

7th IODP Scientific Technology Panel Meeting

July 28-30, 2008

University of Alberta at Edmonton
Edmonton, Canada

Synopsis

STP met for 3.0 days in Edmonton, Canada. 15 members attended: Schmitt attended as alternate for Vigier, Colwell was absent, and there was no representative from China. STP considered in detail reports from the IOs, particularly with respect to the implementation of the IODP QA/QC Policy. In addition STP further discussed the status of Microbiology within IODP, considering responses from the IODP-MI Task Force on Subsurface Life, and discussed the development of an STP Roadmap and its relation to that proposed by the EDP. STP discussed the issue of IP/IPR/patents; overall agreement was reached that this issue needs to be addressed at the lead agency level and that STP does not have the necessary expertise or knowledge to propose specific actions for implementation.

Conflicts of Interest:

Takuro Nunoura, as a member of the IODP Task Force on Subsurface Life, abstained from voting with respect to issues directly arising from this Task Force's report. Brandon Dugan declared possible conflict of interest through being involved with the initiative to persuade industry to contract the JR for parts of the year.

DRAFT EXECUTIVE SUMMARY

The STP forwards the following recommendations, consensus statements, and action items to the SPC or the IODP-MI as appropriate, and for distribution to the IOs as required. STP suggestions for whether items should be forwarded to SPC and/or IODP-MI are indicated, as are priorities for action items. Brief overviews/background are provided where appropriate in italics.

STP Recommendations

STP Consensus Statement 0807-01: LIMS Test Drive and Update

The STP thanks Sean Higgins and Peter Blum (USIO) for their presentations of the "test drive" external team report, and their overview of analytical and data management systems and services on the retrofitted SODV. STP was relieved to learn the LIMS system will be ready for implementation at sea trials, and happy to hear the glowing opinions of the system by the test drive members. STP acknowledges the efforts made by the USIO in creating improved and comprehensive, yet flexible and user-friendly analytical and data management systems and services. We are impressed with the high level of QA/QC attainable with this new system. STP looks forward to the results of the upcoming shipboard external review of the science systems.

Voting record: 14 For, 0 Against, 0 Abstentions, 2 Absent (Colwell & Gorin)

Priority: High

STP suggests this be forwarded to SPC and IODP-MI

Background to STP Consensus 0807-01:

Background: The SODV is currently in dry dock for improvement and modification, and will be fit with new instrumentation and a new data management system. The development of the USIO data management system was an ambitious undertaking. STP was interested in the status of implementation of the data management system

STP Consensus Statement 0807-02: Magnetic Susceptibility Tool and Downhole magnetometer Proposal.

STP thanks Trevor Williams for his presentation on the current status of the magnetic susceptibility tool and congratulates him and the Lamont group for the successful completion of the construction and tests of the new tool. We look forward to seeing the data from this new and improved downhole tool at a future STP meeting.

STP also thanks Trevor for his presentation of the proposed down hole magnetometer tool. STP is excited about the extended capabilities that this tool represents, particularly the ability to obtain downhole magnetostratigraphy. The incorporation of this tool into the existing Schlumberger tool string is a great advance and enhances the scientific opportunities. STP hopes that the development of this instrument moves forward in a timely manner (for inclusion in the IODP Engineering Development Plan for FY10).

Voting record: 13 For, 0 Against, 0 Abstentions, 3 Absent (Colwell, Gorin & Christensen)

Priority: HIGH

STP suggests this be forwarded to [SPC and IODP-MI]

Background to STP Consensus 0807-02:

Of existing tools, the GHMT is no longer available to IODP and the tool was not well-supported by Schlumberger. The GBM (Gottingen Borehole Magnetometer) requires a dedicated technician, requires proprietary processing, and had problems in past IODP deployment. It is not clear that the GBM tool is supported due to changes in critical staffing, . Finally, neither tool combines modern off-the-shelf sensors. There really is no other option than the proposed tool for in situ magnetostratigraphy within IODP.

STP Consensus Statement 0807-03: Update on the Chikyu

The STP thanks Nobu Eguchi for his presentation on the current status of the Chikyu. STP looks forward to the successful completion of the Chikyu's on-going repair and her return to drilling operation.

In response STP asks a) what is measured by the gas monitoring system onboard the Chikyu; b) how accessible are the data to the science party; c) how easy is it for a 3rd party tool to be linked to this system. STP are also interested in hearing from CDEX on the subject of implementing real time CT scan visualization for core description. Reports on these would be welcomed at the next STP meeting.

Voting record: 13 For, 0 Against, 0 Abstentions, 3 Absent (Colwell, Gorin & Christensen)

Priority: Medium

STP suggests this be forwarded to IODP-MI.

Background to STP Consensus 0807-03:: Chikyu is currently in drydock for scheduled maintenance, but is also repairing its azimuth thrusters and riser tensioners.

STP Consensus Statement 0807-04: QA/QC Implementation and Reporting

STP recommends that the science party be responsible to report on QA/QC issues in the Expedition Report, especially in the *Methods* section of the report.

IODP-MI and IOs should discuss how the Expedition Science Party can be persuaded to participate in the QA/QC process at the earliest opportunity; without a full commitment from each participant the QA/QC process could be severely undermined.

STP should assign members to review Expedition Reports, any IO-generated technical report (if one was needed), and Operational Review Task Force (ORTF) reports in their particular expertise area. STP will also contact co-chiefs, staff scientists/expedition project managers, and technical staff, as necessary, to clarify any QA/QC issues, copying in IODP-MI where possible.

Several additional issues concerning QA/QC were discussed and the following observations and requests to IOs/IODP-MI were agreed by the panel. IOs/IODP-MI should report on progress with respect to these at the next STP meeting.

1. Towards achieving the goals of the IODP QA/QC Task Force Report, there needs to be a list of standards currently used. The IOs are encouraged to compile and share this list on an on-going basis. IODP-MI should facilitate adoption of cross-platform standards where appropriate.
2. QA/QC monitoring should include STP working groups reviewing the routine IO reports to STP; these will include comment on QA/QC as appropriate. Additionally, IODP-MI should consider STP liaison to ORTF to identify potential issues as appropriate.
3. Post-expedition data. The IOs are requested to provide details of policy for QA/QC of post expedition data submission.
4. Digital imagery is now an essential component of IODP, but the IOs need to develop protocols for all platforms so that the user records the minimum metadata upon saving the image to the database.

Voting record: 14 For, 0 Against, 0 Abstentions, 2 Absent (Colwell & Gorin)

Priority: HIGH

STP suggests this be forwarded to [IODP-MI]

Background to STP Consensus 0807-04:

STP Consensus Statement 0802-01: Implementation of IODP-MI QA/QC TF Report.

