



Science Evaluation Panel (SEP) Meeting June 27-28, 2023 – Pavia, Italy, and Zoom

Roster

Science Subgroup

Barbara Balestra	American University
Chandranath Basak	University of Delaware
Christoph Beier*	University of Helsinki
Clara Bolton	CEREGE
Anne Briais*	Institut Universitaire Européen de la Mer
Gerald Dickens	University of Dublin
Patrick Fulton	Cornell University
Mari Hamahashi	Yamaguchi University
Yumiko Harigane	National Institute of Advanced Industrial Science and Technology
Michelle Harris	University of Plymouth
Matt Ikari	University of Bremen
Barbara John*	University of Wyoming
Joel Johnson*	University of New Hampshire
Mark Kendrick*	University of Queensland
Zhonghui Liu	University of Hong Kong
Chris Lowery*	University of Texas at Austin
Kathleen Marsaglia	California State University, Northridge
Kenji Matsuzaki	University of Tokyo
Erin McClymont†	Durham University
Rie Nakata	University of Tokyo
Jeremy Owens	Florida State University
Sandra Passchier	Montclair State University
Molly Patterson	Binghamton University, SUNY
Stephen Pekar	Queens College - City University of New York
Jennifer Pickering†	University of Memphis
Natascha Riedinger	Oklahoma State University
Alessio Sanfilippo	University of Pavia
Rajeev Saraswat	National Institute of Oceanography
Jason Sylvan	Texas A&M University
Mike Weber	University of Bonn
Kosei Yamaguchi	Toho University
Guoliang Zhang	Institute of Oceanology, Chinese Academy of Sciences

Site Subgroup

Brian Boston	Auburn University
Jason Chaytor	U.S. Geological Survey
Laura De Santis	OGS
Irina Filina	University of Nebraska-Lincoln
Jianhua Geng	Tongji University
Jess Hillman	GNS
Maria Filomena Loreto	ISMAR

Maria Beatrice Magnani
Gregory Mountain
Nisha Nair
Robert Pockalny
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Derek Sawyer*
Nick Schofield
Kazuya Shiraishi
Min Xu
Yuzuru Yamamoto
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Southern Methodist University
Rutgers University
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University of Rhode Island
University of Hamburg
University of Birmingham
Ohio State University
University of Aberdeen
JAMSTEC
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Kobe University
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Liaisons and Observers

Angelo Camerlenghi
Nobu Eguchi
Ron Hackney
Kevin Johnson
Barry Katz
Larry Krissek
Charna Meth
Natsumi Okutsu
Katerina Petronotis
Marisa Rydzy
Sanny Saito
Angela Slagle
Sasha Turchyn
Michiko Yamamoto

ECORD Science Support & Advisory Committee
MarE3, JAMSTEC
Australia-New Zealand IODP Consortium
National Science Foundation
Environmental Protection and Safety Panel
JOIDES Resolution Facility Board
IODP Science Support Office
MarE3, JAMSTEC
JOIDES Resolution Science Operator
ECORD Science Operator
MarE3, JAMSTEC
U.S. Science Support Program
ECORD Facility Board
IODP Science Support Office

*Unable to attend
+Attended as alternate

Meeting Notes

1. Welcome and Logistics

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

2. Agency Reports

ECORD Facility Board (EFB)/ECORD Science Operator (ESO): Sasha Turchyn, the EFB chair, reviewed the EFB membership, the proposals residing at the EFB, and future mission-specific platform (MSP) operational plans. Expedition 389 (Hawaiian Drowned Reefs) is scheduled for 2023, and Expedition 406 (New England Hydrogeology) is scheduled for 2024. The EFB is pleased that the recent MagellanPlus workshops are resulting in increased proposal pressure for MSPs. The next EFB meeting will take in September 2023 in Edinburgh in conjunction with the *Chikyu* IODP Board (CIB).

