

Minutes

Second Meeting of the Scientific Measurements Panel (SciMP) of the IODP

June 23 - 25, 2004

**Boston University
Boston, Massachusetts, USA**

Attendees

SciMP

Aita, Yoshiaki	Japan, Utsunomiya University
Escartin, Javier	France, CNRS Institut de Physique du Globe
Gulick, Sean	US, Institute of Geophysics, Univ. Texas
Kasahara, Junzo	Japan, University of Tokyo
Korja, Annakaisa	Finland, University of Helsinki
Lyons, Tim	US, University of Missouri
Mandernack, Kevin	US, Colorado School of Mines
Murray, Rick (co-chair)	US, Boston University
Neal, Clive	US, University of Notre Dame
Nunoura, Takuro *	Japan, JAMSTEC
Okada, Makoto (co-chair)	Japan, Ibaraki University
Saito, Saneatsu	Japan, JAMSTEC
Sakamoto, Tatsuhiko	Japan, JAMSTEC
Screaton, Elizabeth	US, University of Florida
Spezzaferri, Silvia **	Switzerland, Univ. of Fribourg
Villinger, Heinrich ***	Germany, Bremen
Wilkens, Roy	US, University of Hawaii
Yamamoto, Masanobu	Japan, Hokkaido University

* Serving as alternate to Kenji Nanba (Japan).

** Serving as alternate for Mike Lovell (UK).

*** Non-voting ESSAC representative.

Note...the representative from China could not attend.

Liaisons and Guests

Blum, Peter	JOI Alliance, TAMU (Science Services/Laboratories)
Coffin, Mike	SPC Chair, Univ. of Tokyo, Japan
Freifeld, Barry	Lawrence Berkeley Laboratory, US.
Fujine, Kazuho	CDEX, Curator
Ito, Hisao	SPC, Japan
Kryc, Kelly	JOI Alliance, JOI (Washington, DC).
Kuroki, Kazushi	CDEX, Technical Supervisor
Rea, Brice	ESO, Petrophysics Representative (UK, Leicester)
Robinson, Stuart	JOI Alliance, LDEO, Borehole Research Group (BRG)
Roehl, Ursula	ESO, Bremen Repository
Ruppel, Carolyn	NSF, US.

Executive Summary

SciMP Recommendations, Consensus Statements, and Action Items

The second meeting of the Scientific Measurements Panel (SciMP) of the IODP occurred from June 23 - 25, 2004, at Boston University, Boston, Massachusetts, with co-chair Rick Murray serving as host. The SciMP meeting resulted in the following 16 Recommendations, 8 Consensus Statements, and 25 Action Items. These are forwarded to SPC for comment and/or approval, with appropriate distribution to IODP-MI or the SPPOC.

Upon the recommendation of the IODP-MI Sapporo office, we are following a numbering scheme of “Year-Month-Number” (that is, for this meeting, 04-06-xx) for the Recommendations, Consensus Statements, and Action Items. Brief overviews are provided where appropriate *in italics* before each Recommendation and Consensus Statement. Detailed background information is provided in the full minutes.

Note: Many of the presentations and draft Working Group reports (Powerpoint, etc.) by panelists and other attendees are included in the 28 different appendices. Recommendations written in these presentations were presented for discussion only, and the recommendations as written here in the Executive Summary and the Minutes are more current than those in the presentations.

Appendices to these minutes are as follows:

- Appendix 1 Agenda (Murray and Okada)
- Appendix 2 Report from most recent SPC meeting (Okada)
- Appendix 3 OD21/CDEX Report (Kuroki)
- Appendix 4 JOI-A Report (Blum)
- Appendix 5 ESO Report (Roehl)
- Appendix 6 Phase Two Non-Riser Ship Status (Blum)
- Appendix 7 Logging Issues (Robinson)
- Appendix 8 Downhole Tools Workshop Report (Murray)
- Appendix 9 Drill Cuttings (Saito and Kuroki)
- Appendix 10 Hydrology PPG Summary (Screaton)
- Appendix 11 X-ray CT Scanner (Freifeld)
- Appendix 12 Report from SPC (Coffin)
- Appendix 13 QA/QC Overview (Saito)
- Appendix 14 Paleontology and MRC WG Report (Aita)
- Appendix 15 Physical Properties WG Report (Gulick)
- Appendix 16 Petrophysics QA/QC Report (Gulick)
- Appendix 17 Downhole Tools WG Report (Saito)
- Appendix 18 Core Description WG Report (Saito)
- Appendix 19 Severely Dilated Samples (Saito)
- Appendix 20 Paleomagnetism WG Report (Okada)
- Appendix 21 Chemistry WG Report (Neal)
- Appendix 22 Microbiology Sub-Sampling (Mandernack)
- Appendix 23 Core-Log-Seismic Integration (Sakamoto)
- Appendix 24 IO Technical Report Coordination (Kuroki)
- Appendix 25 IO Technical Staff Rotation and Training (Kuroki)
- Appendix 26 IO Coordinated Report on Digital Imagery (Blum)
- Appendix 27 ESO-Arctic Lomonosov Ridge Update (Rea)
- Appendix 28 Third Party Magnetometer (Robinson)

Recommendations

SciMP has discussed the JOIDES ODP logging policy (e.g., the “400 m rule”) based on an analysis of logging practices during ODP. SciMP emphasizes the scientific importance and value of a regular logging program, realizing that this importance is sometimes not appreciated by the scientific community. The following recommendations stem from these discussions:

Recommendation 04-06-01: SciMP recommends that all IODP sites should be logged. The absence of planned logging of IODP sites in a proposal has to be explained and justified explicitly in the proposal.

Vote: 17 yes, 1 no, 0 abstain, 1 absent (representative from China).

The Drill Cuttings Team Working Group, chaired by Saito, has revised its report from the previous SciMP meeting (Nagasaki, December 2003) and presents it here for final approval.

Recommendation 04-06-02: SciMP recommends to SPC acceptance of the Drill Cuttings Team report, and requests SPC distribute it to the IO’s and IODP-MI. The full report and attached documents are found in Appendix 9.

IODP scientists should recognize the limitation of cutting usage as well as their usefulness. SciMP recommends:

- a. Appropriate sampling parameters, such as the sample interval and volume of drill cuttings, should be decided according to the scientific objectives of the expedition.
- b. Drill cuttings initially processed by on-site specialists should be forwarded to the on-site scientific laboratories as soon as possible.
- c. Washed and dried cuttings should be stored as permanent archives. All cuttings data should be stored in database with Cutting Sample ID.
- d. Access to mud logging data including drilling/geological information should be made available for browsing and storage in science database.

Drill Cuttings Appendix I:	Report of drill cuttings for SciMP
Drill Cuttings Appendix II:	An Introduction to Mud Logging for Scientists
Drill Cuttings Appendix III:	“Chikyu” Mud Logging and Cuttings Procedure
Drill Cuttings Appendix IV:	Physical Properties of Cuttings and their use for IODP

Vote: 17 yes, 0 no, 0 abstain, 1 absent (representative from China).

The interim SciMP and now the SciMP have received several presentations on x-ray CT scanning. It is clear that X-ray CT scanning is a mature technology that provides a detailed look at core prior to liners being opened. CT data will be useful for a wide variety of applications including improved sampling and measurements, core correlation, structural studies, and others. CT scanning can be done quickly enough that it will not impede the flow of core through the shipboard laboratories.

Recommendation 04-06-03: SciMP recommends that acquisition of x-ray CT scanners be given a high priority for shipboard and shorebased laboratories in IODP.

Vote: 17 yes, 0 no, 0 abstain, 1 absent (representative from China).

Upon a request from the SPC Chair, SciMP is assessing the role of the Science Coordinator (IODP-MI, Sapporo Office) in its meetings. We acknowledge the need to minimize travel and budgetary expenditures relating to the multiple meetings being held by the entire IODP structure.

Recommendation 04-06-04: SciMP recognizes the value of having a Science Coordinator from the IODP-MI Sapporo office at its meetings. Among other contributions, participants from that office have historically provided valuable updates on cruise/research proposals, and have also provided programmatic memory. Such updates have defined project-specific needs that fall within the advisory purview of SciMP. SciMP requests that the Science Coordinator record the minutes of the meeting, thus optimizing the advisory role of the SciMP member now compromised by that task.

Vote: 17 yes, 0 no, 0 abstain, 1 absent (representative from China).

The Paleontology and MRC Working Group, chaired by Saito, has revised its report from the previous SciMP meeting (Nagasaki, December 2003), incorporated results from the ad hoc Working Group meeting, and presents a final report here for final approval.

Recommendation 04-06-05: SciMP recommends to SPC acceptance of the Paleontology and MRC Working Group report, and requests SPC distribute it to the IO's and IODP-MI as soon as possible. The full report of the WG is found in Appendix 14. SciMP recommends:

- a. The SciMP recommends the establishment of a Paleontology Working Group, perhaps as an IODP-MI task force. Membership should include appropriate persons from SciMP, at least one Micropaleontological Reference Center (MRC) curator and other experts as needed. Issues to be considered include: development of digital atlas and taxonomic dictionaries, acquisition of technical support on board drilling platforms, interaction of MRCs with scientific communities, sample preparation procedures, control of the quality of paleontologic data and other related matters.
- b. SciMP recommends that the MRCs should (1) be renamed as Integrated MRCs (IMRCs), and (2) continued in IODP as an integrated component. Formal inclusion of IMRCs collections and curators will provide an important resource to IODP for the production of micropaleontologic training and public education materials, for maintaining quality control of paleontologic and biostratigraphic data within IODP, as a liaison to the broader micropaleontologic community, and for insuring an archival legacy of IODP

micropaleontologic recovery. “Formal inclusion” could include participation as panel or task force representatives, making regularly scheduled presentations to SciMP, and other activities of the IODP.

- c. IODP must coordinate their efforts regarding digital taxonomic dictionaries and cyber atlases and related issues with other national and international initiatives such as CHRONOS, NEPTUNE and et.al. SciMP recognizes the importance of international cooperation and interaction among the IOs and the micropaleontologists community and encourages collaborations with IMRC curators to develop these dictionaries to be used on the IODP drilling platforms

The microfossil groups to be covered should include calcareous nannofossils, planktic foraminifera, benthic foraminifera, diatoms, silicoflagellates, radiolarians, and palynomorphs (dinoflagellates and pollen).

The taxonomic dictionaries for the Cenozoic and Mesozoic should be updated and expanded on a regular basis (e.g., once per year).

- d. The SciMP recommends that post-cruise data capture and updating of older data become an ongoing activities of IODP, working in cooperation with relevant various expert groups, e.g. IMRCs, CHRONOS, NEPTUNE and ODSN. Both taxonomic dictionaries and chronology updates should be core products available via the proposed Information Services Center (ISC).
- e. The MRCs should reduce their sampling to recover only key remaining gaps in current coverage, as they have requested.
- f. The MRCs should explore funding possibilities to insure the timely completion of the IMRC sample set and on-line publication together with the relevant age information.

