

***JOIDES Resolution* Facility Board (JRFB) Meeting 17-19 August 2020 - Virtual Meeting**

Consensus Statements

Consensus 1

Statement on COVID-19. The JRFB recognizes the unique situation the JRFSO finds itself in with the current global pandemic in terms of operating the *JOIDES Resolution*, sampling of materials from completed expeditions, and analyzing expedition samples and data. Flexibility is essential during these times in order to continue to produce high quality data and science results expected from these expeditions. As such, the JRFB endorses the COPE (COVID Mitigation Protocols for Safe Operations) document produced by the JRFSO, in consultation with ODL, for implementing IODP expeditions during the pandemic. The JRFB further recommends that the moratoria for Expeditions 378, 379, 382, 383, and 385 be extended no more than 6 months beyond the respective moratorium periods. Such extensions would include a delay in publication of the Proceedings Volume and a delay in open access to associated data and core samples.

The new moratorium dates are:

Expedition 378: 6 February 2022

Expedition 379: 23 February 2021

Expedition 382: 20 May 2021

Expedition 383: 18 July 2021

Expedition 385: 27 September 2021

Consensus 2a

Scheduling of the JR. The challenges of implementing IODP expeditions on the *JOIDES Resolution* during the current pandemic are immense. Paramount in all decisions is the safety of all concerned. Given the current situation in the port call locations for Expeditions 392 and 393, and the probability that such circumstances will not change before expedition implementation, these have been postponed (but not cancelled). The JRFB has provided guidance to the JRFSO for future scheduling that allows flexibility in their approach to implement drilling expeditions while attempting to schedule at least some of the postponed expeditions.

Consensus 2b

Brazilian Decree. The JRFB regrettably has concluded that Expedition 394 Rio Grande Cone Methane and Carbon Cycling will need to be postponed. This is due to the Brazilian decree that prohibits drilling in Brazilian waters, which most likely will not be rescinded in the near future. This is not helped by the COVID-19 pandemic. The Expedition 394 proponents, as well as the proponents from already postponed Brazilian expeditions (387, 388) should understand that these expeditions remain at the JRFB for scheduling once the situation changes.

Consensus 2c

JR Expedition Preparation Work. The JRFB endorses efforts by the JRSO to install the re-entry infrastructure for Expeditions 390 and 393 in advance of those expeditions, in order to use time more productively once those expeditions are able to sail. The JRFB also encourages the JRSO to evaluate the possibility of including hole maintenance at Site U1309 as part of this effort; specifically, the possibility of retrieving the caliper left in the borehole.

Consensus 3

JRSO. The JRFB commends the leadership and staff of the JRSO for their exceptional support of scientific ocean drilling by the *JOIDES Resolution* in a landscape of rapidly changing operational and global health challenges. The JRFB also commends the JRSO for their continued focus on the present and future well-being of the facility and all of those involved with it.

Consensus 4a

2050 Science Framework. The JRFB recognizes and applauds the exceptional work accomplished by the IODP ‘*Exploring Earth by Scientific Ocean Drilling - 2050 Science Framework*’ writing and review teams, led by Drs. Anthony Koppers and Rosalind Coggon. Their commitment to developing the future directions of scientific ocean drilling from the international IODP community, and under extraordinary circumstances, provides an unprecedented vision for the coming 25+ years of scientific ocean drilling.

Consensus 4b

2050 Science Framework Implementation. Implementation of the 2050 Science Framework will require changes to the standard operating practice we currently have for evaluating proposals and potentially implementing expeditions. The JRFB looks forward to the IODP Forum meeting in September 2020, where discussion on implementing the 2050 Science Framework will begin. The JRFB recommends that the implementation planning include input from the Science Support Office, science operators, facility boards, funding agencies, etc., such that the transition from the current Science Plan to the new Science Framework is as transparent and seamless as possible.

Consensus 5

Future Opportunities. The JRFB is encouraged by the investments made in the maintenance of the *JOIDES Resolution* by ODL in 2020, and that NSF reported funds saved from deferred expeditions can be used to support expeditions in FY2024, with additional contribution from JR Consortium partners.

