE OF SCIENTIFIC OCEAN DRILLING
19 Towards a post-2023 Science Plan (D. Kroon/A. Morris)

See agenda book pages 90-121 for more detailed information on the new Science Framework.

Post-2023 IODP Science Framework (A. Morris)
(11:05)
International workshops (J-DESC, PROCEED, ANZIC, NEXT, IODP-China) have been organised and a total of about 650 participants attended these workshops. Representatives from each of these workshops (four core members and two alternate members from PROCEED/ECORD) were nominated to attend the Science Plan Working Group Meeting that took place in New York. Finally, Roz Coggon (UK), Antony Morris (UK) and Matthew O'Regan (SWE) attended the New York meeting representing ECORD, in addition to 21 attendees from all other IODP countries. This meeting led to the structure and roadmap of new science plan. Anthony Koppers (USA) and Roz Coggon (UK) were appointed as lead and deputy lead editors, respectively. The outcomes of the New York meeting were discussed, modified and approved by the IODP Forum. The Science Framework Writing Team selected by the editors was appointed. Overall, 16 writers, the lead and deputy lead editors and 22 external reviewers are forming the Science Framework Writing Team. Besides the deputy lead editor from the UK, eight ECORD members (3 GER, 3 UK, 1 FRA, 1 SWE) are contributing to the writing or the review of the new Science Framework (see agenda book page 45).

Structure: The new Science Framework contains eight strategic objectives, five flagship initiatives and fundamental program facets (see agenda book pages 93-97). Strategic objectives form the core of the new programme and include topics that resonated across all of the international meetings. These strategic objectives are open-ended to encourage innovation and discovery through a bottom-up proposal process. Flagship initiatives are multi-expedition endeavors that cross-cut multiple strategic objectives. They require a long-range vision and interdisciplinary efforts over 10-20-year time periods. Fundamental program facets are maximising the impact of scientific ocean drilling with new opportunities and links to other major programmes, such as space agencies and ICDP. These program facets include 1) broader impacts and outreach, 2) terrestrial to extraterrestrial, 3) land to sea drilling, and 4) data analytics and technology development.

PROCEED workshop outcomes: The new big science ideas include planetary hazards; land to sea transects; life cycle of a plate; origin of life: planetary dynamics to habitability; tectonic, oceanography and climate sensitivity; future evolution of life: from past to future. A new science plan should consist of achievable topics, but should also include aspirational goals, which may not be completed within a 15-year programme. The science plan should include science that is achievable in 5, 10, 15 and more than 15 years. Concerning the architecture of the science plan, the PROCEED attendees suggested to have a mission statement. Technology and links with other programmes should be highlighted. A new terminology should be used and the number of science questions should be reduced. Science questions should be clear, broad and important for society. A focus should be on interdisciplinary links between research fields. All mentioned ideas and suggestions from the PROCEED workshop were included into the new Science Framework.

Timeline (D. Kroon)

(11:20)

D. Kroon presented the timeline for the new Science Framework (SF):

- 1 November 2019: draft #1 due for review by SF Working Group
- 1 December 2019: draft #2 due for review by SF Working Group
- 8 December 2019: pre-AGU in-person meeting of SF Writing Team, Working Group and the team of professional writers and illustrators
- 11 December 2019: presentation of the new SF structure, roadmap and writing team at the AGU Townhall
- 15 January 2020: final draft #3 due
- 22 January 2020: posting version #1 at IODP.org for commenting
- 11 March 2020: posting version #2 at IODP.org for commenting
- 22 April 2020: final version presented to SF Working Group/IODP Forum for approval
- 30 April 2020: final version posted on IODP.org
- June 2020: publication of new SF documents

DISCUSSION on the new Science Framework:

D. Kroon asked when the IODP Forum should be asked to review the SF document if it is novel enough (see discussion on the new Science Framework on page 24). This should not be done too late when the document is already almost finalized (A. Morris). The deadline for posting version #2 at IODP.org for commenting could be 22 February 2020 and each time the community should have two weeks for commenting, i.e. after the 22 January and 22 February deadlines (C. Neal). This would allow for more time to revise the SF document (C. Neal). D. Kroon will discuss this issue with A. Koppers and R. Coggon and the IODP Forum could review the SF document maybe by the end of January 2020 (D. Kroon). Probably C. Neal, L. McNeill, G. Christeson, D. Kroon and one Japanese colleague in addition to the core group will have an initial look at the SF document to see if the new SF is novel enough (D. Kroon). The SF writing process is already fast and ambitious, and shortening this process is not necessary (J. Allan). It is important to get maximum input from the community (J. Allan). The review outside the core group could be done after the first community input or even parallel (C. Neal). The review by the IODP Forum could be done parallel to the first community review (A. Morris). This process is fast, but there will be reviews at regular intervals and course corrections and changes can be made as the new SF will be more inclusive (C. Neal). This living document is adjustable based on new scientific results/discoveries (C. Neal).

20 Towards a future international scientific ocean drilling programme (D. Kroon)

(11:34)

D. Kroon presented the 2019 Forum consensus items (see agenda book pages 122-124 and http://www.iodp.org/forum-minutes-and-consensus-items).

- Forum Consensus Item 19-01 on the current IODP structure, which requires only minor adjustments for a post-2023 programme
- Forum Consensus Item 19-02 on the development of a new Science Framework
- Forum Consensus Item 19-03 on streamlining the ADP (land to sea proposal) review process
- Forum Consensus Item 19-04 on China as a potential new platform provider
- Forum Consensus Item 19-05: acknowledgement of the 2019 host in Osaka

DISCUSSION on Big Science Data:

At the 2019 IODP Forum meeting there was an invitation by the International Union of Geological Sciences (IUGS) regarding the big science data programme Deep-time Digital Earth within the IUGS (M. Strasser). This programme is about how to store big data sets and how to make them accessible to the community (D. Kroon). At the 2019 IODP Forum meeting a founder position was offered to IODP joining this Deep-time Digital Earth initiative (D. Kroon). IODP data are already publicly accessible, but there will be huge data sets to be stored in a future programme (D. Kroon). Joining this initiative needs to be

discussed as there are also other possibilities (D. Kroon). D. Kroon discussed with Achim Kopf that PANGAEA would be also interested in storing scientific ocean drilling data. A workshop could be organised to conclude on this topic as it is too early at the moment to sign up for the Deep-time Digital Earth initiative (D. Kroon). IODP is a collaboration and not a coherent programme (J. Allan). There are agreements between consortia and the programme exists as a cooperation, i.e. there are three different dataset controls and a commitment from all partners is needed to have data accessible (J. Allan). There might be four groups, the three current platform providers and maybe China, with independent decisions to join the proposed initiative (J. Allan).

D. Kroon presented the next steps in 2020: 1) the delivery of the Science Framework document; 2) current and new platform providers would confirm participation in a post-2023 programme, work on an implementation model and present their plans at the 2020 IODP Forum meeting; 3) an additional IODP Forum is likely needed in March 2021 to finalize a business framework for the new programme, and 4) scientists might formulate national to international 'derived' versions of the Science Framework for the first five or ten years post-2023.