The IO liaisons met prior to STP and developed a consensus statement in regard to QA/QC reporting as discussed in “STP Consensus Statement 0802-01: Implementation of IODP-MI QA/QC TF Report”. This consensus statement provides the basis for reporting QA/QC on a

routine basis for IODP Expeditions.

STP Consensus Statement 0807-05: 3rd Party Tools QA/QC.

STP recommends that the IODP 3rd Party Tools document be renamed to include both 3rd Party Tools AND Instruments explicitly. The document should also be revised to include the need for proponents to include protocols for defining and recording appropriate QA/QC procedures and relevant meta-data.

Voting record: 14 For, 0 Against, 0 Abstentions, 2 Absent (Colwell & Gorin)

Priority: HIGH

STP suggests this be forwarded to [SPC and IODP-MI]

Background to STP Consensus 0807-05:

The IODP 3rd Party Tools Guidelines were revised by STP and approved by the Science Planning Committee (9 March 2006). Since then IODP have developed QA/QC Guidelines for all data acquired by the program. The third-party tool guidelines do not include this development, nor are they obviously relevant to 3rd parties wishing to bring instrumentation onto an IODP Expedition. Revision of these Guidelines could be undertaken by STP in collaboration with IOD.

STP Consensus Statement 0807-06: Reference Collections and Database Lists

STP recommends that IODP-MI provide leadership in the development and maintenance of reference materials (for example, physical reference slides, digital images and Taxonomic Dictionary).

IODP- MI should share scope of work, deliverables, timeline and management plan with IOs to ensure Taxonomic Name Lists and Lithologic Lists are delivered in appropriate format and timely manner. STP requests IODP-MI give an update at the next STP meeting on progress made on the development and maintenance of these and other lists used in the database.

Voting record: 13 For, 0 Against, 0 Abstentions, 3 Absent (Colwell, Gorin & Christensen)

Priority: HIGH

STP suggests this be forwarded to [IODP-MI]

Background to STP Consensus 0807-06:

The utility of any list will be limited by the lack of a long term management plan, which remains to be defined. STP encourages IODP-MI to discuss this with the IOs. STP Consensus Statement 0802-10: Lithologic Description Reference Collections

All IOs agree importance of developing these. A digital set would be an excellent resource and could be used for onshore and offshore training, but does not substitute for a physical reference set. We suggest IODP-MI and the IOs explore appropriately how best to do this. STP does not believe the IOs will proceed without direction from IODP-MI.

STP Consensus Statement 0807-07: Report from EDP

STP thanks Sean Higgins for a short report from the recent EDP meeting. Rick Colwell attended the meeting but was unable to be present at the STP meeting.

Voting record: 13 For, 0 Against, 0 Abstentions, 3 Absent (Colwell, Gorin & Christensen)

Priority: HIGH

Background to STP Consensus 0807-07:

STP Consensus Statement 0802-10: Lithologic Description Reference Collections

All IOs agree importance of developing these. A digital set would be an excellent resource and could be used for onshore and offshore training, but does not substitute for a physical reference set. We suggest IODP-MI and the IOs explore appropriately how best to do this. STP does not believe the IOs will proceed without direction from IODP-MI.

STP Consensus Statement 0807-08: IODP Depth Scales: Errors and Corrections.

Following on from STP Consensus Statement 0802-08: Core-Log Seismic Integration, STP recommends IODP-MI ask the IOs provide comment on the IODP Depth Scales: Errors and Corrections document (June 14, 2007, Draft version 1.0).

Voting record: 13 For, 0 Against, 0 Abstentions, 3 Absent (Colwell, Gorin & Christensen)

Priority: HIGH

STP suggests this be forwarded to [IODP-MI]

Background to STP Consensus 0807-08:

This follows on from the adoption by the IOs of the IODP Depth Scales Report. The report is currently in draft version and urgently needs attention if it is to be implemented for Phase 2.

STP Recommendation 0807-09: Microbiology in IODP

The STP thanks Steve D'Hondt for his presentation on the IODP-MI Subsurface Force Task Force Report. We recognize that urgent action is required by IODP-MI to move microbiology in IODP forward.

Voting record: 12 For, 0 Against, 1 Abstention (Nunoura), 3 Absent (Colwell, Gorin & Christensen)

Priority: HIGH

STP suggests this be forwarded to SPC and IODP-MI

Background to STP Recommendation 0807-09:

The microbiology program is still in a state of development. We are concerned that IODP will fail to meet one of its principal science objectives and will lose an outstanding opportunity for argument for renewal, unless the microbiology component of IODP is greatly advanced through standard measurements, routine samples and appropriate modification of IODP sample request materials.

STP Recommendation 0807-10: Formation Factor Determination

STP recognizes the need to routinely determine Formation Factor. However, STP has concerns about how to ensure the quality of the data. STP recommends that IODP-MI work with the IOs and the microbiology and physical properties communities to identify an appropriate means for making this determination.

STP recommends that once this issue is resolved, routine determination of FF start.

Voting record: 12 For, 0 Against, 1 Abstention (Nunoura), 3 Absent (Colwell, Gorin & Christensen)

Priority: HIGH

STP suggests this be forwarded to SPC and IODP-MI

Background to STP Recommendation 0807-10:

Formation factor is key for calculating biogeochemical fluxes in marine sediment. Some STP members are concerned that formation factor may be difficult to measure routinely with great accuracy. Logging resistivity provides an independent measure where available, but cannot substitute for core measurements because logging resistivity is not available for short holes and is not accurate in the cased upper part of the hole, where formation factor is particularly critical for calculating biogeochemical fluxes.

STP Recommendation 0807-11: Dissolved Inorganic Carbon (DIC)

STP recognizes the need for standard DIC measurement in order to accurately determine in situ pH and to quantify seafloor microbial respiration. Consequently, STP recommends that DIC concentration be added to the existing list of porewater chemistry standard measurements.

STP requests the IODP-MI Subsurface Life Taskforce provide additional information to IOs on detection limits, etc. which may impact the instrumentation (e.g., coulometer or TOC analyzer) that can be assigned for analysis.