Consensus 6a

Orphan Site Criteria. As noted by the 2018 JRFB Consensus 9, and the 2019 JRFB Consensus 13, the JRFB in exceptional circumstances, on a case-by-case basis, will consider to keep unimplemented sites at the Board for potential completion at a later date. Exceptional circumstances are now defined as including mechanical failures of the JR, unexpected medical evacuations, etc., but do not extend to weather-related issues (e.g., heavy seas, sea ice, etc.) that are beyond the control of the JRSO and ODL.

Consensus 6b

Drilling of Orphan Sites. The JRFB currently has 12 sites from 5 expeditions that have been approved for staying at the Board for potential future drilling. In order to facilitate the drilling of these “orphan” sites, they will be subject to the following:

- If the time that the site(s) have been at the Board exceeds 5 years beyond the original expedition, the proponents will be asked to submit an addendum to the SEP for review to ensure that the science justification for drilling the site(s) is still valid and if new drilling technology/engineering developments are needed and available that would allow the science goal(s) to be achieved. Based upon input from SEP and the JRSO on these two criteria, the JRFB will decide whether or not to keep these sites at the Board for future drilling.
- If the drilling of the sites can be accomplished in a few days, the proponents should consider submitting an APL.
- The feasibility of drilling the hard rock sites will be evaluated by the JRSO after the results of Engineering Expedition 384 are available.
- The proponents may also consider including the undrilled sites in a new proposal to SEP.
- The sites will remain a target of opportunity: transit target, one-off opportunities (e.g., Expedition 368X), etc., but with no guarantee that they will be drilled in the current program.

Consensus 7

Curatorial Advisory Board. The JRFB wishes to thank the current CAB Chair, Mike Lovell, and members Richard Arculus and Elisabetta Erba for their exceptional and extended service to the CAB. They have gone above and beyond in their service to our community, having previously agreed to extending their periods of service to 30 September 2020.

Consensus 8a

Barbara “Bobbie” John. The JRFB is extremely grateful to Barbara “Bobbie” John for her excellent service to the *JOIDES Resolution* Facility Board and the International Ocean Discovery Program over the last three years. Her experience and insight regarding operational, scientific, and administrative issues that the JRFB has had to deal with means she leaves the Board with the program in a much better position. On behalf of an appreciative international scientific ocean drilling community, we acknowledge the contributions you have made and thank you for your service.

Consensus 8b

Holly Given. The JRFB, on behalf of the broad international community, wishes to express deep and heartfelt thanks to Holly Given for the years of service she has given to scientific ocean drilling. Her encyclopedic knowledge and recall of critical facts that govern our program have been instrumental for the smooth running of the International Ocean Discovery Program and her contributions to the ocean drilling programs that came before. Her innate ability to always interject in a positive way at meetings has provided avenues for consensus that would otherwise have taken much longer. As she retires from her duties at the Science Support Office, we applaud her accomplishments

that have enabled IODP to be so effective over the years, while also strengthening the international nature of scientific ocean drilling. While she will be sorely missed, we wish her all the very best for the next stage of her life. Thank you so much, Holly!

Action Items

Action Item 1

JRFB Chair to write to the Co-Chiefs of the orphan sites explaining the implementation criteria to get these sites drilled.

Action Item 2

The JRFB Chair will write to the incoming Curatorial Advisory Board Chair and members informing them of the terms of service.

Action Item 3

(left over 2019 Action Item 7) The following policies and guidelines still require further edits and will be approved by electronic vote. These are the Sample and Data Obligations Policy*, and the Guidelines for the EPSP Safety Review Report and Presentation and Expedition Safety Package.

**the JRFB Chair will work to define when the changes will take effect, including the impact on shore-based sampling parties.*

JOIDES Resolution Facility Board Meeting 2020 Roster

Members

James Allan	National Science Foundation, USA
Leanne Armand	The Australian National University, Australia
Brijesh Bansal	Ministry of Earth Science, India
Steve Bohaty	University of Southampton, UK
Gilbert Camoin	ECORD Management Agency, CEREGE, France
Brad Clement	JR Science Operator (JRSO), Texas A&M University, USA
Marguerite Godard	University of Montpellier, France
Barbara John	University of Wyoming, USA
Gil Young Kim	Korea Inst. of Geoscience and Mineral Res. (KIGAM), Republic of Korea
Larry Krissek	The Ohio State University, USA
Clive Neal, Chair	University of Notre Dame, USA
Yan Sun	Ministry of Science and Technology (MOST), China
Ryuji Tada	Chiba Institute of Technology, Japan