SciMP also supports the following “Consensus Statement” from the Paleontology WG:

SciMP realizes the critical importance of chronostratigraphy in guiding drilling operations and interpreting earth history in the new multiplatform IODP structure. The SciMP therefore stresses the importance of paleontologists’ participation in the panel.

Vote: 17 yes, 0 no, 0 abstain, 1 absent (representative from China).

SciMP is reorganizing to merge the former Physical Properties, Downhole Logging, and Underway Geophysics working groups into a new Integrated Petrophysics Working Group to provide greater breadth of expertise and improved integration of core-based measurements, downhole logging, and surface and downhole geophysics.

Recommendation 04-06-06: SciMP recommends the integration of petrophysical disciplines for the formation of IODP working groups, interaction with the IOs, and discussions of technical and scientific feasibility and significance in the IODP.

Vote: 17 yes, 0 no, 0 abstain, 1 absent (representative from China).

Recommendation 04-06-07: SciMP recommends to SPC acceptance of the Physical Properties Working Group report, and requests SPC distribute it to the IO's and IMI as soon as possible. The full report of the WG is found in Appendix 15 and includes descriptions of standard and minimum measurements across the IODP and on specific platforms. Specific recommendations of the Physical Properties WG include:

- a. The final ODP operations for physical properties measurements be taken as a minimum requirement for IODP Phase I operations, but with the addition of resistivity. Furthermore, we recommend that the following be urgently considered: colour reflectance upgrade, implementation of calibration standards, and upgrade of natural gamma ray.
- b. The MST/MSCL should be standardized on both the riser and non-riser vessels and be incorporated into mission specific platform (MSP) projects. Discrete samples should be taken for QA/QC and calibration procedures of ephemeral properties against the MST.

SciMP also supports the following “Consensus Statement” from the Physical Properties WG:

SciMP should examine petrophysical plans in detail for each MSP expedition. This examination is to ensure the proposed measurement strategy adequately meets the requirements of the science objectives and the legacy nature of IODP data.

Vote: 17 yes, 0 no, 0 abstain, 1 absent (representative from China).

To enable rigorous and acceptable QA/QC procedures to be implemented across IODP platforms the following recommendations are made to SPC. Many of these relate to other areas (e.g. Chemistry WG) with significant overlap, but are formulated from the Petrophysics viewpoint.

Recommendation 04-06-08: SciMP recommends to SPC acceptance of the Petrophysics QA/QC report, and requests SPC distribute it to the IO's and IMI as soon as possible. The full report is found in Appendix 16. Specific recommendations include:

- a. IO's be requested to provide details of proposed QA/QC measures, including calibration, for all petrophysics measurements appropriate to their platform. These should address initial calibration, and quality assurance and control on a short term (daily) and long term (monthly) timescale for routine continuous and discrete measurements and occasional measurements.
- b. IO's be requested to provide details of how they propose assessing and recording QA/QC with respect to 3rd parties (e.g. logging contractors). This request primarily concerns how the 3rd party calibration is dealt with and initially assumes there will not be any additional burden on 3rd parties.
- c. IO's be requested to provide details and implementation plans for performance records: these should enable easy identification of problems, drifts/anomalies in measurements, and address how the science party can access the records.
- d. IO's be requested to provide suggestions for explicit training of scientists and technicians in QA/QC and calibration to ensure data accuracy and precision are comparable. This should concern individual and cross-platform issues.

Vote: 17 yes, 0 no, 0 abstain, 1 absent (representative from China).

SciMP is aware that a focused look at hydrogeology has not yet occurred in IODP. Near the end of ODP, however, the JOIDES Hydrology PPG produced an in-depth report that still has many relevant aspects to the IODP. SciMP read this report very carefully, and discussed multiple aspects of it. Consensus Statements 04-06-02 and Action Item 04-06-03 also resulted from this discussion. In particular, temperature information is extremely valuable for hydrogeology objectives, as well as for chemistry, microbiology, and tectonic interpretations. The additional time cost of APC temperature measurements is small (20-30 mins per measurement). Accordingly :

Recommendation 04-06-09: SciMP recommends that APC temperature measurements be taken at least at one hole per site at a frequency of 1 measurement per approximately 30 m, with a suggested minimum of 3 measurements per site.

Vote: 17 yes, 0 no, 0 abstain, 1 absent (representative from China).

Recommendation 04-06-10: SciMP recommends to SPC acceptance of the Downhole Tools Working Group report, and requests SPC distribute it to the IO's and IMI as soon as possible. The full report of the WG is found in Appendix 17 and includes descriptions of common standards and minimum requirements across IODP and platform specific recommendations. Specific recommendations of the Downhole WG include:

- a. QA/QC data, for both logging and other downhole tools, such as calibration data, QC logs, correction parameters should be stored in the science database where possible so that scientists can access the data.
- b. SciMP recommends that logging plans for the riser platform take advantage of availability of large diameter tools to maximize scientific achievements.
- c. For both operational and scientific purposes, SciMP recommends frequent and effective use of LWD/MWD for drilling.

SciMP also supports the following "Consensus Statement" from the Downhole Measurements WG:

Sonic log has a huge potential, however it also has a lot of issues before scientists utilize its data; especially stoneley wave and S (flexial) data. Sonic waveform data should be distributed by standard format in science community. Sonic waveform data should be recorded, where possible. IO's should provide scientists every information to utilize the data.

Vote: 17 yes, 0 no, 0 abstain, 1 absent (representative from China).

The Core Description Working Group, chaired by Saito, has revised its report from the previous SciMP meeting (Nagasaki, December 2003) and presents it here for final approval.

Recommendation 04-06-11: SciMP recommends to SPC acceptance of the Core Description Working Group report, and requests SPC distribute it to the IO's and IODP-MI as soon as possible. The full report of the WG is found in Appendix 18.

Core description and archival of sampled materials is an essential component of IODP Expeditions, and requires standardized preparation and description, and integrated core processing flow, and a comprehensive database, as addressed in the Core Description Working Group Report. SciMP recommends:

- a. The development of precise splitting techniques of cores to provide maximum quality of surfaces to be described.
- b. The integration of core images in a multi-data browsing system so as to integrate imagery and non-destructive measurements for core description.
- c. The preparation and creation of reference smear and thin section collections common to all platforms and on-land facilities.
- d. An adequate core archiving strategy for all core samples recovered during IODP expeditions to insure post project description and sampling requirements.
- e. An adequate archiving strategy for drill cuttings, when available.

Vote: 17 yes, 0 no, 0 abstain, 1 absent (representative from China).

The Paleomagnetism Working Group, currently chaired by Okada, has revised its report from the previous SciMP meeting (Nagasaki, December 2003) and presents it here for final approval.

Recommendation 04-06-12: SciMP recommends to SPC acceptance of the Paleomagnetism Working Group report, and requests SPC distribute it to the IO's and IODP-MI as soon as possible. The full report of the WG is found in Appendix 20. SciMP recommends:

- a. A non-magnetic core barrel be used for all IODP APC coring to minimize drilling induced magnetic overprint on sediments.
- b. U-channels will constitute the standard paleomagnetic sample in all cases when it will be feasible to perform u-channel sampling of the cores, and they should be routinely collected in IODP expeditions.
- c. Measurements and analyses should be carried out as soon as possible during the Expedition.
- d. The order of measurements on discrete samples and/or u-channels is as follows:
 1. Magnetic susceptibility,
 2. Natural Remanent Magnetization (NRM),
 3. Stepwise demagnetization of the NRM,
 4. (Stepwise) Acquisition and demagnetization of an ARM,
 5. (Stepwise) Acquisition and demagnetization of an IRM.
- e. Permanent magnets are recommended for calibration of magnetometers. Paramagnetic rare earth oxides are recommended for calibration of susceptibility meters. Calibration standards should be measured before the routine work to produce reliable data.

Vote: 17 yes, 0 no, 0 abstain, 1 absent (representative from China).

The Chemistry Working Group, chaired by Neal, has revised its report from the previous SciMP meeting (Nagasaki, December 2003) and presents it here for final approval (Appendix 21).

Recommendation 04-06-13: SciMP recommends that SPC accept the report of the Chemistry Working Group (CWG) and the recommendations contained therein, which is the result of input from the ocean drilling community regarding analytical facilities associated with IODP. SciMP requests that SPC distribute the report to the IOs and IODP-MI as soon as possible.

The CWG report contains 11 specific recommendations and 6 Action Items that reflect the following overall conclusions that:

- A. Better standardization/calibration should be employed for IODP than was available for ODP; and
- B. Technician training should be at a higher level than during ODP to maintain the equipment while on-site and also to ensure the data generated is of the highest quality.

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A full discussion of these and related issues can be found in the Chemistry Working Group report (Appendix 21).

SciMP endorses the following recommendations.

A variety of samples will be handled and in order that these are not compromised for immediate or future analyses, careful handling/storage procedures need to be followed. Accordingly:

CWG Recommendation 1: Sample handling procedures should be specified for each expedition such that the integrity of the drilled samples are not compromised. This should be discussed and specified during the expedition planning stage between the co-chief scientists and the IO.

Use of microscopy during any drilling expedition is a vital part of the characterization and science that is undertaken. Applications include micropaleontology, smear slides, petrologic thin sections, etc. Several of the respondents to the CWG survey requested that the microscopy facilities in IODP be significantly upgraded from ODP; this includes both microscopes and thin section making capabilities. Round-the-clock operation of thin section laboratories is essential for sample throughput, which in turn could influence drilling and, therefore, the scientific return of a given expedition. Accordingly:

CWG Recommendation 2: SciMP recommends that there be a sufficient number of microscopes configured for each specific use to achieve the scientific objectives of a given expedition, that they be equipped with both transmitted and reflected light capabilities, be able to work up to 1600X total magnification in air (and, as much as possible, oil), as well as have the ability to take and store digital images.

*The addition of a **laser ablation** (LA) facility that would interface with the ICP-MS has been discussed in some detail. It is evident that the new laser systems (e.g., the New Wave UP-213 nm) are very powerful and relatively simple to operate. Quantitative data may not be possible because major element data, which are used as internal standards, will not be determined while on site. However, as long as the external standardization procedure is robust, diagnostic elemental ratios may be obtained from glass and mineral samples that could be used to influence drilling. These analyses do not require digestion nor is a polished section necessary. Rather, a flat sample surface is needed. Therefore, sample throughput is much quicker than for bulk rock analyses. Furthermore, electron microprobe data can be obtained during shore-based studies and the LA-ICP-MS data gathered on site can then be quantified. Samples that could be analyzed are glasses, minerals, and other features requiring fine-scale resolution. Accordingly:*

CWG Recommendation 3: SciMP recommends that a laser ablation facility (with radiation of 213 nm or less) be available on the Riser & non-Riser platforms for interfacing with an ICP-MS.

The CWG is working from the following position: There is no substitute for data of the highest quality. By adhering to this premise, it is anticipated that the data obtained on different platforms will be of the highest quality, such that they will be able to influence drilling decisions and be publishable in scientific journals. With IODP operating multiple platforms and analytical facilities, data quality is an extremely important aspect that requires careful consideration in order for data generated while on site to be used in scientific publications. Where analytical facilities are

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duplicated on platforms and in shore-based labs, each should have the same suite of reference materials available. Accordingly:

CWG Recommendation 4: Standards/reference materials for each analytical facility be uniform across the different platform and IODP-affiliated shore-based laboratories.