Voting record: 12 For, 0 Against, 1 Abstention (Nunoura), 3 Absent (Colwell, Gorin & Christensen)

Priority: HIGH

STP suggests this be forwarded to SPC and IODP-MI

Background to STP Recommendation 0807-11:

Porewater chemistry is considered a standard measurement. Adding DIC to the list of standard porewater chemistry will initiate its routine analysis. Shipboard DIC measurements can be undertaken at very little additional cost to IODP because instruments suitable for DIC analysis (coulometer and TOC analyzer) are already present on the Chikyu and the JOIDES Resolution. We recognize that a science party may sometimes restrict analysis where porewater is extremely limited (as with any other standard porewater measurement). This is consistent with existing protocols for Interstitial Water (IW) analysis. In discussion, there was debate on whether DIC should be considered an ephemeral property. For example, long-term storage (even in a frozen state) may impact DIC concentration. Testing on data quality of frozen porewater will be helpful as some MSPs may necessitate post-expedition testing on frozen material.

STP Recommendation 0807-12: Microbiology Routine Sampling for Frozen Preservation

STP recognizes the need for routine sampling for frozen preservation from all expeditions and suggests following the recommendations of the IODP Subsurface Life Task Force for routine deep-frozen ($\leq -80^{\circ}\text{C}$) bulk sediment, formalin-fixed samples and deep-frozen basement samples. These are as follows:

-- On every expedition, in association with IW samples, deep-frozen bulk sediment should be taken in quadruplicate (e.g., with 30cc sterile cut-off syringes) where possible or in duplicate (as two successive whole rounds) where sediment is too indurated for syringe sampling.

-- Formalin-fixed frozen sediment samples should be taken in quadruplicate on every expedition, in association with IW samples, in concert with sampling for standard cell counts. These samples may be subsamples of a pooled formalin-fixed sample taken with two 3cc cut-off syringes. These samples will be used for cell counting and related analyses.

With the above strategy, if samples are too poor in quality for IW recovery, they should not be sampled for frozen preservation. Also with the above strategy, if sediments are too hard for IW recovery, they need not be sampled for routine frozen samples. However, this approach should not be taken to preclude modification of routine sampling to include intact samples from subseafloor horizons where the sediment is too well indurated for IW sampling.

-- Frozen solid-phase samples of basement are required for expeditions that core basement. Sample frequency for basement samples should be decided at the pre-cruise meeting.

IODP-MI should consider whether these changes necessitate a revision to the IODP Sample, Data Obligations Policy.

Voting record: 12 For, 0 Against, 1 Abstention (Nunoura), 3 Absent (Colwell, Gorin & Christensen)

Priority: HIGH

STP suggests this be forwarded to SPC and IODP-MI

Background to STP Recommendation 0807-12:

The task force suggests that routine microbiology samples be taken in association with IW samples. The cost implications for routine microbiology sampling are likely to be low relative to the potential scientific gains from such samples. Inherent issues with regard to avoidance of sampling significant stratigraphic or tectonic horizons (e.g., the K/T boundary) are the same as with other routine sampling programs such as IW whole-round sampling. Thus, some degree of shipboard flexibility in routine microbiology (and IW) sampling will be needed as significant horizons are approached.

STP Recommendation 0807-13: Microbiology/Biogeochemistry Perception

There is concern that routine sampling for frozen preservation may be viewed negatively by some shipboard science parties, which will be asked to accept some loss of sample without a clear understanding of the rationale. Additional education and outreach to the science party is an important component of the routine sampling request. One option is to develop a promotional set of materials to aid in education of shipboard science parties. IODP-MI should take leadership on working with the IOs and members of the subsurface life community to enhance science party participation.

Voting record: 12 For, 0 Against, 1 Abstention (Nunoura), 3 Absent (Colwell, Gorin & Christensen)

Priority: HIGH

STP suggests this be forwarded to SPC and IODP-MI

STP Recommendation 0807-14: Microbiology Inclusion and Outreach

STP recommends that IODP-MI take leadership on working with the IOs and the IODP-MI Subsurface Life Task Force to modify the sample request forms to include microbiology (all sample types) and to enhance access through improved webpages.

Voting record: 12 For, 0 Against, 1 Abstention (Nunoura), 3 Absent (Colwell, Gorin & Christensen)

Priority: HIGH

STP suggests this be forwarded to SPC and IODP-MI

Background to STP Recommendation 0807-14:

STP recognizes the need to increase access to the microbiology community. Given that many potential users are unfamiliar with the infrastructure and legacy of the IODP/ ODP/ DSDP system, we are concerned that unnecessary barriers exist. We recognize that this is outside our purview, but ask that IODP-MI and the IOs seek counsel on improving accessibility to the microbiology community. Such an undertaking would also aid the existing community, particularly as scientific ocean drilling structure and traditions (e.g., sampling, protocols, QA/QC) shift under the new current phase of ocean drilling.

Microbiology is not listed as a research area and categories of microbiology samples are not identified on the sampling request form. Furthermore, lists of archived deep-frozen samples are not available to the scientific community via any straightforward mechanism. These are major impediments to use of archived samples for microbiology and to community use of archived deep-frozen samples.

These problems can be addressed by changing the sample request form, creating on-line lists of available samples, and changing the IO and IODP-MI websites to enhance outreach to a community that is largely not used to interfacing with the IODP community. Currently there is very little information on microbiology on these websites, when they might instead function as the focus of a virtual community of geomicrobiologists.

STP Recommendation 0807-15: Submission to International Database and Banks

STP recommends following the IODP Subsurface Life Task Force recommendations that all published sequence data and standardized contextual data must be submitted to an appropriate international database, and that all published culture strains must be deposited in publicly accessible culture collections. IODP-MI should take the lead in ensuring that this is done.

IODP-MI should consider whether these changes necessitate a revision to the IODP Sample, Data Obligations Policy.

Voting record: 12 For, 0 Against, 1 Abstention (Nunoura), 3 Absent (Colwell, Gorin & Christensen)

Priority: HIGH

STP suggests this be forwarded to SPC and IODP-MI

Background to STP Consensus 0807-15:

These requirements are routine for publication in mainstream microbiological journals and required by many funding agencies. IODP implementation of these requirements will ensure that the sequence data and cultivated strains are made available to the broader community in cases where the publications or funding agencies do not already institute these requirements.

Appropriate international sequence databases include, but may not be limited to, GenBank, EML Nucleotide Sequence Database, and the DNA Databank of Japan.

STP Recommendation 0807-16: EDP Microbiology Contamination Issues

STP thanks EDP for their Action Item 0807-08: Microbial Contamination of Core, establishing a Microbiology Contamination Working Group. STP agrees this is a necessary measure and recommends Rick Colwell as STP (electronic) liaison to the Working Group.