<u>DISCUSSION on a post-2023 programme:</u>
The ECORD funding agencies just signed until 2023 and G. Camoin asked about the level of requested information for the new business framework. It seems to be premature to ask the ECORD funding agencies in 2020 to commit beyond 2023. Maybe they can indicate intentions, but not confirm their participation. A confirmed participation would mean that the decision is based on numbers/budgets (G. Camoin). Some further discussions at the ECORD level will be needed (G. Camoin). Italy could not commit at this time as Italy gets a budget for every year (A. Argnani). France could just indicate that it is probable to continue with the programme (S. Guillot). Between 1997 and 1999 there was a commitment from France, but the government changed and the contributions were reduced by 30% (G. Ceuleneer). Germany could indicate to try to be a future member of the programme, but this intention is also related to the new structure of the programme (G. Lüniger). For example, for Germany it is important to bring IODP and ICDP closer together (G. Lüniger). The new Science Framework is one step in getting IODP and ICDP closer together, but it is too early to merge the two programmes (D. Kroon). ECORD has to discuss the intentions for a post-2023 programme, for example, how to work closely together with ICDP, does ECORD want to remain a platform provider, does ECORD want to have access to the other platforms, but in 2021 there will not be any formal commitment by ECORD to a post-2023 programme (G. Camoin). D. Kroon asked if ECORD might indicate an aim concerning a business plan. Assuming a similar ECORD budget, ECORD could indicate how much could be contributed to the different platforms (G. Camoin). Post-2023 drilling will be more expensive and different scenarios need to be worked out (T. Quinn). Information like it is highly unlikely to get additional funds for the programme is needed. A budgetary framework needs to be discussed, for example, a vessel that costs $120M USD per year is not viable (T. Quinn). The next programme will be more expensive, but it depends which

tools will be used and how intensively (J. Behrmann). The 2019 IODP Forum meeting has shown that everybody is ready for a new international programme, however, the final commitment by the ECORD funding agencies cannot be expected before 2022 (G. Camoin). Each platform provider needs to discuss on how to proceed (D. Kroon). The next EFB meeting and an additional day at the next ECORD Council spring meeting might be used to discuss ECORD's intentions for a post-2023 programme (G. Camoin). The science community indicated that six months of operation is a minimum and a variation has to be taken into account to guarantee this minimum, i.e. 8 or 10 months of operation have to be considered to avoid a non-operational mode (T. Quinn). The Science Framework needs to be successfully implemented (T. Quinn). All IODP members will discuss their intentions for a post-2023 programme and present their plans at the next IODP Forum meeting.

Action Item 3: EMA
To organise a discussion at the next ECORD Facility Board and ECORD Council Spring meetings in 2020 on ECORD's views and intentions for a post-2023 scientific drilling programme.

SCIENCE

21 ECORD expedition staffing and quotas (A. Morris) - US staffing of MSP expeditions

ECORD expedition staffing and quotas

(12:16)
A. Morris summarized expedition staffing and quotas.

Staffing of ECORD scientists on IODP Expeditions (see agenda book pages 125-126 and 131-):
Expedition 387 'Amazon Margin': Staffing is completed. Eight ECORD scientists including one Special Call (4 from France, 1 from Germany, 1 from the UK, 1 from Norway and 1 from Sweden) are ready to sail.
Expedition 388 'Equatorial Atlantic Gateway': Staffing is completed. Six ECORD scientists (3 from Germany, 1 from France, 1 from Norway and 1 from Sweden) plus one UK Co-chief Scientist are ready to sail.
Expedition 386 'Japan Trench Paleoseismology': Staffing is almost completed. Ten ECORD scientists (4 from France, 3 from Germany, 1 from Finland, 1 from Sweden and 1 from Switzerland) have been selected and still need to accept. There will be one Austrian Co-chief Scientist.

Participation: Overall, 870 applications including 121 applications to Special Calls have been received for IODP Expeditions 349-388 (excluding applications to postponed expeditions). Of those, 265 from the UK, 200 from Germany, 121 from France and 284

from the other ECORD countries. In total, 320 ECORD scientists, including 23 Co-chief Scientists and 35 Special Calls, sailed on IODP Expeditions 349-388. Of those, 101 from the Germany, 76 from the UK, 64 from France and 79 from the other ECORD countries. More than 50% of the ECORD sailing scientists are young researchers: 70 Master and PhD students, 98 early-career scientists, 129 senior scientists and 23 Co-chief scientists. The gender distribution is as follows: 59% of the ECORD scientists are male and 41% are female. The male-female balance across the different career stages reveals that the number of female scientists decreases with career stage from 49% (PhD level) to 32% (Co-chief scientist).

Quotas: There is still an imbalance between the quotas of the large contributors and the smaller contributors. The large contributors are 6.14 underquota and the smaller contributors are 6.14 overquota. France is significantly underquota with 6.28 and Norway is also significantly underquota with 5.88. Several countries like the UK, Austria, Canada, Italy and Spain are overquota.

Table 5: Projected quotas 2014-2019 (Expeditions 349-390/393).
Expedition 386 is subject to final confirmation.
Expeditions 390/393 are based on the ESSAC nomination proposal.

Total Berths invited	Total Berths special calls/I KC	berths entitled - excl. Sp	Difference	Total Sailed, incl. co-chiefs	Member	Financial Contribution (%)
66	1	72.28	-6.28	68	France	25.18%
89	8	91.02	-2.02	107	Germany	31.71%
62	13	59.84	2.16	82	UK	20.85%
217	22	223.14	-6.14	257	Sum	77.75%
4	3	1.63	2.37	7	Austria	0.57%
1	0	0.16	0.84	1	Belgium	0.05%
4	0	0.88	3.12	4	Canada	0.31%
1	0	2.55	-1.55	2	Denmark	0.89%
1	0	1.30	-0.30	1	Finland	0.45%
0	0	0.08	-0.08	0	Iceland*	0.03%
2	0	2.02	-0.02	2	Ireland	0.70%
1	0	0.24	0.76	1	Israel	0.08%
10	4	7.31	2.69	15	Italy	2.55%
9	0	8.40	0.60	9	Netherlands	2.93%
12	1	17.88	-5.88	13	Norway	6.23%
1	0	0.16	0.84	1	Poland	0.06%
2	1	1.46	0.54	3	Portugal	0.51%
4	0	1.80	2.20	4	Spain	0.63%
8	1	8.24	-0.24	9	Sweden	2.87%
10	1	9.75	0.25	12	Switzerland	3.40%
70	11	63.86	6.14	84	Sum	22.25%
287	33	287.00	0.00	341	TOTAL ECORD	

US staffing of MSP expeditions

(12:24)

C. Brenner presented US staffing statistics by career level and gender for all IODP platforms and only for MSP expeditions (2015-2019). For all IODP platforms about 35% of the US sailing scientists are senior researchers/professors, ca. 31% are graduate students and about 34% are others. The same breakdown is maintained for US participants on MSP expeditions: 32% are senior researchers/professors, 32% are graduate students and 36% are others.

The gender distribution for the 2015-2019 time period is as follows: 48.5% of the US scientists are male and 51.5% are female for all IODP platforms. The gender balance for US scientists on MSP expeditions is 44% male and 56% female.

(12:32)

lunch break

(13:30)

22 IODP active proposals and SEP Report (L. McNeill)

(13:30)

L. McNeill gave a panel update. SEP reports to the JRFB and services the EFB and the CIB. There are good communications and relations with the SSO, the JRFB and the IODP Forum. SEP meets twice a year (January and June) following the proposal deadlines. Since 2014, SEP has been operating as a single panel. In 2019, SEP met at the Scripps Institution of Oceanography (SIO) in La Jolla, USA, and in Edinburgh, UK. It is extremely effective and efficient to have both types of expertise, science and site survey data, in the same room along with the operators (five watchdogs).

SEP Terms of Reference: SEP is responsible for the selection of the best and most relevant proposals to be forwarded to the Facility Boards. SEP also advises the Facility Boards and the IODP Forum on any shortcomings of the proposal pool with respect to themes and challenges of the IODP Science Plan and makes suggestions for stimulating proposal pressure in those areas.