Liaisons

Gail Christeson	University of Texas at Austin
Sarah Davies	Leicester University
Nobu Eguchi	Institute for Marine-Earth Exploration and Engineering (MarE3), JAMSTEC, Japan
Holly Given	IODP Science Support Office, Scripps Institution of Oceanography, USA
Barry Katz	EPSP Chair, Chevron Corporation, Houston, TX, USA
Dick Kroon	IODP Forum Chair, University of Edinburgh, UK
Shin'ichi Kuramoto	Institute for Marine-Earth Exploration and Engineering (MarE3), JAMSTEC, Japan
Lisa McNeill	SEP Co-Chair, University of Southampton, UK
Nobukazu Seama	Kobe University
Gabriele Uenzelmann-Neben	ECORD Facility Board Chair, Alfred Wegener Institute, Germany

Observers

Gary Acton	JRSO, Texas A&M University, USA
Carl Brenner	USSSP, Lamont-Doherty Earth Observatory, Columbia University, USA
Dru Clark	IODP Science Support Office, Scripps Institution of Oceanography, USA
Roz Coggon	PROCEED Workshop Scientific Committee, University of Southampton, UK
Helen Evans	IODP Science Support Office, Scripps Institution of Oceanography, USA
Nadine Hallman	ECORD Management Agency, CEREGE, France
Jeff Gee	Scripps Institution of Oceanography, USA
Dave Goldberg	USSSP, Lamont-Doherty Earth Observatory, Columbia University, USA
Bob Houtman	National Science Foundation, USA
Steve Hovan	National Science Foundation, USA
Kevin Johnson	National Science Foundation, USA
Hodaka Kawahata	President J-DESC
Anthony Koppers	NEXT Workshop Co-Chair, Oregon State University, USA
Mitch Malone	JRSO, Texas A&M University, USA
Harue Masuda	J-DESC, Osaka City University, Japan
Chris Olson	IODP Science Support Office, Scripps Institution of Oceanography, USA
Lorri Peters	JRSO, Texas A&M University, USA
Katerina Petronotis	JRSO, Texas A&M University, USA
Terry Quinn	National Science Foundation, USA
Sanny Saito	J-DESC, Osaka City University, Japan
Angela Slagle	USSSP, Lamont-Doherty Earth Observatory, Columbia University, USA
Deborah Smith	National Science Foundation, USA
Marta Torres	USAC Chair
Gen Totani	MEXT
Shouting Tuo	IODP-China, Tongji University, China
John Walter	National Science Foundation, USA
Wentao Wang	Ministry of Science and Technology (MOST), China
Michiko Yamamoto	IODP Science Support Office, Scripps Institution of Oceanography, USA
Alan Yang	IODP Science Support Office, Scripps Institution of Oceanography, USA
Not attending	

JOIDES Resolution Facility Board Meeting Notes: **17-19 August 2020 - Virtual Meeting**

Monday

17 August 2020

10:00-13.00 EDT

1. Welcome

JOIDES Resolution Facility Board (JRFB) Chair Dr. Clive Neal welcomed everyone to the first virtual board meeting over Zoom and acknowledged that this would be unusual. The participant introductions were skipped due to the shortened time for the virtual meeting and the various time zones of the participants. Dr. Neal thanked the Board members for the preparation work for the meeting done by email and thanked the various agencies that provided their reports in a written format prior to the meeting. Dr. Neal then went over the logistics and rules of engagement for the meeting. Dr. Neal then reviewed the Action Items from the 2019 JRFB Meeting and noted that many issues have been affected by the global pandemic.

2. Approval of Meeting Agenda

Dr. Neal requested and received consensus to approve the meeting agenda.

3. Approval of May 2019 JRFB Meeting Minutes

Dr. Neal requested and received consensus to approve the 2019 Meeting Minutes.

