Report of the

JOIDES Scientific Measurements Panel

Curtin University

Perth, Australia

January 12th-14th, 2000

Scientific Measurements Panel Participant List

SCIMP Members

David Anderson	(US, NOAA)
Christian Buecker	(Germany, Joint Geoscientific Research Institute)
Bernard Celerier	(France, Universite de Montpellier II-CNRS)
Peter Flemings	(US, Penn State University)
Alan Huffman	(US, Conoco)
Thomas Janecek	(US, Florida State University)
Mike Lovell	(UK, Leicester University)
Ken MacLeod	(US, University of Missouri)
Peter Michael	(US, The University of Tulsa)
Roger Morin	(US, USGS)
Rick Murray	(US, Boston University)
Joe Ortiz	(US, Lamont-Doherty Earth Observatory)
Greg Skilbeck (alternate)	(PACRIM, University of Technology, Sydney)
Wonn Soh	(Japan, Kyushu University)
Geoff Wheat	(US, W.Coast &Polar Reg Undersea Res Ctr)

Liaisons

Gerry Iturrino	(ODP-LDEO)
Jay Miller	(ODP-TAMU)
Nick Pisias	(SCICOM/OPCOM)
Frank Rack	(JOI)
Jeff Schuffert	(JOIDES)

Guests

Jock Keene	(Australian Secretariat)
Lindsay Collins	(Australia, Curtin University)
Dave Smith	(University of Rhode Island)
Brad Julson	(ODP-TAMU)
Bill Mills	(ODP-TAMU)

Regrets

Sverre Planke	(ESF, University of Oslo)

NOTE: This report of the meeting is grouped primarily by agenda items and is not always in chronological order of discussion.

A) Introduction

The meeting started on Wednesday January 12th, 2000 at 8:00 am and ended on Friday, January 14th, 2000 at 5:00 p.m.

The Chairman welcomed the panel to the meeting and expressed a special welcome to new members Christian Buecker, Ken MacLeod, Peter Michael, and Mike Lovell. Greg Skilbeck attended as the PACRIM alternate.

Jock Keene, the meeting host, explained some of the arrangements for the meeting.

The Chairman 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) Update on Recommendations -- June 99 Meeting

The sixteen recommendations resulting from the June 1999 SCIMP meeting are listed below. See SCIMP Appendix 00-1-1 for a short background to each recommendation, the complete recommendation, and the status of the recommendation.

1) Digital Imaging

SCIMP REC 99-2-12: PURCHASE OF DIGITAL IMAGING SYSTEM.

2) Publications

SCIMP REC 99-2-1: ODP/DSDP CITATION DATABASE
SCIMP REC 99-2-2: PRELIMINARY REPORT AUTHORSHIP
SCIMP REC 99-2-3: LOGGING REPORT AUTHORSHIP

3) Underway Geophysics

SCIMP REC 99-2-10: USE OF SINGLE-CHANNEL STREAMERS
SCIMP REC 99-2-11: TUNED-GUN ARRAYS vs. GI GUNS

4) OD21 Laboratory Design

SCIMP REC 99-2-13: OD21 LAB DESIGN CHANGES
SCIMP REC 99-2-14: WORKING GROUP ON RISER SHIP DATA

SCIMP REC 99-2-15: OBSERVERS ON INDUSTRY DRILL SHIPS.
SCIMP REC 99-2-16: JOINT INDUSTRY PROJECTS

5) Other

SCIMP REC 99-2-4: JANUS DATABASE ENTRY
SCIMP REC 99-2-5: PALEO LAB TECHNICAL SUPPORT
SCIMP REC 99-2-6: PORTABLE JANUS PALEO APPLICATION
SCIMP REC 99-2-8: CORE WRAPPING
SCIMP REC 99-2-9: SAND BLASTER AVAILABILITY
SCIMP REC 99-2-7: MRC RECOMMENDATION

C) Operator updates from TAMU, JOI, JOIDES, BRG

1) JOI

As the panel had five new members at this meeting, Frank Rack first presented an overview of the Ocean Drilling Program and JOI's role as Prime Contractor in the program. Next he outlined the JOIDES advisory system and the role of the technical panels (in particular SCIMP) in the system.