SEP Review Evaluation: General evaluation criteria for IODP proposals and the response letter include: 1) Are the scientific questions/hypotheses being addressed exciting and of sufficiently wide interest to justify the requested resources?; 2) To what degree does the integrated experimental design of site characterization, drilling, coring/sampling, logging, and downhole experiments constitute a compelling and feasible scientific proposal?; 3) Will the proposal significantly advance one or more goals of the Science Plan?; and 4) Would the proposal engage new communities or other science programs into the drilling program?

At the January 2019 SEP meeting (SIO, La Jolla, CA, USA), 17 proposals have been reviewed, of which one was an MSP (full2-866) and one a *JR*/*Chikyu* (full-941) proposal. Proposal 866 was forwarded to the EFB and was scheduled for 2020. One proposal was forwarded to the JRFB after fast track review (full-910). Four of the nine revised proposals were sent for external review, three need to be revised and two were deactivated. Seven new proposals were received, and of those, four proposals need to be revised, one was sent for external review and two proposals were deactivated.

Table 6: Outcomes from the January 2019 SEP meeting. Proposals submitted for the October 2018 deadline and evaluated at the January 2019 SEP meeting. Orange: revised, blue: new proposals.

ID	Type	Name	Short title	Result	Ship
814	Full2	Joseph Stoner	Greenland Ice Sheet	Deactivate	JR
851	Full	Mitchell Lyle	Cenozoic Nortwest Atlantic Transect	External Review	JR
857C	Full	Claudia Bertoni	DREAM: Lago-Mare Deposits	Revise	JR
888	Full2	Robert Stern	Aleutian Basin Formation	Deactivate	JR
909	Full2	Paul Knutz	NW Greenland Glaciated Margin	External Review	JR
910	Full2	Alberto Malinverno	Continental Margin Methane Cycling: Rio Grande	External Review/FastTrk	JR
929	Full2	Steven D'Hondt	Blake Nose Subseafloor Life	External Review	JR
933	Full	Torsten Bickert	NW African Continental Margin Climate	Revise	JR
937	Full	Andrew McCaig	Deepening Hole U1309D	Revise	JR
941	Full	Yasuhiko Ohara	Godzilla Megamullion Lithosphere Architecture	Revise	JR/Chikyu
942	APL	Ian Hall	Site 1089 Reoccupation	Deactivate	JR
943	Full	Tim Reston	Galicia Margin Rifting	External Review	JR
944	Full	Ritske Huismans	Mid-Norwegian Continental Margin Magmatism	Revise	JR
945	Full	Luigi Jovane	Brazilian Equatorial Margin Paleoceanography	Revise	JR
946	Full	Henry Dick	Kane Megamullion Lower Crust	Deactivate	JR
947	Pre	William Wilcock	Cascadia Borehole Observatories	Revise	JR
866	Full2	Michael Strasser	Japan Trench Paleoseismology	Stay at EFB	MSP

Table 7: Outcomes from the June 2019 SEP meeting. Proposals submitted for the April 2019 deadline. Green: back from external review, orange: revised, blue: new proposals, green: back from external review.

ID	Type	PI	Short Title	Result	Ship
851	Full	Mitchell Lyle	Cenozoic Northwest Atlantic Transect	Holding Bin	JR
857C	Full2	Claudia Bertoni	DREAM: Lago-Mare Deposits	External Review	JR
895	ADP2	Rachel Flecker	Mediterranean-Atlantic Gateway Exchange	Revise	JR
903	Full	Denise Kulhanek	Argentine Margin Seaward Dipping Reflectors	Revise	JR
909	Full2	Paul Knutz	NW Greenland Glaciated Margin	Holding Bin	JR
915	Full	Jacques Giraudeau	North Atlantic Fjord Sediment Archives	Revise	JR->MSP
927	Full	Nevio Zitellini	Tyrrhenian Continent-Ocean transition	Revise	JR
929	Add	Steven D'Hondt	Blake Nose Subseafloor Life	Holding Bin	JR
932	Full	Timothy Druitt	Hellenic Arc Volcanic Field	External Review	JR
933	Full2	Torsten Bickert	NW African Continental Margin Climate	Deactivate	JR
934	Full2	Wolfram Geissler	Arctic Atlantic Gateway Climate	Deactivate	JR
935	Full	Stefan Bünz	Arctic Fluid Flow Systems	Revise	JR
939	APL2	Asuka Yamaguchi	Tohoku Petit-Spot Magmatism	Revise	Chikyu
943	Full	Tim Reston	Galicia Margin Rifting	JRFB	JR
944	Full2	Ritske Huismans/ Sverre	Mid-Norwegian Continental Margin Magmatism	External Review	JR
945	Full2	Luigi Jovane	Brazilian Equatorial Margin Paleoceanography	External Review	JR
948	Pre	Deniz Cukur	East China Sea Rifting and Volcanism	Deactivate	JR
949	APL	Susana Lebreiro	Tore Seamount Paleoenvironment	Deactivate	JR
950	Full	Henry Dick / Alessio Sanfilippp	Kane Megamullion Deep Drilling	Deactivate	JR
951	Pre	Susumu Umino	North Hawaiian Arch Crust	Revise/Full	Chikyu
952	APL	Alessandra Negri	Mediterranean Sapropel Paleo Archive	Deactivate	JR
953	Pre	Peter Bijl	Australian-Antarctic Rift-Drift	Revise/Full	JR
954	APL	Renata Giulia Lucchi	East Fram Strait Paleo Archive	Revise	JR
955	Pre	Julie Huber	Axial Seamount Observatory	Revise/Full	JR
956	Pre	Angela Hessler	Mississippi-Bryant Deep-sea Fan System	Deactivate	JR
957	Pre	Bernard Coakley	Western Arctic Climate and Tectonics	Deactivate	JR
958	APL	Zane Jobe	Niger Delta Drought Impacts	Deactivate	JR
959	Pre	Ake Fagereng	Hikurangi Megathrust Along-Strike Variability	Revise/Full	JR
960	Pre	Steffen Leth Jørgensen	Arctic Mid-Ocean Ridge Carbon Cycling	Deactivate	JR
961	APL	Ann Cook	Gulf of Mexico Glacier-Methane Link	Revise	JR
962	Full	Joseph Stoner	Greenland Ice Sheet	External Review	JR
963	Pre	Maureen Walczak	NE Pacific Margin Paleoenvironment	Revise/Full	JR
964	Full	Robert McKay	Antarctic Cryosphere Origins	Deactivate	JR
965	Pre	Mark Leckie	Jurassic-Cretaceous Paleoceanography (Leg 1/11)	Revise/Full	JR

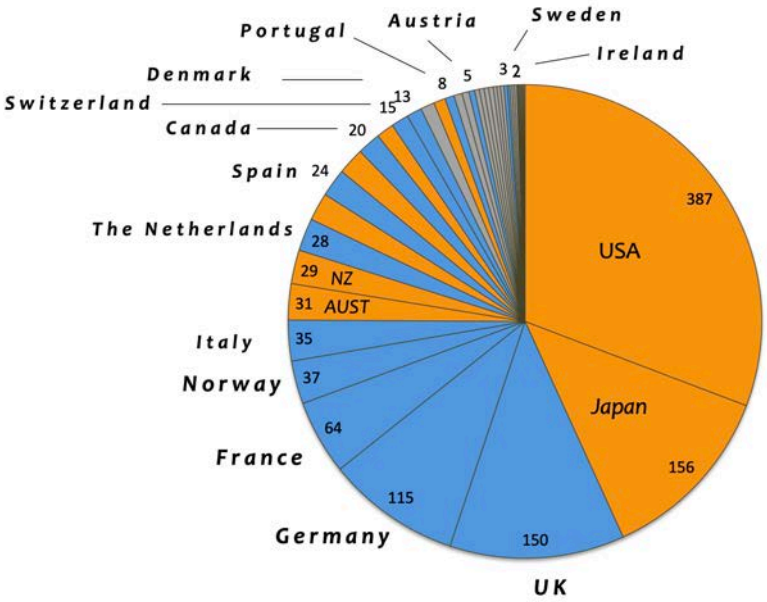
At the June 2019 SEP meeting (Edinburgh, UK), a record number of 34 proposals have been reviewed, of which one was an MSP (full-915) and two *Chikyu* (APL2-939 and pre-951) proposals. Thirty proposals have been received and four proposals came back from external review. The result of the June 2019 SEP meeting is that one proposal was forwarded to the JRFB after coming back from external review (full-943). Three of the 16 revised proposals were placed in the holding bin after coming back from external review, six need to be revised, four were sent for external review and two were deactivated. Of the 18 new proposals, six proposals need to be developed as full proposals, two need to be revised, one was sent for external review and nine proposals were deactivated.