All blank, reference material, and sample data (especially duplicate analyses) should be easily obtained from the data repository. Each datum should include a date and who the analyst was. These data should be regularly scrutinized (as described in the report), problems highlighted, and solutions given. During ODP, routine analysis of Standard Reference Materials (SRMs) that were run as unknowns during a normal sample batch was discouragingly rare. Accordingly:

CWG Recommendation 5: Routine analysis of reference materials as unknowns during every analytical run must become common practice on all IODP platforms and related shore-based labs.

If there is an occasion to use third party equipment (defined as specialized analytical facilities not in the IODP inventory), its suitability should be demonstrated prior to the expedition by reference material and duplicate sample analyses. All sample, reference material, and blank data need to be uploaded to the data repository and be available for scrutiny. Accordingly:

CWG Recommendation 6: If third party analytical equipment is to be used on any IODP platform, its suitability should be demonstrated by the analysis of relevant reference materials *prior* to the start of the expedition.

SciMP should act as a guarantor of high quality data produced by IODP analytical facilities. Regular status reports of the IODP analytical facilities should be made at each SciMP meeting along with actions taken/proposed by the working group/committee. Coordination should be through the co-chairs of SciMP and the respective IOs. Critical in this endeavor is traceability of all data uploaded to the data repository. Each analysis should include the date of the analysis, sample type, the analyst, platform, etc. Accordingly:

CWG Recommendation 7: SciMP will advise the IOs on the development of analytical and sample preparation protocols, as well as their implementation on the various IODP platforms and in shore-based laboratories. SciMP will also oversee and advise on QA/QC issues (and in the mitigation of problems) as they relate to geochemical analyses.

Accurate weighing of the samples and any added reagents is essential for accurate and precise data. As has been seen on the JR, this is difficult on a moving ship, and introduced significant errors into the analyses both directly (through weighing errors) and indirectly (through conducting sample preparations by volume measurements rather than weight). We recommend that a balance be isolated (using a gimble or gyroscope system) for such accurate weighing. Accordingly:

CWG Recommendation 8: The CWG of SciMP recommends that facilities for accurate weighing on a moving ship be made available on the Riser and non-Riser platforms. Such facilities will greatly increase the quality of geochemical data generated on these platforms, enhancing their usability in scientific publications.

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The following three “CWG Recommendations” deal with chemistry technical support. Technician training and ability is a critical part of obtaining the highest quality data, not only in sample preparation and analysis, but also in maintaining and trouble-shooting problems with individual pieces of machinery. The CWG recommends that all IODP technicians should have at least a Masters degree in analytical chemistry, geochemistry, or related fields, and/or sufficient experience or training. However, this alone will not guarantee that quality data will continue to be produced from each analytical facility over the life of IODP. It is essential that the technicians understand the various sample preparation techniques and be able to adequately judge data quality and the best way to do this is to give the technicians training in an IODP-related research laboratory (e.g., Kochi, Bremen, TAMU) or visiting university laboratories for 2-4 weeks. Accordingly:

CWG Recommendation 9: All IODP chemistry technicians should have at least a Masters degree and/or sufficient experience or training in analytical chemistry, geochemistry, or related fields. This is essential to ensure that the technician is skilled enough to deviate from a prescribed set of procedures should a given situation require it.

CWG Recommendation 10: Each laboratory technician should undergo training with the respective manufacturer of the analytical facility they are to be responsible for. Such training should include maintenance, trouble-shooting, and software. There should be regular (annual?) refresher courses that would allow the technicians to stay up-to-date with hardware and software developments.

CWG Recommendation 11: Each chemistry laboratory technician should undergo training at IODP-related (or where applicable, university research laboratories), in order to understand how to judge data quality and the problems associated with obtaining data that are of the highest quality.

Vote: 17 yes, 0 no, 0 abstain, 1 absent (representative from China).

With the first IODP expeditions happening in summer, 2004, and with technological planning well underway for all platforms and shorebased laboratories, the IO's are appropriately moving ahead with documentation of technological and engineering procedures. There needs to be some uniformity in these publications right from the start, and the below recommendation is designed to ensure that such uniformity is put in place.

Recommendation 04-06-14: SciMP recognizes the unusual fiscal constraints and its consequences for publications for the first year of the IODP. SciMP encourages SPC/IODP-MI to insure that consistent editing, layout and production for the IODP is established as soon as possible, as described in previous SciMP Recommendations. In particular, SciMP recommends:

- 1) That IOs prepare Expedition Reports, and other documents such as technical notes and engineering reports, until the RFP for publications is issued, and, when possible, that the IOs communicate to minimize differences in the publication process
- 2) That a single organization be contracted for technical editing, layout and production of the reports prior to the RFP.
- 3) That an RFP for publications be issued as soon as possible so as to insure that publications of the IODP, including those of expeditions prior to the RFP for publications, are consistent and centralized.

Vote: 17 yes, 0 no, 0 abstain, 1 absent (representative from China).

The below recommendation results from repeated discussions through several meetings regarding how SciMP can be better prepared for drilling expeditions that have been scheduled. Often, by the time an expedition is scheduled, it is too late to raise issues regarding potential technical and database implications. When these considerations are considered too late in the cycle, "leg creep" commonly results. This need is important for both routine expeditions (e.g., assessment of logging) as well as for engineering issues. The below strategy is designed to combat this problem. This is the latest in a line of recommendations to this end, and results from discussions with the Chair of SPC.

Recommendation 04-06-15: The SciMP recommends that the SPC send ranked proposals to the SciMP for technological evaluation when the proposals are forwarded to OPCOM for potential scheduling.

Vote: 17 yes, 0 no, 0 abstain, 1 absent (representative from China).

As identified at the May, 2004 Downhole Tools Workshop (Fleming, Fisher, Murray), access to facilities for testing, calibration and inter-comparison of tools is crucial to third-party tool development. While onland testing is a necessary step, actual deployment of a tool on the platform may be necessary to evaluate performance prior to its use to fulfill scientific objectives on a leg. Accordingly:

Recommendation 04-06-16: SciMP recommends that IODP-MI examine potential procedures by which regular downhole tool and engineering testing could be hard-wired into the annual program plan.

Vote: 17 yes, 0 no, 0 abstain, 1 absent (representative from China).

Consensus Statements

Consensus Statement 04-06-01: SciMP is very discouraged by the delay in the creation of a central Information Services Center to coordinate the data generated by and information from IODP related activities. SciMP reiterates the importance of establishing an ISC as soon as possible. This is particularly relevant for Observatories and Legacy Holes and data and how these relate to IODP. With expeditions now operating, the need for an ISC is immediate.

Consensus Statement 04-06-02: SciMP appreciates the contributions of the JOIDES Hydrogeology PPG in highlighting data collection issues relevant to hydrogeology, and note that their recommendations to establish protocols and QA/QC procedures for temperature and pressure measurements are in accordance with recommendations recently or currently being put forth by IODP SciMP.

SciMP supports the recommendations by the JOIDES Hydrogeology PPG for consideration of future IODP efforts to support hydrogeologic data collection, including but not limited to expanded packer capabilities, improved shipboard low-flow pumps and real-time downhole pressure monitoring tools, improved capability for downhole water sampling, enhanced ability to recover fluid samples from the pressured core sampler, improved temperature measurement tools, and establishment of apparatus to measure electrical conductivity.

SciMP recognizes the value of collecting hydrogeologic data within a variety of subseafloor settings, including drilling legs that do not have a primarily hydrogeologic objective. Accordingly, SciMP supports the use of in situ formation temperature and pressure tools, and the collection of fluid porewater chemistry data because of their importance for fluid flow objectives, and encourages the availability of cores for permeability and consolidation testing.

Consensus Statement 04-06-03: SciMP endorses in principle the SPC recommendation to store cores in the Bremen, Gulf Coast and Kochi repositories based on geographic grouping of cores as suggested by IODP-MI. SciMP requests that it be consulted during the progress of this initiative so as to evaluate its possible impact on shorebased core processing, curation, and other matters.

Consensus Statement 04-06-04: SciMP enthusiastically endorses the concept of scanning all DSDP volumes into digital format. This effort will facilitate their wide electronic distribution and could provide digital images suitable for specific scientific purposes, such as quantitative analysis of core photographs. Details of this effort will be dictated by financial considerations and the scientific needs of the community, including the resolution of scanned graphics and the parceling of each document into single or multiple files. A balance of these and other considerations should be achieved so as to complete this task in a timely manner.

Consensus Statement 04-06-05: SciMP endorses the use of the 3rd party magnetometer from the University of Gottingen on Core Complex 2 (expedition 305), as presented by the JOI-A. We recommend that appropriate spare materials be made available.

See following page for more...

Consensus Statement 04-06-06: SciMP expresses their thanks to Rick Murray and Christa Ziegler for their hospitality and efforts towards supporting our meeting and associated functions. We are also grateful to Boston University for providing the meeting venue, and to the Dean of the College of Arts and Sciences and to JOI for supporting the welcoming reception. The facilities for this meeting have been excellent, and we have wanted for nothing in the way of a comfortable, commodious room, audio-visual equipment, electronic and inter-net connection, and food and drink.

Consensus Statement 04-06-07: SciMP gratefully thanks Yoshiaki Aita, Saneatsu Saito, and Javier Escartin for their hard work and dedication to the IODP over the years they have served on this panel. Their presence on SciMP will be missed but we anticipate that they will continue to contribute to IODP in their new roles, and we wish them well.

Consensus Statement 04-06-08: SciMP gratefully acknowledges all of the work that Rick Murray has put in to the smooth running of SciMP during his time as co-chair. He has led us the right way all the time based on his outstanding organization and coordination abilities covering not only SciMP itself, but also for the complicated entire IODP structure. We believe without any doubt that he will take a lead in scientific drilling in his new roles, and wish him well in his life beyond SciMP.

Action Items

Action Item 04-06-01: ESO to provide SciMP with issues/ramifications to downstream core processing and archiving associated with the use of core diameters different than standard IODP diameters. The OPCOM Chair will be asking SCIMP to address this issue at their next meeting, so SciMP needs to get started as soon as possible.

Action to be taken by: *ESO lead.*

Action Item 04-06-02: ESO will provide the SciMP with a “Tahiti Measurements Plan” as soon as possible, so that the SciMP, in consultation with the ESO and IODP-MI may begin the reviewing of the shipboard and shorebased sampling and analytical plan.

Action to be taken by: *ESO to lead.*

Action Item 04-06-03: A SciMP working group should continue to evaluate more detailed recommendations on measurements for hydrogeologic objectives.

Action to be taken by: *Screaton to coordinate.*

Action Item 04-06-04: SciMP to recommend to IODP-MI representatives to serve on the Curatorial Advisory Board (see “Sample, Data, and Obligations” Policy).