Rack informed the panel of numerous Post-2003 activities. He discussed the AGU town meeting, the IODP planning timeline, and the structure and membership of the IODP Planning Sub-Committee (IPSC) and its associated working groups that are planning post-2003 activities within the framework of that planning timeline. Finally, Rack informed the committee of the progress of the Conceptual Design Committee. The committee is preparing a report, due March 1, that specifies the operational and scientific characteristics of a non-riser drilling vessel and the scientific objectives that it will be expected to address.

Rack next outlined several JOI activities, workshops, and meetings that have been conducted since the last SCIMP meeting. In particular, Rack discussed the Houston "Workshop on Cooperation in Scientific Ocean Drilling: Forging Industry-Academic Partnerships". This type of workshop was the subject of several previous SCIMP recommendations regarding ODP-Industry collaboration. Further JOI initiatives/activities discussed by Rack included the Ocean Drilling Seminar Series on Capital Hill and the International Program offices meeting.

Lastly, Rack presented the latest ODP Scheduled Science Legs and the FY00 ODP Budget, Technology Plan, and ODP Long Range Plan Development. The discussion on LRP developments centered on Deep Biosphere Initiatives, Gas Hydrates, Advanced CORKs, ION sites, Technology Development and Alternate Platforms.

2) JOIDES

Jeff Schuffert updated the panel on various activities within the JOIDES structure and at the JOIDES office. Two new PPGs were formed (Arctic and Hydrogeology) and Schuffert asked SCIMP to name watchdogs to the PPGs. A discussion ensued on how the current JOIDES advisory structure will mesh with the new IODP advisory structure. ISPC is grappling with this issue but little is known at this point.

Schuffert mentioned that efforts are underway to update the online directory on the JOIDES website. The JOIDES office will be sending out emails in the near future to verify directory information. All abstracts for active proposals are now on the JOIDES website.

Finally, Schuffert explained that proposal pressure remains strong and presented a distribution of proposals by country. He noted that proposal page guidelines are being enforced. The next deadline is March 15, 2000.

3) ODP-TAMU

ODP-TAMU did not provide an operator update to SCIMP during the meeting. See Appendix 00-1-2 for a written version of the ODP-TAMU operator update.

4) ODP-LDEO

Gerry Iturrino presented a brief update on activities at ODP-LDEO (See Appendix 00-1-3 for a detailed report). Iturrino followed up on some questions asked at the previous meeting about the logging-related manuals. Two distinct manuals are available: (1) the first, a logging manual, is designed for use by the scientific party and co-chiefs; it describes the tools, the measurements, and how these measurements can be used by the scientific party. It is now on the web and on a CD (a copy of which was distributed to SCIMP members for their input); (2) a second manual, the logger's manual, is designed for the logging scientists and includes information on logging operations, data acquisition, and quality control and is currently being modified and transferred into a CD format.

In response to a question about CLIP (Core Log Integration Platform), Iturrino said that SAGAN (the program to integrate logs with core data) will be tested on Leg 189. Tom Janecek will be on that leg and will provide the panel with an update at the June, 2000 meeting.

Finally, in a response to a query about providing FMS images to shipboard scientists in a useable file size and format. Iturrino noted that GIF images will be available starting with Leg 188. These images can be viewed at two aspect ratios (20-meter sections at 1:1; 100-meter sections at 1:10).

D) Ship Visits

SCIMP members visited the JOIDES Resolution twice during its three-day meeting. The objectives of the first visit were to tour the renovated lab stack and to meet with both the on-going and off-going technicians. SCIMP members met with technical staff assigned to the particular labs that panel members were reviewing and panel members asked for input regarding the level of technical staffing, training needs, current laboratory equipment needs, level of knowledge about JANUS applications, and long-term changes/needs regarding technical positions in the current program.

During the second visit to the ship, SCIMP members focussed on software/JANUS issues, determining equipment status, examining the quality of manuals, looking into further laboratory changes (e.g., moving Microbiology to F-Deck) and any other items that needed additional follow-up from the previous visit two days earlier.