4. JRSO Update on Operations

Dr. Brad Clement presented an update on JR operations. Dr. Clement summarized Expedition 378 operations. Unfortunately, just before departure they learned through finite element modelling that the drilling derrick was not strong enough to hold the weight of the drill string and operations were limited to water depths <2000m. The shortened expedition did recover >900 meters of core from limited sites. During the transit it was discovered that three thruster seals were leaking, and the vessel would require dry dock to repair them. This impacted Expedition 387 which was postponed due to the need for dry dock. Brazil then denied research clearance which meant that Expedition 388 also had to be postponed. The schedule was changed to accommodate this news and Expedition 395 (Reykjanes Ridge) was quickly added to the schedule. However, travel restrictions, flight availability, and port restrictions due to COVID-19 eventually resulted in the postponement of the Exp 395 as well.

Dr. Clement then presented COPE- COVID-19 Mitigation Protocols Established for Safe JR Operations. These protocols add layers of complexity for the JRSO and anyone who will be sailing. Dr. Clement then went over the current schedule. All JR expeditions have been postponed until February 2021, where Exp 392 is scheduled to begin from Cape Town. Dr. Clement said they have tried to reduce the crew and science party numbers and realize this is difficult to do.

Dr. Mitch Malone then gave an update on Expedition 384 (Engineering Testing) which focused on testing recommendations from the Deep Crustal Drilling Workshop. He

summarized the results from various drill bits and one underreamer supplied by industry (including Schlumberger and Baker-Hughes), that were tested.

Dr. Jamie Allan noted how much work it took to pull off Expedition 384 and said that we need to adapt and do as much as we can at this time. Dr. Neal concluded this agenda item re-stating that “we really need to be flexible” in scheduling the JR. and asked people to keep in mind “non-traditional” ways to get science done.

5. EPSP Preview of Proposals at the JRFB

Environmental Protection and Safety Panel (EPSP) Chair Dr. Barry Katz provided an upbeat synopsis that EPSP is now more than one expedition ahead in looking at safety issues. All but three proposals at the JRFB have already been assessed by EPSP. Dr. Katz feels the work mode of EPSP makes virtual meetings difficult and hopes to avoid them. Dr. Katz went over detailed recommendations by EPSP of proposals and their site approvals / recommendations. He concludes that there are lots of proposals to look at, and that we have a pretty robust process.

Dr. Gail Christeson asked about addenda and how to see the most recent status of sites after EPSP meets. Dr. Katz says “we don’t know how this gets back to the system at Scripps.” Dr. Lisa McNeill said it would be useful to have an updated map of sites after EPSP adjustments. Dr. Given agreed.

6. SEP Overview of Proposals for Scheduling

Science Evaluation Panel (SEP) co-Chairs Drs. Lisa McNeill and Gail Christeson gave an overview of proposals at SEP. They noted that the Biosphere Frontiers theme has few proposal submissions but that it is contained in other proposals with other main themes. They briefly presented 14 proposals that are at the JRFB. Dr. Neal thanked Drs. McNeill, Christeson, Sean Gulick, and Victoria Pease of the International Continental Drilling Program for their work to update to the *IODP Proposal Submission Guidelines*. There were no questions.

7. Minimum FY’22 JR Expedition Scheduling

Dr. Mitch Malone presented the options from the JRSO for discussion of expedition scheduling. Dr. Malone discussed COVID-related restrictions in port nations and explained that they had encountered severe challenges in all ports investigated so far (South America, Africa, and Europe). Dr. Malone noted that the host nations – not the JRSO - are mandating the process, and that we might not be able to get much done before there is a vaccine. Dr. Malone explained that sites in international waters require at least 6 months lead time and sites that require country clearance need more than 8 months lead time. Dr. Neal suggested an off-sequence mini-meeting of the JRFB to make specific scheduling decisions may be necessary depending on which one of the postponement / rescheduling options works out. Dr. Larry Krissek suggested that JRSO should fish in Hole U1309D on Atlantis Massif to try to retrieve and/or grind up the caliper arm that was left in the hole to prepare it before they try to do a full expedition there.

Dr. Neal asked the SSO to distribute Dr. Malone's presentation that described the different scheduling option to the Board members. He then asked the Board members to email him with their ranked scheduling preferences. The discussion was tabled until Wednesday.

The meeting ended for the day at 13:26 EDT.

