

IODP Forum Meeting #2
8-10 July 2015, ANU, Canberra, Australia
Minutes v4 31 August 2015
Approved by Email 14 September 2015

Note: Throughout these minutes, “IODP” is used specifically as the acronym for the new International Ocean Discovery Program. When referring to the 2003-2013 Integrated Ocean Drilling Program, the shorthand “old IODP” is used. There is one exception to this convention, in a single reference to the central management organization in the old IODP, IODP-MI.

Agenda Item 1: Introductory Matters

After Forum Chair Keir Becker called the meeting to order, host Dr. Neville Exon described meeting logistics including plans for the meeting dinner evening of 8 July. Meeting participants introduced themselves and an updated roster is appended to these minutes.

Becker then summarized the agenda, which included several main focus items as follows:

- 1) As at the first Forum meeting, a review of the mid-term renewal efforts that will be required in most IODP countries, with an aim to establishing how, what, and when the Forum can contribute to those efforts.
- 2) Continuing Forum assessment of IODP progress towards addressing the themes and challenges of the new Science Plan, based partly on the portfolio of IODP programs already scheduled and proposal pressure at Facility Boards (FB’s) and the Science Evaluation Panel (SEP), but also including the first presentations of IODP science results to date from completed JR IODP Expeditions in the South China Sea (SCS), Izu-Bonin-Mariana Arc (IBM), and Indian Ocean monsoon regions.
- 3) As planned at the first Forum meeting, a review of education and outreach (E&O) efforts across IODP.
- 4) Reviewing marine seismic site survey issues, partly in response to a consensus statement forwarded from the SEP meeting the previous week.

Becker asked if any participants wanted to propose additional agenda items, but none were suggested. The Forum then accepted the agenda for its second meeting:

Forum Consensus 15-01: The IODP Forum approves the agenda for its second meeting at the Australian National University, Canberra, Australia, 8-10 July, 2015.

Becker then briefly reviewed procedures he would use in chairing the meeting, including a few important basic principles from Robert’s Rules of Order, even though the Forum Terms of Reference (ToR) do not state that Robert’s Rules should be used. He noted that the ToR stated that Forum decisions are to be reached by consensus, described what is meant by consensus and how potential consensus statements would be presented and verified, and confirmed that every meeting participant would count in terms of reaching consensus.

Agenda Item 2: Agency/Operator Updates Aside from Mid-Term Renewal Plans

The NSF update from J. Allan highlighted the NSF-Ocean Sciences response to the “Sea Change” Decadal Survey of Ocean Sciences report released early in 2015. As that has major implications for US JOIDES Resolution (JR) mid-term renewal plans, it is summarized below under Agenda Item 4. Allan also reported on the 5-year award of a new USSSP contract to Lamont-Doherty Geological Observatory, led by Carl Brenner and described further under Agenda Item 3. Finally, he described plans for a 3rd-year contractually mandated review of the performance of the JRSO at Texas A & M University under the cooperative agreement from NSF. This will occur in early 2016, with a week-long visit by the NSF review committee to the JRSO. The review committee will include about eight scientists, including two from the JRFB. The review will begin with input from co-chief scientists of JR IODP expeditions, comparable to co-chief reviews that were formerly held during ODP. The committee will be considered an NSF panel, and its report will be submitted in confidence to NSF, who plan to share the report with JR partners. NSF will use the panel report in deciding whether to re-compete or renew the cooperative agreement with the current JRSO at Texas A&M University.

For MEXT, E. Sato reported on recent personnel changes as of 1 April, including his appointment to succeed Y. Kimura as Director for Deep Sea Research, as well as appointment of a new Director General for the MEXT Research and Development Bureau, M. Tanaka. He summarized a 2014 National Science Council report that endorsed riser operations to deepen the NanTroSEIZE deep riser hole C0002 in the next two years, with other approaches to be discussed after two years. Finally, he reviewed the tight MEXT budget situation for Chikyu operations from JFY 2011-2015, and described several mechanisms recommended by the Ministry of Finance to potentially reduce Chikyu base costs.

In the ECORD Management Agency (EMA) report, G. Camoin reviewed the range of financial contribution levels for the 17 current ECORD members and the potential for in-kind contributions (IKC's). He reported optimism about Spain rejoining ECORD at a significant contribution level and described ECORD contacts with potential new members Turkey and Russia. He also highlighted the success of the ECORD-supported MagellanPlus workshops and noted that ECORD plans to continue that support. Finally, he noted the dates of the next annual ECORD Council/ESSAC meeting, 26-29 October, 2015. In response to a question from J. Austin, he mentioned some issues in getting shipboard participant nominations from some ECORD members as well as in augmenting visibility of the program in some of the ECORD members with smaller financial contributions. There was some discussion about exploring the potential of philanthropy to augment ECORD's financial support.

In the JRSO report, B. Clement reviewed recent JR operational successes. He discussed potential clearance issues for the upcoming Sumatra expedition, specifically for sites in Indonesian waters, but he indicated much of the proposed work could be completed in international waters if Indonesian clearance is not granted. He also mentioned the effects of the Nagoya Protocol in inhibiting microbiological sampling for sites in any national waters. In discussion, S. Humphris pointed out that the best solution involves advance contact and direct collaboration of shipboard scientists with scientists in whose national waters drilling may be conducted.

