# Report of the

# JOIDES Scientific Measurements Panel

## Vrije Universiteit

## Amsterdam, Netherlands

## June 14th-16th, 2000

## Scientific Measurements Panel Participant List

**SCIMP Members**

| | |
|---|---|
| David Anderson | (US, NOAA) |
| Christian Buecker | (Germany, GGA) |
| Bernard Celerier | (France, Universite de Montpellier II-CNRS) |
| Thomas Janecek | (US, Florida State University) |
| Eiichi Kikawa | (Japan, Japan Marine Science and Tech. Center) |
| Mike Lovell | (UK, Leicester University) |
| Ken MacLeod | (US, University of Missouri) |
| Peter Michael | (US, University of Tulsa) |
| Roger Morin | (US, USGS) |
| Joe Ortiz | (US, Lamont-Doherty Earth Observatory) |
| Sverre Planke | (ESF, University of Oslo) |
| Greg Skilbeck (alternate) | (PACRIM, University of Technology, Sydney) |
| Geoff Wheat | (US, W.Coast &Polar Reg Undersea Res Ctr) |

**Liaisons**

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|---|---|
| Gerry Iturrino | (ODP-LDEO) |
| Jay Miller | (ODP-TAMU) |
| Frank Rack | (JOI) |
| Carl Richter | (ODP-TAMU) |
| Jeff Schuffert | (JOIDES) |

**Guests**

| | |
|---|---|
| Jeroen Kenter (host) | (Vrije Universiteit ) |
| Rob de Meijer | (Kernfysisch Versneller Institut) |
| Robert Whitmarsh | (Southampton Oceanography Center) |

**Regrets**

| | |
|---|---|
| Rick Murray | (US, Boston University) |
| David Smith | (US, University of Rhode Island) |

## A) Introduction

The meeting started on Wednesday June 14th, 2000 at 8:30 am and ended on Thursday, June 15th, 2000 at 5:00 p.m. SCIMP members toured the Netherlands Institute for Oceanographic Research (NIOZ) on June 16th, 2000.

The Chairman welcomed the panel to the meeting and expressed a special welcome to new member Eiichi Kikawa. Greg Skilbeck attended as the PACRIM alternate. Carl Richter shared liaison duties with Jay Miller and will become the new ODP-TAMU liaison to SCIMP.

Jeroen Kenter, the meeting host, explained some of the logistical arrangements for the meeting.

The Chair presented a brief overview of the Agenda and asked if there were any other items that panel members wanted to add to the agenda. None were suggested. The Chairman continued with the Agenda.

## B) Liaison Reports

•**JOI** (Frank Rack)

Frank Rack updated the panel on the activities that have occurred at JOI over the past seven months. Rack described the ODP management and advisory structure for the benefit of new members, updated the panel on the status of member countries, reviewed the timeline of recent events at JOI, explained the new structure of JOI and outlined the FY01 development plan.

Rack went on to update the panel about post 2003 planning, including the ODP/IODP transition plan, the Conceptual Design Committee Report and the IODP science plan.

See Appendix 00-2-1 for more details of the JOI status report

The floor was opened to discussion of the recent firing of Kate Moran and the community reaction to that event. All panel members were unhappy with what had happened and the way it happened. The panel, however, believes the new oversight structure is an improvement and is willing to give it a chance to work.

An unfortunate outcome of the events over the past few months was the resignation of Alan Huffman from the SCIMP. Alan's presence will be missed and the panel came to the following consensus:

**SCIMP Consensus 00-2-1**
SCIMP regrets that the recent turmoil in JOI management has resulted in the resignation of Alan Huffman from the panel. Alan's contribution as technical expert with industrial

expertise, as well as his pragmatic and human approach, is sorely missed. This loss has hurt the panel.

•**JOIDES-**(Jeff Schuffert)

Jeff Schuffert updated the panel on several JOIDES office and advisory issues. First, Schuffert noted that the JOIDES office received 36 proposals this spring (roughly the same number as at other JOIDES proposal deadlines). Fifteen proposals were new and some were for holes ODP is not capable of drilling before 2003. This proposal influx is taken as strong support for the continuation of drilling post 2003. The SSEPs evaluated 30 proposals and this number will be the most that SCICOM has ever had to consider. Legs 200 and 201 are already on the schedule, thus there will only be 4 legs to schedule this summer and only about eight or nine left to schedule until the end of the program. Schuffert also noted that a request to post abstracts of new proposals on JOI web site is under consideration.

Schuffert informed the panel that the JOIDES directory is now electronic and updated regularly (every few days). The directory used to be a hard copy mail out, but was obsolete quickly as contact information changes on the order of one person per day. Schuffert was asked if it is still possible to go to the web site and update contact information personally. This is possible only if one has the original JOIDES message from which to reply. Schuffert said the best method is to go through the web manager at the JOIDES office to update contact information.

Schuffert was next asked if there were plans to provide an online search capability for the contents of the JOIDES Journal. The panel suggested that a web page be added with a searchable table of contents. Schuffert encouraged all panel members to submit contributions to the JOIDES Journal

The JOIDES liaison was queried on the use of alternate platforms in the transition from ODP to IODP when no ship will be on-line. Schuffert noted that this is a topic of discussion within IPSC and nothing has been ruled out at this time. Panel members were encouraged to send ideas and comments to Ted Moore. It was noted that NSF does have an alternate platform mechanism but it is not specifically related to ODP, and there isn't any proposal pressure at this time to warrant activity.

Discussion next focussed on the status of the PROD drill. There was a test recently in Puget Sound. Although some core was recovered, a hydraulic leak stopped the test. NSF and ONR program managers have put PROD usage on hold until a number of engineering and operational issues are resolved

Finally, Schuffert noted that the COMPLEX report will be out soon as a special edition of the JOIDES Journal, and that the JOIDES office will move in January to Miami (Kier Becker will be SCICOM chair).