Action to be taken by: *Murray.*

Status: On June 28, 2004, Murray emailed Hans-Christian Larsen that K. Nanba (Japan, microbiology), C. Neal (US, igneous petrology and geochemistry), and H. Villinger (Germany, geophysics and tools) were selected. These individuals represent balance between national entities and expertise.

Action Item 04-06-05: In response to a request from SPC, the SciMP and the TAP shall work with MBARI in developing a draft plan for managing the MARS-IODP borehole test site as outlined in IODP proposal 621-Full (Installation of Borehole Observatories in Monterey Bay). A Joint SciMP and TAP report, with input from MBARI and other proponents, will be finalized for the October 2004 SPC meeting.

Action to be taken by: Co-chair Okada, who will be attending the upcoming TAP meeting, will work with TAP on identifying an *ad hoc* working group.

Two “Action Items” Resulting from Paleontology WG Report...

Action Item 04-06-06: The MRCs, in consultation with SciMP, initiate discussions with IODP-MI and funding agencies to explore how to grant permanent archival status in appropriate major Museums for one set of each of the current four collection types (foram, nanno, rad, diatom), as designated by the IMRC curators. The remaining 7 sets of each fossil group should retain their indefinite loan status.

Action to be taken by: *MRCs.*

Action Item 04-06-07: The Paleontology WG of SciMP will work with the IOs to evaluate and review the common data content items of potential paleontological databases used by the IODP and will report their result at the next SciMP meeting.

Action to be taken by: *Paleontology WG and IO's.*

Action Item 04-06-08: The SciMP Petrophysics Working Group should examine petrophysical measurements for non-riser Phase II and the *Chikyu* to ensure maximum incorporation of technological developments, and report to SciMP at its next meeting.

Action to be taken by: *Petrophysics WG*

Two “Action Items” Resulting from Petrophysics QA/QC Report...

Action Item 04-06-09: SciMP Petrophysics WG to evaluate IOs QA/QC plan and strategy for inter-facility calibration.

Action to be taken by: *SciMP Petrophysics WG*

Action Item 04-06-10: An *ad-hoc* SciMP group could be established to consider implementation at a later date of blind calibration tests.

Action to be taken by: *SciMP Petrophysics WG.*

Three “Action Items” Resulting from Downhole Measurements WG Report...

Action Item 04-06-11: IOs in consultation with SciMP identifies the minimum level of data processing and necessary skill level for the processing for each measurement across all drilling platforms.

Action to be taken by: *IO's.*

Action Item 04-06-12: SciMP Petrophysics working group, in consultation with IOs, will identify temperature and pressure downhole tools whose standard operating and interpretation procedures need be developed or updated.

Action to be taken by: *SciMP Petrophysics WG*

Action Item 04-06-13: SciMP facilitates development of general policies for downhole tools, borehole experiments, and long-term monitoring. SciMP will form an *ad hoc* working group to investigate the development of these policies.

Action to be taken by: *SciMP co-chairs to name members of ad hoc WG.*

Action Item 04-06-14: SciMP identified major issues related to handling and measurements on severely dilated samples. Possible solutions for detection and correction of dilation include; a) development of correction methods for stratigraphic thickening due to elastic rebound and b) facilitation of laboratory petrophysical measurements under *in situ* condition (e.g., consolidation tests). SciMP shall continue to investigate handling and measurements on severely dilated samples.

Action to be taken by: *Petrophysics WG and Core Description WG, with a report to be made at next SciMP meeting.*

Action Item 04-06-15: The Paleomagnetism Working Group establish a strategy for inter laboratory standardization and QA/QC for paleomagnetic measurements.

Action to be taken by: *Paleomagnetism Working Group.*

Six “Action Items” Resulting from Chemistry WG Report...

Action Item 04-06-16: SciMP will work with the IOs to investigate the modular lab concept for MSP operations.

Action to be taken by: *SciMP (Petrophysics WG, Chemistry WG, and Microbiology WG) and IOs.*

Action Item 04-06-17: SciMP will work with the various IOs to explore the possibility of adding Environmental SEM and Cathodoluminescence capabilities to the microscopy facilities on the various platforms and affiliated shore-based laboratories.

Action to be taken by: *SciMP (Chemistry WG) and IOs.*

Action Item 04-06-18: The Chemistry WG will explore the suitability of microwave digestion in the preparation of rock and sediment samples for various geochemical analyses, such as ICP-OES and ICP-MS, as a way of increasing sample throughput, safety, and the uniformity of the preparation technique across different platforms and related shore-based labs.

Action to be taken by: *SciMP Chemistry WG.*

Action Item 04-06-19: SciMP asks that the IOs of the various platforms examine the potential problem of an oscillating plasma when using a quadrupole ICP-MS on a moving platform. SciMP further asks that the IOs report the results of their investigations to SciMP at the January 2005 meeting. SciMP will be conducting independent investigations of this issue and will also report their findings at the January meeting.

Action to be taken by: *Chemistry WG and IOs.*

Action Item 04-06-20: The feasibility of having a gas-source stable isotope mass spectrometer on both the Riser and non-Riser platforms be explored. The function of this mass spectrometer would primarily be to undertake analyses of ephemeral samples such as headspace gases and pore waters. SciMP recognizes that in order for this to work peripheral, on-line devices must be included as dictated by scientific need (e.g., GC and an Elemental Analyzer).

Action to be taken by: *Chemistry WG.*

Action Item 04-06-21: The Chemistry Working Group of SciMP will study the issue of “blind calibration tests” and formulate a policy on this matter to be presented at the January 2005 meeting.

Action to be taken by: *Chemistry WG.*

Action Item 04-06-22: Murray to forward on to IO’s and IODP-MI the information provided by panelist and microbiologist Kevin Mandernack in response to Action Item 03-02-16 (from Nagasaki meeting).

Action to be taken by: *Murray...material is provided as Appendix 22.*

Action Item 04-06-23: SciMP recognizes the need to form a WG to examine various aspects of core-logging-seismic integration. The WG will meet by e-mail and develop a report to next SciMP meeting, including fundamental points of depth correction methods of construction of composite depth section and mcd (meters of composite depth) for the recovered cores, core and logging integration, and logging-seismic integration. Members of the WG will include representatives from the IO's and SciMP members (Sakamoto, Gulick, Blum, Kuroki, Takahashi, Robinson, Rea, Kasahara).

Action to be taken by: *Sakamoto lead.*

Action Item 04-06-24: SciMP supports the creation of an archive that contains images of the highest quality possible. To this end, SciMP supports and encourages continued communication between the different IOs regarding the quality of archival images, and asks that they report on progress at the next SciMP meeting.

Action to be taken by: *IO's.*

Action Item 04-06-25: A SciMP working group, in consultation with the IO's, will examine issues related to IODP third-party tool development guidelines and report back to the next meeting of SciMP.

Action to be taken by: *SciMP co-chairs, IO's. SciMP members Kasahara, Villinger, and Wilkens will constitute SciMP's contribution to the working group.*

Action Item 04-06-26: SciMP to invite Dr. Johannes Stoll to present at their next meeting a report on the long-term prospects of magnetometer tool usage in IODP.

Action to be taken by: *SciMP co-chairs.*

MINUTES

Wednesday, June 23, 2004

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

1. Welcome and Logistics

Murray introduced himself, welcomed all participants to the great and famed city of Boston, and outlined the logistics of the meeting.

2. Introductions of Continuing and New Members, Guests, Liaisons

Murray introduced all panelists, guests, and liaisons, as well as Christa Ziegler, a Boston University Earth Sciences graduate student who was helping run the meeting. Alternates to the SciMP members are as listed in the “Attendees “ list.

3. Review and Approval of Agenda

Murray asked for review of the agenda. Several new items were added, including:

Comments from the US NSF:	Item 6A
Election of Curatorial Advisory Board (CAB):	Item 15A
X-Ray CAT Scanning	Item 16A
Downhole Measurement WG Report:	Item 21A
Paleomag WG Report:	Item 23A
Discussion of Uniformity of Technical Reports:	Item 27A
SciMP Involvement in Proposals	Item 30A

Motion to approve the agenda (*Appendix 1*) was moved (Neal), seconded (Screaton), and approved (17 yes, 0 no, 0 abstain, 1 absent [Chinese representative]).

For the remainder of these minutes, all unanimous votes will be recorded as “17-0-0-1”.

4. Review and Approval of Minutes from December 2003 (Nagasaki, Japan) Meeting

Motion to approve the December 2003 minutes was moved (Neal), seconded (Escartin), approved unanimously and forwarded on to the SAS Office for posting and distribution.

5. Review of IODP Panel Structure, SciMP Mandate, and SciMP Working Groups

For the benefit of the very many new members and attendees, Murray briefly reviewed these matters, paying particular attention to SciMP’s mandate and interactive position in the Science

Advisory Structure (SAS) and how to relate most efficiently with the Implementing Organizations (IOs).

6. Status of Recommendations from Prior Meeting

Murray reviewed the status of Recommendations and Action Items from the December 2003 meeting (Nagasaki, Japan). The status (**in bold**) is as follows, with the word **Boston** meaning it will be discussed again here:

Recommendations

03-03-01:	Input to SSEPS	Received by SPC, Boston.
03-02-02:	Legacy Hole and D'Hole Meas.	Accepted.
03-02-03:	Seismic Integrator position	Accepted.
03-02-04:	Checkshots/VSPs	Accepted.
03-02-05:	Observatories	Accepted, Boston.
03-02-06:	Sample, Data Policy	Accepted, sent to SPPOC for further discussion.
03-02-07:	Publications	Received by SPC, included in their report to SPPOC.

Consensus Statements

All consensus statements were noted by SPC and were included in their discussions.

Action Items

03-02-01:	Mandate	Done.
03-02-02:	Arctic Measurement Plan	Done.
03-02-03:	Cuttings	Done, Boston.
03-02-04:	Core Description WG	Done, Boston.
03-02-05:	Phys Props WG	Done, Boston.
03-02-06:	Chemistry WG	Done, Boston.
03-02-07:	Digital Imagery	Done, Boston.
03-02-08:	Core Description IO Report	Done, Boston.
03-02-09:	Paleomag WG	Done, Boston.
03-02-10:	Integrated Petrophysics Plan	Done, Boston.
03-02-11:	Downhole Tools by IO's	Delayed.
03-02-12:	QA/QC	Delayed.
03-02-13:	Severly Dilated Samples	Done, Boston.
03-02-14:	Phase 1 Drilling	Done, Boston.
03-02-15:	Microbiology WG	Done, WG report was accepted by SPC.
03-02-16:	Microbio subsampling	Done, Boston.
03-02-17:	ICP-MS specifications	Done, Boston, as part of Chem WG
03-02-18:	<i>Chikyu</i> Hood Space	Delayed.
03-02-19:	Technical Support Rotation	Done, Boston.
03-02-20:	Expedition Naming	Done.
03-02-21:	Report and WG publishing	Done.

