



Science Evaluation Panel (SEP) Meeting July 27-30, 2021 – Virtual Meeting

Roster

Science Subgroup

Chandranath Basak	University of Delaware
Thorsten Bauersachs	Kiel University
Christoph Beier	University of Helsinki
Melissa Berke	University of Notre Dame
Clara Bolton	CEREGE
Julie Bowles	University of Wisconsin-Milwaukee
Anne Briaes	Institut Universitaire Européen de la Mer
Marianne Conin ⁺	Universite de Lorraine
Patrick Fulton	Cornell University
Joerg Geldmacher ⁺	GEOMAR
Karsten Gohl [*]	Alfred Wegener Institute
Morihisa Hamada	JAMSTEC
Yoshitaka Hashimoto	Kochi University
Kiichiro Kawamura ⁺	Yamaguchi University
Mark Kendrick	University of Queensland
Yoon-Mi Kim	KIGAM
Mark Leckie	University of Massachusetts Amherst
Zhonghui Liu	University of Hong Kong
Kenji Matsuzaki	University of Tokyo
Lisa McNeill	University of Southampton
Beth Orcutt	Bigelow Laboratory for Ocean Sciences
Jeremy Owens	Florida State University
Sandra Passchier	Montclair State University
Molly Patterson	Binghamton University, SUNY
Charity Phillips-Lander	Southwest Research Institute
Julie Prytulak	University of Durham
Yair Rosenthal	Rutgers University
Rajeev Saraswat	National Institute of Oceanography
Niall Slowey	Texas A&M University
Hiroko Sugioka [*]	Kobe University
Paola Vannucchi [*]	Università di Firenze
Antje Voelker	Centro de Ciencias do Mar
Chuang Xuan ⁺	University of Southampton
Kosei Yamaguchi	Toho University
Guoliang Zhang	Institute of Oceanology, Chinese Academy of Sciences

Site Subgroup

Andrea Argnani ⁺	ISMAR
Silvia Ceramicola [*]	Istituto Nazionale di Oceanografia e Geofisica Sperimentale
Jason Chaytor	U.S. Geological Survey
Gail Christeson	University of Texas at Austin

Deniz Cukur ⁺	KIGAM
Jianhua Geng	Tongji University
Andrew Goodliffe	University of Alabama
Shuoshuo Han	University of Texas at Austin
Jess Hillman	GNS
Christian Hübscher*	University of Hamburg
Gwang-Soo Lee*	KIGAM
Zhitu Ma*	Tongji University
Beatrice Magnani	Southern Methodist University
Nisha Nair	National Centre for Polar and Ocean Research
Uisdean Nicholson	Heriot-Watt University
Ross Parnell-Turner	University of California, San Diego
Patricia Persaud	Louisiana State University
Tim Reston	University of Birmingham
Derek Sawyer	Ohio State University
Tilmann Schwenk	University of Bremen
Kazuya Shiraishi	JAMSTEC
Eli Silver	University of California, Santa Cruz
Min Xu	Chinese Academy of Sciences
Yuzuru Yamamoto	Kobe University

Liaisons and Observers

Jamie Allan	National Science Foundation
Flavio Anselmetti	ICDP Science Advisory Group
Peter Blum	<i>JOIDES Resolution</i> Science Operator
Carl Brenner	U.S. Science Support Office
Laurel Childress	<i>JOIDES Resolution</i> Science Operator
Emily Estes	<i>JOIDES Resolution</i> Science Operator
Helen Evans	IODP Science Support Office
Katharina Hochmuth	ECORD Science Operator
Tobias Hoefig	<i>JOIDES Resolution</i> Science Operator
Barry Katz	Environmental Protection and Safety Panel
Carola Koegler	ICDP Office
Larry Krissek	<i>JOIDES Resolution</i> Facility Board
Dirk Kroon	IODP Forum Chair
Yangyang Liu	IODP-China PMO
Mitch Malone	<i>JOIDES Resolution</i> Science Operator
Charna Meth	IODP Science Support Office
David Okaya	IODP Science Support Office
Katerina Petronotis	<i>JOIDES Resolution</i> Science Operator
Johann Raitt	ICDP Science Advisory Group
Sanny Saito	MarE3, JAMSTEC
Angela Slagle	U.S. Science Support Office
Karen Stocks	IODP Science Support Office
Gabriele Uenzelmann-Neben	ECORD Facility Board
Trevor Williams	<i>JOIDES Resolution</i> Science Operator
Michiko Yamamoto	IODP Science Support Office
Alan Yang	IODP Science Support Office