•**ODP-LDEO-**(Gerry Iturrino)

Gerry Itturino brought to the attention of the panel a few specific items from the ODP-LDEO report (Appendix 00-2-2). Itturino briefly discussed the status of the IESX pilot study, recent operational capabilities of CLIP (SPLICER/SAGAN), and progress of the High-Resolution Gamma tool. More detailed discussion of many of the downhole tool issues can be found in

the Downhole Tools review/update section (Section D) and the Third Party Tool update section (Section H).

Itturino was asked about the status (ownership) of the CLIP software. It was not clear to the panel who is responsible for maintenance and upgrades of this software.

**ACTION ITEM**: Itturino will report back to the panel with this information.

Itturino was queried about training plans for the Seismic Data Integration (IESX) study. Currently, ODP-LDEO personnel are trained and non-LDEO scientists will go to Lamont for training. Part of the pilot study is to see how much training is required for this job.

•**ODP-TAMU** (Carl Richter)

See Appendix 00-2-3.1 and 00-2-3.2 for the ODP-TAMU operator update.

Carl Richter updated the panel on the status of the Active Heave Compensation (AHC) system (Appendix 00-2-3.1 and Appendix 00-2-4). Richter described the history of the AHC and presented some comparisons of AHC and Passive Heave Compensation (PHC). On Leg 189 the AHC was operational during the leg at all sites and data were collected by the new rig instrumentation system on ship and drill string dynamics. These digital data permitted analysis of AHC (i.e., the system's ability to de-couple the ship's heave from the drill string).The performance data obtained during Leg 189 indicate that the AHC is performing up to specifications (i.e., the drill pipe motion is less than 10% of the measured ship's vertical motion or heave). In fact, analysis of data from Leg 189 indicates reduction of drill pipe motion exceeds 95% of the ship's vertical motion. The AHC system, however, has two criteria that limit operations: (1) The ship's vertical velocity in response to heave cannot exceed 4 ft/sec; and (2) The PHC stroke for safe operations is limited to ± 2.5 meters (±8 ft). In addition, the AHC system is not yet compatible with APC operations. Several technical problems still need resolution and the drillers are on a very steep learning curve, but it appears that Active Heave Compensation may be useful in certain drilling conditions.

## C) Update of Previous Meeting Recommendations

The thirteen recommendations resulting from the January 2000 SCIMP meeting are listed below. They have been grouped by topic for ease in presentation. Updates on these recommendations are presented in Appendix 00-2-5. See January 2000 SCIMP meeting report for additional discussion and background relating to these recommendations

**1) Personnel Issues**

SCIMP Recommend 00-1-1: Attrition of technical expertise
SCIMP Recommendation 00-1-2: Technician training

**2) Equipment/Laboratory**

SCIMP Recommendation 00-1-3: JANUS Hard Rock AppleCore
SCIMP Recommendation 00-1-4: Digital Imaging Resource Allocation
SCIMP Recommendation 00-1-5: Removal of XRF from the JOIDES Resolution
SCIMP Recommendation 00-1-6: Laboratory Modifications (Microbiology)
SCIMP Recommendation 00-1-13: Catwalk Core Temperature Monitoring

**3) Underway Geophysics**

SCIMP Recommendation 00-1-7: Underway Geophysics Review
SCIMP Recommendation 00-1-8: Magnetometer Review

**4) Seismic/Log/Core integration**

SCIMP Recommendation 00-1-9: Seismic/Log/Core Integration equipment
SCIMP Recommendation 00-1-10: Seismic Project Files
SCIMP Recommendation 00-1-11: Seismic /log/core integration training manuals
SCIMP Recommendation 00-1-12: Site Survey data submission requirements

## D) Review of Laboratory/Services Status

**1) Underway Geophysics**

At its previous meeting in Fremantle, SCIMP decided to undertake an evaluation of Underway Geophysical operations to determine if the current operation is the most efficient means of acquiring, processing, using, and distributing seismic data collected on the ship (SCIMP Recommendation 00-1-7). This evaluation was to be part of a larger effort to develop an integrated seismic/downhole/core analysis program aboard the *JOIDES Resolution* and successor IODP platforms. Indeed, several previous SCICOM-approved SCIMP recommendations have spoken to this data integration issue and progress is being made toward certain aspects of this goal (e.g., the FY 01 seismic-log-core integration pilot study being undertaken by the LDEO Borehole Research Group). Establishing this capability as a standard facility aboard the *JOIDES Resolution* would be one of the most beneficial legacies that SCIMP could leave to this program and its successor, IODP.

Recent changes in the SCIMP membership, however, delayed the specific U/G evaluation proposed at the January, 2000 SCIMP meeting in Fremantle. In addition, SCICOM and SSP members expressed concern that SCIMP was trying to eliminate U/G operations from the *JOIDES Resolution*. This is not the case. SCIMP is merely attempting to find the most efficient means of acquiring seismic data and subsequently distributing and integrating this data with downhole and core geophysical data aboard the *JOIDES Resolution*.

The minimum capabilities required for routine seismic/downhole/core data integration aboard the *JOIDES Resolution* are not well defined. For example, what are the minimum capabilities needed with respect to underway geophysical operations, downhole tools, core analytical equipment, computational instrumentation, and technical support staff to make this data integration facility a reality? Clearly, this seismic/downhole/core data integration program encompasses a wide variety of issues and input is needed from SCIMP members, SSP

members, ODP-TAMU, and ODP-LDEO. In order to keep moving forward with this issue, SCIMP recommends that a temporary Working Group be established to define the minimum capabilities for a routine seismic/downhole/core data integration program aboard the *JOIDES Resolution.* The following recommendation defines the mandate, reporting timeline, members and meetings for this Working Group.