SCIMP members were extremely impressed with the modifications to the laboratory facilities during the recent drydock. SCIMP wishes to commend ODP-TAMU on the successful modification and update of the JOIDES Resolution laboratory. These changes significantly enhance the shipboard capabilities of the program.

Specific laboratory reports as well as recommendations and action items are mostly found in Section E (Review of laboratories/Services). Several other key points regarding the technical staff are discussed below.

A common theme and concern among much of the ODP technical staff and SCIMP members was what will happen to the technical staff as ODP winds down toward 2003. SCIMP members are concerned that experienced shipboard and shorebased personnel will find other employment towards the end of the program and can envision poorly staffed laboratories during the last year of the program. It is not clear to SCIMP at this point how this transition will occur from ODP to IODP, and the panel recommends that IPSC and JOI explicitly address this issue and make the technical staff aware that they are addressing the issue.

SCIMP Recommendation 00-1-1: SCIMP is keenly aware of, and concerned about, the high risk of significant technical attrition on the JOIDES Resolution as ODP approaches its conclusion in 2003. SCIMP strongly recommends that JOI and IPSC develop a plan that will assure the preservation of all critical technical skills towards the end of ODP. This plan should be in place and communicated to all ODP staff by January 1, 2002.

Another issue of concern to SCIMP is maintaining a high level of training and technical skill among the sea-going only (ASPP) staff. Currently, ASPP employees attend workshops or training without any compensation for their time. Such a policy is

detrimental to maintaining a high level of expertise and esprit de corps. SCIMP understands that this lack of compensation stems from Texas A&M University's personnel policies, but the panel recommends that ODP-TAMU should aggressively pursue a change in its current training practices regarding ASPP employees.

SCIMP Recommendation 00-1-2: SCIMP recommends that ODP-TAMU provide the necessary shore-based training for all ASPP employees in a manner that appropriately compensates them for their time.

E) Review of lab/services status

1) Core Description:

•AppleCore

SCIMP LWG members evaluated both the hard-rock and soft-rock versions of AppleCore. The LWG members feel the Hard Rock AppleCore application will never be able to achieve the desired results needed for archival and distribution of hard-rock core descriptions. The data input and reporting functions are too restrictive for most hard-rock descriptions and, in most likelihood, the application will not be used by petrologists because it does not record the data they need. SCIMP members believe that current GIS applications could be modified to provide a suitable hard-rock core description application. Further development of the Hard Rock AppleCore application is not recommended.

SCIMP Recommendation 00-1-3: SCIMP recommends that ODP-TAMU cease further development of Hard-Rock AppleCore and await a recommendation by the Core Description Lab Working Group on development of a new application.

> ***ACTION ITEM:*** *The Core Description LWG will evaluate various GIS programs, to be used in conjunction with a the new digital line scan camera, as a starting point for hard-rock core descriptions. This LWG will report its findings to SCIMP via the message boards.*

Although soft-rock AppleCore still has some imperfections, it is useable, and is a big improvement over previous methods, so it should be retained. Hard-rock AppleCore should be kept available in case some of its functions are needed by soft-rock scientists.

•Digital Imaging

SCIMP members discussed the state of digital imaging on the JOIDES Resolution, including the currently deployed Archive MST (AMST) that contains a digital camera.

SCIMP members believe it would not be a good use of valuable and limited ODP development resources to continue the development of the AMST digital camera and made the following recommendation:

SCIMP Recommendation 00-1-4: SCIMP applauds ODP-TAMU's decision to purchase a digital imaging system from GEOTEK. Due to the high priority of this measurement on upcoming legs, we reiterate our request that the new GEOTEK system be deployed and operational by June 2000 as specified in SCIMP Recommendation 99-2-12. Appropriate resources should be focussed on the integration of the GEOTEK line scan camera into the ODP infrastructure including:

Deployment of required resources
Data storage/archive procedures
JANUS data model
Post-cruise image distribution plan

To alleviate space concerns in the post-drydock core lab, the AMST should be removed to provide space for placement of the GEOTEK track. Sensors from the existing AMST should be retained on board the JOIDES Resolution for use by the shipboard scientific party, if needed. No resources should be spent on further development of the alternatives to the GEOTEK line scan camera system.