Voting record: 12 For, 0 Against, 1 Abstention (Nunoura), 3 Absent (Colwell, Gorin & Christensen)

Priority: Medium

STP suggests this be forwarded to EDP and IODP-MI

Background to STP Recommendation 0807-16:

EDP Action Item 0807-08: Microbial Contamination of Core. EDP responded to STP Consensus 0802-06 by establishing a Microbiology Contamination Working Group (Holloway, Ussler, Tamura, and Thorogood) to investigate technologies and strategies for reducing microbial and drilling fluid contamination of cores. The EDP was responding to STP Consensus 0802-06 and the presentation by Rick Colwell on Microbial. Contamination of Core.

Contamination is a major issue in the quality of microbiology samples. It is critical to maintain continued dialogue with EDP. Having a panel representative with a microbiology specialty allows EDP to have immediate answers during discussion and aids in moving forward on potentially resolving these engineering issues.

STP Recommendation 0807-17: Kochi Microbiology Repository and Long Term Frozen Sample Storage

STP thanks Fumio Inagaki for his presentation on the Kochi (KCC) microbiology repository, and recognizes the significance of KCC's proposal as the first proposal for such a facility.

STP recognizes there is an immediate need for storing routine microbiology samples at very cold temperatures, but is concerned about the ongoing costs beyond the pilot project. STP also recognizes there are significant concerns with sample storage costs. STP requests a report from KCC on the pilot project and recommends using the KCC facility as an opportunity for testing liquid nitrogen storage against storage in -80C freezers (e.g., at College Station) for incremental degradation of microbes and molecular signatures with time.

STP recommends that IODP-MI requests, as soon as possible, a break down from KCC of the total costs involved in operating the facility, such as shipping, maintenance, liquid N₂

replacement, PFA vials, personnel costs, etc. This will allow IODP-MI to evaluate future costs of potential operation at KCC.

In addition, STP recommends that IODP-MI and the IOs investigate the long-term total costs (e.g., support, facilities, staff, infrastructure, maintenance, shipping, materials, supplies) and relative benefits of multiple options for deep-frozen sample archives (e.g., liquid N₂ vs. ultra-low freezers) and frozen sample archives and make recommendations for future facilities at IODP core repositories.

Voting record: 12 For, 0 Against, 1 Abstention (Nunoura), 3 Absent (Colwell, Gorin & Christensen)

Priority: HIGH

STP suggests this be forwarded to SPC and IODP-MI

Background to STP Recommendation 0807-17:

The STP discussed the KCC proposal with considerable interest and some concern about its long-term costs. At our previous meeting, the Subsurface Life Task Force was asked to discuss feasibility of using KCC Microbiology Center as a storage facility for routine deep-frozen microbiology samples. Their response to the revised KCC proposal follows below.

“The Task Force completely agrees with the Kochi Core Repository on the importance of developing appropriate sample storage and handling facilities for routine microbiology samples. The Task Force applauds the initiative of the Kochi Core Repository in addressing this issue. The Task Force also agrees that liquid nitrogen storage would be the ideal strategy for storage of deep-frozen samples, if cost were no object.

The Task Force believes that, ideally, deep-frozen bulk sediment samples and rock samples for nucleic acid, biomarker and solid-phase redox analyses, as well as frozen formalin-fixed samples for cell-based studies, will be stored at all IODP sample repositories, with each repository storing the deep-frozen samples and formalin-fixed samples for each expedition for which it also stores the cores. Storage at multiple locations has at least three major benefits: it eliminates the possibility that system failure at any single repository will compromise all IODP deep-frozen samples and/or formalin-fixed samples; it allows scientists that visit a repository to compare their deep-frozen samples and/or formalin-fixed samples directly to the cores; it allows scientists to visit a repository to personally select samples at reasonably low cost (in time and money), whether they are from Europe, North America or the western Pacific.

Liquid nitrogen may be better for storage of deep-frozen environmental samples than -80°C storage in ultra low freezers, because liquid N₂ is even colder than an ultra-low freezer.

Consequently, if cost is not an issue, liquid N₂ storage is preferred on general principal.

However, no liquid occurs to support biological alteration at -80°C and there are few, if any, published comparisons of genomic results for environmental microbiological samples stored at liquid N₂ temperatures and ultra-low freezer temperatures.

For reasons of cost and convenience, the majority of molecular microbiologists store their environmental samples at -80 C in ultra-low (-86°C) freezers. Task Force members polled molecular microbiologists from several institutions, including Caltech, the Institute for Genomic Research (TIGR), the Marine Biological Laboratory (MBL), the University of Maryland, the University of Rhode Island, the University of Southern California and Woods Hole Oceanographic Institution. At every one of these institutions, molecular samples for environmental microbiology are stored permanently in ultra-low freezers.

ODP samples from Leg 201 have been stored in ultra-low freezers at several institutions (including the College Station IODP repository) since early 2002. These samples have been used successfully for many DNA analyses (e.g., Parkes et al., 2005; Biddle et al., 2006; Teske and Sørensen, 2008), for RNA analyses (Sørensen and Teske, 2006), and for pyrosequencing metagenomic analyses (Biddle et al., 2008). These samples are typically stored in trilaminate bags with an O2 scrubber (e.g., Cragg et al., 1992).

Given these issues, the Task Force recommends that IODP-MI and the IOs do a careful cost analysis and go with the cheaper of the two options [liquid N2 or ultra-low (-86°C) freezers] if sample integrity is not greatly compromised. The Task Force also recommends that IODP assess effectiveness of the two storage approaches by splitting multiple samples and using the splits to test liquid nitrogen storage against storage in -80°C freezers (e.g., at College Station) for incremental degradation of microbes and molecular signatures over the interval of the Kochi pilot project (3 years)."

STP Recommendation 0807-18: Nomination of a Microbiologist for CAB

STP nominates David Smith (URI), John Baross (UW) and Takuro Nunoura (Jamstec) as candidates to serve on CAB.

Voting record: 12 For, 0 Against, 1 Abstention (Nunoura), 3 Absent (Colwell, Gorin & Christensen)

Priority: Medium

STP suggests this be forwarded to IODP-MI

Background to STP Recommendation 0807-018:

This is a request from IODP-MI to STP.

STP Consensus Statement 0807-19: STP Liaison to EDP.

STP notes that the development of the EDP and STP Roadmaps will inevitably contain some overlap. In order to ensure that progress is made in an efficient way, we suggest that STP send a liaison to the EDP meetings on a case-by-case basis after consultations between the chairs on the meeting agenda. STP would welcome a liaison from EDP as and when appropriate.

Voting record: 13 For, 0 Against, 0 Abstentions, 3 Absent (Colwell, Gorin & Christensen)

Priority: High

STP suggests this be forwarded to SPC and/or IODP-MI

Background to STP Consensus Statement 0802-19:

This discussion took place as a result of the report from the previous EDP meeting where Rick Colwell attended as STP liaison.