In the CDEX report, S. Kuramoto highlighted plans for the upcoming 10-year anniversary of D/V Chikyu, including several events in November. He explained the two-year (2014-2015) hiatus in Chikyu IODP operations, largely attributed to the effect of unusually prolonged negotiations for non-IODP work offshore India and finally conducting it this year. He then

described plans to resume IODP work in 2016 with the NanTroSEIZE C0010 riserless observatory work originally planned for 2015 and a 2017 riserless expedition still to be decided, followed by resumption of NanTroSEIZE riser operations at the deep riser site C0002 in 2018. Fulfilling these plans probably requires additional financial contributions from conducting non-IODP work, some of which is still to be negotiated. In response to a question from N. Exon, Kuramoto confirmed that this plan means a possible CPP at the Lord Howe Rise could not be conducted before 2019. He also mentioned the upcoming launch of a new JAMSTEC ship, R/V Kaimei, which will be capable of several options for marine seismic data acquisition in support of IODP or other scientific objectives.

For ESO, R. Gatliff summarized planning for 4 MSP operations to be conducted in 2015-2018:

- 1) the Atlantis Massif expedition in late 2015 using both MEBO and the BGS Rock Drill from the British ship RRS James Cook, accepted by ECORD as an IKC from the UK;
- 2) Chicxulub impact crater drilling in 2016 using a lift boat, with the ECORD contribution limited to \$8.5M, a \$1M contribution from ICDP in final negotiations, and ongoing negotiations for a potential IKC from Mexico;
- 3) the Antarctic Cenozoic Paleoclimate project in early 2018 (austral summer), using a seafloor drill potentially from the US polar research ship N.B. Palmer; and
- 4) the ACEX-2 program later in 2018 (July-September), with an ECORD cost cap of \$15M, one icebreaker secured as an IKC, and ongoing negotiations to secure two more icebreakers as IKC's.

Gatliff also described some of the wide array of coring and measurement tools that can be used on MSP expeditions. In discussion, there was agreement that the IODP community may need to be made more aware of all the MSP technological possibilities, so the Forum registered the following consensus statement:

Forum Consensus 15-02: The Forum notes that MSP technology is rapidly evolving; new tools to be used in the upcoming MSP schedule include two different rock drills, associated (and newly developed) logging capability for those drills. Furthermore, a variety of “in kind contributions” (e.g., icebreakers, support vessels) are being negotiated. As a result, Forum concludes that the IODP scientific community may need to be made more fully aware of all the viable, and in some cases evolving, MSP operations. The Forum suggests that ECORD and ESO publicize the range of MSP possibilities in venues like the ECORD Newsletter and the ESO web site (<http://www.eso.ecord.org/expeditions/msp.php>).

Agenda Item 3: PMO Updates

As mentioned in the NSF report, there is a new USSSP office at LDEO under a five-year cooperative agreement with NSF. The new USSSP Director, C. Brenner, summarized the ongoing transition from the former USSSP program at the Consortium for Ocean Leadership, which is still finishing under a no-cost extension. With one exception, LDEO USSSP personnel are in place, the exception being a position for education and outreach to be filled within the next few months. Brenner described plans to (a) continue many elements of the current education and outreach program, and (b) modify the make-up of USAC with a somewhat smaller core membership but drawing in a larger range of outside expertise on an ad-hoc basis. He also described (1) an ongoing search for a new USAC chair, to be in place

by 1 October 2015, and (2) plans to shift to an online process for many USAC functions such as workshop proposal reviews and applications for shipboard participation.

For J-DESC, H. Nishi summarized the participation history of Japanese scientists on recent IODP expeditions, J-DESC workshop activities, and J-DESC education and outreach activities.

ANZIC and China made their reports in the context of Agenda Item 4 immediately below.

Agenda Item 4: Plans for Mid-Term IODP Renewal

As context, at the first Forum meeting, there was a thorough review of plans for mid-term renewals in all IODP countries, mostly to take place as of 2018-2019. At that review, a majority of IODP country representatives reported similar processes and criteria for renewal. For the Platform Providers, these plans include some sort of internal country or consortium review occurring in 2017, and a mix of criteria for successful renewal involving both good science results measured against the Science Plan and success of their financial models for platform operations. The IODP partner with the most imminent renewal process was ANZIC, so there was particular interest at the second Forum meeting in their prospects.

As noted above, the release of the “Sea Change” US Decadal Survey of Ocean Sciences report in early 2015, followed by the formal NSF Division of Ocean Sciences response in May, were the major renewal-related events since the first Forum meeting. These documents are widely available so will not be reviewed in any detail in these minutes. As summarized by J. Allan, NSF accepted the recommendations of the report, which were centered on restoring a healthier balance between research and infrastructure funding within the Division of Ocean Sciences. The report recommended reducing infrastructure costs to NSF for all three major Ocean Sciences assets, including the US research fleet, JR, and the Ocean Observatories Initiative. IODP and JR fared quite well, being judged of very high relevance to ocean science priorities identified in the report. Allan reported that the recommended initial 10% cut in JR infrastructure costs to the US has already been met through greater efficiencies in the JR operating budget and ship track, as well as NSF assuming risk for changes in fuel costs and major drillstring losses. Allan further noted that a total reduction of about \$8M in annual operational costs has been made in the last several years through these efficiencies. There is also additional income to Ocean Sciences from CPP expeditions, with some proportion of that income being returned to the Division to help support core research. Allan reported that this model can be expected to hold successfully through the mid-term renewal, with at least four and quite possibly five JR expeditions per year.