2) Chemistry (including XRF/XRD):

The SCIMP Chemistry LWG members reported that, in general, the Chemistry laboratory is functioning well. However, several issues/concerns (discussed below) need to be addressed in a timely fashion. The reader is referred to the ICP-ES sub-section below for details about the implementation of that program.

•Current Measurements

a) Gas Chromatographs

The new GC's and GC MS are working well. The "front end" of the GC-MS (an auto extraction unit system), however, was not purchased. The operation of the GC-MS without this extraction system results in a poorer quality data set and grossly minimizes the utility of the GC-MS.

> ***ACTION ITEM****: SCIMP and TAMU Chemistry Laboratory Working group will look into the feasibility of purchasing an auto extraction unit in light of other needs in the chemistry.*
>
> ***ACTION ITEM****: SCIMP and TAMU Chemistry Laboratory Working group will develop a cookbook of extraction techniques and machine settings for the analysis*

of organic molecules using the GC-MS. Additional considerations will be given to other instruments to aid in these analyses.

b) Infrastructure

i) During the ship visits, SCIMP members found that the new instrumentation in the chemistry laboratory is taxing the current cooling system. This could be a significant problem when the ship is working in the tropics.

***ACTION ITEM**: ODP-TAMU should investigate feasibility of adding additional cooling systems into the chemistry laboratory.*

ii) Several "workhorse" pieces of equipment in the chemistry laboratory are either aging or becoming out-dated. These instruments include the coulometer, spectrophotometer, and freeze dryer.

***ACTION ITEM:** SCIMP and ODP-TAMU Chemistry Laboratory Working group will investigate options to replace/update these systems and make specific recommendations at the next SCIMP meeting.*

iii) The pump for the GC-MS and the EC detector in the chemistry lab need to be vented.

***ACTION ITEM:** ODP-TAMU to ensure that all instruments and storage cabinets comply with health and safety guidelines.*

•ICP-ES/XRF

The ICP-ES was used successfully on Leg 187. Analytical protocols for various elemental groups still need to be worked out but, overall, implementation of the ICP-ES has been a huge success. Rick Murray, SciMP member, was actively involved in training the ODP technicians on the operation of the ICP-ES and has also written the Technical Note to guide its operation. With further development being done by the shipboard scientists and ODP personnel (in particular Jay Miller) on Leg 187 and by other scientists on Leg 188, this facility is at the time of this writing essentially a fully operational facility. SCIMP commends ODP-TAMU for their enthusiasm and interest in transferring the analytical tasks of the XRF to the ICP-ES. SCIMP acknowledges the considerable effort of this endeavor.

The success of the ICP has direct implications for the status of the XRF. The ICP appears to be able to replace the XRF in 99% of most needs. Removal of the XRF has implications for other laboratory space on the ship, particularly the microbiology laboratory.

Along these lines, SCIMP members discussed a rearrangement of some of the laboratories on the JOIDES Resolution. In particular, several members of the panel felt that the best location for the microbiology laboratory would be next to the current chemistry laboratory on the F-deck. A subgroup that included SCIMP Chemistry LWG members, ODP-TAMU technical and scientific staff, and several other interested parties examined the lab stack spaces under consideration. They determined that with the removal of the XRF and movement of the thin section, hard-rock sample preparation, and XRD laboratories into the new space on the 7th floor of the lab stack the microbiology laboratory could fit into the F-Deck. Pros and cons of this move were discussed in a full meeting of the panel and the following two recommendations ensued:

SCIMP Recommendation 00-1-5: SCIMP recommends that ODP-TAMU remove the XRF from the JOIDES Resolution during the Leg 189/190 transit and portcall.

SCIMP Recommendation 00-1-6: SCIMP recommends that TAMU expeditiously (i.e., during Leg 189/190 transit) move the existing thin section, hard-rock sample preparation and XRD laboratories into the new space on the 7th floor of the lab stack. The microbiology laboratory, including the existing apparatus and the expanded apparatus purchased by ODP-TAMU and LExEN should be installed in the F-deck space vacated by this move.