STP Consensus Statement 0807-20: STP Roadmap.

STP recognizes the significant overlap of some issues on the EDP and STP roadmaps, but that there are many others that do not. STP suggests that both EDP and STP continue to develop their roadmaps and collaborate on those issues where there is significant synergy.

Voting record: 13 For, 0 Against, 0 Abstentions, 3 Absent (Colwell, Gorin & Christensen)

Priority: High

STP suggests this be forwarded to SPC and/or IODP-MI

Background to STP Consensus Statement 0807-20:

This discussion took place as a result of the report from the previous EDP meeting where Rick Colwell attended as STP liaison.

STP Consensus Statement 0807-21: Clive Neal

STP requests that SPC approve Clive Neal as chair of STP.

STP Consensus Statement 0807-22: Saneatsu Saito

STP requests that SPC approve Saneatsu Saito as vice-chair of STP.

STP Consensus Statement 0807-23: Doug Schmitt

STP expresses its sincere thanks to Doug Schmitt for organizing this very successful meeting in Edmonton as he went above and beyond the call of duty as a alternate member of the panel.

In addition, his devotion to the needs of the panel was exemplary, especially when he corrected a potentially disastrous administrative blunder concerning liquid supplies for the panel and thus ensured that everything ran very smoothly.

However, STP recommends that he update his field guide to “leisurely strolls along the river” to reflect the fact that we live on a dynamic planet.

STP Consensus Statement 0807-24: Beth Christensen

STP gratefully thanks Beth Christensen for her dedicated contribution to the IODP over the last three years she has served on the Scientific Technology Panel.

STP Consensus 0807-0X:

Her permanent and active contribution to the core description (and micropaleontological) working group was most stimulating for all the participants. Beth will be missed for her ability in taking minutes and for making the complex and seemingly circular arguments of the panel read like the simple sentences of a professional writer.

Her contributions to, and participation in, the STP social calendar are memorable; as is her ability to actively engage in discussion (both scientific and not) with all attendees, thus ensuring everyone’s participation in the panel.

Thank you Beth, for your help, your fruitful comments, and for your exceptional contribution to STP. Good luck for your post-STP future.

STP Consensus Statement 0807-25: Paterno Castello

STP extends profound thanks to Paterno Castillo for his diligent and unwavering service to the Scientific Technology Panel over the last three years.

His encyclopedic knowledge of all things hard rock and his dogged pursuit of “clarification” made discussions clearer and more understandable for all participants.

While his involvement in evening sessions left a little bit (well, a lot) to be desired, his friendly disposition and positive attitude will be missed at future STP meetings.

Pat - we will miss you, but good luck in your post-STP life.

STP Consensus Statement 0807-26: Mike Lovell

STP mourns the loss of Mike Lovell, a devoted, quiet, and soft spoken leader whose shy and retiring manner was an example to us all. His passing from STP back into the real world leaves a tremendous void that will probably never be filled by any one person. His unselfish devotion to ~~rocking the boat~~ IODP will be sorely missed. One can only hope that his life after STP will be as rewarding as the one he left behind when he passed back into the normal world on this day, July 30, 2008 to pastures much greener. He leaves behind a panel who will need serious counselling for many months to come to get over their loss.

Action Item 0807-27: Scientific Technology Roadmap

STP members will continue to develop the Scientific Technology Roadmap, taking note of the need to liaise with EDP on matters of common or complementary interests and/or expertise. This will be coordinated by Saito and Neal.

Action by: All Panel Members. Neal and Saito to coordinate responses.

When: Review progress by mid-November 2008.

Proposed next STP meetings:

January 2009; Location: USA; Host: TBD

June 2009; Location: South Korea; Host: Youn Soo Lee

Draft Minutes
7th IODP STP Meeting Edmonton, Alberta Canada
7/28/2008-7/30/2008

In these minutes, the Recommendations, Consensus Statements, and Action Items are not repeated in detail or in their final format. Please refer to the Executive Summary above for the full and final text of each, as indicated.

The minutes are not intended to be a literal transcription of the meeting. Statements represent overall the speaker's comments and are not intended as direct quotations. Text in reduced fontsize represents additional notes.

28 July 2008

9:20

Lovell welcomed all to STP meeting and thanked Doug Schmitt for hosting the meeting.

Schmitt went over venue and logistics. Lovell encouraged all to use internet access only during breaks.

Dugan and Gorin were appointed as minute takers.

Lovell introduced new members and apologies.

Colwell could not attend.

Alternate Schmitt is attending for Vigier.

New members are Krastel (ECORD, Kiel Germany) and Saito (IFREE, JAMSTEC).

9:32

Review and approval of agenda led by Lovell. Lovell proposed that we delete Item 15 from the agenda as the JR is still in the shipyard and New Jersey MSP has been postponed again. Neal moved to approve agenda. Dugan seconded.

Conflict of Interest statement reviewed. Lovell called for any conflicts. No apparent/direct conflicts but the following spoke on potential conflicts.

Dugan is involved in Ocean Drilling Consortium proposal.

Saito has been nominated as co-chief for NanTroSEIZE 1b.

Nunouro is on Subsurface Life Task Force.

Review of Roberts Rules of Order and STP Mandate (Lovell).

Overview of STP rotations and area of expertise that we have on the panel.

9:45

It was noted that Colwell attended 7th EDP meeting and we will review comments from Colwell throughout the meeting.

Christensen moved to approve last meeting minutes. Castillo seconded. All approved.

9:47

Kawamura presented IODP-MI report.

Dates provided on upcoming SAS meetings and overview of IODP proposal numbers.

Australia has signed MOU and joined IODP and should be sending representative to STP.

Update on IODP workshop, IODP thematic review, and IODP Renewal conference.

Eguchi asked about status of India joining IODP. India has not officially joined yet.

Overview of reports provided by IODP-MI to STP.

Development process suggested for Acceleration of Paleontology Coordination group.

Christensen asked what time frame this group plan (paleo) included; Blum asked about contact for implementation. Kawamura answered he thought Cenozoic and Mesozoic and said he is primary IODP-MI contact for inquiries.

SSEP now has option to request review by EDP or STP on SSEP review form.

Higgins stated digital taxonomic dictionary is a great, long-term objective.

10:09

SPC report presented by D'Hondt.

SPC responses to STP consensus statements and global ranking update.

Castillo asked for clarity on who asks review of proposals by STP

SSEP makes the recommendations.

Science operations (one model) was presented for FY2009 (SPC Consensus 0803-03).