Sasha also reviewed some of the current discussions regarding the transition from IODP to the International Ocean Drilling Programme (IODP³), the joint ECORD-Japan post-IODP program. Sasha and the other facility board chairs are considering how some proposals that are at the *JOIDES Resolution* Facility Board (JRFB) could transfer to the EFB for early consideration for IODP³. IODP³ hopes to schedule two to three expeditions per year, which will provide capacity to implement some of the proposals that will not be implemented by the *JOIDES Resolution*.

Marisa Rydzy discussed the data updates and publications for Expedition 386 (Japan Trench Paleoseismology), the co-chief for Expedition 406 (New England Hydrogeology), and the operational plans for Expedition 389 (Hawaiian Drowned Reefs). Expedition 389 will investigate the link between changes in global sea-level and climate over the last 500,000 years and the response of coral reefs to these changes. The offshore phase will take place September to October 2023.

Chikyu and *Chikyu* IODP Board (CIB) Report: Sanny Saito presented the report on behalf of Nobi Seama (CIB Chair), Nobu Eguchi (MarE3, JAMSTEC), and himself. Sanny reviewed the CIB membership and *Chikyu* operation plans through 2025, and discussed that planning is underway for Expedition 405 (Japan Trench Tsunamigenesis), which will be the last *Chikyu* expedition in IODP. The operational period will last about three months and will have six co-chiefs.

Sanny then presented the consensus and action items from the most recent CIB meeting, which was held three weeks ago in Kobe, Japan. Many of the discussions at the meeting took place in joint sessions the EFB, as both facility boards are looking

toward the transition to IODP³. In particular, the CIB and EFB agreed to work together until the IODP³ MSP Facility Board is formed and to form a working group to develop proposal guidelines for IODP³. They also agreed on a series of steps to begin transitioning proposals to the MSP concept and to informing proponents about opportunities with IODP³.

SEP participants asked if *Chikyu* might leave Japan in the future. Sanny responded that this is possible dependent on budget, and Nobu reiterated that this is possible.

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 Working Group on Virtual Expeditions (WG-VE), and improvements to the Proposal Database (PDB) and Site Survey Databank (SSDB). She reminded SEP members about the Post-IODP Planning section of the website and the confidentiality policy, and she discussed that the SSO is assisting the facility boards with transition items to future programs. Charna also provided statistics on proposals submitted to IODP.

IODP Forum Report: Charna presented the IODP Forum report on behalf of Henk Brinkhuis, Forum chair, who was unable to attend this SEP meeting. Charna discussed the role of the IODP Forum in the current program and in facilitating discussions about future programs. Charna reviewed the consensus statements from the previous IODP Forum meeting, which took place Vienna, Austria in April 2023. These statements are available in the IODP Forum section of iodp.org, and they focus on operations, core curation, and use of legacy assets. In discussing the post-2024 programs, the IODP Forum learned more about the current planning status and direction for each of the IODP partners; this update is available in the Post-IODP Planning section of iodp.org. The next IODP Forum meeting will take place in Wollongong, Australia, in October.

JOIDES Resolution Science Operator (JRSO): Katerina Petronotis presented operational updates from the JRSO. Expeditions 398 (Hellenic Arc Volcanic Field) drilled twelve sites in the Christiana, Santorini, and Kolumbo volcanic complexes and nearby basins to understand the volcanic history of the region. The pumice and tephra layers presented some technical issues, but recovery was good overall and the majority of the objectives were achieved. Katerina expressed appreciation to EPSP for quickly approving sites that were proposed while the expedition was at sea.

Expedition 399 (Building Blocks of Life, Atlantis Massif) had an original goal of deepening Hole U1309D. Instead, Site U1601 became the focus of the expedition, as it had good recovery and was dominated by serpentinized peridotites. The presence of asbestos minerals created safety challenges that resulted in needing to defer detailed core descriptions and sampling until after the expedition. The Expedition 399 returned to port four days early for professional cleaning as requested by Texas A&M University Environmental Health and Safety, Siem, and JRSO staff.

Katerina provided an update on COVID-19 protocols and the future schedule for the *JOIDES Resolution*. After the last expedition ends on August 2, 2024, the *JOIDES*

Resolution will demobilize. Most of the shipboard instruments will move to the IODP Gulf Coast Repository.