•X-ray Diffraction unit

NOTE: Some of this discussion regarding X-ray diffraction (XRD) services was held via email after the meeting.

The current x-ray diffraction unit is aging and is inoperable for substantial periods of time. Replacement of the current unit with a "table-top" model has been the topic of discussion at previous SCIMP meetings. Replacement cost is on the order of $60K. In light of the high maintenance of the current XRD and the recommended removal of the XRF unit from the ship, the committee was queried about removal or reduction of x-ray services from the shipboard laboratory system. In essence, are there still further programmatic advantages to also considering removal of the XRD in addition to the already-recommended XRF removal? Would these advantages offset the loss of the XRD capabilities? For example, the removal or reduction of x-ray services has obvious technical, space, and monetary ramifications. The removal or reduction of x-ray services could free up part or all of a technical slot for other missions (e.g., microbiology). In addition, removal (without replacement) of the current XRD would allow allocated replacement funds and space to be used for higher priority measurements.

Panel members discussed the utility of XRD measurements on board the ship. The discussion centered quite a bit on anecdotal evidence. Some members felt the XRD was used substantially and the data was often cited in Initial Report site chapters and post-cruise manuscripts. Others panel members felt the XRD was not an essential tool for shipboard use and cited its lack of use on many legs. The need for more objective criteria was apparent. In light of this disagreement, the Chair felt that the past use of the XRD (and potential use on upcoming scheduled legs) needs to be better documented before making a specific recommendation for replacement or removal of the XRD. The issues of community response and retention of constituency are also important factors, in the context that having such a facility on-board does increase the scientific capability of the program.

> ***ACTION ITEM:*** *Chemistry and Core Description SCIMP LWG members will document the past usage history of the XRD and examine its utility for the upcoming scheduled legs. They will report their findings to the panel via the SCIMP message boards before the next meeting. SCIMP will make a specific recommendation for removal or replacement no later than June 2000.*

•Workshop-post 2003 drilling

Rick Murray and Geoff Wheat reported that they, along with Dan Schrag, will be operating a JOI/USSSP supported workshop in Fall, 2000, on "Opportunities in Geochemistry for Post-2003 Ocean Drilling." This workshop, probably oriented around the following themes...

I. Diagenesis: Sediment - Pore Fluid Interactions.
II. Chemical Paleoceanography and Chemostratigraphy.
III. Formation and Alteration of Ocean Crust.
IV. Gas Hydrates and Subseafloor Microbiology.
V. Fluid Transport: Ridges to Flanks to Subduction.
VI. Instrumentation, Technology, and Science of Opportunity.

...is hoped to address a great many issues that are important to SciMP in the context of their involvement with instrumentation and experimental conditions in the new program. As outlined in the justification to hold this workshop: "With the on-going construction of scientific themes and technological goals in the context of multi-platform post-2003 drilling, we feel that it is necessary to gather members of the geochemical community to identify and target research questions that can only be addressed through ocean drilling. Building upon these questions, we will develop a guiding "blueprint" for shipboard and shorebased geochemical studies during the next phase of scientific ocean drilling (post-Ocean Drilling Program (ODP)). An explicit goal is to involve geochemists who have limited interactions with ODP. Incorporating these scientists will provide a broader view of geochemical problems and will strengthen the ties between ODP and the geochemical community."

3) <u>Physical Properties</u>:

•Lab Status

The Physical Properties laboratory was only partially reconstructed since dry dock. The remainder of the laboratory equipment (MST tracks) will be brought online during the initial transit on Leg 188.

> ***ACTION ITEM****: ODP-TAMU will report back to SCIMP via the message boards about the status of the Physical Property labs.*

•Pyncnometer

Several issues arose out of the visit to the ship by the SCIMP physical property LWG. The pyncnometer has been moved to a new location and modified during the laboratory renovations. It is not clear how the environmental conditions in this new location and the instrument upgrade will affect the quality of the data.