Definition of Tier 1 and 2 in proposal ranking was explained.

Tier 1 – to do with high science impact; likely to be drilled when ship in region

Tier 2 – good science, may be drilled but could be pushed back to SPC.

10:25

Next summer (09) meeting will probably be in S. Korea; Lee volunteered to host. Need to think about where winter 08/09 meeting will be held.

Coffee break until 10:45.

10:45

Split into working groups (Petrophysics, Microbiology and Geochemistry, and Core Description) to review responses from IOs.

12:30

Break for lunch. Going to resume as large group at 13:30.

13:30

Higgins gave overview of Science System “Test Drive” on JR capabilities done at TAMU, summarized changes in USIO management and reminded STP that there are some changes in ship schedule from what SPC had at their meeting.

Full report of Test Drive was provided digitally.

Overall Test Drive summary - new system is exciting and that the USIO has done well

and exceeded expectations; this will help push forward shipboard science.
Emphasized that no major problems were found.
Still have the task of installing and integrating this onto the ship and tested in transit.
Neal asked when the transit team will be announced. Higgins responded this will be once the delivery schedule is finalized so involved scientists can schedule appropriately

13:45

Blum presented on JR Shipboard Analytical Capabilities.

Goal is to have dynamic, robust databases linked to all science/technological operations
Depth framework adopted by all IOs in 2007 and now being implemented.

Laboratory Information Management System (LIMS) – not one item, but combined databases to provide desired capability.

Sampling – staff is involved in curation and QA/QC and scientists also sample for post-cruise research;

Sample Master is application to track/look at samples.

Provided an overview of instrumented data capture, Descriptive and Interpretive Information (DESCINFO), data analysis, data access and reporting capabilities.

15:10

Williams presented an update on the Magnetic Susceptibility Sonde (MSS) and new information on a proposal for the Multisensor Magnetometer Module (MMM).

MSS tool was tested in July 2008 at Schlumberger Blanco well and was run successfully with a Schlumberger tool string, telemetry, and data acquisition system.

If approved in FY2010 engineering plan, the MMM would probably be online in 2013.

Johnson to write a consensus statement on MSS and MMM.

Christensen and Castillo to write a consensus statement on USIO presentation by Higgins/Blum.

15:20 – Coffee Break

15:35

Eguchi presents Chikyu update for STP.

After Exp 314-316, Chikyu in dry dock for repair, maintenance and lab improvement and thruster trouble was found.

Schedule has been updated to allow for repair of failed gear.

Thruster problems were not noticed in operation only noticed in dry-dock inspection.

Repairs have been done for installation of tensioners.

FY09 Chikyu schedule shown with three expeditions from 1 March – 31 Aug 2009.

15:50

Break into breakout groups to consolidate response to IO reports.

16:40

Dugan presented petrophysics response to IO reports.

Nunoura presented microbiology/geochemistry response to IO reports.

Christensen presented core description response to IO reports.

Neal mentioned it is troubling because reference collections are bigger than any one IO so we need some leadership from IODP-MI to get this done correctly and to get our science done. STP needs to send a strong message back to IODP-MI enforcing the importance of moving QA/QC forward efficiently and quickly.

17:20

Haupt presented a consensus statement from the IOs to STP.

Science party will be responsible for reporting QA/QC and document in Methods section.

STP is responsible to assign members to review Expedition Reports, any IO

technical report, and Operational Review Task Force (ORTF).

IO staff is available for STP to contact to clarify issues.

Blum added perhaps could have an STP watchdog that could directly talk to IOs

Neal asked who enforces QA/QC at sea. Haupt responded it is shared between staff scientists, technicians, and chief scientists.

17:35

Lovell commented on history of patent issue for all to consider for Tuesday AM.

Issue is as we move more into new areas (e.g., microbiology) we may move into lucrative applications - what if individual scientists want to patent something that was developed in IODP operations. Lead agencies want specific examples and questions that we can send back to SPC and then up to the lead agencies.

17:45

Meeting adjourned for the day. Going to kickoff at 8:30 AM on Tuesday (7/29/2008).

29 July 2008

08:40

Lovell called the meeting to order. Going to begin the day with discussions on microbiology.

08:45

D'Hondt presented IODP-MI Subsurface Life Task Force's Principal Technical Recommendations.

Recommended new standard measurements –formation factor and dissolved inorganic carbon (DIC) in interstitial water.

Neal inquired about how much porewater you need to do this – you probably do relative to local seawater.

Geochemical flux explained including formation factor with an example of subseafloor respiration.

DIC example of total CO₂ production was presented.

Desire to preserve solid-phase samples was expressed.

Legacy samples recommendations – deep-frozen bulk sediment samples in quadruplicate syringes, formalin-fixed frozen sediment samples, deep-frozen solid-phase samples of basement.

Recommended sampling strategy for legacy samples - link with interstitial water (IW) sampling in soft sediment; if samples are too hard/poor for IW sampling, then no microbiology legacy sampling.

Cost for deep-frozen samples – 24ft3 -80C freezer with CO2 backup= \$10k US + electricity + \$5/month monitoring fee. TF does not know cost of equivalent N2 storage.

Recommended IODP requirements for microbio studies – all sequence data and contextual data submitted to international database, all published culture strains placed in publicly accessible collection.

Update on sample requests for subsurface life studies – microbio must be included as a research category on request forms and frozen samples must be included for archive request, detailed sample info must be easily accessible via webpages, and sample request forms must be easily accessible.

09:40

Coffee break.

10:00

A small working group was selected (Nunoura, Ikehara, Christensen, Gorin) to develop a consensus statement on the Subsurface Life Task Force presentation.

Open discussion about Subsurface Life Task Force presentation.

Will these recommended measurements be placed under minimum measurements and what is there cost?

What is the ability of the IOs to make resistivity measurements? Measurements can be made but there are concerns about reproducibility. This measurement is simple in concept but has potential problems with QA/QC due to temperature, time, etc. Why this hasn't been overcome? How can we use logging data in conjunction with bench-top test? What is error tolerance in measurements? Consensus statement will be written along the lines that we accept resistivity measurements are valuable and necessary, but we have reservations about robustness of the data so we will recommend a small community group to investigate feasibility and existing technology.

General agreement that DIC measurements are valuable and should be relatively easy to do with existing equipment on JR; Chikyu may need more testing before implementing it. It seems like adding DIC to standard measurements is minor and doable as pore water is already a standard measurement.