Although it was not discussed solely at this time in the meeting, the issue of the status of the Information Services Center (ISC) was raised, with specific regard as to when it would be put forth by IODP-MI. As such an entity, despite being approved by SPC and forwarded to IODP-MI, appears to be stalled in terms of its implementation, the discussion led to:

Consensus Statement 04-06-01
Information Services Center
Please see Executive Summary for full text.

6A. Comments from US NSF

Ruppel discussed how the NSF is examining options for extending options to do non-riser drilling through Sept 2005. Perhaps up to 8 viable expeditions after existing schedule may be scheduled. While many things would have to happen for this to occur, they are examining how to do it, and it would require an appendix to the existing program plan. The expeditions would have to be on the inexpensive side, although they are not using Phase 2 money. Also, it is unclear when the Phase 2 vessel will happen, but the good news is that the IODP money for Phase 2 is MREFC #1 internal to NSF. Murray commented that it is excellent news that we are getting more science done without taking money from Phase 2 and expressed appreciation to NSF for trying to get this done.

7. Brief Report from Most Recent SPC Meeting

Okada provided a brief overview, pending detailed comments from Coffin (see Agenda Item 17). Okada's presentation is given in *Appendix 2*. SPC has asked SciMP to discuss the core distribution plan for IODP. This will be discussed later at this meeting. SPC has also asked us to discuss issues about long-term observatories.

The Sample, Data, and Obligations Policy was approved by SPC and forwarded on to SPPOC again.

The Microbiology WG report was approved by SPC and forwarded to IODP.

8. OD21 / CDEX Report

Kuroki spoke of on-going efforts in Japan. His report is given in *Appendix 3*. In particular, there was discussion about the test cruises of the *Chikyu*. Escartin asked about what happens to material from test cruises and whether scientists would be involved in these test cruises. Murray followed with additional questioning along these lines, and expressed concern that a lot of good science could be done, and if that was the case it may be appropriate for the international community to be involved. Kuroki noted that the test cruises are mainly for training and engineering but if cores are gathered they will be analyzed. Neal questioned about training for scientist-crew integration, and Kuroki responded that staff scientists will be on board but that he didn't know about international scientists.

Murray asked if the other IOs have similar Health, Safety, and Environmental (HSE) groups and/or policies, as CDEX does. Blum said "yes", and Rea noted that for the MSPs this occurs on a case-by-case basis. All IO's felt there would and should be some commonality for the future. Kuroki further noted that this policy was discussed at the last IO meeting and will be finalized at their October meeting.

9. JOI Alliance

Blum spoke of on-going efforts in the U.S. His report is given in *Appendix 4*. There was much discussion about the number of people (FTE's) that appeared to be involved. Ruppel wondered about the distinction between the Tools and Analytical Service people and those involved with Scientific Operations. Murray wondered how the interaction would occur, or if they were in fact the same individuals. Blum commented that the ASPP (sea-going only) people will be under Sci Ops and non-ASPP (live in College Station) in Tools and Analytical Serv. Certain labs are not under one or the other.

Murray commented on the North Atlantic Climate legs, with regard to the need for balance between sample moratorium and obligations given the 5 month gap between the two expeditions. If the expeditions are linked to each other as one "Scientific Party", care needs to be taken on running the Sample, Data, and Obligations Policy. The moratorium is one year following receipt of samples, for example, and the early cruise may be inadvertently penalized by (early or late) receipt of samples.

Villinger asked about the plans for logging in the upcoming expeditions. Robinson replied that logging will take place at 1 site on Exp 303 and will then determine further strategy. Same for 306. Cork installation at 642E discussion is ongoing. 642E was logging previously but it is cased to 400 m. Expedition 304 will have standard ops, and 305 will have standard ops plus magnetometer possibly (see Agenda Item 32). Juan de Fuca logging ops are in the plan.

Neal appropriately asked about the funding for contingency plans for oil prices and dollar value, particularly given the volatility of such matters in the global economy. The NSF replied that we should "have faith" and that they were covering such matters.

10. ESO

Roehl spoke of on-going efforts in Europe. Her report is given in *Appendix 5*. Additional information regarding the Arctic expedition (ACEX) may be found in Agenda Item 30.

There was discussion of the issues and ramifications to downstream core processing and archiving associated with the use of different sized core diameters. There are subtleties associated with storage (curation) and operations that need to be considered. Roehl noted that these may be particularly important for Tahiti. This led to:

Action Item 04-06-01
Core Processing Issues for Non-Standard Cores
Please see Executive Summary for full text

Murray questioned about the Tahiti expedition, and in particular regarding the time frame for SciMP being asked about the Tahiti measurements plan. Roehl responded that as soon as the co-chiefs get decided we can start the process. Tahiti will again involve partial labs again with a shore-based component. Murray asked about plans for an onshore lab, locally on Tahiti Roehl responded that the problem is once you start operating on the core you have to keep going and thus it might be better to do it at Bremen.

Discussion continued on when SciMP would oversee the Tahiti measurements plan. The panel wants to see this soon, and plans should be identified and finalized before the next SciMP meeting.

Rea stated how useful advice from SciMP was for ACEX and that the system worked very well, regarding SciMP and BGS interaction. This led to:

Action Item 04-06-02
 Tahiti Measurements Plan
 Please see Executive Summary for full text

Ruppel asked if there were any concerns about potential delays that could occur due to environmental concerns. Both Roehl and Rea noted that they were not able to yet answer this but that it was being looked at carefully.

11. Phase Two Non-Riser Ship Status

Blum reported on this subject. His report is included as *Appendix 6*. Murray requested further information regarding the overall time frame. Blum responded that things were happening very rapidly, with expected progress by an October meeting with announcements to be posted on the MREFC website soon (July, 2004). Murray further queried as to whether JOI would be sending design documents to SciMP for evaluation and input, and Blum said “Yes, absolutely”.

Villinger questioned about the basic ship design, and would it basically be a JR-like ship, or even the JR itself. Blum noted that the JR is in the running but the information will be in the RFQ (request for quote). Villinger further questioned about what new capabilities were to be expected. Blum noted that new capabilities could include small things like enhancements to a lab or major advance to a system or infrastructure (such as core handling). Everything is on the table.

Neal asked that with regards to the staffing needs what sort of requirements would be followed, and Blum responded that they would work strongly based on ODP experience. Murray noted that the important issue is what is in the RFQ because if it is not in there then there is no obligation of the new ship vendor to provide it. Therefore, the community (JOI-A and SAS) needs to make sure new requests get included in the RFQ.

Villinger asked if the RFQ will be for ship and labs? Blum responded that the contractor must provide vessel that meets the stated requirements and that the space and infrastructure must match the science needs. So far, JOI-A has come up with needing twice the lab space than is available on the JR. Murray pointed out that the US held CUSP and other conferences and that input is being included into what is needed for the new labs. Blum followed up with noting the JOI-A also sees the briefing book as a road map and will make hiring decisions based on what is in the book. Murray reminded participants that we are international panel and the input into the briefing book needs to be international. Ruppel agreed that the US will be providing a Phase 2 vessel but it is possible that it won't have all the bells and whistles and that funding is a line item in the congressional budget.

12. Logging: Policy Background, Status of Tools, Legacy Issues

Robinson provided this report (*Appendix 7*). Murray asked if the GLT is permanently unavailable and Robinson confirmed that to the best of his knowledge the GLT was a “dead duck”.

Murray asked whether the presentation on the 400 m guideline was for information only or do they expect a recommendation from the panel. Robinson noted that it was for information only but input from the panel would be appreciated. Murray asked if it was known who dropped the 50m

basement guideline and when, and Robinson responded that it was very difficult to track these things but it seems to have just faded away.

Gulick queried as to ESO's thoughts on the logging rule. Rea noted that it was site by site dependent but that he was concerned about situations where 350-399 m total depths have occurred due to avoiding logging. If any core breaks occur the logging is really needed in order to get core-log-seismic integration especially for sites we plan to revisit.

Villinger suggested that one way to do this is that a logging plan must get approved ahead of time by SPPOC with input from SciMP. Neal continued that perhaps we need more constraints on the capped/returnable holes to avoid logging being an afterthought. Education may need to occur for sample motivated co-chiefs as to the importance of logging. Robinson observed that we need to avoid logging plans being decided on shipboard. Wilkens recalled that part of the reason the 400 m rule was built was in order to give the logging scientists some ammo. Villinger suggested that the co-chiefs should have to state why they would not log. Murray wondered when would this be decided, and Villinger answered that it would have to occur before the leg in a logging plan. Ruppel pointed out that downhole measurements are likely to have this problem too. Blum agreed with these discussions but noted that not each hole turns out to be as hoped for and so there must be flexibility to not log as the hole is being written off. He also argued that one must make the case where you intend to do no logging, but that we also need onboard real time mechanism for such decisions.

Murray reminded the SciMP that there are no SAS personnel on OPCOM, and thus it would be worth to have a review of a logging plan be within SAS at some capacity. Robinson suggested that perhaps proponents can give more information on the proposal cover sheet as to the logging plan. Neal agreed that this could happen at the proposal stage with a logging plan for each proposed hole. Saito suggested that the logging plan should be looked at in the project scoping group, although Screaton pointed out that often at the proposal stage you have not thought through how to get the science done. Wilkens reminded that we shouldn't forget the legacy aspect and Murray noted that as we get into operational mode we will need review logging plans for each expedition. After further discussion, Murray tasked Villinger with writing up a recommendation on these matters.

Recommendation 04-06-01
Logging: All Sites Should Be Logged
Please see Executive Summary for full text

13. Report from Downhole Tools and CORK Mini-Workshop

Murray provided brief comments on the a workshop recently convened by Peter Flemings, Andy Fisher, and Murray regarding downhole tools. A second mini-workshop led by Keir Becker followed the tools workshop. Murray's report is in *Appendix 8*. Several participants of the workshop were SciMP members (Screaton, Villinger, Ruppel) and were also able to help during the discussion.

Regarding the issue of increasing the power supply to downhole tools, Neal asked if having a cable would preclude batteries, whereby Screaton pointed out that the idea was to have live feedback and Villinger suggested that the goal was to have the flexibility to use either one.

A good portion of the workshop examined funding mechanisms and models in the new IODP. Murray noted that unlike ODP, some direct funding to PI's could come from central management, that is, IODP-MI. Ruppel pointed out that engineering must also be included in proposals now, rather than assuming the IOs will provide the engineering (as was the case in ODP).

Lyons noted that these changes were all for the better, and that there were lots of opportunity to bridge the gap between sample collection and using the hole. Ruppel agreed and noted that this should apply to observatories as well.

14. Drill Cuttings Team Working Group Report

Saito and Kuroki together presented the latest version of this report, based on their first presentation (at Nagasaki) and comments received. Their presentation is in *Appendix 9*.

Drawing attention to the table in the report that gives suggested masses of material to be gathered, etc., Murray noted that this plan is not one size fits all, but that the chart represents a good starting point for deciding minimum required sampling. Villinger wondered about what happens to the excess samples. Kuroki thought the case was more likely to be that they wouldn't get enough material, but that if they did get an excess such material would be discarded.