Allan showed a timeline for the US renewal effort that will involve a US community workshop sometime in 2017, and reports to the National Science Board starting in spring 2018. Allan emphasized that, to successfully justify mid-term renewal of US JR operations, NSF will need JR partner commitments to increase in the post-renewal financial model. Currently, partner base contributions provide about 1/4 of the JR operational costs, and NSF will seek for the second phase of the new IODP to increase the base contribution level so that it provides at least 1/3 of the JR operational costs, similar to the proportion at the end of ODP. In addition, NSF aims to increase the number of US scientists who sail on JR. Thus, NSF’s position is that increases in partner contributions will be required in order to maintain current quotas of partner shipboard participants for post-renewal JR operations. In response to a question from J. Austin, Allan noted that achieving these goals will require formal

renegotiation of MOU's with JR partners in early 2018, with preliminary negotiations beginning even sooner.

E. Sato updated the Forum on the expected renewal process within Japan. He noted that an internal Japanese review would probably occur some time in 2018, in terms of both support for Chikyu and participation of Japanese scientists in all international aspects of IODP. He also noted that there are annual reviews that are sent to the Minister of MEXT. He noted that no funding carryover will be allowed beyond the March 31, 2019 end of the current phase of Chikyu operations. In response to a question from G. Camoin, Sato noted that a decision on continuing Chikyu IODP operation into the next phase of IODP would probably occur in 2018.

For ECORD, G. Camoin noted that 12 of the 17 current members are committed through FY2018, four through FY2016, and the last committed only through FY2015. He provided further details as to the nature of the 2017 ECORD review that he had anticipated during discussions at the first Forum meeting. Plans are to appoint an ECORD Evaluation Committee of 7-10 members in January of 2017, with the committee to hold one formal meeting likely in Bremen. The committee will be expected to provide a final report to ECORD member national funding agencies by mid-2017, with renewal funding decisions expected by late 2017 or early 2018. As Camoin noted at the first Forum meeting, the review will focus on three aspects: the impact of MSP science in relation to the Science Plan, the scientific benefit of ECORD participation in all IODP operations (i.e., including JR and Chikyu), and efficiencies of the MSP/ECORD management and finances.

N. Exon reported on the Australian renewal activities, which are on a much shorter timeline given that current funding is assured only through the end of the present year. Australian members of ANZIC have proposed a five-year renewal under the assumption that partnership contributions would remain as in the current phase. This is currently under review, with good external reviews already in hand, and funding decisions expected later this year. He noted that one potential outcome is a positive funding decision, but for a term of less than 5 years at an annual level of \$3M Australian, with about $\frac{3}{4}$ coming from the Australian Research Council and the remainder from university partners. The role of New Zealand is also to be renegotiated. Within New Zealand, contributions to ANZIC are assured until the end of 2017, with negotiations for future years still to be conducted.

P. Wang reported on the vision for renewal within China. He noted that there are efforts underway to raise the visibility of scientific ocean drilling in China, and the three SCS CPP expeditions are very helpful in this regard. He expressed confidence that China will increase its contribution to IODP, and also noted that China wants to explore options that include concrete contributions within China in addition to simply increasing partnership fees. As three possible examples, Wang noted that China might want to consider building a new core repository, providing MSP's as additional contributions, and/or building and contributing a new generation of scientific drilling vessel. With respect to the last, D. Kroon suggested that a possible new drill ship should be designed with deep crustal drilling capabilities intermediate between JR and Chikyu capabilities. J. Allan noted that the new IODP could have greater flexibility to accept such contributions, and J. Austin suggested other options for Chinese contributions such as engineering support for new systems, perhaps in conjunction with industry.

After the presentations from IODP partners on their specific renewal plans, there was a discussion as to how the Forum could contribute to these efforts. There was general

agreement that summaries of IODP scientific progress produced by the Forum could be very helpful in the separate renewal processes. This discussion was revisited – producing a formal consensus statement – after presentations by the Forum, SEP, and Facility Board chairs on IODP progress to date toward the Science Plan described in the section below.

Agenda Items 5-7: Progress Toward Achieving the IODP Science Plan

As noted at the first Forum meeting, probably the most important aspect of the general purpose and mandate of the IODP Forum is to assess program-wide IODP progress towards addressing the themes and challenges of the new Science Plan. As at the first Forum meeting, this section of the agenda included presentations by the Forum chair and SEP co-chair, followed by updates about scheduling decisions made at the three spring FB meetings. Details of the last are or will be available in the respective FB minutes, so are not repeated here. The first Forum meeting occurred just two months after the first IODP expedition, too early to assess any scientific results. At this meeting fourteen months later, the Forum received its first summaries of IODP preliminary results, presented by P. Wang for the first South China Sea expedition, R. Arculus for the three IBM expeditions, and B. Clement for three very recent Indian Ocean monsoon expeditions.

The Forum chair's summary focused on the balance of scheduled expeditions and proposal pressure mapped onto the four main themes and fourteen challenges of the Science Plan, but less than two years into the program did not involve assessment of scientific results of completed IODP drilling. That initial summary indicated reasonably good coverage of the SP themes and challenges, with only one challenge (Limits of Subseafloor Life within the Biosphere Frontiers theme) under-represented in the expeditions now scheduled through 2018. At the first Forum meeting, most IODP agency representatives stated that, for successful mid-term renewal, it would not be considered necessary for IODP to have addressed every challenge in the Science Plan. Thus, the coverage by scheduled programs and proposals of IODP themes and challenges would seem to indicate even better IODP performance toward achieving the science plan than deemed necessary for mid-term renewal. In discussion, D. Kroon and J. Austin emphasized that, as renewal approaches, the Forum will need not only to map expeditions and proposals onto and synthesize results within Science Plan challenges, but also to assess what important scientific opportunities remain within the themes and challenges for the second five years of IODP.