JOIDES Resolution Facility Board (JRFB): Larry Krissek reminded SEP that the JRFB had scheduled four expeditions for the *JOIDES Resolution* for FY24. Since then, Expedition 404 (Arctic-Atlantic Gateway Paleoclimate) had to be removed from the schedule due to the demobilization schedule of the *JOIDES Resolution*. Weather windows and ice conditions did not allow for other scheduling options.

Larry reviewed the statement of task for the JRFB Working Group on Virtual Expeditions (WG-VE), as well as the membership, and stated the final report from the group is posted on iodp.org. An important conclusion of the WG-VE was that the term “virtual expeditions” has different meanings and implications to different groups. Instead of competing with these assumptions, the WG-VE recommends using the term Ocean Drilling Legacy Assets Projects (LEAPs).

Larry presented the WG-VE recommendations for LEAPs with respect to scope, participation, proposals, evaluations, and implementation. LEAPs present an opportunity for focused multidisciplinary research using legacy assets at scales larger than conventional single or multi-PI research projects. They could encourage new involvement and participation from the community; provide priority access to core repositories; open new funding sources, resources, and partnerships; and enhance visibility of project outcomes. Next steps could involve a pilot project within the present IODP structure.

The most recent JRFB meeting was held in May 2023 in Washington, DC and online. Larry reviewed the JRFB membership and some of the consensus statements and action items. Particularly, the JRFB appreciates that IODP³ will accept proposals from scientists from all nations; the JRFB agreed to stop accepting new or revised proposals to the use the *JOIDES Resolution*; the JRFB asked the SSDB Advisory Committee to look at issues related to the data currently held in the SSDB post-IODP.

SEP participants asked about funding for LEAPs. The LEAPs process would help to provide access to data, cores, or other assets; it would not involve funding. Funding would need to come from other sources (e.g., funding agencies, PMOs). SEP participants asked how many LEAP pre-proposals might come to SEP to review in January. Larry and Charna replied that the number is not known as this is a new concept, but the assumption is that there would not be many.

National Science Foundation (NSF): Kevin Johnson provided an update from NSF's Ocean Sciences (OCE) Division, beginning with leadership changes. James McManus has started as the new OCE Division Director; Bob Houtman (Integrated Programs Section Head) has retired; and Jamie Allan has started phased retirement, with full retirement scheduled for the end of the current U.S. fiscal year. Kevin is the new lead for the Ocean Drilling Programs at NSF and bring experience sailing on the *JOIDES Resolution*, *Chikyu*, and other vessels to the position.

Kevin reviewed that the award model for the *JOIDES Resolution*. NSF provides \$48 million per year for the ship, with the remainder of the \$72 million needed annually coming from non-binding international partner contributions. NSF decided not to extend the cooperative agreement for the *JOIDES Resolution* from 2024 to 2028 because the current financial model was not viable and there has been a decrease in international contributions. Extending the cooperative agreement would have required a significant increase support from OCE, which would have negatively impacted the ocean science research community that OCE supports.

The *JOIDES Resolution* will demobilize at the end of FY2024. During the five-year period after demobilization, NSF will support a wind down of JRSO activities (e.g., post-cruise publications, data archiving, and core repositories). U.S.-owned cores will be kept at the current locations under the same governance while long-term storage discussions are underway.

Kevin stated that NSF recognizes the broad importance of scientific ocean drilling-enabled science and discussed the next steps forward. NSF will continue to invest in research using existing samples and data, and NSF is also committed to supporting early-career scientists. OCE has asked the National Academies of Sciences to conduct a new decadal survey, which will include a discussion of infrastructure and scientific ocean drilling. Kevin also said that workshops would be used for broad community input, and that there will be a Town Hall on July 6 at 2pm Eastern Daylight Time.

Overall, NSF would like for scientific ocean drilling to be a sustainable enterprise within their broader oceanographic community portfolio of activities. This path requires community input and developing a sustainable financial model. Science communities drive what research and infrastructure NSF funds. NSF needs strong proposals for scientific ocean drilling activities in order to continue to make the case for long-term and near-term investments, and to enable communications with leadership on the relevance of the program to society. NSF also wants to continue longstanding international partnerships through a new financially viable model.

