# Science Evaluation Panel (SEP) Meeting
# June 18-19, 2024 – Helsinki, Finland, and Zoom

## Roster

### Science Subgroup

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|---|---|
| Barbara Balestra* | American University |
| Christoph Beier | University of Helsinki |
| Clara Bolton* | CEREGE |
| Anne Briais | Institut Universitaire Européen de la Mer |
| Gerald Dickens | University of Dublin |
| Elizabeth Griffith | Ohio State 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 |
| Benjamin Keisling+ | University of Texas at Austin |
| Adriane Lam* | Binghamton University, SUNY |
| 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 |
| Ken MacLeod+ | University of Missouri |
| Cecilia McHugh | Queens College, City University of New York |
| Rie Nakata | University of Tokyo |
| Hugo Olierook | Curtin University |
| 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 |
| Reed Scherer* | Northern Illinois University |
| Jason Sylvan | Texas A&M University |
| Kaustubh Thirumalai+ | University of Arizona |
| Mike Weber | University of Bonn |
| Jim Wright+ | Rutgers University |
| Kosei Yamaguchi | Toho University |
| Guoliang Zhang | Institute of Oceanology, Chinese Academy of Sciences |

### Site Subgroup

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|---|---|
| Brian Boston | Auburn University |
| Jason Chaytor* | U.S. Geological Survey |
| Laura De Santis | OGS |
| Irina Filina | University of Nebraska-Lincoln |

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| Jianhua Geng | Tongji University |
| Gilles Guerin | Columbia University |
| Jess Hillman | GNS Science |
| Maria Filomena Loreto | ISMAR |
| Gregory Mountain | Rutgers University |
| Nisha Nair | National Centre for Polar and Ocean Research |
| Robert Pockalny | University of Rhode Island |
| Jonas Preine* | University of Hamburg |
| Tim Reston | University of Birmingham |
| Derek Sawyer | Ohio State University |
| Nick Schofield | University of Aberdeen |
| Kazuya Shiraishi | JAMSTEC |
| Min Xu | Chinese Academy of Sciences |
| Yuzuru Yamamoto | Kobe University |
| Natalia Zakharova | Central Michigan University |

## Liaisons and Observers

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|---|---|
| Angelo Camerlenghi | ECORD Science Support & Advisory Committee |
| Nobu Eguchi | MarE3, JAMSTEC |
| Stephen Hesselbo | ICDP Science Advisory Group |
| Kevin Johnson | National Science Foundation |
| Masa Kinoshita | *Chikyu* IODP Board |
| Larry Krissek | *JOIDES Resolution* Facility Board |
| Erwan Le Ber | ECORD Science Operator |
| Charna Meth | IODP Science Support Office |
| Natsumi Okutsu | MarE3, JAMSTEC |
| Lisa Park Boush | ICDP Science Advisory Group |
| Michelle Penkrot | *JOIDES Resolution* Science Operator |
| Katerina Petronotis | *JOIDES Resolution* Science Operator |
| Ulla Röhl | Bremen Core Repository |
| Marisa Rydzy | ECORD Science Operator |
| Sanny Saito | MarE3, JAMSTEC |
| Sasha Turchyn | ECORD Facility Board |
| Tomas Wiersberg | International Continental Scientific Drilling Program |
| Michiko Yamamoto | 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

National Science Foundation (NSF): Kevin Johnson reviewed the current funding model for the *JOIDES Resolution*. He discussed that NSF is the majority funder of the *JOIDES Resolution*, providing $48 million per year through a cooperative agreement to TAMU. Non-binding international partner contributions provide the remainder of the operating costs, but the contributions have decreased from $16.5 million in FY2015 to a tentative commitment of $5 million for FY2024. Three complementary project proposals (CPPs) that occurred early in IODP added an additional $18 million and were essential for keeping the *JOIDES Resolution* operational throughout the program. Without additional CPPs and with waning international contributions, the current funding model has proved unsustainable, leading NSF to decide not to extend the cooperative agreement for the *JOIDES Resolution* beyond FY2024.