SEP co-chair D. Kroon briefly updated the Forum on proposal decisions at the last two SEP meetings, described the greatly simplified site data classification scheme adopted at the SEP meeting a week earlier, and reviewed the large rotation of SEP membership that will occur before the next meeting in January 2016 (including his replacement as co-chair still to be named). The SEP has the right to (a) advise the Facility Boards and Forum if they perceive weaknesses in the proposal pool and (b) make suggestions to stimulate proposal pressure to address those weaknesses. He noted that SEP has no suggestions in that regard at this Forum meeting, consistent with the Forum chair's assessment of reasonable balance of expeditions and proposals across the themes and challenges of the Science Plan.

ECORD FB chair K. Gohl summarized upcoming changes in the EFB membership, including the naming of G. Lericolais as new chair as of 1 January 2016. He summarized MSP scheduling decisions made to date by the EFB, including the four 2015-2018 expeditions that had been described earlier by R. Gatliff of ESO. He discussed the financial constraints that require a balance of low-cost to expensive expeditions in order to achieve the ECORD goal

of conducting one MSP expedition per year in IODP. He also projected how that goal might be achieved generically for the second five years of IODP, with three low-cost expeditions in 2019, 2020, and 2022 allowing for one medium-cost expedition in 2021 and one more expensive expedition in 2023. For the low-cost expeditions, provisional reservations have been made for MeBo70/200 and the BGS RD-2 in 2020 and 2022, and ECORD is aiming for research vessel IKC's for potential seabed drill and long piston-coring programs.

New CIB chair Y. Tatsumi was not in attendance, so N. Eguchi summarized the results of the two CIB meetings that had been held since the first Forum meeting, CIB#2 in July 2014 and CIB#3 in March 2015. He presented the more important consensus statements from both meetings. These included recommendations for the remaining Chikyu IODP schedule up to mid-term renewal: a NanTroSEIZE riserless observatory expedition now rescheduled for spring 2016, another riserless expedition in 2017 to be named, and resumption of NanTroSEIZE riser operations in the deep C0002 site in 2018. Three other major riser programs are now at CIB (CRISP, IBM, and Hikurangi) and will be considered active with no implied priority and no project coordination team (PCT) activity until an appropriate window for Chikyu riser drilling opens up. The Chikyu IODP funding situation dictated a CIB consensus that no further riser drilling proposals could be accepted unless they are CPP proposals. In 2014, CIB agreed to form a mantle drilling working group but implementation has been delayed. Finally, Eguchi summarized changes in the CIB membership, including replacement of G. Kimura as chair by Y. Tatsumi as of 1 April 2015.

JRFB chair S. Humphris updated the Forum on outcomes of the mid-May JRFB meeting. These included schedule recommendations for 4 programs in FY17-FY18: Mariana Convergent Margin and South Chamorro Seamount, a two-expedition South China Sea Rifted Margin CPP, Australia Cretaceous Climate and Tectonics as first expedition in FY18, and Hikurangi Subduction Margin later in FY18. Humphris briefly described the objectives of each of these programs. An important expectation from scheduling two CPP expeditions in FY17 is that there will be ten months of operations in both FY18 and FY19. The schedule allows insertion of additional FY18 expeditions in the Australia-New Zealand region. It also indicates the beginning of JR's move eastward across the South Pacific to the South Atlantic as previously stated by JRFB. The JRFB reaffirmed that projected cruise track, anticipating beginning to drill in the South Atlantic in FY19 with an expectation of a "few years" of operations in the Atlantic and its marginal seas. Humphris concluded with an update on JRFB membership, including her replacement as chair by A. Koppers as of 1 October 2015.

As noted above, during earlier discussions after presentations from NSF, MEXT, and ECORD, those agencies agreed that summaries of IODP scientific progress produced by the Forum could be very helpful in their renewal processes. Further discussions were focused on refining the nature of the summaries to be produced by the Forum and a working plan for producing them. These discussions continued over two days following the progress updates from the Forum, SEP, and Facility Board chairs, and resulted in the following consensus:

Forum Consensus 15-03: As the ~2018-2019 mid-term renewal of the International Ocean Discovery Program approaches, the Forum recommends the preparation of 1-2 page, summaries of recent expedition-based achievements vs. further opportunities for each of the 14 challenges of the IODP Science Plan. These summaries should be written in a style that is appropriate to target funding managers, non-specialists and the general public. If possible, these summaries should be produced in time to distribute in 2017 to all national and consortium members engaged in IODP-renewal processes. Possible mechanisms to produce these summaries might range from: (a) <1 day meetings of Co-

Chief scientists and outside experts, in association with major conferences such as AGU, EGU, or JpGU, to (b) synthesis mini-workshops (not more than ~ 6-10 participants) for major IODP efforts, such as the multi-expedition investigation of the Asian and Indian Ocean monsoons. The Forum strongly supports efforts by national and consortium IODP offices to consider providing appropriate levels of financial support for these efforts, to take place over the next 12-18 months.

As this consensus statement was being accepted, J. Allan noted that the “co-chief review” section of the planned 2016 NSF review of the JRSO described above would present an excellent opportunity to ask co-chief scientists of JR expeditions to produce initial drafts of expedition accomplishments that the Forum could modify for its summaries directed toward renewal.

Agenda Item 8: Overarching Educational and Outreach (E & O)Activities

In the new Program structure, public relations and educational activities are mainly conducted and funded within individual IODP countries or consortia. The Forum mandate includes “stimulating overarching public relations and educational activities,” but no control of any funding for these activities. For that reason, the first Forum meeting had identified a review of education and outreach across IODP as a special focus of this second Forum meeting. This section of the agenda started with reviews of education and outreach in each of the IODP countries or consortia, and then moved on to a discussion as to whether there could and should be a more overarching approach across the program.