SEP participants asked how NSF will maintain the technical expertise that is essential to scientific ocean drilling (e.g., engineering expertise). Kevin replied that NSF will unveil a new U.S. scientific ocean drilling program soon, so not all expertise will be lost. SEP participants asked if ODP (OCE Ocean Drilling Program) will begin funding research proposals, or if all proposals will continue to go to MGG (OCE Marine Geology and Geophysics Program). Kevin said that grants will still be handled by MGG, but communications between MGG and ODP is good and there could be cost sharing. There will be money to do the work. SEP participants asked for more details on the proposal pressure needed and who can submit. Kevin replied that proposals submitted to NSF must be led by a U.S. scientist, but they can include international collaboration. NSF also has bilateral agreements with several countries, which can make international funding easier.

SEP participants also asked for more details on planning workshops for determining U.S. priorities. Kevin said that community members have reached out to NSF with a workshop idea, which they are currently developing into a proposal. NSF could also request such a workshop through USSSP. Given that nothing is funded yet, a workshop probably won't happen until late this year or early next year. The community will be informed when a workshop is scheduled.

3. Proposal Reviews

Over the course of the meeting, the SEP reviewed one full proposal for the *JOIDES Resolution*; three preliminary proposals and two addendums for the mission-specific platforms; and two ancillary planning letters for the *Chikyu*. The review outcomes are in the table below.

ID	Type	PI	Short Title	Recommendation
708	Add5	Stein	Central Arctic Paleoceanography	Good for SF2050
730	Add	Partin	Sabine Bank Sea Level	Good for SF2050
992	Full2(Add)	Haeussler	Prince William Sound Subduction and Climate	Forward to JRFB
1008	Pre2	Gischler	Belize Barrier Reef Postglacial Sea-level	Revise to Full
1010	APL	Ikehara	JTRACK Deep-Time Paleoseismology	Revise to APL2
1011	Pre	Perez	Northeast Greenland Glaciated Margin	Decline
1012	Pre	Newton	North Sea Late Cenozoic Environments	Revise to Full
1013	APL	Fulton	JTRACK observatory redeployment	Holding Bin

4. Science Talk

Mike Weber (University of Bonn) provided an overview of Expedition 382 (Iceberg Alley and Subantarctic Ice and Ocean Dynamics), which took place in 2019 to investigate the long-term climate history of Antarctica, the response of polar ice sheets to changes in insolation and atmospheric CO₂, and the influence of global sea level on ice sheet evolution. Analysis of the data and samples began just as the COVID-19 pandemic began, temporarily delaying the start of some of the research.

Mike reviewed the goals, ongoing research, and major findings from the expedition. He described that the ice-ocean-atmosphere system is coupled between the hemispheres, and that the sea-level fingerprint in the Northern Hemisphere and ocean thermal forcing are the main drivers of Antarctic ice sheet stability. Expedition 382 retrieved the highest resolution and stratigraphically longest continuous records of ice-ocean-atmosphere variability near Antarctica. Results are showing that glacial sea-level low stands led to widespread dust deposition in the Southern Ocean, which fueled ocean productivity and active atmospheric CO₂ drawdown in the Subantarctic Zone. It also helped lower atmospheric CO₂ through intense sea-ice coverage and ocean stratification. The last five glacial terminations showed distinct peaks of Antarctic ice sheet mass loss during the preceding glacial period and throughout deglaciation.

5. Next Meeting and Thank You

Charna Meth will host the next SEP meeting at the University of California, San Diego and virtually on January 10-11, 2024.

Kathie and Tim thanked Chandranath Basak, Jason Chaytor, Patrick Fulton, Jess Hillman, Mark Kendrick, Beatrice Magnani, Nisha Nair, Jeremy Owens, Sandra Passchier, Molly Patterson, Rajeev Saraswat, and Derek Sawyer – who are all rotating off of SEP soon – for their hard work and contributions; Alessio Sanfilippo and the University of Pavia for hosting the meeting; the SSO for their organization and support; and the full SEP membership their participation.