**SCIMP RECOMMENDATION 00-2-1:** SCIMP recommends that a temporary Working Group be established to advise SCIMP on the minimum capabilities needed for a routine seismic/downhole/core data integration program aboard the *JOIDES Resolution.*

The **mandate** of the Working Group is as follows:

1) Evaluate required seismic acquisition and processing facilities on the *JOIDES Resolution* (U/G and VSP).
2) Evaluate facilities required for core-log-seismic integration and interpretation on the *JOIDES Resolution.*
3) Evaluate the need for scientific and technical staff support on the *JOIDES Resolution.*
4) Evaluate how to obtain, store, and distribute digital seismic data.
5) Evaluate what shore-based facilities and personnel are required.
6) Estimate cost of different aspects of the seismic laboratory.

**Timeline**:

The evaluation of required seismic acquisition and processing facilities on *the JOIDES Resolution* (U/W and VSP) should be completed by December, 2000 and a report and recommendations presented at the December, 2000 SCIMP meeting.

The final report and recommendations to be presented at the June, 2001 SCIMP meeting.

**Members:**

Members should include (but not necessarily be limited to) one person from SCIMP, SSP, ODP-TAMU, and ODP-LDEO, a Shipboard Scientist participating in the ODP-LDEO FY 01 pilot study, and an Industry representative).

**Meetings:**

One to two meetings held at the Borehole Research Group facilities at LDEO.

Finally, SCIMP discussed its previous recommendation (00-1-12) that all site survey data be submitted to the Site Survey Data Bank (SSDB) in digital form (SEGY format). The Site Survey Panel (SSP) raised concerns that this recommendation may be too restrictive as sites are often picked on analog data. In addition, SSP was concerned about the volume of data, how data could be handled effectively by the limited staff at the SSDB, and costs associated with this data collection. SCIMP reiterated that it was only concerned with data from within a couple miles around the borehole and that analog data within and around the borehole could be easily converted to a digital format by commercial firms specializing in analog to digital conversion. In addition, survey data would need to be supplied in digital from the SSDB in order to make a Data Integration Facility aboard the JOIDES Resolution (and its successors) a reality. The Leg 194 IESX project pilot study scheduled for Leg 194 should go a long way towards addressing the data handling issues and support issues.

**2) Core description**

The major outstanding issue discussed by SCIMP with respect to core description was the acquisition of digital imaging capabilities for split cores. SciMP considers the issue of digital imaging and its integration into the core description facility to be the current most serious shortfall in the onboard scientific program. We believe the lack of this digital imaging system is considerably affecting the ability of shipboard scientists to accurately record basic core information and hindering post-cruise study.

Whilst the panel appreciates the efforts of ODP-TAMU in pursuing the development of additional options above and beyond SCIMP recommendations 99-2-12 and 00-1-4, we believe the effort is unwarranted in view of available technology and strongly reiterate our earlier advice for purchase of the existing GEOTEK system. The GEOTEK line-scan digital imaging system suggested by SCIMP is the system of choice. The basic GEOTEK core logging system is used by over 50 institutions around the world (including many JOIDES institutions and institutions in most member countries). The digital camera system developed by GEOTEK exceeds the specifications offered by any other comparable system in the world. This system, when put on the ship, would (1) have known capabilities; (2) work the first day it was set-up; and (3) address known, high priority issues with respect to core description, photographic distribution, and publications.

We were disappointed to learn at the June SCIMP meeting that the purchase of this equipment has now apparently been shelved indefinitely because of YR 00 budgetary constraints. We can only restate that SciMP currently considers this purchase to be the number one priority for scientific improvement on the *JOIDES Resolution* and request ODP-TAMU to re-evaluate the current budget with a view to immediate implementation of Recommendation 99-2-12 in the current fiscal period.

We further suggest the delays in implementation could have been avoided and the purchase process ameliorated by closer and on-going liaison between the Chair of SciMP, SCIMP Core Description Lab Working Team members, and the ODP-TAMU Lab Working Team Chair.

SCIMP makes the following recommendation with respect to digital imaging:

**SCIMP Recommendation 00-2-2:** SCIMP recommends that JOI direct ODP-TAMU to reallocate current fiscal year funds to move forward immediately with the purchase of a single-track, moving sensor GEOTEK line-scan digital imaging system.

**3) Chemistry**

Several specific items in the chemistry laboratory were discussed by the panel.

First, the panel was informed of requests by shipboard scientists of the need for new extraction equipment for organic analyses. The panel, however, did not have much information on the types of equipment and availability of funds. Thus detailed discussion and recommendations were deferred until the next meeting when more information would be available.

***ACTION ITEM****: Geoff Wheat to compile list of issues and equipment needs for organic analyses by next meeting.*

Recent shipboard scientists queried the panel about the need for resistivity measurements (See Appendix 00-2-6). Resistivity is an essential parameter for diffusion modeling by pore-water chemists. Again, the panel did not have much information as to the types of equipment available for this type of measurement, and discussion and recommendations were deferred until more information is available.

***ACTION ITEM****: Geoff Wheat to determine what types of commercially-available equipment are available to make routine resistivity measurements aboard the JOIDES Resolution.*

The panel heard about concerned repeated failures of the ICP-ES power supply and potential problems/issues related to the use of large amounts of argon. Updates on these issues as they evolve will be most welcome by the panel.

***ACTION ITEM:*** *ODP-TAMU personnel to keep SCIMP Chemistry LWG members updated on ICP-ES operations.*

Finally, a brief discussion was held on the establishment of shore-based facilities, particularly with respect to utilizing the XRF that is being removed from the *JOIDES Resolution*. Shore-based facilities could be useful for equipment testing and development, training of technical staff, and analysis of old cores. In the context of the recent SCIMP laboratory/services prioritization, panel members believe that a shore-based facility that makes use of the old XRF is "useful" but not "essential" at this stage of the Program.

**4) Physical properties**

Several physical property issues were addressed by SCIMP.

