

Over the past two years, the Integrated Ocean Drilling Program's (IODP) 25 international partners, the platform operators, and the scientific leadership of the Science Advisory Structure have come together to consider the IODP experience and design a management structure and business model for future operations that retains both the multi-platform capabilities and transformative science goals outlined in the new science plan "*Illuminating Earth's Past, Present, and Future: The International Ocean Discovery Program Science Plan for 2013-2023*" while addressing constraints facing the main financial sponsors. The framework presented here will be used as a guiding document by the Platform Providers (MEXT, ECORD, NSF) to develop more specific Memoranda of Understanding with their international partners for the new International Ocean Discovery Program.

Framework for International Ocean Discovery Program

IODP Program Management

1. The Science Plan "Illuminating Earth's Past, Present and Future" is the guiding scientific document for the new IODP.
2. A Support Office, funded through contributions to the U.S. Facility Board to support *JOIDES Resolution* operations, is intended to have the following tasks (dependent upon outcome of the solicitation process): support of the Science Advisory Structure (SAS) and associated meeting logistical support, support of IODP Forum, oversight of Site Survey Data Bank, maintenance of the IODP website, and publication of the journal 'Scientific Drilling'. The Support Office will handle drilling proposals for the *JOIDES Resolution*, *Chikyu*, and MSPs and may be utilized upon request by other platform providers.
3. Most other functions of the current Central Management Organization not included in Item #2 will be transferred to the Platform Providers and/or program partners (i.e., workshop proposals, data management, core curation, publications, engineering and technology development, and education and outreach).
4. A Project Partnership Office (PPO), which will be financially supported by MEXT/JAMSTEC, will be established to develop funding and collaborative partnerships for large-scale IODP initiatives utilizing *Chikyu* and conduct other relevant tasks. This PPO would also be available for use by other Platforms Providers to assist them in developing large-scale collaborations. The PPO will also provide support for riser proposals in SAS evaluation/nurturing process (mentioned in Item 21).
5. The IODP Forum is the custodian of the Science Plan and a venue for exchanging ideas and views on the scientific progress of the program. The Forum will also provide advice to IODP Facility Boards on Platform Provider activity. The IODP Forum is independent from the Science Advisory Structure and the Platform Provider Facility Boards. Members will include active community scientists, and representatives from funding agencies (to any platform), implementing organizations, and program member offices. The IODP Forum will also have liaisons from others interested in the IODP program (e.g., other large science programs, potential new members, etc.). The chair of the IODP Forum will be a well-recognized scientist who will be the face of the program and will discuss with the respective Facility Boards the

progress of the program toward completion of the Science Plan. The Chair of the IODP Forum will be in post by October 1, 2013.

Platform Provider Program Management

6. Individual Platform Providers contribute to IODP by fulfilling objectives identified in the Science Plan.
7. NSF will operate the *JOIDES Resolution* as an independent Platform Provider. ECORD will operate MSPs as an independent Platform Provider. MEXT/JAMSTEC will operate *Chikyu* as an independent Platform Provider.
8. Each Platform Provider will have its own Facility Board (FB) that will be responsible for the effective delivery of the Facility's contribution to the IODP Science Plan with the available resources.
9. The U.S. Facility Board will consist of (1) representatives from funding agencies contributing to *JOIDES Resolution* operations, (2) active leading members of the international scientific community, and (3) representatives from the *JOIDES Resolution* operator. The Chair of the US FB will be a well-recognized active scientist from the ocean drilling community. NSF will act in a coordinating role for the FB to facilitate meeting logistics. The U.S. FB will have liaisons from all major entities in the program. The US Facility Board will (1) schedule proposals for drilling based upon science priorities and optimal geographic distribution, (2) advise on long-term planning, (3) approve the Annual Facility Program Plan and (4) fund the Support Office.
10. The ECORD Facility Board will include leading scientists, representatives from the ECORD Science Operator, the Director of the ECORD Managing Agency, and representatives from ECORD/IODP funding agencies. The Board will be organized by EMA, with an ECORD scientist as Chair. The ECORD Facility Board will have liaisons from all major entities in the program. The ECORD Facility Board will primarily (1) schedule proposals for drilling based upon science priorities, optimal geographic distribution and costs, (2) assess the Annual ECORD plan and (3) advise on long-term planning.
11. The Chikyu IODP Board (CIB) will consist of (1) representatives from entities contributing to *Chikyu* operations, (2) leading members of the international scientific community, and (3) representatives from MEXT/JAMSTEC/CDEX. The CIB Chair will be selected from well-recognized scientists of the ocean drilling community. The CIB will have liaisons from all major entities in the program. The CIB will (1) advise on long-term *Chikyu* project planning, (2) schedule proposals for drilling based upon science priorities, engineering feasibilities and optimal geographic distribution, (3) approve the Annual Facility Program Plan, and (4) advise on activities of an entity to function as a Project Partnership Office (PPO).
12. The current curation and geographical distribution of cores will continue into the new program, with the goal to maintain a uniform sampling policy among all the IODP repositories. NSF/USIO intends to support all cores from the *JOIDES Resolution/Glomar Challenger* and MSPs located at the Gulf Coast Repository. In reciprocity, ECORD intends to support all cores from the *JOIDES Resolution/Glomar Challenger* and MSPs located at the Bremen Core Repository. JAMSTEC intends to support *Chikyu* cores wherever they are stored. NSF/USIO and ECORD intend to support the cores from the *JOIDES Resolution/Glomar Challenger* and from MSPs located at the Kochi Core Center, respectively. The repository