N. Hallmann of EMA presented a comprehensive overview of the extensive ECORD E & O activities. ECORD resources include a range of printed and electronic documents and internet presence. Activities in 2015 included or will include booths and Town Halls at EGU and AGU meeting, support to the Japan Geoscience Union (JpGU) meeting, and a press conference for Exp 357. Activities planned for 2016 include a press conference for the Chicxulub expedition, and booths and related activities at EGU and AGU again, plus the International Coral Reef Symposium (ICRS) in Hawaii in June and International Geological Congress (IGC) in South Africa in late August-early September. ECORD also conducts summer schools, a distinguished lecturer program, and ECORD School of Rock, plus it administers scholarships and small research grants. The direct budget for these activities is about \$50k/yr, although it does not include salary costs or host support provided for various activities. J. Austin asked if the IGC in South Africa in 2016 represented a good opportunity to showcase IODP with possible South African membership in mind. This generated considerable discussion and support, especially given that South Africa is already an ICDP member. The Forum came to consensus to endorse a strong IODP presence at the 2016 IGC meeting:

Forum Consensus 15-04: The IODP Forum recommends that all IODP Platform Providers coordinate their actions towards the development of joint activities at the occasion of the International Geological Congress which will be held on August 27th-September 4th, 2016 in Cape Town, South Africa. Activities should include the organization of an IODP-ICDP booth, an IODP-related science session, and membership drive for South Africa.

S. Kuramoto described CDEX E & O activities, and it was noted later that J-DESC will report on its E & O activities at the next Forum meeting. Recent CDEX activities included

booths at major meetings like Fall AGU, JpGU, and the 2015 UN world conference in Sendai on disaster risk reduction. CDEX also has an extensive media presence within Japan, and is planning a major redesign of its web site. Finally, Kuramoto described plans for the 10th anniversary celebration for Chikyu in November, noting that it will provide a major opportunity for increasing Chikyu visibility in Japan.

C. Brenner then described the new USSSP approach to E & O. He noted the two have generally been lumped together in the US, but he considers education more “mature” than outreach and wants to focus on the outreach aspects. In that regard, USSSP will continue to support the School of Rock, graduate student fellowships, the Ocean Discovery Lecture Series (formerly called Distinguished Lecturer), the Onboard Outreach program (formerly called Educator at Sea), and the joidesresolution.org web site. He also described a new initiative to collaborate with the American Museum of Natural History by providing US IODP scientists to participate in their Milstein Science Series. He also emphasized a new initiative in social media outreach, noting that, to be successful, it must direct users to deeper content.

S. Tuo then summarized recent Chinese E & O activities, which were mostly focused on the opportunities represented by the first South China Sea CPP. The expedition itself represented a good opportunity for young Chinese geoscientists. There was good public and press interest, although there was also some misinformation in one or two press reports. In discussion of the last, J. Allan noted that there is no central authority in IODP with any kind of control over outreach. B. Clement noted that the JRSO is working on a primer in support of organizing communications to press and public about JR expeditions.

N. Exon and R. McKay then reported on E & O activities within ANZIC. IODP is not well enough known by some important groups in Australia or New Zealand, so a serious approach will be required to make it more visible. Toward that end, ANZIC will take advantage of the present and upcoming JR presence in the region. For example, a VIP group of 150-200 will be visiting JR while in Fremantle this month. The following Indonesian Throughflow expedition will represent a good opportunity to engage media, public, and industry interest, and Australian co-chief scientist S. Gallagher will coordinate all media contact.

N. Hallmann closed the presentations with a perspective from the ECORD E & O Task Force that suggested a need for a new IODP “umbrella” for overarching E & O. She noted that E & O directors from IODP partners are invited to the annual meeting of the ECORD E & O Task Force. The stated aim of a more overarching approach would be to increase the visibility of all IODP members as part of an international science program by having common goals, E & O strategies, and resources. The last could include the IODP website, the journal Scientific Drilling, common IODP brochures, and core replicas. (In the following agenda section, H. Given noted that the task description from NSF for the Science Support Office provision of www.iodp.org does not include an E & O aspect.) Hallmann proposed that there should be regular communication among all partner E & O personnel to coordinate E & O activities across the program at no additional cost and to exchange opportunities. She also suggested that there should be a review of IODP E & O activities at every Forum meeting.

In subsequent discussion, there seemed to be good agreement on the value of overarching education and outreach throughout IODP, but some uncertainty as to the best approaches. J. Allan suggested that the PMO’s need to meet to exchange best practices, and that this could occur either within the Forum as specific agenda items or as a separate meeting associated with the Forum. K. Becker noted that one reason three days were allocated for this Forum

meeting was for the possibility of a half-day PMO meeting, but after discussion with NSF and USSSP it was decided it was better to fold those agenda items into the full Forum meeting. There were differing opinions expressed as to whether separate PMO meetings would be required, but there was agreement that PMO-related agenda items should be included in the Forum agenda and that there should be opportunities at the Forum for the PMO's, platform Science Operators, and Science Support Office to exchange ideas and discuss issues regarding expedition staffing and panel nominations. C. Brenner highlighted the importance of continuing communication between meetings, plus sharing techniques as well as the message. N. Exon emphasized the use of two-page summaries, as are being produced by ANZIC, e.g., to highlight current IODP drilling in Australasia. J. Behrmann suggested that streamlining the E & O communication process is important, and that the Forum could be a useful vehicle toward that end. S. Humphris endorsed the idea of a general IODP brochure, but noted that beyond that, approaches would probably be different in each IODP member country. The net outcome of the discussion was endorsement of the concept that each and every Forum meeting should include a major agenda item on education and outreach across IODP, regardless of whether PMO meetings are also reinstated. This was stated in the following consensus statement:

Forum Consensus 15-05: A thorough review of education and outreach activities across IODP should be a major agenda item for each future Forum meeting, with the aim of better coordination of these activities and identifying opportunities for collaboration.