At the 2019 JRFB meeting four proposals were considered for scheduling (771, 892, 874 and 910). Proposal 910 was scheduled for October 2021. Proposals 851, 909 and 929 are expected to be forwarded soon to the JRFB. A significant number of other Atlantic proposals will probably be forwarded to the JRFB in 2020.

At the January 2020 SEP meeting (SIO, La Jolla, CA, USA), 30 proposals will be reviewed, of which one is an MSP (full-970), one a *JR*/*Chikyu* (pre-967) and two *Chikyu* (APL3-939 and pre-975) proposals. Of the 30 received proposals, fourteen are new proposals. Five proposals coming back from external review will be also reviewed at the January 2020 meeting (see table 'Outcomes from the June 2019 SEP meeting').

Table 8: Proposals submitted for the October 2019 deadline to be evaluated at the January 2020 SEP meeting. Orange: revised, blue: new proposals.

ID	PI	Short Title	Ship
851-Add	Mitchell Lyle	Cenozoic Nortwest Atlantic Transect	JR
857C-Add	Claudia Bertoni	DREAM: Messinian Evaporite Demise	JR
885-Full	Jangjun Bahk	Ulleung Basin Gas Hydrates	JR
895-ADP3	Rachel Flecker	Mediterranean-Atlantic Gateway Exchange	JR
903-Full2	Denise Kulhanek	Argentine Margin Seaward Dipping Reflectors	JR
927-Full2	Nevio Zitellini	Tyrrhenian Continent-Ocean Transition	JR
937-Full2	Andrew McCaig	Deepening Hole U1309D	JR
939-APL3	Asuka Yamaguchi	Tohoku Petit-Spot Magmatism	Chikyu
945-Add	Luigi Jovane	Brazilian Equatorial Margin Paleoceanography	JR
947-MDP	Harold Tobin	Cascadia Borehole Observatories	jR
947A-Full	Earl Davis	Cascadia Borehole Observatories: Vancouver	JR
947B-Pre	William Wilcock	Cascadia Borehole Observatories: Oregon	JR
961-APL2	Ann Cook	Gulf of Mexico Glacier-Methane Link	JR
966-Pre	Arun Deo Singh	Arabian Sea OMZ	JR
967-Pre	Takashi Sano	Ontong Java Nui LIP	JR/Chikyu
968-Pre	Alina Polonia	Calabrian Arc Serpentinite Diapirs	JR
969-Pre	Chi-Yue Huang	Huatung Basin Mesozoic Ocean Relics	JR
970-Full	Peter Clift	Sunda Shelf Sea Level	MSP
971-Full	Henry Dick	Kane Megamullion Deep Drilling	JR
972-APL	Brandon Dugan	New England Slope Hydrogeology (APL)	JR
973-Full	Torsten Bickert	NW Africa Neogene Climate	JR
974-APL	Antonio Cattaneo	Ionian Sea Megaturbidites	JR
975-Pre	Yoshihiko Tamura	W Pacific Oldest Oceanic Plate	Chikyu
976-Pre	Hans Christian Larsen	N Iceland Rift Propagation	JR
977-Pre	Pedro Terrinha	SW Iberia Subduction Initiation	JR



IODP active proposals by countries of proponents

See agenda book pages 155-157 for maps showing IODP proposals at the Facility Boards and at SEP.

SEP is now receiving proposals for Pacific and Indian Ocean drilling after a highlight in the proposal call based on the future *JR* ship-track, but SEP is still receiving some new Atlantic and Mediterranean proposals.

Land to Sea Transects: After discussion at the IODP Forum SEP is revising the guidelines and the process for joint IODP-ICDP proposals (ADPs, now Land to Sea Transects). The aim is to simplify the process and to clarify the procedure to encourage potential proponents, including a joint proposal review by SEP/SAG. The aim is to complete these guidelines by early 2020.

Composition of SEP and SEP Co-chair succession: The proportion of Climate and Ocean panelists is low relative to the typical proportion of Climate and Ocean proposals (about half of the current active proposals, but only a third of the panelists). SEP is therefore increasing the number of palaeoclimatologists and palaeoceanographers on the panel. Furthermore, the current panel member balance is about two third SEP science and one third SEP site. SEP is slightly increasing the proportion of site members due to their high workload.
The term of the SEP site Co-Chair Sean Gulick ends on 31 March 2020. The new SEP site Co-Chair has recently been approved, Gail Christeson of the University of Texas at Austin, and her term starts on 1 April 2020. One year between the replacements of the two Co-chairs is now maintained.

The next meetings will be held on 7-9 January 2020 at the Scripps Institution of Oceanography in La Jolla, USA, and on 16-18 June 2020 in Trieste, Italy.

(13:58)

Expedition #382 « Iceberg Alley and Subantarctic Ice and Ocean Dynamics » (M. Weber)

(14:36)

23 MagellanPlus: results and perspectives (L. Lourens)

(14:36)

L. Lourens presented the composition of the MagellanPlus Steering Committee (SC). The Chair is Lucas Lourens and the Vice-Chair is Johan Lissenberg.

Twenty-five MagellanPlus workshops (on average four per year) have been organized and 16 proposals have been developed since 2014. About 1000 scientists participated in these workshops with on average 20% young scientists. Overall, the workshop participants came from 11 ECORD and 17 non-ECORD countries. Two MSP expeditions resulted from these workshops: Expedition 381 'Corinth Active Rift Development' and Expedition 386 'Japan Trench Paleoseismology'.

In 2018 five workshops were implemented (one following a Special Call):

1) Fjord sediment archives in the northeastern North Atlantic in Vienna, Austria, on 7-8 April 2018 (Giraudeau et al., France);

2) The North Atlantic Igneous Province continental break-up magmatism and impacts on global warming during the Paleogene in Kiel, Germany, on 29-30 May 2018 (Berndt et al., Germany);

3) Temporal evolution of Arctic gas hydrate and methane seepage systems in Tromsø, Norway, on 4-5 June 2018 (Plaza-Faverola et al., Norway);

4) Greenland Ice Sheet evolution revealed by drilling a transect on the Baffin Bay - West Greenland margin (909-Full) in Copenhagen, Denmark, on 12-14 September 2018 (Knutz et al., Denmark);

5) Navigating the IODP Proposal System – for PhD and early-career scientists in Southampton, UK, on 24-26 September 2018 (Teagle et al., UK, following a Special Call).

Every year there is one call for workshop proposals. For the 15 January 2019 deadline only two proposals (1 ADP and 1 IODP-related) were submitted. Both proposals were funded after minor revisions:

1) Haiti-Drill (Aiken and Roest et al., France);
2) RELICT - The role of lithospheric inheritance on subduction initiation (Terrinha et al., Portugal).