Screaton pointed out that many of the riser expeditions will be CDP's and thus the Project Scoping Group for the given CDP should specifically develop plans for cuttings. Wilkens added that there will be plenty of time after the *Chikyu* training cruise to revisit this issue once we gain more experience.

Regarding sampling details, Blum suggested that they might want to define the chip size preference for sampling. Yamamoto pointed out that archival storage in glass is better for organic geochemistry. Murray suggested that they explicitly state that the sampling containers need to be usable for multiple later sampling strategies and scientific uses.

Saito and Kuroki discussed how an industry sub-contractor will likely be describing the cuttings on (beneath) the rig floor, and that they would likely be using their own classification scheme. This caused great concern and let to much discussion. Blum elaborated that we need to use a baseline classification for cuttings as well as core. Murray noted that we do not want to use different classifications within a hole, one for cuttings and one for the core itself. For example, Wilkens noted "What is the industry standard for basalt?" as a way of pointing out that there would be two (or more) different schemes resulting. Blum said that we need to look at industry standards but they will have to be modified.

Continuing this discussion, Gulick wondered if the contractors would be describing for operations and then scientists describe for science according to IODP protocol. Neal pointed out that the descriptions might be very different and would lead to confusion. Rea observed that we need to make sure that it is clearly identified which is the scientific description and which is the contractor operation description. Korja said that we just need to be careful to label at the beginning what the description is. Villinger thought that we need to let operations do their own thing and we worry about science description. On the other hand, Lyons said that it should not be that hard to get the descriptions to be the same, as well as some of the operational needs. For example, we need to be careful about the minimum chip sizes as sometimes you may get huge volumes of small chips. Blum observed that the problem will be if there is a different preference on sampling strategy of well cuttings between what is needed for science and what is needed for operations.

Recommendation 04-06-02
Drill Cuttings Team Report
Please see Executive Summary for full text

15. Report on JOIDES Hydrology PPG

Screaton, who was a member of the JOIDES Hydrology PPG, provided a brief summary of this group's report. Her overview is provided in *Appendix 10*. The key thing is that although this was a JOIDES endeavor, they wrote it "for" the IODP, that is, with an eye towards the future. Thus, it is appropriate for IODP SciMP to start addressing their concerns.

Murray asked the panel for their suggestions regarding how should we proceed regarding this mature document. Lyons observed that much of what was mentioned is useful for other groups as well. Villinger and Neal suggested that we pull out some recommendations and send them up to SPC. Murray agreed, and suggested that we figure out what issues are the low-hanging fruit that we can grab and make happen on the short time frame first, and deal with bigger issues later.

Ruppel confirmed that this document was written with the IODP Science Plan in mind and that the temperature tools are a real problem and so perhaps one such low hanging fruit is temperature. Villinger noted that calibrations must be done by the operator. DVTP and P is more complicated as it needs to be upgraded. Piesoprobe and DVTP may be complimentary. Blum noted that there are lots of efforts are going on right now with temperature but coordination problem may exist. Murray noted that the IODP-MI is supposed to coordinate some of these things, so we don't have unnecessary duplication or wasted effort by an IO. Blum agreed but noted that we need to keep separate the operational problem and the technical problem. There are major issues that may be platform specific that and that may need to be dealt with, such as software.

Escartin wondered how expanding a hydrology program would effect staffing. Screaton acknowledged that more personnel would be needed. Wilkens commented that if we make everything required it will take significant time and we might even lose sites. When developing a plan, could we possibly have just one site in important locations instead of all sites?

Because the hydrogeology subject is so closely related to physical properties and other petrophysics issues, please refer to the recommendations made in the "petrophysics" area of discussion later in the meeting. This discussion led to the following Consensus Statement and Action Item:

Consensus Statement 04-06-02
Hydrology PPG Report from JOIDES
Please see Executive Summary for full text

Action Item 04-06-03
SciMP WG on Hydrogeology
Please see Executive Summary for full text

15A. Election of Curatorial Advisory Board (CAB)

Murray reported that the IODP-MI asked the SciMP to staff the CAB. The SciMP is to select three individuals to serve on the Curatorial Advisory Board, as described in Section 5 of the "Sample, Data, and Obligations Policy". Note that the Policy allows for SciMP to select the three members, but does not say that the members must come from SciMP itself. However, in the interest of acting expeditiously, we simply selected three of our own so as to ensure adequate coverage immediately.

This led to the following:

Action Item 04-06-04
 Selection of CAB
 Please see Executive Summary for full text

We selected the below three individuals, which provide balance in terms of national interest as well as in terms of expertise:

Kenji Nanba, Japan, Microbiology	nanba@aujaghi.fs.a.u-tokyo.ac.jp
Clive Neal, US, Petrology and Geochemistry	neal.1@nd.edu
Heinrich Villinger:Germany, Geophysics/D'hole tools	vill@uni-bremen.de

Neal has been on SciMP for two years, Nanba-san for one, and this Boston meeting is Villinger's first. Thus, there should be good rotation for these individuals as well. As Nanba-san was absent from the Boston meeting, Okada-san was asked to relate to him that he has been selected for this task.

16. Discussion of new co-chair selection process and individuals

A conflicted member of the panel left the room. A brief discussion was held about the selection process, about who was eligible (since Okada is Japanese, only US and Europeans could be considered for Murray's replacement), and about who had expressed interest in the position prior to the meeting. Two individuals had expressed interest and their vitas had been distributed prior to the meeting. At this point of the meeting, no vote was held, and instead just the outlines of the discussion took place. This will be addressed later in the meeting (Agenda Item 36).

This concluded the day's formal events, and the panel, guests, and liaisons retired to a function room overlooking the city of Boston and the Charles River for an open bar and appetizer party, hosted by the Department of Earth Sciences, the Dean of Arts and Sciences of Boston University, and JOI. A good time was had by one and all, with revelry was in the air.

Thursday, June 24, 2004

16A. X-Ray Scanning CT

Barry Freifeld from Lawrence Livermore National Laboratory gave a presentation (*Appendix 11*) on the portable X-ray CT imaging system he and his colleagues have developed and deployed on a few ODP legs. There was widespread support for the system, and the panel was very impressed with its capabilities.

Mandernack asked about the potential to put geochemical or mineralogic information into the platform. Freifeld pointed out that you can use dual energy scanning to get at things like sulfide content.

Murray questioned the scan times, and Freifeld noted that it can go as fast as a minute or two if you can handle lower resolution reconstructions. The data fills a DVD every core, again depending on resolution. Murray was curious as to its price, and it appears to be on the order of a couple hundred thousand plus 10-15K/yr for replacements and servicing.

Kasahara wondered about hard rock capabilities, and Freifeld said that a 10 cm piece of granite can be imaged with no problem, but a thicker piece requires a larger X-ray source. Kasahara further noted that composition can give different density values between X-ray CT and GRAPE. Blum asked about resolution and whether less data could be acquired during the first pass, to identify regions of interest. Freifeld noted that this was exactly what was done on Leg 204. Lyons observed this would be superb for much sedimentology like bioturbation.

Murray suggests a recommendation that IODP-MI look into this technology very seriously and soon. ESO says it is not on their short list, and JOI-A says it is on their Phase 2 list. *Chikyu* has a full scale medical scanner, but the panel wondered whether its capability was as complete as this newer generation of portable devices demonstrated here.

Recommendation 04-06-03
High Priority for X-Ray CT Scanning
Please see Executive Summary for full text

17. Report from SPC

SPC Chair Coffin provided a lengthy report (*Appendix 12*) of SPC update and matters of relevance to SciMP. Many of these items are discussed under separate agenda items and are not discussed here, for example, how to get SciMP more involved in the proposal process where appropriate (Agenda Item 30A).

Coffin drew specific attention to MARS-IODP borehole test site status, which resulted in the following Action Item:

Action Item 04-06-05
SciMP-TAP Joint WG regarding
MARS-IODP Borehole Test Site
Please see Executive Summary for full text

An item not discussed elsewhere in this report--only here--had to do with the role of the Science Coordinators at the Sapporo office. Due to cost considerations, they were not present at this meeting, whereas traditionally one has attended SciMP meetings in the past. Coffin asked us to discuss whether the panel profited from their attendance, and whether we thought it was worth the travel money.

The feeling was that there was value added by their attendance, although the frequency of their attendance and what they did at the meeting was discussed. Neal and Gulick commented that having the Science Coordinator here was helpful in that when we needed to get something changed or help with something from that office. Murray concurred, and noted that the Coordinators often contribute helpful liaison-type input regarding what is going on with other panels. Murray noted as a counterpoint, however, that not having them attend could save money and perhaps the SPC representative could fill that role. Coffin commented that they do serve an important role as “corporate memory”. Screaton wondered if they could come to every alternate meeting, or every Japanese meeting, which would save on travel costs somewhat.

Murray commented further that there would be significant “value added” if the Science Coordinator would be the official notetaker at the meeting, and would be responsible for producing a rough draft of the minutes. This would free up the responsibilities of a panel member from taking the notes during the meeting, and would also help get the minutes out in a more timely fashion. Murray noted that of all the tasks associated with being co-chair, doing the minutes is the most difficult, time-consuming, tedious, drawn-out, and mind-numbing aspect of his job. It is like the final scenes of the movie “Apocalypse Now”, where the water buffalo gets hacked to pieces. Murray is the water buffalo. Nonetheless, the minutes are a vitally important official record, and it would be terrific if the Science Coordinator could at least do the first draft of them. The discussion led to the following recommendation:

<p style="text-align: center;">Recommendation 04-06-04 Value of Sapporo Science Coordinator at SciMP Meetings Please see Executive Summary for full text</p>
--

18. QA/QC and Calibration Issues

Saito presented a summary of views regarding how the IODP shipboard and shorebased laboratories can best tackle QA/QC throughout the system. His report is given in *Appendix 13*. Murray noted that each laboratory needs to address this within their own reports, but that the general principles need to be defined by SciMP.

Villinger questioned as to whether this amount of work (which is huge for the IOs) will get us what we want. Murray noted that our job as SciMP is to tell the IOs that measurements have to be accurate, quantified, and comparable across all platforms. On one hand, we could just step back and say “do it”. Villinger thought that perhaps we are being more restrictive than publications are. Wilkens, and several others, disagreed, noting that there are publications out there where due to lack of QA/QC the results are incorrect. Neal noted that in ODP you had 1 platform that was sometimes distrusted in terms of QA/QC and now we have 3 and if they are all doing the same standards then it is easy to judge. Blum agreed with this, philosophically, but noted that what is missing is a realistic implementation plan. His feeling, as an IO, was that SciMP should give advice on implementation and parse it into specific areas/labs.

Murray noted that the beauty of Saito's report is that it puts the responsibility with the IOs but also need feedback from SciMP. He thought there needed to be lots of discussions over the next 6 months and I think SciMP oversight routinely occurring is vital.

Villinger stressed the importance of quality control within the database as well. Korja wants to make sure in the database that the specific lab is labeled and that there is a way to compare to standards automatically. Freifeld noted that the DOE at Yucca Mountain took 10-15 years to fix the standards and make it transparent to outside people as to exactly the procedures and methodology. Murray strongly suggested that this program be anchored according to internationally accepted standards.