NSF remains committed to maintaining access to cores and related data for the U.S. and international science communities. U.S.-owned cores will be kept at current locations under the same governance arrangements for the next five years; longer-term storage will be discussed later. NSF also issued a Dear Colleague Letter to encourage the community to continue to use legacy core material.

Looking toward the next program, NSF recently issued a solicitation for proposals to operate the Scientific Ocean Drilling Coordination Office (SODCO). SODCO will plan, manage, and execute drilling activities, encourage technology innovations, and assist with meeting curatorial responsibilities. Proposals for expeditions will be submitted directly to NSF.

NSF has also initiated a number of planning activities. NSF solicited a new decadal survey from the National Academy of Sciences, Engineering, and Medicine (NASEM), who recently issued an interim report encouraging the continuation of scientific ocean drilling and emphasizing the program's importance to societally important questions. The FOCUS Workshops are ongoing and will identify priorities with the highest level of scientific urgency, and the FUTURE Workshop will identify technologies that will enable a diverse portfolio of subseafloor sampling approaches.

NSF continues to value international partnerships to conduct scientific ocean drilling expeditions and will continue to cooperate internationally when realistic in terms of

scope and budgetary constraints. NSF also recognizes the value of having a dedicated drilling vessel and is now engaged in steps toward new platform development, taking into consideration the community produced science-mission requirements (SMRs). NSF has formed a subcommittee of the Advisory Committee for Geosciences (AC-GEO) with six ocean drilling scientists who will facilitate an assessment of the SMRs and work with a contractor to determine construction and operations cost estimates of a new drilling platform. The subcommittee will engage with the government, industry, academia, and other stakeholders in completing their work.

Following Kevin's presentation, SEP asked how NSF envisions a proposal system working. Kevin responded that the new U.S. program will be driven by the community submitting drilling proposals directly to NSF, and NSF needs to see proposal pressure. Proposals that are recommended for award will coordinate operations through SODCO. SEP asked when NSF will decide if they will move forward with a new riserless vessel. Kevin responded that it could take at least 10 years for the complete process to evaluate if a ship should be built and to design and build the vessel. SEP asked about the fate of NSF-owned equipment currently on the *JOIDES Resolution*. Kevin explained that much of the equipment will be used to instrument the Gulf Coast Repository, but discussions are ongoing. SEP asked if SODCO will fund site survey cruises. Kevin stated that NSF will continue to fund these as they do now.

*JOIDES Resolution* Facility Board (JRFB): Larry Krissek reviewed consensus statements and action items from the JRFB's most recent meeting, summarizing that the meeting focused on how the JRFB could help with the transition to a new U.S. scientific ocean drilling program, as well as how to continue international collaboration. Specifically, the JRFB recommended that a body similar to the current JRFB be formed to advise the *JOIDES Resolution* Science Operator (JRSO) and IODP Science Support Office (SSO) during their wind down period; that an inclusive scientific drilling Forum be created to support collaborations between the post-IODP programs; that discussions continue around how legacy asset programs could operate in a collaborative way post-IODP; and that the future U.S. scientific ocean drilling program use the same geographic distribution for storing cores as currently exists. The JRFB asked the SSO continue to support the Curatorial Advisory Board (CAB) until a new entity is identified, and the JRFB approved the SSO's pilot program to archive SSDB data associated with implemented proposals. The JRFB also identified proposals at the JRFB with potentially high impact and low operational risk. The JRFB wrote special consensus statements expressing its extreme gratitude to the JRSO, and all who have served on and supported the JRFB, JRFB working groups, SEP, EPSP, and CAB, as well as the IODP curators and staff of the SSO.

SEP asked if NSF would accept any drilling proposals or only proposals that have already been reviewed by IODP, and how will those be reviewed. Larry responded that NSF will review any proposal submitted to them using the NSF system. Kevin added that the U.S. scientific ocean drilling program will take a mission-specific platform (MSP) approach, and platforms will be contracted through SODCO based on the need of the science. SEP asked if proponents can submit proposals simultaneously to multiple post-

IODP programs. Larry explained that to the best of his knowledge, this will be allowed as long as all rules for those programs are followed. SEP asked if a proposal submitted to NSF require a U.S. lead proponent. Kevin confirmed this is true.