In 2019 four workshops were implemented (one was initially a Special Call):

1) New Caledonia Peridotite Amphibious Drilling Project in Montpellier, France, on 22-24 January 2019 (Collot and Godard et al., New Caledonia and France).
2) PROCEED – Ex**p**anding F**ro**ntiers of S**cie**ntific Oc**e**an **D**rilling in Vienna, Austria, on 6-7 April 2019 (initially a Special Call, taken over by ECORD and hosted by the Austrian Academy of Sciences in Vienna);
3) Haiti-Drill in Plouzané, France, on 20-22 May 2019 (Aiken and Roest et al., France);
4) RELICT - The role of lithospheric inheritance on subduction initiation in Lisbon, Portugal, on 12-13 September 2019 (Terrinha et al., Portugal).

Due to the low proposal pressure a second call for proposals was issued with a deadline of 15 May 2019 and four proposals (four IODP-related) were submitted. Two proposals were funded after minor revisions:

1) EFRAM-ARC - Eastern Fram Strait Palaeo Archive: The drill of a high-resolution Early Pleistocene Arctic palaeoclimatic record (Lucchi et al., Italy);
2) COSNICA - The life cycle of a microplate at a convergent margin (Kurz et al., Austria).

There are two upcoming workshops for 2020:

1) EFRAM-ARC - Eastern Fram Strait Palaeo Archive: The drill of a high-resolution Early Pleistocene Arctic palaeoclimatic record in Trieste, Italy, on 21-24 January 2020 (Lucchi et al., Italy);
2) COSNICA - The life cycle of a microplate at a convergent margin in Graz, Austria, on 19-20 June 2020 (Kurz et al., Austria).

Travel grants: The MagellanPlus SC supported travels of one ECORD scientist with 1,500 € to attend the workshop "Completing the Australian-Antarctic transect: Ocean drilling to reveal the nature of Gondwana breakup and the development of the Antarctic Circumpolar Current" on 21-25 January 2019 in Hobart, Australia. In addition, one ECORD scientist was supported with 2,000 € to attend the Borehole Observatory Workshop on 16-17 October 2019 in Seattle, USA.

Publications: Articles regarding MagellanPlus workshops were published in the ECORD Newsletters #31 and #32.

The deadline for the next call will be on 15 January 2020. Four proposals will be funded for the February 2020-2021 time frame.

The budget is 70,000 € per year. Travel grants of up to 10,000 € can be funded.

ECORD Council Consensus 19-11-06:
The ECORD Council applauds the MagellanPlus Steering Committee for their commitment and the outstanding success of the MagellanPlus workshop series programme over the last years.

In favour: 14, **Abstain:** 0, **Against:** 0, **Absent:** 1 (Canada)

ECORD FACILITIES

24 ECORD Petrophysical Consortium - EPC - (S. Davies)

(14:45)

S. Davies presented the activities of the European Petrophysics Consortium (EPC): equipment & measurements, preparation for the upcoming expedition, education and outreach.

The EPC comprises the University of Leicester and Géosciences Montpellier. The EPC provides petrophysics staff scientists and petrophysicists, and expertise in downhole logging and core petrophysics programmes. Katharina Hochmuth joined the EPC in February 2019 and Simon Draper is IODP Project Manager since August 2018. Johanna Lofi was on maternity leave from February to August 2019 and Laurent Brun covered during her leave.

Equipment and measurements: Changes in regulations require a new MSCL container, which is currently under construction and will be delivered in December 2019. In August 2019 two laboratory containers for MSP expeditions arrived and will provide offshore facilities according to the new Offshore Regulations and Safety Standards for geochemical and core curation procedures.

Software and facilities: New standalone Techlog licences from Schlumberger have been obtained and a new dedicated computer area with Techlog workstations was created. EPC-owned equipment will be housed in a new combined lab and storage room.

IODP Expedition 386 'Japan Trench Paleoseismology: Katharina Hochmuth is the Petrophysics Staff Scientist. In May 2019 EPC staff visited the RV *Kaimei* and the *Chikyu* to discuss operational aspects. An ECORD-JAMSTEC meeting was organised in June and a Project Management meeting was organised in September when the RV *Kaimei* MSCL container was visited to check the equipment and inventory. EPC is working on operating procedures and acquiring additional mobile Kingdom Suite licences.

Education, training & outreach: In 2019, EPC was involved in the ECORD Summer School in Bremen and hosted the fourth ECORD Petrophysics Summer School in Leicester. Twenty-seven participants from four countries by institution and eleven countries by nationality attended the Petrophysics Summer School. Since 2016, 41 participants from the USA, 60 from ECORD countries and seven from other countries attended the Petrophysics Summer School. Overall, nine participants sailed before the Petrophysics Summer School and seven sailed after the Petrophysics Summer School. Most of the participants are early-career scientists. The title of the Summer School will change to "Downhole Logging for IODP Science" to focus more on science as many people with interest in the oil and gas industry applied. The 2020 Petrophysics Summer School will be held on 4-10 July with an application deadline on 14 February 2020. Furthermore, EPC was also engaged in the 6th ECORD Training Course (March 2019). EPC is present on the Social Media and has its own blog (www.petrophysicsworld.blogspot.lu).

25 Bremen Core Repository - BCR - (U. Röhl)

(14:55)

U. Röhl gave an update on the Bremen Core Repository (BCR). Core curation includes the documentation, preservation and protection of the cores as well as the promotion of the responsibility of taking samples from the cores for scientific purposes. The BCR currently archives 158 km of cores from the Atlantic Ocean, Arctic Ocean, Mediterranean Sea, Black and Baltic Seas. Since 1969 more than 1.7M samples have been taken from BCR cores. The BCR is responsible for organising and hosting the Onshore Science Parties (OSPs) and for providing core and sample curation services and first measurements, including mobile laboratories for MSP expeditions. The MARUM is also involved in data management tasks provided by PANGAEA (IODP-MSP data portal, Drilling Information System - DIS), provides the PR Officer for ESO, and runs the ECORD Summer Schools since 2007 and ECORD Training Courses since 2015.

Since October 2018, 26,532 samples have been taken and the BCR successfully dealt with sample requests backlog. The BCR is planning and preparing for Expedition 386 'Japan Trench Paleoseismology'. The sampling party for Expedition 382 'Iceberg Alley and Subantarctic Ice and Ocean Dynamics' will be organised on 18-26 November 2019. In general, 2-5 km of cores are sampled with 20,000 to 40,000 samples within 10-14 days. Usually, 24-45 participants are attending a science party.

Cores from the KCC for XRF Scanning: Cores from Legs 117, 122 and 189 were temporarily stored at the BCR in March and August 2019. XRF scanning was undertaken and the cores will return soon to the KCC.

Milestones in 2020: A high level of sampling, including cores from recent expeditions (347, 357, 381, 382) is expected. The sampling party for Expedition 387 'Amazon Margin' will be hosted. According to the current *JR* schedule, at least four more sampling parties will be held at the BCR in 2020 and 2021.

Education: This year is the 13th year of the Bremen ECORD Summer School. In 2019 the topic of the Summer School was "Subduction Zone Processes: Magma, Volcanoes, Ore Deposits, Geohazards". The Summer School combines lectures and interactive discussions on the main themes of IODP with practical 'shipboard' methodologies. In March 2019 the fifth ECORD Training Course was held at the MARUM where the participants were prepared for future IODP expeditions. The 6th ECORD Training Course will be organised on 20-24 April 2020.

COMMENTS on the BCR:
NSF needs an annual inventory list from the BCR (J. Allan).
The IODP Sample, Data, and Obligations Policy and Implementation has been revised and some feedback still needs to be incorporated in the next draft (C. Neal). Probably next week this draft will go back to the curators for review and then to the Facilities Boards for approval (C. Neal).
For the ANZIC legacy grants the sample request needs to be approved by the core repository before getting the funds and the rules of using the samples must be followed (L. Armand).