> ***ACTION ITEM:*** *ODP-TAMU will need to monitor the data output during Leg 188 and report back to SCIMP via the message boards.*

•Natural Gamma

A current problem with natural gamma data collection on the whole-core MST is that there is often a trade-off between core flow and gamma counts. The faster the core flow through the MST, the shorter the gamma count times and hence, very low counts per seconds are recorded. On high recovery legs it is almost impossible to gather useful natural gamma data. Christian Buecker reported to the panel that higher resolution spectral gamma detectors are now available. These new detectors could possibly be incorporated into the current natural gamma sensor on the MST (thus allowing increased throughput and high gamma count rates).

> ***ACTION ITEM:*** *Buecker will investigate the cost and availability of these new detectors and report back to the panel via the ODP message boards.*

•Utility of Measurements

The physical property laboratory, like many of the labs on the ship, is very crowded. With the potential for new track systems in the laboratory stack (e.g., digital imaging), there is a need to evaluate the utility of some of the current equipment in the labs. In particular, utility of routinely collecting Vane Shear measurements was discussed by the panel. Before advocating the removal of the Vane Shear unit, the panel decided it was necessary to determine how often the data were being accessed and how many post-cruise manuscripts utilized the data.

> ***ACTION ITEM:*** *SCIMP Physicial Property LWG members will evaluate the level of data access and try to determine how often Vane Shear data is used in ODP post-cruise publications.*

4) Paleomagnetics:

Overall, the technicians were pleased with the equipment status and level of operations in the Paleomagnetic laboratory. The equipment functions well but some concerns were raised about several of the data reduction applications. Currently, three separate software packages (including a large amount of data file editing in Excel) are needed to generate plots for intensity, declination, and inclination. In particular two applications for data reduction of cryomagnetometer data (one that deals with section breaks and one that creates Z plots) need high-priority attention. Until these two applications are modified, data reduction will remain a needlessly labor-intensive proposition. In addition, data were often not supplied to the scientific party in a timely manner because of this extensive manual data reduction.

5) Underway Geophysics

Underway Geophysics currently involves three data collection processes, including: (1) Precision Depth Records, (2) single channel seismic imaging, (3) magnetometry. The most frequent data type collected are PDR. Seismic lines are being acquired only rarely on a as needed basis. The support staff are comfortable with the acquisition of the data but are not well versed on why they follow a given process and how they might modify or improve that process. As such, this limits the options available onboard the JOIDES Resolution to standard procedures. The staff have no experience or expertise in data processing so that the data tend to remain in a crude state unless scientific expertise on a given leg is available to process the data further. In general, this is not being done. The seismic data being generated are ***not*** of sufficient quality to tie well logs and improving them for that task would require significant processing.

The equipment being used is adequate to the task but is clearly antiquated and of declining serviceability. The airgun/watergun sources need to be replaced (SCIMP Recommendation 99-2-11). The streamer and computers are antiquated but functional. Documentation/cookbooks do not exist.

Staffing on the JOIDES Resolution for U/G support is adequate and both U/G technicians provide other support in the main laboratories. Both technicians have some support / backup from other technicians as the U/G process requires two persons, one for equipment monitoring on the fantail and one for data acquisition in the computer room. Discussion with the technical staff highlighted the fact that one technician has several support persons to assist in U/G work while the other technician has very little support. This imbalance needs to be addressed to assure that U/G support is balanced for each crew.

Specific issues that need action are as follows:

1) If U/G support is to continue on the JOIDES Resolution, the technicians should be sent to industrial courses in seismic data acquisition and seismic data processing. The goal of this training should be (1) to raise the awareness of the support staff regarding how they can modify standard processes, (2) what options are available to improve the data quality and (3) provide some basic QA/QC tools to assure that the JOIDES Resolution U/G data are of sufficient quality to add value to the JOIDES Resolution drilling.

2) There may be a need for a PC upgrade in the data processing room for navigation purposes.

3) Both magnetometers are currently non-functional and the electronics technicians are not sufficiently familiar with these tools to provide repairs and support. It should be determined what repairs are needed and what support is required to keep the tools operational. This support should be weighed against the need for the use of magnetometers on the JOIDES Resolution. A determination should as to whether magnetics data should be collected on the JOIDES Resolution and, if so, should the data collection be out-sourced as needed.