Agenda Item 9: Effectiveness of IODP web site

The specific Forum mandate includes “fostering effectiveness of the IODP web site by working with the Support Office.” At the first Forum meeting, participants registered a consensus of appreciation for the effectiveness of the site as transitioned by the Science Support Office (SSO) from the former host location at IODP-MI. At this meeting, SSO Director H. Given described a plan included in the FY16 SSO Program Plan approved by JRFB and NSF to revamp and simplify the site and upgrade the content management system. This is urgently required because the current content management system is obsolete and there is still too much unneeded or redundant content carried over from the old IODP. She reviewed the wording of the SSO cooperative agreement that describes the web site task, noting that it focuses on IODP planning and specifically does not include an E & O component. Formal approval of the site redesign plan rests with the JRFB, but Forum participants were in general agreement with the plan. In response to questions about preserving legacy documents from the old IODP, Given assured the Forum that an archive would be maintained of all the important 2003-2013 IODP documents.

Agenda Item 10: Coordination among Facility Boards and Platform Providers

The Forum mandate lists a number of aspects of coordination among Facility Boards and Platform Providers for which the Forum might want to comment. There were very few comments made about the listed matters, but this section of the agenda allowed for important discussion on two other important program-wide matters. The first was the impact on IODP of recent initiatives for data publishing when publishing scientific papers. B. Clement had introduced this at the May JRFB meeting, referring to a recent statement by the “Coalition on Publishing Data in the Earth and Space Sciences” that includes many prominent scientific

publishers and organizations such as AGU and EGU (see www.copdess.org). He introduced it again at the Forum meeting, showing a summary table of eight standards and three levels of “Transparency and Openness Promotion” (TOP) guidelines recently published by Nosek et al in Science. He noted that, while ODP was an early leader in open data access, the new guidelines involve a significant new cost in terms of publishing data in machine-discoverable, “persistent” databases. He also noted that the JRSO has submitted a proposal with COL and LDEO to migrate to this kind of “deep” archive, but the long-term costs and implications for other Platform Providers need to be determined. The Forum was not well prepared to discuss this in any meaningful detail at this meeting, but resolved to revisit it at the next Forum meeting:

Forum Action Item: The next Forum meeting will include an update on the initiatives for open data publishing with respect to IODP data.

The other matter discussed under this agenda item was the difficulty in acquiring marine seismic data in support of IODP science, related to both funding limitations and increasingly strict regulations governing the use of sound at sea. The direct prompt for this discussion was a consensus statement registered at the SEP meeting the week before. At its first meeting, the Forum had discussed the funding aspect, particularly possibilities for IODP funding agencies to co-fund seismic data acquisition in support of IODP science. The outcome of that discussion was the realization that there are open avenues for funding agencies to provide such co-support as well as recent examples. However, it is not clear whether any such activities occurred in the year since the first Forum meeting. The SEP statement went further, highlighting not only funding issues but also the difficulties in working with environmental regulators in obtaining permissions to use sound sources at sea. It also suggested three specific IODP actions in the near future, but in a new program without a centralized IODP authority, it is not clear who might take such action on behalf of the program.

This matter generated considerable discussion over two days, particularly from the Forum members with experience in collecting marine seismic data. There was general agreement on the essential importance of seismic imaging in identifying viable targets for high-priority IODP science, as reflected in a consensus statement:

Forum Consensus 15-06: The Forum appreciates and seconds the SEP statement on marine seismic site survey data importance and acquisition challenges, and stresses the vital importance of the linkage between seismic data and drilling in IODP.

This was recognized as a rather general statement, and there was further discussion as to in what ways the Forum could be of more practical impact in improving the situation. The sense of the discussion was that the issues are serious in most IODP countries that have seismic capabilities, and that the Forum might be a suitable voice on behalf of all IODP. Hence the Forum will need to revisit this matter at its next meeting, and probably future meetings, so there was agreement to an action item to make it a focus of the next Forum meeting:

Forum Action Item: Progress toward addressing the challenges related to international coordination and acquisition of IODP-related seismic data will be an important focus at the 2016 Forum meeting.

Agenda Item 11: Collaboration with ICDP

The first Forum meeting had suggested formation of a joint ICDP-IODP Working Group to develop procedures for joint evaluation of “amphibious drilling proposals” (ADP’s) that require both onland and at-sea drilling to fully satisfy scientific objectives that cross the shoreline. That suggestion was seconded at the ICDP Executive Committee a month after the Forum, and the working group was formed over the summer, chaired by SEP member K. Miller. The Forum chair summarized the recommendations of the working group, which in the months before this Forum meeting had been reviewed and approved in principle by the SEP, all three IODP Facility Boards, and the ICDP Executive Committee and Assembly of Governors. These include all the policy-making bodies for both programs, so the procedures will be implemented in the coming year, but Becker requested a Forum endorsement as well. He outlined the recommended joint review procedures, which were designed not to require any major changes in normal processes or deadlines within either program. The working group recommended utilizing the normal ICDP process for starting with a workshop proposal to develop a full ADP. The workshop proposal would formally submitted to ICDP at its annual 15 January deadline, and forwarded to the SEP for an initial review much like a normal IODP pre-proposal. The intent of the SEP review would be to gauge IODP interest and provide recommendations for what would be required for a successful ADP from IODP perspective. The working group recommended that full ADP’s should be submitted first to the 1 October IODP proposal deadline and then co-submitted to the 15 January ICDP deadline. This would allow for review at the January and possibly June SEP meetings, obtaining external IODP reviews if recommended by SEP, review at the spring ICDP Science Advisory Group (SAG) meeting, and early summer preparation of an integrated joint review statement by a subgroup of SEP and SAG members. Implementing this review process will require some flexibility in both programs, but as noted above, policy-making bodies of both programs have accepted the concept.