EDUCATIONAL ACTIVITIES

26 ECORD (H. Kinkel/U. Röhl/S. Davies)

(15:06)

ECORD Summer Schools - Scholarships:

The 2019 ECORD Petrophysics Summer School was held for the fourth time in Leicester from 29 June to 5 July and received a direct support of 10,000 €. Twenty-seven participants attended this Summer School. Four scholarships with 800 € each were funded.

The 2019 Urbino Summer School in Paleoclimatology was held for the 15th time in Urbino from 10 to 26 July and received a direct support of 10,000 €. Seventy-five participants attended this Summer School. Nine scholarships with 1,200 € each were funded.

The 2019 ECORD Bremen Summer School with the topic "Subduction zones: magma, volcanoes, ore deposits, geohazards" was held at MARUM from 16 to 27 September and received a direct support of 10,000 €. Twenty-seven participants attended this Summer School. Two scholarships with 600 € each were funded.

In total, 55 applications for ECORD Scholarships (35 for Urbino, 14 for Leicester, 6 for Bremen), excluding six applications from non-ECORD countries, were received and 15 ECORD Scholarships were given. Since 2013, 121 ECORD Scholarships were given (36 from UK, 23 from Germany, 13 from France, 12 from Italy, 37 others).

ECORD Training Course:
The ECORD Training Course 2019 "Virtual Drillship Experience" was held at MARUM in March 2019 and received a direct support of 6,500 €.

ECORD Research Grants:
Sixteen high-quality proposals from young scientists to work on DSDP-ODP-IODP cores or data were received. In 2019 seven research grants were given to young researchers from six ECORD member countries. The total budget is 18,000 € and top-ranked research grants will be funded with up to 3,000 €. Since 2013, 49 ECORD Research Grants were given (18 from UK, 7 from Germany, 5 from Italy, 19 others).

Distinguished Lecturer Programme (DLP): H. Kinkel presented the four DLP lecturers for the 2018/19 time period. The four lecturers cover the themes of the Science Plan: Luc Beaufort (FRA) for 'Climate and Ocean Change', Verena Heuer (GER) for 'Biosphere Frontiers', Rebecca Bell (UK) for 'Earth in Motion' and Margot Godard (FRA) for 'Earth Connections'. The annual DLP budget is of 13,500 €.

COMMENT on the Urbino Summer School:
The Urbino Summer School will change and next week they will present the new concept (H. Kinkel).

27 USSSP (C. Brenner)

(15:15)
The U.S. Advisory Committee for Scientific Ocean Drilling (USAC) also advises on Education and Outreach. It has 12 members with a range of expertise, which serve 3-year terms. The Chair as of 1 October 2019 is Marta Torres. USAC is organised into three subcommittees: 1) Shipboard Staffing; 2) Workshops, Pre-drilling Activities, and Nominations; and 3) Education and Outreach.

In 2018 the U.S. developed an Education and Outreach White Paper with five overarching goals. C. Brenner presented the primary goals of the USSSP Education and Outreach Program:

- **Raise awareness of Earth science in general, and IODP in particular, and its central role in our understanding of the Earth's past, present and future.**
- Promote and support the science of IODP *specifically*, and assure a steady influx of future IODP leaders, by encouraging and providing opportunities for students and educators to participate in IODP expeditions and/or research.
- Inspire and help prepare students for careers in *general* fields of science, technology, engineering and math (STEM).
- Empower science educators to incorporate data and observations from deep ocean cores, allowing them to develop learning materials based on fundamental Earth system science concepts.
- Increase ethnic and gender diversity in IODP and geosciences in general.

Core education activities include the Onboard Outreach Program, Ocean Discovery Lecture Series, School of Rock, Graduate Student Fellowship Program, Lamont-Doherty Earth Observatory (LDEO) Summer Intern Program, American Museum of Natural History (AMNH) collaboration, Educational Conferences and the Core Loan Program.

The *JR* Academy is a new initiative. During Expedition 385T two credit-bearing courses for 12 undergraduate students were provided on board in partnership with the Whatcom Community College in Bellingham, WA. Overall, 40 applications have been received. Courses will be introductory oceanography and Earth science with a research project option.

The 2019-20 Ocean Discovery Lecture Series started in 2019 with six lecturers who cover the major IODP themes.

The School of Rock (SOR) 2019 has been held shore-based in collaboration with Scripps and the Birch Aquarium and it was timed to coincide with the September San Diego port call on 8-18 September. The SOR was jointly funded by USSSP and the A-STEP grant (Ambassadors for STEM Training to Enhance Participation). It was targeted towards in-service and pre-service teachers. Seventeen teachers and graduate students attended the 2019 SOR.

The Schlanger Graduate Student Fellowship Program funded five fellows in 2019-20 to work on projects with IODP relevance.

LDEO Summer Intern Program to allow undergraduate students to work with mentors on predefined research projects in Earth science. Since 2016, USSSP has sponsored three students per year; two are typically from underrepresented groups in the geosciences.

The USSSP Workshop Program funds U.S. participation in ECORD educational activities.

The IODP-PAIS Antarctic School was funded and organised by USSSP in collaboration with PAIS (Past Antarctic Ice Sheet dynamics) on 10-14 June 2019 at the GCR in College Station. The goal was to train early-career scientists to document and interpret properties of Antarctic marine sediment cores, as well as to understand how interpretation of stratigraphy and depositional environments can improve the understanding of past and future Antarctica. Overall, 25 participants from ten countries attended this core school.

(15:27)
coffee break
(16:02)

28 J-DESC (N. Eguchi)

OUTREACH ACTIVITIES

31 J-DESC (N. Eguchi)

(16:02)

J-DESC built a new Workshop Support System starting from October 2019 and is currently receiving workshop proposals. N. Eguchi summarized J-DESC educational activities since November 2018:

Date	Title	Venue
Nov-2018	SAKIGAKE-JpGU Hard Rock Drilling Focus Group Kick-off Workshop (co-sponsored)	Kanazawa
Nov-2018	地球惑星科学 学生と若手の会 Students and Early Career Scientists Meeting on Earth and Planetary Science (co-sponsored)	Tokyo
Nov-2018	15th Anniversary Symposium of Center for Advanced Marine Core Research, Kochi Univ. (co-sponsored)	Kochi
Apr-2019	**J-DESC Workshop "Scientific Ocean Drilling beyond 2023"**	**Yokohama**
May-2019	JpGU Session: Drilling Earth Science	Makuhari

N. Eguchi presented the schedule for the J-DESC Core Schools:

Course Title	When
Logging Course	Yearly (Autumn~Winter)
Basic Core Analysis Course	Every March
Isotope Analysis Course	Every March
Micropaleontology Course	Every August
Paleomagnetism Course	Every other year
Petrologic Description Course	Irregular

The Kochi Core School 2019 for Asian Young Scientist will be organised on 12–21 November 2019 at the Kochi Core Center. This Core School is organised by Kochi University and co-funded by the SAKURA Science Exchange Program of Japan Science and Technology Agency (JST), J-DESC and JAMSTEC. This course includes lecture series and lab courses on core description and measurements. The goal is to inform young Asian researchers about IODP and to prepare them for future participation in IODP expeditions.

Outreach activities include press releases, booths at scientific conferences, media, brochures and leaflets.