Tuesday	18 August 2020	10:00-12.00 EDT
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Dr. Neal started the meeting promptly at 10am EDT

8. COVID-19 Impacts on Expedition Moratoria

COVID-19 has impacted post-cruise sampling for three expeditions: 378, 383 and 385. All three expeditions have been impacted differently. Expedition 383 finished their first sample party and took ~60% of their samples but the second sample party had to be postponed. Expedition 378 is still working through their XRF scanning and planning their sampling strategy. The JRSO is asking the JRFB for guidance on extending the moratoria for affected expeditions. Dr. Malone noted that two other expeditions were also affected (379 and 382). They had completed their sampling and the moratorium had begun when COVID-19 restrictions prevented them from using their labs. A lengthy discussion followed on the best way to approach the problem with the majority of comments "to keep it simple" because it would be too difficult to customize an extension period for each expedition based on how COVID-19 affected each sample party. Dr. Jamie Allan of NSF reminded the group that NSF's policy for open data access would argue for the minimum reasonable extension. The decision was made to extend the moratorium period for no more than six months for the affected expeditions. See Consensus 1.

9. Scientific Ocean Drilling Science Framework Update

Dr. Anthony Koppers and Dr. Roz Coggon presented the status of the future Science Framework, "Exploring Earth by Scientific Ocean Drilling." Dr. Dick Kroon as Forum chair gave remarks about how the Science Framework will be considered at the upcoming virtual Forum meeting, including the planning structure and implications on proposal submission and evaluation. Once the research councils have decided if there is going to be a "new program," the Forum will start considering what the organization of that would look like. Dr. Kroon said that the Forum will also discuss the topic of remote meetings, even beyond COVID-19. His goal is to reach a series of consensus statements about how to work with / implement the new Science Framework. Dr. Neal asked when SEP should consider switching to the new Science Framework for proposal evaluation. Dr. Coggon said they are recommending planning workshops beginning at the end of 2021 to focus on the Flagship Initiatives.

Dr. Allan reminded everyone that this is still a framework, not a program with signed memoranda. NSF will make a decision as to proceed with a Dear Colleague Letter exploring community interest in provision of a replacement drillship by June 2021, with a decision to seek acquisition for such a facility at a later time.

Dr. Lisa McNeill voiced support for the idea that proposals should begin to refer to “Framework science” sooner rather than later. Dr. Holly Given asked that as the group begins to ponder implications for drilling proposals, that the Science Support Office is included in the discussion, so they are not caught unaware about possible changes to the proposal process and can advise on their viability. See Consensus 4a and Consensus 4b.

10. Availability/Viability of the JR post-2023

Dr. Jamie Allan noted that the silver lining of the COVID-19 situation is that, with postponed expeditions, we will have enough funds to operate substantially into FY2024. The *JOIDES Resolution* will need a dry dock in 2024 for vessel classifications to be kept, but JR could potentially operate into 2025 and maybe even up to 2028, which is last possible year the JR could operate. See Consensus 5.

Dr. Neal said that the idea to operate the JR into 2028 is mainly to avoid any big gap between JR and a new platform. Dr. Allan reminded everyone that there was a 5 ½ year gap between the *GLOMAR Challenger* and the *JOIDES Resolution* and hopes to avoid that. A compelling Science Framework is only the first step; partners will also be needed to help fund the operations of the new platform. Dr. Allan stated that funding partners would need to increase their contributions by about ~2x to have a globally ranging drill ship. Dr. Kroon agreed that it is important for funding agencies to commit to a new vessel; then we can look into ways to fill platform gaps, etc.

11. JR International Partner post-2023 Intentions - Discussion

Dr. Gilbert Camoin stated that ECORD is ready to participate in the new program, but that their first priority is to remain a platform provider. Dr. Camoin doubts ECORD funding agencies will have decisions in 2021. Funding agencies likely won't be ready to commit before 2022.

Dr. Leanne Armand (ANZIC) has briefed their funding agency about current plans with JR operating through 2024, which was well-received by the Council. There are hopes that there will be a new ship. She said that, while it's far too early to make any commitments, their intention is to stay in the program and try to increase their participation.