Natural gamma options

Natural gamma measurements are ideally suited for core-log integration and as a terrigenous flux proxy. However, the multi-sensor track NaI natural gamma detectors are rather inefficient and measurements are time consuming. Hence, the data often cannot be acquired at sufficient resolution at sea. Newer, bismuth-germinate, full-spectrum detectors offer a more efficient replacement for the NaI detectors. A presentation was given by Rob de Meijer (Kernfysisch Versneller Institut) about these state-of-the-art natural gamma detectors (See Section E for more details).

Vane shear measurements

At the January, 2000 SCIMP meeting, the use and utility of the vane-shear instrument on board the *JOIDES Resolution* was discussed. The panel felt that before a decision was made to keep or remove the instrument from the ship a literature survey needed to be conducted to determine how often the data is used. A literature survey found that, excluding ODP Scientific Results volumes, no references were made to the vane shear measurements collected on board the *JOIDES Resolution*. Ensuing discussion among panel members further pointed out that Vane Shear is an extremely subjective measurement and highly dependent on the operator. Few scientists sailing on ODP legs have experience in Vane Shear measurements. The panel feels that the Vane Shear should remain where it is (and be maintained) until some other piece of essential equipment is proposed that will utilize the space the Vane Shear unit currently occupies. Thus, if a qualified Physical Property specialist does sail, the unit will be available for use.

Pycnometer monitoring

During the SCIMP tour of the JOIDES Resolution at the January, 2000 meeting, SCIMP members were concerned that the new location of the pyncnometer might affect data quality. In practice, the new location in the corner, away from A/C vents and doors, appears to work well. The shorter tube length between the helium tank and the pyncnometer also appears to help. The major issues with the pycnometers seem to be the number of samples run each leg and the fact that the pycnometer is used in an environment (at sea) where it was not designed to operate. The current usage is about 2500 samples/leg as opposed to the 250 samples/year recommended by Quantachrome.

***ACTION ITEM****: SCIMP PP Lab working team to investigate other options for this type of measurement*

**5) Paleomagnetics**

The equipment in the Paleomagnetics laboratory is functioning well and JANUS database query updates and modifications are progressing in a timely manner. It was noted that the Magnetic Susceptibility data from the Archive MST and the Discrete Bartington loop (in the paleomagnetics lab) are not being uploaded into JANUS. While this is a low-priority concern, the task needs to be identified and put on the JANUS modifications list.

***ACTION ITEM:*** *Determine if JANUS uploader programs for the Magnetic Susceptibility data from the Archive MST and the Discrete Bartington loop are on JANUS modifications task list.*

**6) Downhole Tools**

The DVTP with prototype pressure capability has been built and the tool was delivered for testing on Leg 190. ODP-TAMU reports that the first run was successful but the pressure casing failed during the second run. ODP-TAMU technicians are attempting repairs at sea. Further discussion of the tool centered on the length of deployment (this was unknown at the time of the meeting). Panel members inquired how tidal influence was incorporated into the analysis of the data.

Next, the panel discussed how data from leg-specific (fit-to-mission) tools was distributed and archived. The panel discovered that data distribution protocols for this type of equipment are not effectively handled by either the ODP Data Policy or the Third Party Tool Policy. The panel felt that data from all leg-specific tools should be distributed to the entire shipboard party, archived in ascii format on the Initial Reports CD-ROM, and be subject to the same one-year data moratorium as are all other standard ODP data types. The following recommendation resulted:

**SCIMP Recommendation 00-2-3:** SCIMP recommends that all investigators who produce data using leg-specific, non-ODP scientific analytical equipment and instrumentation on board *the JOIDES Resolution* follow all standard ODP data policies and data moratoriums. In all cases these data should be made freely available in the same way that other shipboard data are distributed.

The panel also discussed the acquisition, distribution, and archiving of long-term data from ODP boreholes (e.g., strain-meter measurements). The use of ODP boreholes after a cruise has been discussed previously by the panel (e.g., see Recommendation 99-1-15) and by the Long-Term Observatory PPG. The Long-Term Observatory PPG recommended the establishment of an oversight group for legacy holes (possibly a subset of SCIMP and/or OPCOM members). This group would deal inter alia with guidelines for use of holes, duration of experiments, check on ability to remove or add equipment, and resolve multi-user conflicts. The use of legacy holes will continue after the end of the current program and most definitely into the successor program, IODP. The issues are broad and often political in nature and many are well beyond the scope of an advisory panel such as SCIMP (e.g., territorial issues). Because of these broad issues and the use of these holes both in the current program and the next, SCIMP believes the issue of legacy holes (particularly data distribution) should be addressed by the ODP-IODP transition plan.

**SCIMP Recommendation 00-2-4:** SCIMP recommends that the ODP-IODP transition plan address the issue of long-term use of ODP drilled boreholes, with particular emphasis on the distribution and archiving of data collected from these legacy holes.

Finally, discussion centered on how to involve the panel at an early stage of downhole tool review of new proposals. Panel members and liaisons discussed mechanisms that would allow SCIMP to provide timely input to the downhole measurement needs on proposals in the ODP

system. Currently, SCIMP sees the recommendations of the ODP-LDEO group only after the legs are scheduled. This timing does not provide SCIMP with enough lead time to assist ODP-LDEO and proponents with planning for technological development, pursuit of funding for specialty tools, or assistance with other options for downhole measurements. With over 70 active proposals it would be a daunting task for SCIMP members to review all proposals. The JOIDES office has grouped proposals (current and new) by Long Range Plan themes. The plan is for SCIMP members to flag *groups* of proposals early on (rather than numerous individual proposals) that may need new tools/technologies or modification of existing tools to accomplish the objectives outlined in the Long Range. For example, given the large number of paleoclimate proposals that are focused on high-resolution studies, there will be an increasing demand for high-resolution logging data. To accomplish this timely review, it will be necessary for SCIMP members to receive detailed comments early on from ODP-LDEO liaisons to the SSEPs and the ODP-LDEO liaison to SCIMP. Thus the question of proprietary issues arose.