SCORE (*Chikyu* Shallow Core Program) is a collaborative program between J-DESC and JAMSTEC. J-DESC solicits drilling proposals to be achieved using piston cores down to ~100 m below seafloor. Successful proposals will be implemented by JAMSTEC when the *Chikyu* is available at sea on the way to/from other operations. SCORE provides a good training for young-career scientists and students in IODP proposal writing. Every year there are two deadlines for application.

QUESTION about SCORE:
A. Voelker asked how many SCORE applications are received. For each deadline 2-3 proposals are received (N. Eguchi).

29 ECORD (M. Bednarz/C. Cotterill/U. Prange)

(16:09)
M. Bednarz summarized ECORD Outreach Task Force (OTF) activities since November 2018 on behalf of the ECORD OTF.

Conferences: A joint ECORD/IODP-ICDP booth under the "Scientific Drilling" banner was organised at the EGU 2019. A Lunch & Learn event on how to get involved in scientific ocean drilling and a joint IODP-ICDP Townhall meeting have been organised. A booth will be organised together with ICDP, USSSP and CDEX-JAMSTEC at the AGU 2019, which will be held in San Francisco in December.

An ECORD-IODP Day was organised on 3 October 2019 at the University of Athens, Greece (see Agenda Item 6 for further information).

ECORD also provided support and resources for 1) the 13th International Conference on Paleoceanography (ICP), which was held on 2- 6 September 2019 in Sydney, Australia; 2) IODP Italy at the Festival del Mare on 16-18 May 2019 in Genoa, Italy, which is a public event on the world of the sea with interactive conferences, labs and exhibits; and 3) the Great Exhibition Festival 2019, which was held on 29-30 June 2019 in London, UK.

Recently completed printed media comprise a brochure for the general public (https://www.ecord.org/resources/brochures/), an IODP-ICDP brochure, the pre-expedition flyer for Expedition 386 (https://www.ecord.org/expedition386/), MSP expedition stickers and the ECORD Newsletter #33 (https://www.ecord.org/resources/ecord-newsletter/). A brochure targeting stakeholders will be finalised soon. The ECORD Annual Report 2019 will be started soon. The call for content for the ECORD Newsletter #34 will be issued on 15 February 2020 with a deadline for contributions on 15 March 2020.

Digital media and online resources: The ECORD website is constantly improved. Recently, the ECORD Information Database (https://ecordbase.ecord.org) was completed. Ongoing projects are a video targeting funders and stakeholders, the ECORD photo gallery (a platform for sharing high-resolution ECORD photos) and the ECORD Puffersphere Project. It was agreed on the information architecture, the usability and the scientific content of the Puffersphere (16 IODP expeditions covering all IODP Science Plan themes). The content production for the Puffersphere is still ongoing. Proposed projects are an ECORD database for theses related to ECORD/IODP and the creation of a powerpoint presentation explaining the MSP concept.

In 2019 core replicas were presented at 13 events in Italy and the UK.

The idea of a travelling exhibit is discussed with ICDP. Such an exhibition could be displayed in museums and research centres around Europe and it could include virtual reality tours and 3D printouts.

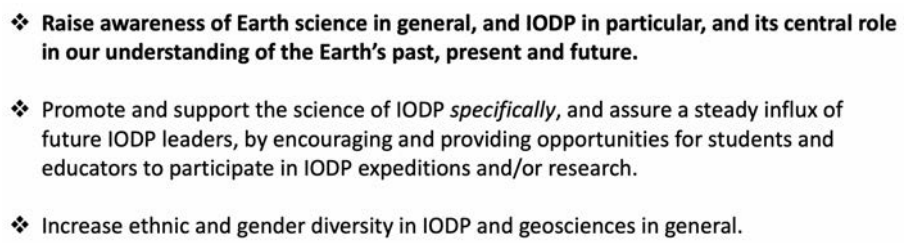
Expedition 386 'Japan Trench Paleoseismology': The pre-expedition flyer was completed, the expedition logo was designed and a draft of the Communications Plan was created. The Scientific Prospectus was published on 8 October.

QUESTIONS about pre-expedition flyers:
C. Brenner asked about the audience of the pre-expedition flyer and if there is a lot of interest. This flyer is not very detailed and it is mainly targeting the general public and early-career scientists (M. Bednarz). C. Brenner asked about the venues where this flyer is distributed. The pre-expedition flyer is circulated at conferences before, during and after the expeditions (M. Bednarz). This flyer is also distributed at festivals, open days and media events to provide background information (C. Cotterill).

30 USSSP (C. Brenner)

(16:30)

The U.S. developed an Education and Outreach White Paper and C. Brenner presented the primary goals of the USSSP Outreach program:



Core outreach activities include the Onboard Outreach Program, Ocean Discovery Lecture Series, AMNH collaboration, joidesresolution.org website, Social Media, *Ocean Discovery* newsletter, conferences, LDEO Open House, "In Search of Earth's Secrets" exhibition, port call outreach and press releases.

Onboard Outreach Officers: Over five expeditions (379, 382, 383, 385T and 385) eleven Outreach Officers sailed on the *JR* (one from ECORD). Outreach for Expedition 379 included Social Media (YouTube, BBC Earth Instagram photo series), interviews and some videos (e.g. BBC Global News). Expedition 382 outreach included 54 broadcasts, 6 Facebook live events, 13 news and magazine articles and interviews. During IODP Expedition 385T the Onboard Outreach Program "re-boot" was organised to assess future situations where there is only one outreach officer on board, to develop creative projects (e.g. new educational resources, video series, cartoons/art, books, posters, web interactives, etc.), to conduct live ship-to-shore events and to teach *JR* Academy students visual and other science communication skills.

American Museum of Natural History collaboration: The Milstein Science Series focused this year on "Layers of the Ocean". This annual event attracted 8,000 visitors on 17 February 2019. On 13 June the AMNH organised "Dinos After Dark" with a presentation on Expedition 364. This event was sold out after hours.

The joidesresolution.org website has more than 100,000 hits per year. Not only the scientific community, but also the wider audience visits this website.

Social Media: Facebook (@joidesresolution) with 10,250 followers, Twitter (@TheJR) with 5,280 followers, Instagram (@joides_resolution) with 1600 followers. Live events moved from Reddit to Facebook.

The *Ocean Discovery* newsletter is published twice a year.

DISCUSSION on outreach and education:

It is very challenging as there are many different IODP related websites and social media accounts (M. Strasser). The reason for this is that IODP is not one programme, but a loose confederation of platform providers that share a common science review structure (C. Brenner). This makes it difficult from a branding perspective (C. Brenner). IODP outreach should be compared to similar international programmes and not to NASA as they are a mission-oriented agency (J. Allan). The U.S. is doing outreach for the JR and the corresponding website is joidesresolution.org (C. Brenner). The iodp.org website targets the science community. The situation was already improved as recently ECORD's social media channels have been unified (A. Morris). Activities on the ECORD social media channels are interlinked with the other partners (H. Kinkel). Maybe European universities could be contacted to increase ECORD's visibility, for example to better promote the ECORD Summer Schools (M. Bednarz). Social media are the tool to communicate with students and to raise awareness (K. Verbruggen). Not everybody is using social media (J. Allan). For example, many NSF colleagues refuse social media accounts due to safety issues, but standard email approaches to institutions, etc. should be used (J. Allan). People can sign up to the ECORD mailing list and they will get directly information announcing opportunities, etc. (A. Morris). In addition, ECORD has a problem with the different languages spoken in Europe and the different curricula of the European countries, which need to be standardised (C. Cotterill). IODP should engage and collaborate with NASA and the space agencies in Europe (C. Neal). Synergies between ECORD countries, their own national space agencies and the European Space Agency can be exploited (C. Neal). There are different levels of engagement, and collaborations and partnerships should be leveraged. Next year a workshop will be held to bring the IODP and NASA communities together and to focus on synergies (C. Neal). The relevance of IODP research for NASA research needs to be shown (C. Neal). NASA is certainly interested in the deep biosphere (A. Argnani). Data on IODP and NASA climate observations could be put together (C. Neal). Furthermore, the space agencies will be interested in the results of the Chixulub Impact Crater expedition (C. Neal). IODP science is relevant and needs to be sold (C. Neal).