This subject matter will be re-addressed at the next SciMP meeting.

19. Paleontology and MRC WG Report

and

20. Review of Common Data Items for JCORES Paleontology Tools

Aita gave a report on the results from the *ad hoc* Paleontology and MRC meeting held in Washington DC. His report is given in *Appendix 14*. There was discussion of the different taxonomic dictionaries, how to set up various working groups to track and ensure progress, and funding. Also, it was discussed as to who owns the MRC collections, with regard to whether or who would give permission to move materials from one to the other.

Aita also presented a brief summary of the "paleontology tools" being developed by JCORES. Escartin and Villinger questioned whether this effort was intended to be CDEX-specific or not. Escartin further noted that if there is a database task force from IODP-MI it should be their job. Murray thought if we make this not platform specific and then it could perhaps be an action item to initiate discussion on ensuring a common set of paleontology data items in IODP. Spezzaferi suggested that the efforts going on with CHRONOS should be closely monitored, and Murray noted that if the IOs are fine with what CHRONOS is developing, then it could be perhaps simply mapped over.

The various discussions resulted in the following recommendation:

Recommendation 04-06-05
 Acceptance of Paleontology / MRC WG Report
 (which includes 6 sub-recommendations and 1 consensus statement)
 Please see Executive Summary for full text

Also, the following Action Items resulted:

Action Item 04-06-06
 MRC Collections
 Please see Executive Summary for full text

Action Item 04-06-07
 Items in Paleontological Data Bases
 Please see Executive Summary for full text

21. Report from Petrophysics WG and Physical Properties WG

Gulick presented the Physical Properties WG report (*Appendix 15*). He and Screaton emphasized that the Physical Properties WG report pre-dates the new Petrophysics “umbrella”, but that there is useful information in it, nonetheless. There was much discussion of, and enthusiasm for, the new Petrophysics orientation, which resulted in the following recommendation:

Recommendation 04-06-06
Integration of Petrophysical Disciplines
Please see Executive Summary for full text

Regarding the Physical Properties WG report, discussion resulted in the following:

Recommendation 04-06-07
Acceptance of Physical Properties WG Report
(which includes 2 sub-recommendations and 1 consensus statement)
Please see Executive Summary for full text

The following Action Item was identified:

Action Item 04-06-08
Phase 2 and *Chikyu* Petrophysics
Please see Executive Summary for full text

Gulick also presented the QA/QC Report for Petrophysics, as shown in *Appendix 16*. This resulted in the following recommendation.

Recommendation 04-06-08
Acceptance of Petrophysics QA/QC Report
(which includes 4 sub-recommendations)
Please see Executive Summary for full text

Two Action Items also resulted:

Action Item 04-06-09
QA/QC for Petrophysics Interlab Comparison
Please see Executive Summary for full text

Action Item 04-06-10
Blind calibration tests for Petrophysics
Please see Executive Summary for full text

Finally, due to the close relationship between Petrophysics and Hydrology, the following recommendation was identified:

Recommendation 04-06-09
Frequency of APC Temperature Measurement
Please see Executive Summary for full text

21A. Downhole Tools WG Report

Saito presented the Downhole Tools Working Group report (*Appendix 17*). There was much discussion regarding QA/QC information, with regard to the fact that the contractor (e.g., Schlumberger, but not only Schlumberger) will not give out such information since it is proprietary. Discussion centered around the gray zone where guidelines crossover into science. Processing guidelines are a big issue. LDEO-BRG has some in-house guidelines. Villinger noted that some of these issues are scientific. It raised important issues regarding sonic logs. This discussion resulted in the following recommendation:

Recommendation 04-06-10
Acceptance of Downhole Tools WG Report
(which includes 3 sub-recommendations and 1 consensus statement)
Please see Executive Summary for full text

Three additional Action Items resulted as well:

Action Item 04-06-11
Minimum Level of Data Processing
Please see Executive Summary for full text

Action Item 04-06-12
Temperature and Pressure Tools
Please see Executive Summary for full text

Action Item 04-06-13
Ad Hoc WG on Policies for Tools, Borehole Exp.'s, and
Long-Term Monitoring
Please see Executive Summary for full text

22. Core Description Working Group

Saito presented the latest results from this Working Group, and his presentation is in *Appendix 18*. This report was discussed in depth at the last SciMP meeting and so there was only minor discussion of it here. The following recommendation resulted:

Recommendation 04-06-11
Acceptance of Core Description WG Report
(which includes 5 sub-recommendations)
Please see Executive Summary for full text

23. Laboratory Measurements on Severely Dilated Samples

Saito presented the report from the group that had looked at how to deal with severely dilated samples (*Appendix 19*). The discussion addressed who should deal with the issue of correcting for stratigraphic thickness. Rea noted that this brings up the issue that at some point you cross into science. Robinson wondered if the intent or need was to upgrade Splicer? Wilkins pointed out that there is enough data to come up with reliable methods of correction and thus it is a science issue. Blum noted that a related issue is the depth mapping. To some extent you can develop standard operating procedures and but in some cases it is a science issue.

This led to the following:

Action Item 04-06-14
Handling and Measurements of Severely Dilated Samples
Please see Executive Summary for full text

23A. Paleomagnetism Working Group Report

Okada presented the Paleomagnetism Working Group Report (*Appendix 20*). The report was well-received with most of the discussion having to do with the component regarding non-magnetic core barrels. There was widespread support for their use. Blum noted that they are a little more expensive, and a little less reliable, but that they are a “small ticket” item. The view of the discussion was that they should be adopted as standard. The discussion led to the following:

Recommendation 04-06-12
Acceptance of Paleomagnetism WG Report
(which includes 5 sub-recommendations)
Please see Executive Summary for full text

The following Action Item also resulted:

Action Item 04-06-15
Inter-laboratory Standardization
Please see Executive Summary for full text

24. Chemistry Working Group Report

Neal presented the revised version of the Chemistry Working Group (CWG) Report (*Appendix 2I*).

This was a very lengthy and comprehensive report that touch upon many issues faced by other laboratories as well (e.g., qualifications of technical support, etc.). It was emphasized that SciMP needs to be involved in MSP planning at a very early stage, as they were for Arctic planning.

There was discussion about the feasibility of installing ICP-MS on the non-riser vessel. It was thought that vibration may be an issue, but that there was likely to be ways to combat it. Murray noted that in his experience the vendors have very creative ways to deal with it, and he knows of several vendors that have installed such devices on factory-floors and other high vibration regimes. While vibration can't be ignored, it is likely a solvable problem.

There was much discussion about the educational/experience level of the technical support. Overall, the feeling was that the level of technicians provided by TAMU in the past is not going to be sufficient for the new program. While some individuals of the technical staff are certainly capable individuals who are up to the task, overall the TAMU model is not sufficient, and most technicians currently employed are not of the required level. Also, there needs to be a dedicated microbiology technician. Three of the group's subrecommendations specifically dealt with technical staffing issues. The discussion led to:

Recommendation 04-06-13

Acceptance of Chemistry WG Report
(which includes 11 sub-recommendations)
Please see Executive Summary for full text

Additionally, six Action Items resulted:

Action Item 04-06-16

Modular Labs for MSPs
Please see Executive Summary for full text

Action Item 04-06-17

Environmental SEM and Cathodoluminescence
Please see Executive Summary for full text

Action Item 04-06-18

Microwave Digestion
Please see Executive Summary for full text

Action Item 04-06-19

Quadrupole ICP-MS
Please see Executive Summary for full text

Action Item 04-06-20

Gas Source Stable Isotope Mass Spectrometer
Please see Executive Summary for full text

Action Item 04-06-21

Blind Calibration Tests
Please see Executive Summary for full text

As part of the Chemistry and Microbiology discussion, panelist and microbiologist Kevin Mandernack provided to co-chair Murray his written documentation in response to Action Item 03-02-16 (from Nagasaki meeting). This short document (*Appendix 22*) is here being forwarded on to the IO's and IODP-MI for their incorporation in the context of the Microbiology WG Report.

Action Item 04-06-22

Sub-Sampling for Microbiology
Please see Executive Summary for full text

25. Core-Log-Seismic Integration

Sakamoto provided a nice summary of issues regarding core-log-seismic integration (*Appendix 23*). There was widespread support for many of the issues he presented, from the IOs and the SciMP, and it was recognized that formation of a Working Group was probably the best way to proceed. The Working Group will consist of Sakamoto (to chair it), Gulick, Blum, Kuroki, Takahashi, Robinson, Rea, and Kasahara, and can meet by email. The following Action Item resulted:

Action Item 04-06-23

Core-Log-Seismic Working Group
Please see Executive Summary for full text

26. Core Repositories and Core Distribution

Murray reminded the panel and attendees of the issue identified in Coffin's report from the SPC (*Appendix 12*). The basic issue is whether the IODP cores should be distributed by a geographic plan or a platform-based plan. There was widespread support for a geographic plan, although SciMP was not presented with any specific one. It was acknowledged that there were complicated factors at play, including the length of time and cost it would take to integrate the IODP plan with that proposed last year regarding DSDP/ODP cores. Also, there are legitimate contractual obligations...say an MSP gathers cores that would end up being curated in Texas. The cores

would travel to Bremen (for analysis) and then to Texas (for curation)....does this make sense? The discussion led to the following Consensus Statement:

Consensus Statement 04-06-03
Geographic Storage of Cores
Please see Executive Summary for full text

27. Electronic Access to DSDP Volumes

Murray had been approached by Torsten Stieger (Germany) regarding a potential plan to scan all the DSDP volumes and thus have them available electronically. Without endorsing Stieger's plan, the SciMP expressed great enthusiasm for the idea in concept. All agreed that IODP science would be advanced by having this accomplished. Importantly, the panel agreed that they would like this done rapidly, without necessarily waiting for a "perfect" version to be accomplished. Just getting a scanned copy (PDF) per volume would be a great advance and that this should be done over the short time-frame. This led to the following Consensus Statement:

Consensus Statement 04-06-04
Scanning of DSDP Volumes for Digital Access
Please see Executive Summary for full text

27A. Uniformity of Technical Reports: Coordination and Publication

Kuroki presented a discussion of this subject (*Appendix 24*). The rising issue is that the individual operators are going ahead--as they should--with the documenting of their engineering and other technical accomplishments. However, as such documentation proceeds, without a plan and an agreement between the IO's regarding format (both in terms of layout but more importantly in terms of content), that there will be no unified coordination of these reports. It was emphasized that the discussion here is addressing non-peer reviewed literature (engineering and technical reports, etc.). The IO's were in agreement that this subject needed to be addressed sooner rather than later. The discussion expanded to involve other aspects of the publications program, and resulted in the following recommendation:

Recommendation 04-06-14
Publication Uniformity and Coordination
(which includes 3 sub-recommendations)
Please see Executive Summary for full text

28. IO Update on Technical Staff Rotation and Training

Kuroki presented a good update on this subject (*Appendix 25*). Kasahara asked for clarification of the purpose of having a rotation plan, and Kuroki pointed out that it will help standardize across platforms and share knowledge and expertise. Murray noted that it will also contribute to the feeling of an "Integrated" IODP, in ways that perhaps cannot be quantified easily. While it is acknowledged that lead-time and visa issues will be complex, particularly since 9/11, that it can be accomplished.