***ACTION ITEM:*** *The SCIMP Chair will query Bill Hay (SCICOM chair) and the SSEP chairs to discuss how problematic proposals (with respect to downhole tools) can be reviewed by SCIMP members.*

**7) JANUS / Shipboard computers and networks**

The Leg 189 ODP-TAMU Marine Computer Specialists (Dave Kotz and Laura Wright) provided the panel with a detailed update/status report of shipboard computer and database operations. SCIMP thanks them for their input. In general, several minor problems were reported but there are no major issues that SCIMP needs to address at this meeting.

Corrections/updates/modifications to JANUS (as a result of the recent prioritization) appear to be on schedule. SCIMP members had several questions, though, about some of the specifics reported in the ODP-TAMU operator report (Appendix 00-2-3). It was not clear to panel members if the items in the JANUS Application status table were specific tasks or groups of tasks. In addition, some items appeared on both the "Tasks in Progress" and the "Tasks Completed" tables. SCIMP members would like to see a follow-up meeting/report to gauge the status of JANUS modifications and to assist in establishing new priorities, if necessary.

Overall SCIMP is pleased with the progress of data migration. SCIMP members noted some errors in the Data Migration Table in the ODP-TAMU operator's report (in particular, Color Reflectivity on Legs 162 and 163, P-wave data on 163). But overall the task is progressing well and is ahead of schedule.

Panel members noted that a new Macintosh operating system is due out shortly. This operating system is significantly different than the current one. It is not clear how ODP-TAMU plans to handle upgrades to this new operating system.

***ACTION ITEM****: SCIMP and ODP-TAMU computer lab working teams develop a plan to upgrade Macintosh operating systems.*

Finally, it was noted that the computational needs for the Microbiology Laboratory are unknown at this time.

***ACTION ITEM:*** *Query shipboard microbiologists to determine computational needs in Microbiology Lab.*

**8) Curation**

The major curatorial issue SCIMP addressed at this meeting was the selection of a new Curatorial Advisory Board (CAB) member to replace Rick Murray. Discussion of the potential CAB members centered on the need for someone with a paleontology background. The obvious choice was Ken MacLeod. Ken accepted the assignment.

Panel members informed the ODP-TAMU liaisons that a more concerted effort needs to be made to explicitly inform shipboard scientists that they can contact the CAB if they are not satisfied with the way the Sample Advisory Committee (SAC) handles their sample request.

**9) Paleontology/microscopes/MRC**

Ken MacLeod reported that for the last couple of legs there seems to have been a continuation of the lack of communication between ODP-TAMU staff responsible for supplies and shipboard paleontologists.This stems from the age-old problem that no technician is assigned to the lab (and despite reassurances by ODP-TAMU to recommendations outline in SCIMP Recommendation 99-2-5).

MacLeod reported that a concerted effort was applied to the use of the PAL JANUS application on Legs 188 and 189. As people get familiar with the application there seems to be better acceptance. In general, the program is workable but not ideal. One recurring problem is that the PAL software slows down with heavy use. John Firth, however has been addressing bugs and modifications by a three-step process: easy fixes are done immediately, stylistic changes within a few months and more extensive modifications will await the new JAVA implementation.

Fossilist has been made available to shore-based scientists. It is not clear how easy it is to reload data back into JANUS and this will need to be monitored by the Paleontology lab working group.

Micropaleontological Research Center curators met in Bremen recently. In general, the MRCs report that all is going well. No major issues to resolve at this time.

Finally, the panel discussed the handling of digital photomicrographs (and other images). Joe Ortiz presented information on two asset management applications (Extensis Portfolio and Cumulus Canto) that could be utilized by ODP for organizing, viewing, sharing, and previewing digital files across networks and platforms. ODP-LDEO has successfully utilized Extensis Portfolio. This type of off-the-shelf asset management software appears to be a viable solution for the consistent linking of metadata with digital single frame images. SCIMP makes the following recommendation regarding the handling of single-frame digital images:

**SCIMP Recommendation 00-2-5:** To establish a protocol for the consistent linking of metadata with digital single frame images (e.g., thin sections, scanned core photographs) SCIMP recommends that ODP-TAMU purchase and implement the use of an asset management software/database (e.g. Extensis Porfolio or Cumulus Canto). The database

generated should interface with JANUS, have SQL compatibility and be able to export data in a long-term archive format.

**10) Publications**

Two Publications issues were presented to the panel. First, the Publications Department is constantly trying to test and evaluate its products. Reviews are often needed from the community. Ann Klaus (Manager of Publications) queried the Chair about getting reviews from the non-SCIMP community. The panel has no problem with the Publications Department getting reviews from as much of the community as possible. SCIMP only wishes to be included in the reviews and be informed of major developments that result from outside reviews.

Previously, SCIMP recommended that ODP-TAMU purchase a full web-based version of the AGI/GEOREF ODP citation database (SCIMP Recommendation 99-2-1). Subsequent to this recommendation, JOI and ODP-TAMU decided to purchase the single-copy edition of the citation database for the purpose of generating internal reports about ODP publication status. The Chair queried Ann Klaus prior to meeting about community access to this database. Ann Klaus and Kathy Phillips supplied a very informative response to these questions (See Appendix 00-2-7 for the full details). Based upon this response to issues about database contents, distribution, community access, etc. the panel decided the database is most useful for generating reports and not as a scientific research tool. As such, the panel is satisfied with the purchase of the single-copy citation database and will not pursue access of the web-based version in the current tight fiscal climate.

**11) Microbiology**

Updates on the status of the microbiology laboratory setup were previously discussed in Section C (Review of Recommendations). See Apppendix 00-2-5 for details.

Several specific questions regarding microbiology lab status were directed to the ODP-TAMU liaison.

1) Has a timetable been established for renewing microbiology supplies once depleted?

2) What is the status of the Radiation van?

3) Are there LeXen funds for purchase of a dedicated squeezer for the microbiology lab?

The ODP-TAMU liaison will respond to these queries post-meeting.