CONCLUSIONS

32 Review of Consensus and Actions (N. Hallmann/All)

The consensus statements and action items will be reviewed by email.

33 Next ECORD Council-ESSAC meetings (S. Guillot/B. Westerop/A. Morris) (17:01)

ECORD Council Consensus 19-11-07:
The ECORD Council decides that the ECORD Council-ESSAC meeting #8 will be held in Granada for two days during the first week of November 2020.

In favour: 14, **Abstain**: 0, **Against**: 0, **Absent**: 1 (Canada)

ECORD Council Consensus 19-11-08:
The ECORD Council decides that the next ECORD Council Spring meeting will be held for two days (day 1: ECORD budgets, news and procedures; day 2: post-2023 programme) during the first two weeks in June.

In favour: 14, **Abstain**: 0, **Against**: 0, **Absent**: 1 (Canada)

Action Item 4: EMA
To create a Doodle poll to set the dates for the next ECORD Council Spring meeting and to ask for propositions concerning its location.

ACKNOWLEDGEMENTS

ECORD Council Consensus 19-11-09:
The ECORD Council and ESSAC warmly thank David Hardy, Koen Verbruggen and the Geological Survey of Ireland for organizing and hosting their 7th joint meeting in Dublin.

In favour: 14, **Abstain**: 0, **Against**: 0, **Absent**: 1 (Canada)

G. Camoin closed the meeting at 17:06.

LIST OF ACRONYMS

ADP: Amphibious Drilling Proposal
AGU: American Geophysical Union
AMNH: American Museum of Natural History
ANZIC: Australian and New Zealand IODP Consortium
APL: Ancillary Project Letter
ArcOP: Central Arctic Paleoceanography, IODP Expedition 377
A-STEP: Ambassadors for STEM Training to Enhance Participation
AUV: Autonomous Underwater Vehicle
BCR: Bremen Core Repository
BGR: Bundesanstalt für Geowissenschaften und Rohstoffe - Federal Institute for Geosciences and Natural Resources, Hannover, Germany
BGS: British Geological Survey
CCOD: Canadian Consortium for Ocean Drilling
CDEX: Center for Deep Earth Exploration
CEREGE: Centre Européen de Recherche et d'Enseignement des Géosciences de l'Environnement - Centre for Research and Education in Environmental Geosciences, Aix-en-Provence, France
CIB: *Chikyu* IODP Board
CIESM: The Mediterranean Science Commission
CNR: Consiglio Nazionale delle Ricerche – National Research Council, Italy
CNRS: Centre National de la Recherche Scientifique - National Center for Scientific Research, France
CPP: Complementary Project Proposal
CRISP: Costa Rica Seismogenesis Project
DAFSHE: Danish Agency for Science and Higher Education
DFG: Deutsche Forschungsgemeinschaft - German Research Foundation
DIS: Drilling Information System
DLP: Distinguished Lecturer Programme
DSDP: Deep Sea Drilling Project
ECORD: European Consortium for Ocean Research Drilling
EFB: ECORD Facility Board
EGU: European Geosciences Union
EMA: ECORD Managing Agency
EPC: European Petrophysics Consortium
EPSP: Environmental Protection and Safety Panel
ESO: ECORD Science Operator
ESSAC: ECORD Science Support and Advisory Committee
EVTF: ECORD Vision Task Force
FB: Facility Board
FCT: Fundação para a Ciência e a Tecnologia - National Funding Agency for Science and Technology
FNS: Fonds National Suisse de la Recherche Scientifique - Swiss National Science Foundation
FY: Fiscal Year
GCR: Gulf Coast Repository
GPC: Giant Piston Corer
GSI: Geological Survey of Ireland
IBM: Izu-Bonin-Mariana
ICDP: International Continental Scientific Drilling Program
ICP: International Conference on Paleoceanography
IKC: In-kind contribution
INQUA: International Union for Quaternary Research
IODP: Integrated Ocean Drilling Program (2003-2013) & International Ocean Discovery Program (2013-2023)
IPMA: Instituto Português do Mar e da Amosfera - Portuguese Institute of the Sea and the Atmosphere
ISOLAT: Integrated Southern Ocean Latitudinal Transect
IUGS: International Union of Geological Sciences
JAMSTEC: Japan Agency for Marine Earth Science and Technology
J-DESC: Japan Drilling Earth Science Consortium
JOIDES: Joint Oceanographic Institutions for Deep Earth Sampling
JPFY: Japanese Fiscal Year
JR: *JOIDES Resolution*
JRFB: *JOIDES Resolution* Facility Board
JRSO: *JOIDES Resolution* Science Operator
JST: Japan Science and Technology Agency
KCC: Kochi Core Center
KIGAM: Korea Institute of Geoscience and Mineral Resources
LDEO: Lamont-Doherty Earth Observatory
LHR: Lord Howe Rise
LIEF: Linkage Infrastructure, Equipment and Facilities

LTBMS: Long-Term Borehole Monitoring System
LWD: Logging While Drilling
MarE3: Institute for Marine-Earth Exploration and Engineering
MARITEC: Marine Technology and Engineering Center
MARUM: Zentrum für Marine Umweltwissenschaften der Universität Bremen - Center for Marine Environmental Sciences, University of Bremen
mbsf: metres below seafloor
MDP: Multi-phase Drilling Project
MEXT: Ministry of Education, Culture, Sports, Science & Technology, Japan
MINECO: Ministerio de Economía, Industria y Competitividad - Spanish Ministry of Economy, Industry and Competitiveness
MoU: Memorandum of Understanding
MSCL: Multi-Sensor Core Logger
MSP: Mission-specific platform
NanTroSEIZE: Nankai Trough SEIsmogenic Zone Experiment
NCRIS: National Collaborative Research Infrastructure Strategy
NERC: Natural Environment Research Council
NESSC: Netherlands Earth System Science Centre
NIOZ: Koninklijk Nederlands Instituut voor Zeeonderzoek - Royal Netherlands Institute for Sea Research
NSF: National Science Foundation, USA
NWO: Nederlandse Organisatie voor Wetenschappelijk Onderzoek - Netherlands Organisation for Scientific Research
ODP: Ocean Drilling Program
ÖAW: Österreichische Akademie der Wissenschaften - Austrian Academy of Sciences
OSDP: Oceania Scientific Drilling Program
OSP: Onshore Science Party
OTF: Outreach Task Force
PAIS: Past Antarctic Ice Sheet dynamics
PMO: Program Member Office
PROCEED: Expanding Frontiers of Scientific Ocean Drilling
ROV: Remotely Operated Vehicle
SAG: Science Advisory Group
SC: Steering Committee
SCORE: Shallow Core Program
SEP: Science Evaluation Panel
SF: Science Framework
SGF: Société Géologique de France – French Geological Society
SIO: Scripps Institution of Oceanography
SOR: School of Rock
SPRS: Swedish Polar Research Secretariat
SSO: Science Support Office
STEM: Science, Technology, Engineering and Math
UKRI: UK Research and Innovation
UK SBS: UK Shared Business Services Ltd
USAC: U.S. Advisory Committee for Scientific Ocean Drilling
USGS: United States Geological Survey
USSSP: U. S. Science Support Program
VR: Vetenskapsrådet - Swedish Research Council
WEPAD: Western Pacific Drilling
XRF: X-ray fluorescence