4) If U/G seismic work continues to be provided on the JOIDES Resolution, appropriate data processing tools should be provided that will allow shipboard staff and scientists to process data to make it suitable for use during drilling. This should be integrated with the seismic workstation being provided for well-tie and seismic/core/log integration on the JOIDES Resolution. Appropriate training materials and cookbooks should be developed for use on the JOIDES Resolution in support of this task.

With these issues in mind, SCIMP makes the following recommendations regarding U/G operations aboard the JOIDES Resolution.

SCIMP Recommendation 00-1-7: SCIMP recommends that the pending purchase or lease of the new seismic gun arrays for the JOIDES Resolution be deferred pending full evaluation of the JOIDES Resolution underway geophysical operations by the SCIMP U/G sub-panel. The evaluation will be completed and presented at the next SCIMP meeting and a full recommendation on U/G operations will follow.

SCIMP Recommendation 00-1-8: SCIMP recommends that ODP-TAMU determine the cost to repair both magnetometers and properly maintain and service them for the remainder of ODP. These data will be incorporated into the SCIMP's evaluation of U/G operations. Any repairs or other expenses should be deferred pending the U/G report.

6) Downhole Tools

•Lab review

The downhole tools were not readily available onboard the ship following dry dock but SCIMP Downhole tool LWG members were impressed with many new initiatives including the new laboratory layout on the 7th floor of the lab stack.

The new Schlumberger unit is PC based and downhole logs can now be displayed on monitors around the ship. SCIMP commends the new ability of Schlumberger to display their logging data throughout the ship as it is acquired. This is an important step in communicating the value of wireline logging to all scientists on the ship.

The TAMU downhole measurements advisory team has regularly posted the minutes of their meetings on the SCIMP message board. The SCIMP Downhole LWG members have found these postings to be very helpful and encourage ODP-TAMU to keep up this level of reporting.

The LDEO Logging manual (on CD) is a very positive addition. SCIMP commends ODP-LDEO for the development of this very helpful manual. This development should be mirrored in all the labs (See Section E.13)

•Third Party Tool Update

David Goldberg provided an update on the development of the high-resolution gamma-tool (See Appendix 00-1-3 for complete details of tool and deployment timetable). The plan is to conduct the first sea-trial on Leg 191 (Western Pacific Ion) in July 2000, followed by a deployment on Leg 194 (Marion Plateau). SCIMP endorses this plan and wishes to be updated on progress of this tool on a regular basis via the SCIMP Message Board.

•SCIMP review of downhole tools

SCIMP and ODP-LDEO representatives discussed several 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. A plan was formulated that would allow SCIMP to provide input far enough in advance (~ 3 years) to assist proponents and ODP-LDEO with the evaluation of technology.

The JOIDES office will group proposals (current and new) by Long Range Plan themes. SCIMP members can than flag groups of proposals early on (rather than numerous individual proposals) that may need new tools/technologies, modification of existing

tools, etc. to accomplish the objectives outlined in the Long Range Plan. SCIMP, ODP-LDEO, and the JOIDES office will address the details of this plan over the next few months and begin this early review of proposals at the June 2000 SCIMP meeting.

7) Shipboard Computers/Networks

The dry dock took its toll on Shipboard Computer / Network operations. Some damage was done to the fiber optics and the printer/monitors/power units. Repairs/Replacements have been made. Delays in the UNIX Y2K migration and the transition from CCMail to Groupwire email service also resulted from dry dock operations. The CCMail to Groupwire transition was finally accomplished during Leg 187 and several bugs have been successfully fixed.

Thirty two new computers have been put on the ship after drydock. The overall upgrade goal is to replace one-third of the computers each year. This goal was accomplished in 1999, is planned for 2000 but there is some concern that budgetary considerations may prevent the goal being reached in 2001.

Sixteen flat-screen LCD monitors were recently put on the ship. The space savings in the labs are quite substantial and these LCD monitors have been shown to be more resistant to ship vibrations.

Computer manual/Cookbook are available as software manuals (including TRACOR/JANUS). General computer "cookbook" procedures are best documented separately for each lab (as is the current practice).