Finally, discussion focussed on the level of technical support and oversight for the microbiology lab. SCIMP would like to be kept informed on the status of the position announcement for a microbiology technician. SCIMP also discussed the oversight of the laboratory within TAMU. Ideally, it would be best to have a Ph.D. level microbiologist on staff (Staff Scientist). SCIMP realizes, though, that this may not be possible as staff scientist work is multi-faceted and a pure microbiologist may not be suitable for the position.

## E) New Techniques/Measurements

Natural gamma data collected on the multi-sensor track are very useful for core-log integration and for use as a proxy for terrigenous flux. Unfortunately, the current system, with its NaI detectors, is very slow and inefficient. On many high-recovery paleoceanograpic legs it is nearly impossible to collect natural gamma data at a sufficient resolution for it to be of use in core-log integration or terrigenous flux studies.

A new generation of natural gamma detectors (bismuth germanate) and analytical techniques are now available. To investigate the potential use of these new detectors, SCIMP invited Prof. Rob de Meijer from the Kernfysisch Versneller Institut to describe the system he has developed and advise SCIMP on the utility of this new system in the ODP environment.

Prof. de Meijer described a new system called MEDUSA (multi element detector underwater sediment analysis) that uses a BGO (Bismuth germinate) crystal and captures full spectrum data (See Appendix 00-2-8 for details of the presentation). The BGO crystals, although more expensive than NaI crystals, are much more sensitive. This BGO/full spectrum analytical system can offer a five-fold increase in sensitivity over a NaI/windows system. Total gamma counts could be a factor of 50 greater than produced with the current ODP system. Disadvantages due to temperature sensitivity and drift of discrete elemental peaks can be controlled by the software.

Rough calculations by Prof. de Meijer suggest that with a 15-cm annular detector approximately 15 full-spectrum measurements could be made on a 1.5 m section of core in about 15-20 min.

SCIMP members were impressed with the system described by Prof. de Meijer and will pursue the cost of developing such a system for use in IODP.

***ACTION ITEM:*** *SCIMP Physical Property LWG members to pursue the steps (and costs) required for development of a BGO/full spectrum natural gamma system for IODP.*

## F) Review of Recommendations

After this meeting, the last of the original SCIMP members (except for the Chair) will rotate off the panel. In an attempt to minimize the loss of "corporate memory" and to determine the effectiveness of the panel over the past 3 years, SCIMP members reviewed the status of all SCIMP recommendations. The ultimate goal of this review is provide SCICOM and JOI with a sense of how the current advisory system is working.

The recommendations were grouped into the same categories that SCIMP uses for its routine laboratory/services evaluations each meeting (See Section D) and the current status of each recommendation was examined. Appendix 00-2-9 contains a spreadsheet that lists each specific recommendation, its status (implemented, in progess, no progress) and miscellaneous comments. A summary of the review is presented below.

**Core description**
Only one of four recommendations dealing with aspects of core description has been fully implemented. The one recommendation that was implemented was a no-cost issue -- stop further developments of Hard Rock AppleCore. Of the remaining three recommendations, two deal with the purchase of a digital imaging system and one deals with development of a new Hard Rock core description application (a recommendation that depends heavily on acquisition of digital images). A reallocation of resources (funds) is necessary to move digital imaging forward and implement the remaining recommendations.

**Chemistry**
Five of seven chemistry-related recommendations have been implemented or are in progress. The two recommendations not currently implemented deal with the development of in-situ temperature and fluid sampling and the measurement of core temperatures on the catwalk. The lack of progress on these recommendations appears to stem from the fact that these developments need outside proponent support and require engineering efforts (with concomitant funds for material and personnel time).

**JANUS / Data Migration / Computers**
The six recommendations regarding JANUS / Data Migration / Computers are either implemented or in progress. Overall, David Becker, Manager of Information Services at ODP-TAMU has done a good job in prioritizing tasks, completing JANUS upgrades, and incorporating new applications. Communication between SCIMP and TAMU is critical, though. Panel members ***must*** be kept informed as applications are completed to determine if intent of recommendations has been met. It is also critical to monitor the progress of the plan for transfer of long-term archive to NGDC.

**Curation / Data Policies**
All six recommendations relating to curatorial and data policy issues have been implemented in a timely manner. The panel congratulates John Firth and Ann Klaus for their efforts with respect to these recommendations.

**Paleontology / Thin Sections / MRS**
All five recommendations related to the Micropaleontology Reference Centers were implemented to the satisfaction of SCIMP.

One recommendation relating to Paleontology Laboratory resources/technical support is rated as still in progress. The lack of full implementation, in part, rests with the allocation of resources (technician to monitor the lab and potentially assist with sample preparation). Other reasons stem from the lack of communication between technicians and scientists (a problem that could be resolved with better oversight and training of technicians on this specific issue by TAMU laboratory officers)

The two recommendations that deal with training for the PAL program could be considered in progress but nearly complete. Training must continue and evaluations about the robustness of the program and its success in capturing and distributing data are still ongoing.

No progress has been made by TAMU towards developing a portable PAL application. A third party application is currently being used.

**Downhole**

Seven of the eight recommendations regarding downhole operations have either been implemented or are in progress. ODP-LDEO has addressed each recommendation that SCIMP has made to the group. The remaining recommendation that needs implementation is the one requesting an evaluation of the cost of current wireline operations by JOI. The panel cannot adequately assess the cost (and efficiency) of current wireline operations because it is very difficult to break down the individual costs for the tools. A more specific follow-up recommendation to SCICOM/JOI is needed from SCIMP.

**Underway Geophysics and Core-Log Integration**

The eleven recommendations in this group can be subdivided into three categories (1) Data acquisition, (2) access to digital seismic data and (3) Infrastructure for digital data integration.