- heads will select members of the community to act as a Curatorial Advisory Board, which will act as an appeals board for issues associated with sample distribution and assist in reviewing and approving requests to sample permanent archives.
13. Data collection and archiving for each platform will be the responsibility of the Platform Provider.
 14. Publications including shipboard reports, the Scientific Prospectus, Preliminary Reports, and Proceedings volumes will be the responsibility of the Platform Provider. The Program encourages the Platform Providers to maintain common publication formats.

Program Exchange

15. Nations supporting platform(s) towards IODP Science Plan goals may have berths on *JOIDES Resolution*, *Chikyu*, MSP expeditions and other platforms through an exchange program agreed upon bilaterally between individual Platform Providers.
16. Lead proponents selected as Co-chief scientists, based upon programmatic or project need, will not count toward national or consortia quotas. This provision will be revisited yearly for the *JOIDES Resolution* and on a project-by-project basis for *Chikyu* to ensure that the science party size and/or member berthing quotas on either platform are not unduly affected should members increase their yearly contribution level to either the *JOIDES Resolution* or *Chikyu* partnerships or new members join either partnership.

Science Advisory Structure

17. The Proposal Evaluation Panel (PEP) is the key scientific panel that integrates the program and ensures scientific excellence in accordance with the Science Plan of IODP. Riserless/MSP proposals will be received and evaluated by the PEP twice/year. Riser proposals will be received by PEP in response to specific proposal calls. An ad hoc PEP breakout group, distinct from the four thematic breakout groups (with additional scientific and operational expertise supplied to PEP as required), will meet for evaluation of these riser proposals.
18. The Science Advisory Structure will also include the Environmental Protection and Safety Panel (EPSP) and the Site Characterization Panel (SCP).
19. The US FB will oversee the Proposal Evaluation Panel, the Environmental Protection and Safety Panel and the Site Characterization Panel. The current Terms of Reference will provide the basis for the Terms of Reference for these panels in the post-2013 program. The PEP, SCP and EPSP representatives will be staffed by the Program Member Offices using a to-be-determined quota system based primarily upon national/consortia contributions to the operations of the *JOIDES Resolution*, but overall programmatic contributions and scientific needs will also be taken into consideration.
20. The Implementing Organizations may establish and staff their own Technical Development Panels and Scientific Technical Panels to address the unique technical/analytical needs of

each platform. The Implementing Organizations are encouraged to exchange ideas and ensure best practices.

21. The Support Office identified in Item 2 will receive proposals for all platforms. Proposals will be forwarded to the Science Advisory Structure Panels, the Project Partnership Office identified in Item 4 (for the case of riser proposals), and to the Implementing Organizations for review of science and logistical support requirements.