*Unable to attend

+Attending as alternate

Meeting Notes

1. Welcome and Logistics

The Science Evaluation Panel (SEP) co-chairs Lisa McNeill and Gail Christeson called the meeting to order with a welcome and asked attendees to perform self-introductions. Gail and Lisa reviewed the meeting format for Zoom and Slack, gave a presentation about the SEP’s proposal review procedures, and reminded those in attendance of their requirement to keep proposal content and discussions confidential.

2. Proposal Reviews

Over the course of the meeting, the SEP reviewed four pre-proposals, nine full proposals (four with addendums), and three ancillary planning letters. One of the pre-proposals was a Land-2-Sea proposal, with the review conducted in partnership with ICDP. The review outcomes are in the table below. Lisa and Gail asked panel members to submit external reviewer suggestions for Proposals 971 and to submit co-chief recommendations for Proposals 955, 976, 979, and 985.

ID	Type	PI	Short Title	Recommendation
885	Full2	Jangjun Bahk	Ulleung Basin Gas Hydrates	HB
955	Full2	Julie Huber	Axial Seamount Observatory	JRFB, excellent
967	Full2(Add)	Takashi Sano	Ontong Java Nui LIP	JRFB, excellent
971	Full2	Alessio Sanfilippo	Kane Megamullion Deep Drilling	External Review
972	APL3	Brandon Dugan	New England Slope Hydrogeology (APL)	JRFB
976	Full2(Add)	Hans Christian Larsen	North Iceland Rift Propagation	JRFB, good
979	Full2(Add)	Wolfram Geissler	Arctic Atlantic Gateway Paleoclimate	JRFB, excellent
980	APL3	Keir Becker	Guatemala Basin Hydrothermal Pits	JRFB
984	Full	Nathan Bangs	Chile Megathrust	Revise
985	Full2(Add)	Renata Lucchi	Eastern Fram Strait Paleo Archive	JRFB, excellent
999	Pre	Marguerite Godard	New Caledonia Ophiolite L2S	Workshop
1000	Full	Denise Kulhanek	Argentine Margin Cretaceous Tectonics & Climate	Revise
1001	Pre	Atsushi Matsuoka	Trans-Pacific co-evolution record	Decline
1002	Pre	Bradley Opdyke	Totten Glacier Climate Vulnerability	Full
1003	Pre	Ann Dunlea	N. CAVA Volcanic Ash	Pre2
1004	APL	Uisdean Nicholson	Nadir K-Pg impact Crater	Revise

3. Agency Reports

National Science Foundation (NSF): Jamie Allan stated that the National Science Foundation (NSF) is committed to IODP and the *JOIDES Resolution* through the end of FY24. FY24 expeditions can be supported under the option year in the *JOIDES Resolution* Consortium memorandums.

NSF issued a Dear Colleague Letter (DCL) last year to request expressions of interest in a globally ranging drillship to meet the science needs in the 2050 Science Framework. Based on the responses, NSF decided that the provision of a state-of-the-art, globally ranging, scientific drillship for possible future international scientific ocean drilling programs will ensure that the United States is able to continue providing support for fundamental geoscience research while welcoming and capitalizing on the globalization of science and engineering, which is one of the leadership elements identified in the National Science Board's Vision 2030 report. However, the lack of financial expressions of interest from IODP partners prevents the continuation of a unified IODP-style program.