Dr. Shin-ichi Kuramoto briefed the Board on plans for the riser drilling vessel *Chikyu*. JAMSTEC will operate *Chikyu* until the end of their FY2025. They will have a constant budget until then, so any big project is difficult without outside money, but they will be able to do riserless operations.

Dr. Shouting Tuo (China) referred the group to his report in the Agenda Book. He is very confident that China will continue as a member of JR Consortium. China still wants to be a new platform provider; it is very likely that China will build a gas hydrate drilling vessel this year and could do IODP work in 2025.

The meeting ended for the day at 12.30 PM EDT.

Dr. Neal opened the meeting promptly at 10am EDT. There was a brief impromptu discussion about whether the virtual meeting was as successful as it had been for SEP. While virtual meetings are necessary and functional, they are no replacement for in-person meetings.

12. Orphan Sites

Dr. Neal introduced the topic of “orphan sites” that had been left undrilled in recent completed expeditions. The list of these sites is growing, and the Board needs to come up with a strategy for how to handle them. In 2019, the JRFB added certain sites to the orphan list; there is now a new request from Expedition 383. Dr. Brad Clement reminded the group that when the concept of orphan sites was first created, it was for exceptional circumstances involving mechanical failure of the platform or medical emergencies, not weather (which is the basis of the current request). Several Board members said that if we allow weather issues to determine orphan sites, many if not most expeditions would have them. Dr. Jamie Allan says that weather-related problems often correlate with high-risk operations, and that’s not a reason to go back without a fundamental review of the science that was accomplished with the drilling that was done. If it was weather issue or high-risk operation to begin with, there’s no guarantee of success on the next try. Dr. Allan feels there should be a limited number of years for a site to stay on the orphan list; many of these sites won’t be drilled by 2024 and the science should be “looked at again” so it doesn’t get stale. Dr. Neal mentioned the “5-year” time frame for dormant proposals as an analogy.

Dr. Lisa McNeill said SEP could possibly be involved in looking at the science around orphan sites again; Dr. Gail Christeson said she’d then like there to be an Addendum or a similar type of formal submission. Dr. McNeill points out that this seems to be a rather new concept and is concerned that the list could get “out of hand” if we don’t keep a very high bar for this.

Dr. Neal said that obviously we need clear criteria for co-chiefs so that they know when it is legitimate to request that a site be put on the list, and we need a workable mechanism for how drilling these sites will be implemented. Dr. Neal suggests opportunities can be 1) transit opportunities 2) Ancillary Project Letters (APLs) or otherwise attached to other expeditions. Dr. Christeson felt that the proponents can also just submit a new proposal, which has been the traditional way (before the “orphan site” policy was created) this was handled. Dr. Malone suggested that these can be treated as “less than a leg” proposals that can be slotted into non-standard windows of potential schedules or ship tracks. See Consensus 6a and Consensus 6b.

13. Scheduling Discussion

Several Board members and meeting participants were moved to the Zoom waiting room as they had identified as having a conflict of interest on some proposals under consideration for scheduling.

Dr. Neal indicated that he had contacted Board members offline to get their “votes” on the various scenarios. Dr. Neal will draft a consensus statement with the final result and the discussion will continue after the meeting. See Consensus 2a, Consensus 2b, and Consensus 2c.

14. Review of Consensus Statements and Action Items

Dr. Neal reviewed the items he is drafting consensus statements for. He will send these to the Board members by email for revisions and then they will be posted in the Slack channel for the meeting for comment by liaisons and observers.

15. Curatorial Advisory Board Membership

Dr. Neal presented the suggestions of the IODP Curators for the Curatorial Advisory Board (CAB). He confirmed that they had all agreed to serve. Dr. Bobbie John asked about the range of expertise. The JRFB approves the slate.

16. Membership of the JRFB

Dr. Neal acknowledges the end of Dr. Barbara John’s term and thanks her. Consensus 8a.

17. AOB and next JRFB Meeting

Post meeting, the JRFB approved Consensus 8b in appreciation of the decades of service that Holly Given has dedicated to scientific ocean drilling. Holly will retire on 1 October 2020.

The next meeting is tentatively scheduled at Scripps Institution of Oceanography for 24-26 May 2021.

Dr. Neal thanked everyone for their participation in the first virtual JRFB.