Legacy sample clarification that TF recommendation is to take a legacy sample each time and IW sample is taken. Would it be easier to sell this by calling them microbio research samples with a lead team for research that is then presented to the science party of each expedition (i.e., show the value and plan of samples rather than just take "anonymous" samples). IOs seem to think the value is there and the cost is minimal to get samples. How can we sell that we are preserving material for a growing field that will definitely have new techniques and measurements in the coming years?

General support for legacy samples will be written in consensus statement and also that

the TF should develop small powerpoint for IOs to have explaining science merit.
Support we drop the term “legacy” and just call them microbio samples.
Need a consensus statement to IODP-MI requesting better publicity of frozen samples.
Also will write a consensus statement that STP supports recommendation on IODP requirements for microbio studies – submit to international database and culture strains deposited in public collections.
STP supports TF ideas to update sample requests for subsurface life studies and will write consensus statement.

11:15

Higgins summarized discussions at EDP and involvement of STP in EDP.

EDP Roadmap is in Draft V3, V2 is available.

Colwell’s presentation was well received but many questions remain – use of existing gel core tools? alternate coring technologies to avoid contamination? lab coring techniques that minimize contamination? existence of muds w/o organic compounds?

STP-EDP should have regular liaisons.

We need a consensus statement thanking EDP for input and nominating Colwell to be liaison for working on contamination issues.

Inagaki mentioned a new paper with information we should review for looking at contamination issues. STP should follow up with Inagaki to get paper.

11:30

Inagaki presented proposal for bio-archive core sampling and storage at Kochi Core Center.

Current archiving is not suitable for long-term preservation of biological samples but this is needed to meet science goals.

Kochi is already one of IODP repositories, Kochi staff has positive approach to taking on these samples and storing in liquid N2 and large freezer room that are ready.

STP received digital version of proposal that details – onboard bio-archiving, sample storage and capacity, sub-sampling device and technique and initial plan.

Items to be discussed – promotion of science benefit of archive samples, curation and sample distribution, need KCC curator with microbio background, costs for transport and PFA cups need to be addressed.

We will need a full cost break-down in order to endorse the proposal and develop consensus statement.

IODP-MI would like STP to comment on scientific value of proposal.

Consensus statement will be written thanking Inagaki for presentation, endorsing scientific basis/need for storing frozen samples, but we are concerned about long-term costs which are not an STP issue and we look forward to reports from KCC on the pilot study.

Also will recommend that a comparison between -80 freezer storage and -160 liquid N2 storage and sample preservation be conducted through this pilot study.

12:15

Return to STP Consensus Statement 0802-03: Patent Issue.

We need to discuss what is patentable.

Samples are not patentable because they are directly from IODP work, but applications of a sample or a process developed may be patentable.

Can we find specific examples to help explain what might be the pathway for what is patentable and what is not?

This may be beyond the scope of STP and perhaps IODP because of different legal issues nationally and internationally.

We had concerns that eventually patent issues could lead to problems drilling in certain areas.

We discussed the issue and do not feel we can adequately address patent and legal issues within STP so we have decided to not respond to the request for examples of patent issues. We think this issue needs to be addressed at the lead agency level.

12:40

Nomination of a Microbiology CAB member.

Nominations are David Smith at URI (Neal nominated), John Baross at UW (Johnson nominated), Tokuro Nunoura at JAMSTEC (Lovell nominated).

12:45

Break for lunch. We will reconvene at 14:00.

14:15

Neal presented overview of the STP Roadmap.

STP panel members have PDF of roadmap summary from Sendai STP meeting.

Key questions to consider: Do we develop 2 roadmaps, 1 toward industry and 1 more general? (2) Do we need to consider an appropriate formula for determining funding? Can we calculate the return on our investment? Do we need to think about ways to reducing sample volumes for microbiology as technology advances? What about developing a mineral dictionary? or sediment grain mineralogy?

Charge for breakout groups:

- 1) Choose items that best fit your working group;
- 2) Are there things that need to be added, deleted?
- 3) Fill in remaining cells in worksheet provided to all. Should categories be added/deleted?
- 4) Note the EDP overlaps – should these items be left to EDP?
- 5) Rank the items in your group in order of decreasing importance using the science as the primary driver;
- 6) Separate out those that will have an incremental impact vs those that will have a transformative impact;
- 7) Ranking – 1 = transformative science; 2 = incremental science; 3 = deleted.

Breakout groups will work the rest of the afternoon on the roadmap. Dinner is scheduled for 18:30 at Fort Edmonton Park.

Will reconvene Wednesday (7/30/08) at 9:00.

30 July 2008

09:00

Lovell began with overview of STP response to IO reports to follow up from breakout groups on 07/28/2008.

Goal is to establish what message we want to send back to IODP-MI and/or IOs and formulate our consensus statement.

Overall agreement for STP to contact co-chiefs, staff scientists/expedition project managers and technical staff as necessary for QA/QC discussions.

STP will receive consensus statement from the IO liaisons and agrees this should form a basis for implementing the IODP-MI QA/QC Task Force Report across IODP.

- 1) STP requested a more detailed response from CDEX – CDEX announced they agree with USIO statements
- 2) STP suggests generation of a list of standards currently used – the IOs are encouraged to share this list as an ongoing process; IODP-MI should facilitate adoption of cross-platform standards where appropriate
- 3) 3rd Party Tool document should be renamed and revisited to: (a) make it explicit in title that the document applies to all 3rd party tools or instruments; (b) 3rd party tool and instrument data is captured with QA/QC
- 4) Post-expedition data – do the IOs have a policy for QA/QC for post-expedition data submission? There is a concern about getting this done right, so further discussion should occur
- 5) QA/QC monitoring could include STP working group reviews of the IO reports and STP liaison to ORTF to identify any potential issues
- 6) Qualitative data – IODP-MI needs to provide leadership in the development and maintenance of reference sets (e.g., physical reference slides, digital images, etc.)
- 7) Qualitative data – digital imagery is necessary but protocols need to be developed on all platforms so that the users enters the minimum metadata upon saving the image
- 8) Specific proposals related to QA/QC for microbiology: (a) adopt cell-counting standards for a given cruise (i.e. establish cross-scientist controls); (b) with respect to depth, randomize the samples for cell counts – could be issues with cross-contamination in some settings and randomization; also makes immediate counts as cores are collected impossible. This is a highly specialized concept and the scientists need to decide how this will be done onboard the ship.
- 9) Need to provide photographic documentation of routine and unique microbiological samples. This falls under (7) above.
- 10) Revisited oriented cores. No action/statement required as the IOs are doing this as possible (USIO does this, CDEX does this; ESO noted this is cost-prohibitive)
- 11) STP recommends IODP-MI take the lead in creating and maintaining a basic set of reference slides for lithologic description. This falls under (6) above.
- 12) IODP-MI should share scope of work, deliverables, timeline and management plan with IOs to ensure taxonomic name lists (TNL) are delivered in appropriate format and timely manner. No apparent progress has been made on the development and maintenance of other lists used in the database including digital taxonomic dictionary (DTD) and lithology list (LL). The utility of any of these lists will be limited by the

lack of a long-term management plan, which remains to be defined. STP encourages IODP-MI to discuss this with the IOs.