The next step in planning for a new drillship is to define the Science Mission Requirements (SMR). NSF will task USSSP with forming a U.S. committee to recommend SMRs to NSF using the NEXT Report, the 2050 Science Framework, and input from the U.S. science community (e.g., RFI responses, workshop). NSF-accepted SMRs will serve as the basis for a conceptual design for a new drilling vessel and a decision about whether to lease or build the ship. NSF expects that there may be international interest and other new partnerships in the program.

SEP members asked for clarification about the amount of time that the U.S. will not have an operational drillship. Jamie stated that the time could be significant. NSF must undertake substantial planning to understand the needs, costs, and risks involved in acquiring a new drillship, and the U.S. community will need to demonstrate sustained support for scientific ocean drilling throughout this process. Lisa stated that the international community can also rally, and Dick Kroon supported this notation by discussing the possibility of continued and new use of other platforms. Carl Brenner added that USSSP and USAC are thinking about U.S. community engagement, including virtual expeditions and other activities to maintain scientific momentum.

In response to questions about the future of the *JOIDES Resolution*, Jamie explained that there will be a five-year drydock of the ship at the beginning of FY24. Continuation of the *JOIDES Resolution* beyond FY24 will depend on outcomes from the drydock inspections, budget limits, NSF policies, current awards and contracts, and partner contributions. Jamie would like to extend operations of the *JOIDES Resolution* for as long as possible, and he is looking at ways to preserve the legacy of IODP (e.g., cores, data availability).

JOIDES Resolution Facility Board (JRFB): Larry Krissek provided a summary of the final report of the JRFB Working Group on Science Framework Proposal Requirements and Assessments (WG-SFP). The WG-SFP concluded that the current proposal submission and evaluation system contributed significantly to the scientific strength and international success of IODP, and they encourage the next phase of scientific ocean drilling to continue to implement a single, unified proposal and site characterization review system. The WG-SFP recommended additions and modifications to address new

aspects of the 2050 Science Framework, as well as a potential new funding environment and management structure. The report is available on the IODP website.

The minutes, consensus statements, and action items from the June 2021 JRFB meeting are available on the IODP website and include the election of Larry as the next JRFB chair, a geographic focus of the Atlantic Ocean and eastern Pacific Ocean for the *JOIDES Resolution*, the FY23 *JOIDES Resolution* expedition schedule, the fate of unimplemented *JOIDES Resolution* drilling proposals and orphaned sites, and the next steps in developing U.S.-ship proposal guidelines for the next program.

The JRFB will not accept new proposals for the next proposal deadline but will accept revisions to proposals in the system. SEP asked Larry about plans to inform proponents about the process of transitioning to the next phase of scientific ocean drilling. The SEP co-chairs would like to coordinate their review letters with the JRFB chair's letter to help proponents decide their next steps.

Larry reviewed the responses to the JRFB's request for information (RFI). The 79 responses are representative of the broadness of the 2050 Science Framework, showing interest across the strategic objectives, flagship initiatives, and enabling elements. The flagship initiative of Diagnosing Ocean Health received the least RFI responses. Most of the responses were to use a non-riser platform (62%), and about half included the Pacific Ocean. Twenty-two of the RFI's were submitted by early career researchers. The SSO continues to accept RFI responses.

JOIDES Resolution Science Operator (JRSO): Mitch Malone presented the JRSO's response to the COVID-19 pandemic, which included the development of a their COVID Mitigation Protocols Established for Safe *JOIDES Resolution* Operations (COPE) and expedition adjustments due to travel and port restrictions. Five expeditions were postponed, but the JRSO was able to make operational progress with Expedition 384 (Engineering Testing), Expedition 390C and 395E (South Atlantic Transit Re-entry Systems), and Expedition 395C (Reykjanes Ridge). Depending on vaccination rates, Mitch expects that Expedition 396 (Mid-Norwegian Continental Margin Magmatism) will sail with a reduced science complement and Expedition 391 (Walvis Ridge Hotspot) will have a full science party.