*JOIDES Resolution* Science Operator (JRSO): Katerina Petronotis presented operational updates from the JRSO. Expedition 401 (Mediterranean-Atlantic Gateway Exchange) cored and logged four primary sites to evaluate the environmental causes and consequences of the Messinian Salinity Crisis. It was also the first Land-2-Sea project with future ICDP drilling expected to recover sediments on land in Spain and Morocco. Expedition 402 (Tyrrhenian Continental-Ocean Transition) cored and logged six primary sites to determine the kinematics and geometry of the extensional deformation in the Tyrrhenian Sea and to establish the timing and origin of the associated magmatism. The quantity and coarseness of the volcanics complicated operations, but recovery was good given the conditions. Expedition 403 (Eastern Fram Strait Paleo-Archive) is currently underway and is aiming to reconstruct variability of the East Spitsbergen Current. They started coring on June 14 and are currently experiencing ice-free conditions.

The JRSO will demobilize the *JOIDES Resolution* during August and September. They can accommodate limited visitor access from August 2-4, if prearranged. The shipowner (Sea1 Offshore) has not found alternate work for the *JOIDES Resolution* and will initiate paperwork to cold stack the vessel for six months if a clear path forward is not found.

Post-IODP (i.e., beginning October 2024), Texas A&M University expects to complete post-expedition work and publications, provide curatorial services, dispose of property, migrate data, and produce legacy documentation. They are also planning to provide an instrumented Guld Coast Repository using the instruments that will be returned to shore post-demobilization of the *JOIDES Resolution*. The facility should be operational by the spring of 2025. Katerina also provided operational statics for *JOIDES Resolution* Expeditions 349-402.

SEP asked about JRSO staff reductions. Katerina replied that the JRSO currently has about 125 people and by March 2025 she expects the staff to consist of about 50 people; details are still being finalized. SEP asked if the Gulf Coast Repository will be available for SPARCs. Katerina replied that it would be, but there would be fees for anyone using the instruments. Normal sample requests would not incur a cost, just as they currently don't.

ECORD Facility Board (EFB)/ECORD Science Operator (ESO): Sasha Turchyn discussed that EFB meetings for the past year have been held jointly with the *Chikyu* IODP Board (CIB). There has also been an interim MSP Facility Board (iMSP-FB) meeting in preparation for the transition to the International Ocean Drilling Programme (IODP$^3$). Sasha and Nobi Seama are jointly chairing the iMSP-FB and will jointly chair the regular MSP-FB for the first year of IODP$^3$. IODP$^3$ will also have a SEP, and it will be co-chaired by Tim Reston and Masataka Kinoshita. The IODP$^3$ proposal guidelines and submission procedures should be released in the next couple of months. Sasha

reminded SEP that IODP$^3$ will not have ancillary planning letters (APLs) as an option because MSP expeditions can be of any length. The next EFB meeting will take place in September at the University of Cambridge.

The goal is for IODP$^3$ to implement two to three expeditions per year. IODP Proposal 637 (New England Shelf Hydrogeology) will be the first expedition of IODP$^3$, and IODP$^3$ plans to also implement IODP Proposals 939 (Tohoku Petit-Spot Magmatism) and 1010 (JTRACK Deep-Time Paleoseismology) on the *Chikyu* in 2025.

Marisa Rydzy updated SEP on the onshore science party activities for Expedition 389 (Hawaiian Drowned Reefs), the second science meeting for Expedition 386 (Japan Trench Paleoseismology), and the need to retender a vessel for New England Hydrogeology (formally IODP Expedition 406, but now planned for IODP$^3$ in 2025). She also introduced Leo Barbosa as the new ESO Offshore Operations Manager.