Of the four recommendations relating to data acquisition (airguns, streamers, magnetometers, U/G review), one is stalled (the U/G review) and the remaining three are in progress (to some extent, awaiting the outcome of a proposed U/G and Data Integration Facility review recommendation -- 00-2-1).

The five recommendations related to the infrastructure for digital data (seismic-log-core) integration are implemented or in progress. The upcoming FY01 IESX pilot study will go a long way towards determining the actual progress towards establishing a seismic-log-core data integration facility on the ship and the allocation of resources necessary for this facility.

Two recommendations have specifically requested that site survey data within the vicinity of the borehole be sent to the site survey database in digital form. To date, little progress has been made. If the IESX pilot study proves successful, these two recommendations will have to be implemented in order to provide seismic project files for each leg.

**Publications**

Nine out of ten publications recommendations made by SCIMP were successfully implemented. The remaining recommendation (the purchase of the web-based AGI/GEOREF ODP Citation database) was modified by JOI and ODP-TAMU to the purchase of a single-copy issue of the Citation database (for reporting purposes). After further review of issues regarding database contents, distribution, community access, etc., the panel decided the database is most useful for generating reports and not as a scientific research tool. As such, the panel is satisfied with the purchase of the single-copy citation database and will not pursue access of the web-based version in the current tight fiscal climate.

**Miscellaneous**

Recommendations in this category cover areas related to personnel, IODP, and SCIMP logistics and structure.

Personnel
Seven recommendations regarding personnel were made by SCIMP. Four recommendations requested JOI to evaluate the staffing levels throughout ODP. Little progress has been made on these recommendations and SCIMP still feels shore-based staff levels are too high and the sea-going staff needs to be reorganized into a more flexible system to deal with leg-specific needs. SCIMP needs to redefine these personnel recommendations to be more specific in nature.

A recommendation for ODP-TAMU to sail a database administrator/programmer on most legs has been implemented recently and SCIMP concern about compensation for ASPP-training is being addressed.

Of concern to SCIMP is the status of the remaining recommendation to develop a plan that preserves critical technical skills towards the end of the program. It is hoped that the ODP-IODP transition plan addresses this concern.

IODP/RISER SHIP
The one recommendation related to modifications of the OD21 riser ship laboratory stack was implemented. The two recommendations regarding riser ship operations (working group to optimize science benefit of data unique to a riser ship and putting observers on a riser ship) have not been implemented. It would be to IPSC's benefit to move forward with these latter two recommendations. The one recommendation requesting increased academia-industry interaction has seen some progress but more is needed.

Panel logistics and structure and reporting
The recommendations regarding establishment of liaisons and reporting of meeting minutes have been implemented.

PPGs
The two recommendations regarding PPGs were implemented.

ODP Engineering
The two recommendations regarding ODP Engineering have been implemented or are in progress.

## G) PPG and Panel Updates

PPG and Panel updates were provided for the Hydrogeology PPG (Morin), the Arctic PPG (Janecek) and TEDCOM (Janecek). See Appendix 00-2-10 for summaries of current action and recommendations.

The Hydrogeology and Arctic PPGs have each met once and are just beginning to grapple with the types of measurements and developments that will be needed. It will be important that SCIMP watchdogs remain abreast of developments within these PPGs.

## H) All Other Business

### 1) Third party tools

SCIMP endorsement was requested for at-sea deployment of the high-resolution gamma tool during Leg 191. The NSF funded high-resolution gamma tool (PI: D. Goldberg) continues on schedule through its third party tool development track. The tool is completely manufactured and assembled and has been bench tested successfully. In June, ODP-LDEO plans land tests for the tool in serial combination with Schlumberger tools (simulating the configuration that will be run on the *JOIDES Resolution*) and for sensor calibration in the API test facility at the University of Houston and with Schlumberger's NGT tool in their test hole in Houston. Final plans for deployment of the tool during Leg 191 are found in Appendix 00-2-2.

**SCIMP endorses the continued development and testing of the High Resolution Gamma Tool.**

Iturino briefly discussed the development of Keir Becker's memory temperature tool, which is planned for deployment on Leg 193. The BRG engineering group repaired the tool and will ship it to the *JOIDES Resolution* in October. Iturrino went into more detail about the core barrel temperature tool (CBTT) that LDEO/BRG is planning to develop for assessing temperature conditions during drilling operations.

The development and deployment of the CBTT will (1) allow temperature monitoring without taking any operational time from the leg; (2) provide continuous measurements while drilling every other 9.5 m section, and (3) allow correlations to be made with drilling parameters (i.e. pump rates) for more accurate assessments of temperature con itions while circulating. This type of temperature monitoring will be crucial for LWD operations because it is not known whether the borehole temperatures will exceed the upper temperature limits of the LWD tools.

An alternative to the CBTT would be to use the Lamont high temperature wireline probe or the University of Miami's memory tool. Each deployment, however, can take several hours and would only provide information after the hole is completed and the temperatures are already rebounding. In addition these tools will not provide information on borehole temperatures while circulating fluids or how much fluids need to be circulated to keep the temperatures down to the operational range of the LWD tools. Deployment of a CBTT in every other core would provide nearly continuous information throughout the entire coring operation and aid in tool deployment decisions in high temperature environments.

The cost of developing a CBTT should be relatively low as ODP-LDEO plans to utilize the same type of technology already in use with the Drill String Acceleration (DSA) tool. The

DSA has been deployed during previous legs to assess the behavior of the active and passive heave compensators.