In discussion at the Forum, several concerns were expressed about exactly how some of the steps in the joint review process will be implemented. These were recognized as legitimate concerns, but the sense of the discussion was that they could be worked out as the first ADP’s come in coordinated fashion through the two programs. The Forum agreed to a consensus of conceptual endorsement:

Forum Consensus 15-07: The Forum endorses in principle the plan for joint ICDP-IODP evaluation of Amphibious Drilling Proposals as approved by the three IODP Facility Boards and ICDP Executive Committee and Assembly of Governors.

Becker also noted that the working group had made some recommendations about actual implementation of an ADP once accepted for scheduling by both programs. These included: (1) joint staffing by ICDP and the relevant IODP Science Operator, (2) following IODP sample and data policies, (3) archiving ADP cores at the appropriate IODP repository, and (4) utilizing IODP-TAMU for project publications like other IODP expeditions. He noted that he had attended the ICDP Executive Committee a month earlier, where he presented these recommendations and a suggestion for formation of a joint four-person ICDP-IODP working group to formalize ADP implementation policies. For ICDP members on this working group, the suggestion was one executive committee or funding agency

representative plus U. Harms as head of the ICDP Operational Support Group (OSG). For IODP members the suggestion was for EMA and ESO representation given that the most ADP's will likely involve IODP MSP operations: G. Camoin from EMA, and D. McInroy as head of operations for ESO. S. Kuramoto reported that the ICDP Executive Committee accepted this recommendation and nominated himself as the Executive Committee representative. Thus, this working group will begin to sort out implementation details, probably working by email.

Becker also mentioned that he had confirmed with the ICDP Executive Committee that they remained interested in continuing the joint ICDP-IODP-ANDRILL Scientific Drilling Town Hall at the next Fall AGU meeting, much as had been organized by USSSP, ICDP, and other entities for the 2014 Fall AGU meeting. C. Brenner indicated that USSSP is also interested and will work with appropriate ICDP and IODP personnel to plan the joint Town Hall for the 2015 Fall AGU meeting.

Agenda Item 12: Recommend Topics for Workshops

The Forum mandate includes the right to recommend IODP workshops, even though the Forum itself controls no workshop funding. For the agenda materials for this meeting, the Forum chair had compiled a table of workshops conducted since 2011 in preparation for the 2013-2023 IODP. That table includes nearly 40 workshops with good coverage of the themes and challenges of the Science Plan. Earlier discussion under agenda items 5-7 had also indicated relatively good coverage of the Science Plan themes and challenges as represented by scheduled IODP expeditions and proposal pressure, and the SEP had not reported any need for proposal stimulation in any challenges. Thus, the chair submitted that there were no obvious deficiencies that would require Forum recommendations for workshops, but he asked for suggestions from the Forum participants. In the discussion, two specific suggestions were made, as follows. First, R. McKay indicated that there are plans to organize an Antarctic-Southern Ocean workshop to integrate planning for both IODP operations and sub-glacial drilling by other programs in the region. Second, it was suggested that the recent and upcoming IODP Asian and Indian Ocean monsoon drilling would probably justify a synthesis workshop, but P. Wang suggested an even more comprehensive workshop to integrate all global monsoon investigations. Both suggestions met with Forum support and a consensus endorsement:

Forum Consensus 15-08: The Forum endorses the suggestions by two of its members for potential IODP workshops in coming years. These are: (1) an Antarctic-Southern Ocean workshop to provide an integrated perspective on proposed IODP and sub-glacial drilling in the region, and (2) a Global Monsoon workshop to integrate results of monsoon investigations throughout the world with results of the recent and upcoming IODP Pacific and Indian Ocean monsoon drilling programs.

Agenda Item 14: Forum Terms of Reference

A thorough review of the Forum Terms of Reference had been conducted at the first Forum meeting, resulting in some revisions and updates in the version now posted on www.iodp.org. At this meeting, the Forum reconsidered whether two years was a suitable length for the term of its Chair. After discussing several relevant factors, the Forum concluded that two years is

a suitable term length, as long as procedures to select future chairs allowed for the new Chair-designate to attend one Forum meeting before his or her term begins.

Forum Consensus 15-09: To ensure successful transition between Forum Chairs, the selection processes to name future Chairs should be conducted early enough to allow the Chair-designate to attend the final Forum meeting chaired by his or her predecessor.

Agenda Item 19: Future Meetings

At the first Forum meeting the Chair suggested that, beginning with the 2016 Forum meeting, the usual time for annual Forum meetings should be moved to the early fall time period to be better sequenced with the SEP and FB meetings that will normally occur in the first half of the year. He also noted that, since the FB and SEP meetings have been and probably will continue to be held mostly in the US, Japan, and ECORD countries, Forum meetings represent the best opportunities for other partner countries to host major IODP meetings. For the 2016 Forum meeting, Brazil graciously offered to host. For future meetings, China and Japan both indicated interest in hosting; this will be discussed further at the 2016 Forum meeting.

Forum Consensus 15-10: The Forum gratefully accepts the generous offer by Brazil to host the third Forum meeting in Búzios near Rio de Janeiro, 21-23 September 2016.