*Chikyu* and *Chikyu* IODP Board (CIB) Report: Masataka Kinoshita (CIB Member) presented the report on behalf of Nobi Seama (CIB Chair) and himself. Masa reviewed the CIB membership and the consensus items from the CIB's most recent meeting, which was held virtually in March. During that meeting, the CIB recommended that Proposal 1013 be implemented as part of Expedition 405 (Tracking Tsunamigenic Slip Across the Japan Trench; JTRACK), and the CIB recommended that IODP$^3$ consider IODP Proposals 939 (Tohoku Petit-Spot Magmatism) and 1010 (JTRACK Deep-Time Paleoseismology) for future implementation.

Masa discussed the co-chief scientists, scientific objectives, and operational plan for Expedition 405 in more detail. The expedition will be approximately 106 days long, beginning in September. The science party will be divided into two teams, sailing at different times with a slight overlap, and the co-chiefs will sail in staggered schedules to provide continuity. Expedition 405 is also considering sailing an outreach officer. Lastly, the Masa presented the *Chikyu* operation plan through the end of Japan Fiscal Year 2025.

IODP Science Support Office (SSO): Charna Meth described the roles of the SSO and described how these SSO activities contributed to the development of LEAPs, including supporting the JRFB Working Group on Virtual Expeditions (WG-VE), developing the proposal guidelines, hosting the webinars, and creating new components for the IODP websites, Proposal Database (PDB), and Site Survey Databank (SSDB). She also reminded SEP members about the importance of the IODP confidentiality policy, particularly in this time of transition. Charna also provided statistics on drilling and LEAP proposals submitted to IODP.

## 3. Proposal Reviews

Over the course of the meeting, the SEP reviewed three full proposals and two preliminary proposals for mission-specific platforms (including one Land-2-Sea); ten

addenda transferring proposals from the JRFB to the EFB; one LEAP preliminary proposal; and one LEAP full proposal. The review outcomes are in the tables below.

**Reviewed new and revised proposals:**

| P# | Type | PI | Short Title | Recommendation |
|---|---|---|---|---|
| 998 | Full | Robert McKay | Antarctic Cryosphere Origins | Revise to Full2 |
| 1005 | Full2 | Peter Clift | Sunda Shelf Sea Level | External Review |
| 1012 | Full | Andrew Newton | North Sea Late Cenozoic Environments | Revise to Full2 |
| 1016 | Pre (L2S) | Morgan Jones | Svalbard Sedimentary Record L2S | Workshop |
| 1017 | Pre | Sara Benetti | British-Irish Ice Sheet history | Revise to Full |
| 004 | Full-LEAP | Timothy Herbert | N. Atlantic Stratigraphic Integration | Decline |
| 006 | Pre-LEAP | Sarah Friedman | N. Atlantic High-Res Magnetostratigraphy | Decline |

**Addenda reviewed for facility boards:**

| P# | Type | PI | Short Title |
|---|---|---|---|
| 567 | Add | Ann Dunlea | South Pacific Paleogene |
| 732 | Add3 | Robert Larter | Antarctic Peninsula Sediment Drifts |
| 839 | Add3 | Karsten Gohl | Amundsen Sea Ice Sheet History |
| 857C | Add2 | Claudia Bertoni | Messinian Evaporite Demise |
| 859 | Add4 | Paul Baker | Amazon Margin Drilling |
| 929 | Add3 | Steve | Blake Nose Subseafloor Life |
| 941 | Add3 | Yasuhiko Ohara | Godzilla Megamullion Lithosphere Architecture |
| 945 | Add4 | Luigi Jovane | Brazilian Equatorial Margin Paleoceanography |
| 967 | Add2 | Takeshi Sano | Ontong Java Nui LIP |
| 976 | Add3 | Hans Christian Larsen | N Iceland Rift Propagation |

## 5. Thank You

Kathie and Tim thanked the Christoph Beier, the University of Helsinki, and ECORD for hosting the meeting, the SSO for support of the meeting, and they thanked the SEP membership for their participation. Larry reiterated his thanks to past and present SEP

members and co-chairs, the curators, the JRSO, and the SSO for their part in making IODP a success.