JOIDES Resolution Planning and Project Architecture and Financial Contribution

22. Member contributions will be used to offset costs associated with operating the *JOIDES Resolution* and Support Office activities.
23. *JOIDES Resolution* members will include any entity providing at least \$3.0M USD/annum towards operation of the *JOIDES Resolution* and Support Office activities. This contribution provides representation on all SAS panels and two berths/expedition on the *JOIDES Resolution*.
24. Associate Members will include any entity that provides contributions of at least \$1M USD/annum for the operation of the *JOIDES Resolution* and Support Office activities. Levels of representation on SAS panels and berths on the *JOIDES Resolution* will be scaled accordingly.
25. Participants wishing to make a contribution of less than \$1M USD/annum may join via a consortium.
26. Participation levels for members and associate members on the *JOIDES Resolution* and SAS panels will be defined in the Annex to the Memorandum of Understanding (MoU) for each partner. Additional berths will be offered to Platform Providers through an exchange mechanism.
27. Co-funded projects will require a flexible approach to staffing.

ECORD MSP Planning and Project Architecture and Financial Contributions

28. ECORD will be responsible for funding and implementing Mission Specific Platform operations. In addition to its own funding, ECORD will encourage and help proponents to seek additional funding sources on a project basis, with the aim of offering more opportunities. Possible additional funding may come, *inter alia*, from the European Commission, partnership with industry, and specific funding at the national level.
29. ECORD will sign a Memorandum of Understanding with NSF that includes access to the *JOIDES Resolution* for ECORD scientists and in reciprocity access to MSPs for US scientists and scientists from *JOIDES Resolution* Members and Associate Members. Participation levels are to be defined in the Annex to the MoU signed between ECORD and the NSF. Additional places may be offered through an exchange mechanism. Monitoring of the exchanged berths will be the responsibility of the PMOs, in coordination with the IOs.
30. Access to MSPs will be offered to Japanese and *Chikyu* partner scientists through an exchange mechanism between berths on MSPs and *Chikyu*. Participation levels are to be defined in an Agreement document signed between ECORD and MEXT/JAMSTEC.
31. Co-funded projects will require a flexible approach to staffing.

Chikyu Planning and Project Architecture and Financial Contributions

32. The major portion of *Chikyu*'s operational time will continue to be allocated for scientific drilling. With flexible scheduling and dynamic geographical movement, she will conduct large riser projects, as well as ancillary shorter-term riserless projects of various scientific themes.
33. Large-scale project proposals for *Chikyu* will be formulated and nurtured from an early stage through workshops (scoping/project formulation) attended by SAS representatives, Implementing Organizations, and potential partners among others in addition to community scientists and engineers.
34. Operation costs of *Chikyu* will be supported through a newly formed *Chikyu partnership body (to be named)* and the *Chikyu* project teams/consortia.
35. Countries, research institutions, private organizations, universities or any other entities/consortia interested in *Chikyu* science activities are invited to join the *Chikyu partnership body*. *Chikyu* partnership members will need to pay a minimum participation fee of Japanese Yen 25,000,000*/annum, which will provide one berth on each *Chikyu* IODP expedition, as well as capacity-building opportunities at Kochi Core Center. Other benefits such as more berths on *Chikyu*, options for choosing berths on the other two platforms (*JOIDES Resolution*/MSP), and CIB representation may be obtainable, subject to availability, with multiple units of participation [Details to be defined and formulated in separate Memorandums]. (*equivalent to USD 312.5 K based on the exchanged rate: 1 USD=80 Yen)
36. Countries, research institutions, private organizations, universities, foundations or any other entities/consortia interested in supporting *Chikyu* science activities are encouraged to join the relevant *Chikyu* project team/consortium. Benefits of project partners will be determined through bilateral negotiations with each project team, based on levels of their contributions [Details to be defined in the Memorandums]. For large-scale initiatives, an international consortium may be formed in order to maximize financial, intellectual and engineering resources.

Transition

1. The Integrated Ocean Drilling Program Science Advisory Structure, with its current panels and representation quotas, will be used to evaluate and prioritize proposals through September 30, 2013. SIPCOM will cease to exist after September 30, 2013.
2. IODP Council will continue as the program authority through September 30, 2013. After that date, IODP Council will be disbanded.
3. IWG+ will stay in existence until the operational framework of the new program is fully implemented.
4. Facility Boards will be initiated prior to the start of the new program and may need to work closely with SIPCOM during the period of overlap.