**SCIMP endorses the development of a core-barrel temperature tool (CBTT) for assessing temperature conditions while coring and minimizing the risk of damaging LWD tools by exposing them to excessive heat.**

**2) New Members**

Three U.S. SCIMP members rotate off the panel after this meeting (Dave Anderson, Roger Morin, and Rick Murray). In addition, one U.S. panel member, Alan Huffman, resigned since the last meeting. Thus four U.S. replacements are necessary. The panel discussed the expertise needed on the panel and decided that new members with expertise in the following four areas/disciplines would be most beneficial to the SCIMP:

Database/Information Technology
Industry
Organic Chemistry
Geophysical/Seismic

**3) New Chair Selection**

Bill Hay sent a letter to the SCIMP Panel Chair requesting that the panel discuss a replacement for the Chair, who rotates off the panel after the next meeting (January 2001). The letter requested that the panel look for a non-U.S. replacement. The panel discussed this issue at length. First and foremost, the panel feels that the replacement should be the best qualified person, irrespective of nationality. The panel discussed the prerequisites involved. The chair must have a good working knowledge of the JOIDES advisory system, knowledge of subcontractor operations (TAMU and LDEO), and the time to invest in the job. Several options were discussed for future panel chairs, including (1) the current Panel Chair staying on, (2) choosing someone currently on the panel, (3) choosing someone who has recently served on SCIMP, and (4) choosing a new member as chair.

Panel members first asked if the current Panel Chair would consider staying on. After much discussion and thought (post-meeting) the Panel Chair decided that it would be best if he rotated off as planned. Next, panel members were asked if one of them would be willing to be the next panel chair. There weren't any positive responses. The panel then suggested several names of recent SCIMP members who they felt would be qualified for the position (Chris MacLeod, Peter Fleming). Finally, the panel suggested several names of non-SCIMP members (Jamie Allan, Eystein Jansen, Jim Zachos)

***ACTION ITEM:*** *The panel will provide SCICOM with the names of potential SCIMP* chairs.

**4) Technical Staff Communication**

During the January, 2000 SCIMP meeting, panel members met with ODP-TAMU technical staff. An outgrowth of this meeting was the idea that SCIMP members could contact ODP-TAMU technical staff on the ship (or shore) to get the latest information on lab status. This

system worked well in preparation for the June, 2000 meeting. SCIMP members received direct and valuable information from the Leg 189 technical staff and wish to commend the Leg 189 technical staff for their timely and productive reports.

In order to keep this conduit of information open between SCIMP and ODP-technical staff, the following guidelines have been worked out. All communications should be copied to the laboratory officer, Supervisor of Technical Support (Brad Julson), SCIMP liaison (Carl Richter), and LWT coordinator at the minimum. ODP-TAMU will then have the Technical Staff respond via the Laboratory Officer, so they are not charged for the out going email. A list of email addresses for the Laboratory officers, Supervisor of Technical Support (Brad Julson), SCIMP liaison (Carl Richter), and LWT coordinators is found in Appendix 00-2-11.

**5) Shipboard email costs**

The panel discussed the issue of charging for email (both incoming and outgoing) on the *JOIDES Resolution*. In this day and age, email access to and from the ship is ESSENTIAL if the program wishes to have highly-qualified scientists sailing on each leg. Shipboard email has a direct impact on morale and thus scientific productivity and measurements. As such, the panel considers this a SCIMP issue. It is obvious that some loose limits need to be applied to prevent total email chaos (particularly file-size and attachment size limits), but SCIMP wonders about the wisdom of trying to recoup costs from the scientific staff (and the ODP and technical staff) for personal email.

The panel would like to see a breakdown of the traffic related to official ODP/SEDCO ship-to-shore business and that associated with personal email (from scientists, ODP staff and SEDCO staff). In addition, it is not clear if there is an ODP line-item budget for email and, if so, what is this budget and is this budget being exceeded (so that costs need to be recouped)? Further recommendations will be forthcoming once these numbers are made available to the panel

***ACTION ITEM****: ODP-TAMU to supply SCIMP with breakdown of email costs to and from the JOIDES Resolution.*

**6) Status of cookbooks**

Dave Anderson compiled a report on the status of "cookbooks' for the various labs (Appendix 00-2-12). Currently none of the cookbooks has JANUS "how-to" information. This information, where available, exists in separate JANUS documentation. The Shipboard Scientist's Handbook is probably in the worst shape but a recent draft has been sent out for review. The ultimate goal for all cookbooks is to have pdf versions with JANUS documentation. To keep the progress of cookbook completion on track, SCIMP would like to see an estimated completion data for each one.

***ACTION ITEM:*** *ODP-TAMU to supply estimated completion date for laboratory "cookbooks".*

**7) Panel involvement in information technology issues**

Dave Anderson suggested that it is important that SCIMP stay abreast of Information Technology developments, particularly with regards to insuring that ODP data is seen by the world. Geoinformatics workshops deal with this type of data tagging. Anderson will supply the panel with a list of recent workshop attendees and SCIMP will have a specific agenda item at its next meeting to investigate this issue.

## I) Next meeting venue

Several venues were discussed for the next meeting. The first choice is to hold the meeting at MBARI (Geoff Wheat, host) on Dec 12-14$^{th}$ , 2000, just prior to the San Francisco American Geophysical Union meeting (Dec 15$^{th}$ -19$^{th}$). Alternate venues include Tallahassee (Tom Janecek, host) or University Miami (New JOIDES Office, host) on Dec 11$^{th}$ - 13$^{th}$, 2000. The latter two venues also allow for non-US members to coordinate travel with the Fall AGU meeting in San Francisco.

## J) Acknowledgements

The panel thanks Jeroen Kenter for hosting the meeting at the Vrije Universiteit and for arranging the tour of NIOZ. SCIMP also thanks Fred Jansen (NIOZ) for taking the time to show panel members the many new and exciting technological innovations at NIOZ and for arranging lunch during our tour.

Dave Anderson, Roger Morin, and Rick Murray rotate off the panel after this meeting. The panel will greatly miss their input and assistance but know that both will remain active in the current and future drilling programs. We wish them all the best of luck in their future endeavors and give them fair warning that we will tap into their expertise in the future!

Finally, SCIMP members wish to thank Jay Miller for his service to SCIMP as an ODP-TAMU liaison. Jay's experience and enthusiasm, combined with a high degree of professionalism, made his input to the panel invaluable. The panel (and especially the Chair) will miss his participation!!