Effective September 1 with Brad Clement's retirement, Mitch will become the new JRSO Director, Gary Acton will become the new JRSO Assistant Director, Katerina Petronotis will become the Manager of Science Operations, and Leah LeVay will become the Supervisor of Science Services. Jamie complimented the operational and financial management of the *JOIDES Resolution*, citing this as important to IODP's substantial success.

ECORD Facility Board (EFB)/ECORD Science Operator (ESO) Report: Gabriele Uenzelmann-Neben reviewed the EFB membership, the proposals residing at the EFB, and the future MSP operational plan. In preparation for the next phase of scientific ocean drilling, the MagellanPlus Workshop Series issued a special call for proposals

that should result in many new MSP proposals. The next EFB meeting will take place in Trieste, Italy, September 29-30, 2021, where the EFB will discuss plans for the next program, plan future operations, and review recent expeditions.

Katharina Hochmuth discussed that the ESO has started detailed planning efforts to operate Expedition 377 (Arctic Ocean Paleoceanography) in the summer of 2022. The outreach program for the expedition already includes a documentary film crew and BBC journalist. Expedition 386 (Japan Trench Paleoseismology) recently concluded drilling operations using the giant piston core on the JAMSTEC vessel *Kaimei*. Despite difficult weather conditions, the expedition cored 15 sites in water depths ranging from 7,445 to 8,023 mbsl, the deepest site ever cored. Sanny Saito reviewed MarE3's contribution to the expedition, and the EFB, ECORD, and MarE3 all praised the successful collaboration.

Chikyu and Chikyu IODP Board (CIB) Report: Sanny reported MarE3 is planning to host the Expedition 386 onshore party in October 2021, if COVID-19 travel restrictions allow; a decision will be made soon. The *Chikyu* Shallow Core Program, which is similar to JR100, is planning to operate in late August 2021.

The CIB met recently and discussed Japan's commitment to the next phase of IODP, the value of JAMSTEC vessels to scientific ocean drilling, the potential of *Chikyu* to implement riserless proposals, and the fate of unimplemented riser proposals. *Chikyu* can operate through at least FY25, and JAMSTEC and MEXT are exploring potential new business models for science operations beyond FY25.

IODP Science Support Office (SSO): Charna Meth described the roles of the SSO and recent SSO activities, including updates to the website, support for the JRFB WG-SFP and RFI, and improvements to the Proposal Database (PDB) and Site Survey Databank (SSDB). She also provided statistics on proposals submitted to IODP.

IODP Forum Report: Dick presented the consensus statements from the IODP Forum meeting held April/May 2021. The next IODP Forum meeting will be held in Rome, October 11-12, 2021, with the PMOs and funding agencies meetings on October 13. Dick's term will end in September, and Henk Brinkhuis will serve as the next IODP Forum Chair.

3. SEP Co-chair Discussion

With Lisa's term ending in 2022, Gail presented three nominees for the science co-chair position. SEP discussed the nominees and agreed that all the candidates are exceptional and well qualified. SEP ranked the nominees, and Gail will forward SEP's recommendation to the JRFB to for approval.

4. Next Meeting and Thank You

The SSO is planning to host the next SEP meeting both at the Scripps Institution of Oceanography and virtually on January 11-13, 2022. The meeting may shift to 100% virtual if international travel to the U.S. does not open. SEP discussed possible European locations for the summer 2022 meeting.

Lisa and Gail thanked Morihisa Hamada, Hiroko Sugioka, Melissa Berke, Julie Bowles, Beth Orcutt, Yair Rosenthal, Andrew Goodliffe, Ross Parnell-Turner, and Eli Silver – who are all rotating off of SEP soon – for their commitment, hard work, and contributions. Lisa and Gail also thanked the SSO for organizing the meeting, the full SEP membership their enthusiasm and participation, and the liaisons and operators for their insight.