The IO's were commended for their efforts to develop this plan and were urged to continue with it.

29. IO Update on Digital Imagery

Blum provided an interesting report on digital imagery (*Appendix 26*). There was much discussion of the relative quality of digital imagery, and of whether the IO's were being consistent between themselves as to their practices. Murray asked CDEX and ESO about their imagery plans. Kuroki said that CDEX was doing core sections only, and only by digital scanning. Roehl responded that for the ESO it would be digital and film, line-scanning and single shot. Blum noted that the operations group at TAMU still wanted to have a single shot, but he feels that need will go away shortly when the digital presents itself. Blum noted that it was JOI-A's intent to go digital essentially immediately. As Neal noted, as long as the digital imagery is as high quality with regard to resolution and inter-comparability, the situation should be fine. There was some confusion, however, regarding the state of affairs of the on-going expeditions, and plans to segue to a new system. This led to the following Action Item:

Action Item 04-06-24
 Digital Imagery
 Please see Executive Summary for full text

30. ESO: Arctic Lomonosov Ridge (ACEX) Update

Rea provided an update as to the ACEX expedition (*Appendix 27*). The panel expressed their appreciation to the ESO for their openness and involvement with SciMP during the discussion and approval process for the "Arctic Sampling Plan" that happened over the past several months.

Issues were still highlighted regarding the drilling mud, and microbiological and ephemeral property issues. The problem is that starch based drill mud, billed as "biodegradable" causes problem for microbiology and for organic geochemistry. The very characteristic that makes them "biodegradable" means that they are a food source. Takuro suggested that intracore contamination is not a problem because of permeability and that one could compare DNA level in center to edge. Yamamoto expressed concern that the starch would influence bulk organic analysis. Murray countered by noting that would be the cases only if it penetrates and if it gets contaminated you will be able to tell by pore water chemistry.

Discussion about wax sealed cores ensued for physical property quality control and it was decided to not have SciMP come down on one side or another, and that to leave the frequency of such sampling be decided by the operator and the SAC of the expedition.

Takuro questioned sampling frequency for microbiology, but because a microbiologist was sailing on the expedition, such sampling was deferred to him.

Lyons questioned about how long after acquisition it would be until the pore water is squeezed. Rea said that it would only long enough to get the MST logging done...on the order of 30 mins or so. Murray and Lyons agreed that such a time frame would be sufficient, doing anything longer than that may constitute a problem.

This concluded the day's events, and the attendees fled to dinner and further informal discussions.

Friday, June 25, 2004

30A. SciMP Involvement in Proposals

Murray reminded the panel that their last effort to become more involved (see Recommendations from Nagasaki meeting) were rebuffed, but it was encouraging to see that SPC now was asking for more SciMP involvement. It seems that there is genuine interest on many parties with SAS and also within management (IOs and IODP-MI) to ensure that SciMP is brought into the loop early enough to assist. Not only will the quality of the measurements, and thus the science, increase, but it is thought that “expedition creep” in terms of budget growth could be diminished.

Villinger agreed that it would be better to be involved early on, for instance one of the problems is CORK technological complexities. Wilkins observed that all expeditions should have some degree of SciMP oversight, not just CORKS or logging-rich expeditions. The panel agreed that such oversight should only happen after the SSEPs completed their reviews. Ruppel confirmed that the proposals are still considered private until after SSEPs portion of the process. Escartin, who in the past has served as SciMP liaison to SSEPs, and Murray both felt that SciMP cannot simply rely on SSEPs watchdogs. The review must be more systematic. Murray noted that there is concern that SciMPs comments from a technical perspective will affect rankings if our comment occurs before SPC ranks. Coffin and Murray suggested that the other time would potentially be after it is scheduled, but that may be too late. Coffin thought that the ideal window would be after SPC forwards to OPCOM and prior to final schedule approval. This led to the following recommendation:

Recommendation 04-06-15
SPC Send Ranked Proposals to SciMP
Please see Executive Summary for full text

31. Seafloor Observatories and 3rd Party Tool Policies

This was a multifaceted discussion about observatories, tools, and multiple labs and policies. One of the main issues of discussion was the current Third Party Tool Development Guidelines. Saito noted that there are analogous issues regarding shipboard or lab instruments. Kasahara suggested using 3 different categories: precise instrument, equal level, experimental. Neal noted that in ODP there are analogous classifications of Development tools, Mature tools, and Experimental tools. Wilkins noted that some of these issues are science issues and get decided by the funding, but that many things in the policy are to prevent demands on resources of the IOs that are unreasonable. Villinger pointed out that during ODP someone at TAMU would just make a decision as to whether something was mature or not, in terms of classifications. Murray noted that such a role would be played in IODP by someone at IODP-MI. Blum and Murray both reinforced that any new policy should protect the IOs from unreasonable demands. This led to the setting up of a small working group (Kasahara, Villinger, Wilkins, with IO involvement when appropriate), as outlined in the following Action Item:

Action Item 04-06-25
Third Party Tool Development Guidelines
Please see Executive Summary for full text

Continuing the general discussion, Screation noted that in the recent Flemings et al Downhole Tools workshop there was the suggestion that some drillship time be set aside for testing. Ruppel noted that the NSF is strongly encouraging the testing of tools on continental boreholes. Screation noted that while any testing (terrestrial, marine) is likely to be helpful, there really needs to be marine testing on the actual drillship to assess the real-world delivery of the system. Murray pointed out that at the workshop it was suggested that IODP-MI hardware in testing time and that operators have to state why the testing time is not being used. That switches the burden from the engineers/scientists to the IOs, and is likely to ensure that adequate testing time will in fact occur and not be cannibalized. This led to the following recommendation:

Recommendation 04-06-16
 Ensure Regular Downhole Tool and Engineering Testing
 Please see Executive Summary for full text

There followed a lengthy discussion regarding how to deal with data generated from CORKs and/or other instruments lowered into boreholes or other hardware put into place by IODP (e.g., seismometer), with specific regard to the Sample, Data, and Obligations Policy. For example, consider a scientist who writes a proposal to the U.S. NSF to place an instrument in a borehole. The proposal is accepted and IODP-MI provides shiptime to put it in. As doing so is an engineering task only (no science), the scientist does not sail on the expedition that installs it, and the installation occurs as part of another expedition during their transit to their first site. None of the scientists on board this expedition have anything to do with the borehole installation. One-point-eight (1.8) years go by (this is longer than the IODP moratorium, but shorter than the U.S. internal moratorium). Whose data is it? The original scientist's?...but s/he didn't sail on the expedition to install it? The scientists who were on the expedition's transit that just happened to stop for a day or two to put in the instrument? Does the U.S.'s moratorium or does IODP moratorium apply. What if somebody else steams up in their own ship and downloads the data?

There was widespread consensus that the current Sample, Data, and Obligations policy is adequate to deal with these issues. The policy was written to allow flexibility...for example, the moratorium time begins when samples (e.g., when there is a post-cruise sample policy) or data (e.g., when data gets gathered/downloaded from a borehole) are "acquired". Wilkens suggested, and the panel agreed, that instead of trying to make an overall policy that covers all options, we may have to revisit some situations on a case-by-case basis. Murray confirmed that the IODP-MI has the ability to modify a moratorium for a particular instance. Kasahara noted that ORION/NEPTUNE instruments are often non-standardized so if you open it up what to do about non-standard data formats. Murray said that the policy does not cover this (nor should it), but we have asked, as part of the Information Services Center (ISC) that all data coming off of any platform must be in compatible formats. Villinger also expressed concern for legacy data from such observatories, and again it was emphasized how important a role the ISC should play in this.

Regarding the potential direct conflict with some national policies (as outlined in the example above), it is clear that the IODP cannot, and probably should not, supersede national policies. IODP-MI will have to in some cases make a ruling in discussion with national agencies

32. Magnetometer Tool for Upcoming Core Complex Expeditions

Robinson from JOI-A provided a good summary of the issues regarding upcoming Core Complex expeditions and sought approval from SciMP to proceed with their plan (*Appendix 28*). Wilkens commented that he has dealt with these same individuals during ICDP and that they had performed very well. Murray noted that there were no technological issues, no new money sought, and no

other-than-usual risks associated with the deployment. Robinson noted that the expedition success does not depend on the tool. This led to the following Consensus Statement:

Consensus Statement 04-06-05
Gottingen Magnetometer on Core Complex 2
Please see Executive Summary for full text

Continuing the discussion, Ito raised an important question regarding long-term issues of magnetometer usage in IODP. This led to discussion about the importance of getting such magnetometer data, which led to the following Action Item:

Action Item 04-06-26
Invite Dr. Johannes Stoll to Discuss Long-Term Prospects
for Magnetometer Usage in IODP
Please see Executive Summary for full text

33. Review of Recommendations, Consensus Statements, and Action Items

As part of this process, the following three Consensus Statements were made.

Consensus Statement 04-06-06
Thanks to hosts (Murray, Ziegler, and Boston Univ.)
Please see Executive Summary for full text

Consensus Statement 04-06-07
Appreciation to off-rotating panelists Aita, Escartin, and Saito
Please see Executive Summary for full text

Consensus Statement 04-06-08
Appreciation to off-rotating Co-Chair Murray
Please see Executive Summary for full text

34. Next Meeting and Date

The SciMP would like to informally rotate between countries, locations, and laboratories and would like to select their own locations for the subsequent meetings. Their first meeting was held in Nagasaki, to see the *Chikyu*. This meeting was held in Boston, rather than in Europe, as the Bremen laboratory would not be ready yet. For their next winter meeting, it was thought that Bremen would not yet be fully operational, and the panel had just recently been to Japan. Thus, the next location will be Hawaii, with Wilkens as host, which will enable a visit to the ICDP drillsite. Bremen is likely to be the location of the Summer, 2005, meeting, followed by perhaps Japan.

Continued on next page...

35. Rotation of Panelists and New Specialties Needed

Given the expertise rotating off (4 members, see above Consensus Statements), it was thought that the fields of Micropaleontology, Sedimentology, Geochemistry, and Database were desired. It was expressed that the national offices (USSAC, ESSAC, JDESC) need to be completely in communication regarding these needs, and great care must be made to that all nations do not inadvertently staff the panel with 4 people of the same expertise. Murray, Okada, and the new incoming co-chair will be in contact with the national offices for this reason.

36. Executive Session: Selection of New Co-Chair

The panel unanimously recommends to SPC that they approve Mike Lovell (Leicester, UK) as the new co-chair, to serve along with Okada-san.

This recommendation has been subsequently approved by the SPC.

To conclude the meeting, Sakamoto motioned to adjourn, and this outstanding action was seconded by Lyons, with thoroughly unanimous approval by the panel with great rejoicing, frolicking, and unbridled enthusiasm.