Agenda Item 20: Final Consensus Items

Forum Consensus 15-11: The IODP Forum extends special recognition to the dedicated service of four of its participants who are at their final Forum meetings and were especially influential in the successful start-up of the International Ocean Discovery Program. These are SEP co-chair Dick Kroon, and the inaugural chairs of the three Facility Boards: Susan Humphris for JR FB, Karsten Gohl for ECORD FB, and Gaku Kimura for Chikyu IODP Board. Dick's infectious enthusiasm and perceptive evaluations of IODP drilling proposals set a very high standard for future SEP co-chairs. The steady, focused leadership of Susan, Karsten, and Gaku in establishing IODP policies and platform scheduling philosophies have set really strong models for continuing success by future Facility Board chairs.

Forum Consensus 15-12: The participants in the field trip would like to thank Richard Arculus and Kelsie Dadd for a wonderful tour of the south coast. In addition, thanks to Catherine Beasley for the very smooth logistical arrangements. The geology was fascinating, the scenery spectacular, the weather generally cooperative, and the kangaroos very entertaining. We were most impressed with the Kioloa Coastal Campus and all enjoyed our discussions around the bonfire and at dinner. We thank you for a memorable experience!

Forum Consensus 15-13: The Forum enthusiastically thanks the hosts of its second meeting, Neville Exon, Catherine Beasley, and ANZIC, for outstanding meeting arrangements. The meeting venue was exceptionally well suited for lively discussions, logistics were flawless, and the brisk weather was refreshing. The two meeting dinners provided excellent Australian cuisine and wines, as well as important opportunities for

Forum participants to engage ANZIC geoscientists and funding managers, and hopefully will help cement the prospects for a long-term renewal of the ANZIC partnership in IODP.

Forum Consensus 15-14: Forum participants profoundly thank our inaugural Chair, Keir Becker of the University of Miami. Keir's encyclopedic knowledge of scientific ocean drilling, his natural diplomatic approach to issues, and his commitment to understanding and implementing the Forum's complicated mandate, have been critical to the Forum's first two years. We say good-bye to his leadership, knowing full well that he will remain to be a wonderful custodian of IODP.

IODP Forum Meeting #2 Roster (as of 05 July 2015, * = apologies)

	NAME	EMAIL
Agencies/Partners		
EMA	Gilbert Camoin ✓ Nadine Hallmann ✓	gcamoin@cerege.fr hallmann@cerege.fr
MEXT	Eisho Sato ✓	eishosato@mext.go.jp
NSF	Jamie Allan ✓	jallan@nsf.gov
Korea - KIGAM	Gil Young Kim * Young Joo Lee ✓	gykim@kigam.re.kr yjl@kigam.re.kr
India - MoES	Brijesh Bansal *	bansalbk@nic.in
China - MoST	Shengbiao Huang ?	huangshb@most.cn
ANZIC	Neville Exon ✓ Ben Clennell ✓ Richard Arculus ✓ Giuseppe Cortese ✓ Rob McKay ✓	Neville.Exon@anu.edu.au Ben.Clennell@csiro.au richard.arculus@anu.edu.au g.cortese@gns.cri.nz robert.mckay@vuw.ac.nz
Brazil - CAPES	Marcio de Castro Silva Filho * Sidney Luiz De Matos Mello ✓	marcio.filho@capes.gov.br smello@id.uff.br
ECORD Council	Guido Lüniger ✓	guido.lueniger@dfg.de
PMOs /Natl. Comms.		
ESSAC	Gretchen Früh-Green * Jan Behrmann ✓ Jochen Erbacher (Germany) * Werner Piller (Austria) *	frueh-green@erdw.ethz.ch jbehrmann@geomar.de Jochen.Erbacher@bgr.de werner.piller@uni-graz.at
USAC	John Jaeger *	jmjaeger@ufl.edu
USSSP	Carl Brenner ✓	cbrenner@ldeo.columbia.edu
J-DESC	Hiroshi Nishi ✓ Yasuhiro Yamada ✓ Masafumi Murayama * Keita Umetsu *	hnishi@m.tohoku.ac.jp yyamada@jamstec.go.jp murayama@kochi-u.ac.jp info@j-desc.org
IODP-China	Pinxian Wang ✓ Shouting Tuo ✓ Xiangjun Sun ✓	pxwang@tongji.edu.cn iodp_china@tongji.edu.cn sunxj@tongji.edu.cn
Operators		
JRSO	Brad Clement ✓	clement@iodp.tamu.edu
ESO	Robert Gatliff ✓	rwga@bgs.ac.uk
CDEX	Shin'ichi Kuramoto ✓ Nobu Eguchi ✓	s.kuramoto@jamstec.go.jp neguchi@jamstec.go.jp
JAMSTEC	Yoshi Kawamura ✓	kawamura@jamstec.go.jp
FB/SEP Chairs		
EFB	Karsten Gohl ✓	Karsten.Gohl@awi.de
CIB/J-DESC	Gaku Kimura ✓	gaku@eps.s.u-tokyo.ac.jp
JRFB	Susan Humphris ✓	shumphris@whoi.edu
SEP	Dick Kroon ✓ Dave Mallinson *	dkroon@staffmail.ed.ac.uk mallinsond@ecu.edu
Science Support Office		
	Holly Given ✓	hgiven@ucsd.edu
Chair/Other Programs		
IODP Forum Chair	Keir Becker ✓	kbecker@rsmas.miami.edu
Next Forum Chair	Jamie Austin ✓	jamie@ig.utexas.edu
ICDP	No rep, but Becker attended ICDP Exec. Comm. in June	