13) Core-Log-Seismic Integration: STP requests IODP ask the IOs provide comment on the IODP Depth Scales: Errors and Corrections document (follow up on STP consensus statement 0802-08)

14) Consensus statement will include need to get scientist buy-in to QA/QC

10:50 - Coffee break

11:15

Update on STP Roadmap breakout groups

Dugan presented petrophysics summary

Christensen presented core description summary

Nunoura presented microbiology/geochemistry summary.

12:10

Lovell presented consensus statements for review, agreement on wording and voting.

Final statements will be included in executive summary.

Neal recorded voting.

Gorin was not present for voting.

Christensen was only present for part of the voting.

Nunoura abstained from voting on items related to IODP Subsurface Life Task Force as he was a member of the TF and he also abstained from voting on CAB nominations because he was nominated.

Lin and Ikehara abstained for voting on issues related to KCC because they are from Kochi.

12:50

Break for lunch. Will resume discussion and voting on consensus statements at 14:00.

13:50

Resumed consensus statement review, agreement on wording, and voting.

Williams presented a short update on the magnetometer tool proposal incorporating comments/questions from EDP prior to voting on magnetometer tool consensus statement

Williams presentation emphasized benefit of new tool that is more robust and accurate than previous tools that are 20+ years old.

15:10

Coffee break.

15:30

Neal announced that we will continue the STP Roadmap discussions offline after this meeting but we need to get an STP consensus on how to work our roadmap with the EDP roadmap.

Should we develop our own roadmap completely or just provide science input to EDP roadmap?

We also discussed liaisons between STP and EDP. Probably should look at each other's agenda and then decide on a case-by-case basis depending on need, scientific scope and/or desired input.

Offline we need to continue to develop our roadmap. We have a lot of open spaces that we can fill in for our roadmap and we will revisit this at our next meeting.

Offline workgroup coordinators for roadmap will be Dugan (petrophysics), Naruse (core description), and Nunoura (microbio/geochem).

15:40

Discussion and voting on consensus statements for STP roadmap and STP-EDP liaisons.

16:00

Lovell noted we have to discuss – panel rotation and areas of expertise we need on the panel.

If one has ideas on missing expertise or expertise needs, please pass that information to Saito and/or Neal.

We need to think of the types of expertise we should request from China and/or Australia. Australia has provided some names that we should consider.

Lovell/Neal led discussion on agenda and location thinking two meetings ahead.

Neal suggested Hawaii as next location perhaps with logistical support from USAC who has meeting in HI. Provisional dates will be 7-9 January 2009. Neal will contact Roy Wilkins as potential meeting host.

Lee has volunteered to host the second 2009 meeting in Korea. Provisional dates will be during the week of 22 June and will be selected for 3 days.

Neal will circulate a preliminary agenda in the next week after discussion with Saito and request our feedback so he can forward to Kawamura.

16:15

Meeting closed.

7th IODP Scientific Technology Panel Meeting

**July 28th-30th, 2008
University of Alberta at Edmonton
Edmonton, Canada**

Final Agenda

July 28, 2008

1. Welcome, meeting logistics, safety, introduction, Robert's Rules, COI
2. Approval of meeting agenda
3. Approve Minutes from STP Meeting #6
4. Preliminary discussion of next meeting locations and dates; panel rotations.
5. Review status of previous meeting action items and recommendations (Kawamura)
6. SPC Report (Lovell/D'Hondt)
7. SAS Activity: SSEP, EDP (Kawamura/Lovell)
8. Consideration of issues from routine reports, supplied pre-meeting, from IODP-MI, SPC, lead agencies, & IOs; discussion focused on issues raised by Panel Members (no formal presentations)
9. Update on JR and CHIKYU
 - 9.1. JR
 - 9.1.1. Overview of analytical and data management systems and services on the new JR (Blum)
 - 9.1.2. "Test drive" external team report (Higgins)
 - 9.1.3. New Mag. Tool (Williams)
 - 9.2. CHIKYU (Eguchi)
10. Implementation of QA/QC – STP Consensus Statement 0802-01 - reports from IODP-MI, USIO, CDEX, and ESO
11. Regarding STP consensus 0802-03: Patent issue

July 29-30, 2008

12. Microbiology –
 - 12.1. Update from IODP-MI Task Force (D'Hondt);
 - 12.2. STP representation at EDP (TBN);
 - 12.3. Implementation plans
 - 12.4. Proposal for bio-archive core sampling and storage (Inagaki)
 - 12.5. Nomination of a Microbiology CAB member
13. Core-Log Seismic Integration: STP Consensus Statement 0802-08; reports from USIO, CDEX, and ESO
14. Development of STP Roadmap – session 1
15. Panel Rotation
16. Select Meeting Location and determine preliminary agenda
17. Finalize Consensus Items and Recommendations

Meeting participants:**Panel Members**

Name	Status	Affiliation
Castillo, Paterno	M	STP
Christensen, Beth	M	STP
Colwell, Rick***	M	STP
Dugan, Brandon	M	STP
Gorin, Georges E.	M	STP
Ikehara, Minoru	M	STP
Johnson, Paul	M	STP
Krastel, Sebastian	M	STP
Lee, Youn-Soo	M	STP
Lin, Weiren	M	STP
Lovell, Mike *	M	STP
Naruse, Hajime	M	STP
Neal, Clive **	M	STP
Nunoura, Takuro	M	STP
Saito, Sanny	M	STP
Schmitt, Doug	A	Alt Vigier
TBA (China)	M	STP

(*chair, **vice-chair; *** unable to attend)

Liaisons and Guests Attending:

Blum, Peter	L	USIO
D'Hondt, Steve	L	SPC
Eguchi, Nobuhisa	L	CDEX
Higgins, Sean	L	USIO
Houpt, David	L	USIO
Inwood, Jenny	L	ESO
Kawamura, Hiroshi	L	IODP-MI
Kuratomo, Toshikatsu	L	MWJ
Moe, Kyaw Thu	L	CDEX
Muraki, Hiroaki	L	MWJ
Röhl, Ursula	L	ESO
William, Trevor	L	USIO
Inagaki, Fumio	G	JAMSTEC