During the SCIMP laboratory visit, several problem areas were identified for further Computer LWG evaluation/action.

(1) The shipboard backup of data has historically been a slow cumbersome process, especially at the end of the Leg. This slow (up to two days) backup can cause problems for shipboard scientists and technical staff trying to complete end-of leg analyses and reports.

(2) The need for more disk space is a constant problem. This problem is only going to increase at a rapid rate with the advent of routine digital imaging aboard the ship. Data image storage, backup and distribution will overwhelm the current disk space.

(3) UNIX/Solaris system archiving support needs improvement. These systems are not always used each leg but when used this archiving support is important.

Additional recommendations/action items regarding computer needs that are tied into seismic/log/core integration can be found in Section I (Integration of Wireline, Seismic, and Core measurements shipboard) below.

8) Data Migration/JANUS

See Discussion in Section F - JANUS Prioritization Committee Report

9) Curation

Current curatorial statistics can be found in the ODP-TAMU operator's report (Appendix 00-1-2). SCIMP reviewed many of the curatorial operations during the portcall and found that, overall, that curatorial operations under John Firth (ODP curator) are running quite smoothly.

•***Shipboard sampling concerns***

Several minor issues regarding pre-cruise sample planning were brought to the attention of SCIMP members. It is felt that a greater effort should be made by TAMU at the pre-cruise meeting to stress to the co-chief scientists the importance of sorting out potential sampling conflicts before the cruise sets sail. It may be necessary for TAMU and/or the co-chiefs to more aggressively pursue incomplete or non-existent sample requests by shipboard scientists prior to sailing.

SCIMP also would like to see the ODP-TAMU staff scientist make a more explicit statement at the beginning of the cruise that scientists can appeal decisions by the Sample Advisory Committee. At the first sample meeting aboard the ship, the Staff Scientist should explicitly state that the Curatorial Advisory Board will promptly respond to appeals by members of the shipboard party who feel their sample request has been improperly denied or altered.

The shipboard curatorial representatives noted that the shorebased sampling data entry application is preferred over the shipboard version and, in fact, is often used at sea. The shipboard curatorial representatives felt that there were some useful aspects of the shipboard system that could be applied to the shorebased system to make it an even better application and one that could be used by all the shipboard and shore-based curators. SCIMP requested that the shipboard curators supply the SCIMP Curatorial LWG with a list of modifications they felt should be made to the current shorebased system to make it a more useful application for both on shorebased and shipboard use.

> ***ACTION ITEM:*** *SCIMP Curatorial LWG to follow up with shipboard curatorial representatives to obtain a list of modifications needed for JANUS sampling application.*

•Curatorial Advisory Board

Overall the Curatorial Advisory Board (CAB) system appears to be working well. All issues have been dealt with effectively. SCIMP has selected Peter Michael to replace Chris MacLeod (who rotated off SCIMP last year) on the CAB.

•Shore-based sampling issues

The ODP Curator, John Firth, received a request that ODP require investigators who sample cores for coarse fraction material (e.g., foraminifera) save the fine-fraction residue for other investigators. SCIMP discussed the issue and felt that ODP could not place this kind of demand on post-moratorium sampling. In effect, such a requirement would have one scientist directly subsidizing another's research. In addition, there could be no reasonable way to monitor the quality or consistency of the extraction procedure by an investigator to ensure that the returned residue would be useful. Finally, such a demand may place undue technical (and monetary) hardships upon an investigator.

10) Paleontology/MRCs/Thin sections

The following issues/topics were investigated and discussed during the SCIMP visit to ship:

•Epiflourescence Zeiss microscope

The equipment needs of shipboard paleontological studies are adequately met in the current laboratory setup. Further, while the epiflourescence Zeiss microscope in the paleontology laboratory is needed for the study dinoflagelates, palynomorphs, and other organic walled microfossils, this functionality is not often important for shipboard paleontological studies. The phase contrast and differential interference contrast are used, though, and on paleoceanographic legs all microscopes in the lab are needed. As an epiflourescence microscope is expensive to purchase and this scope is also appropriate for planned microbiological studies, it seems efficient to move the microscope next door to the microbiological laboratory. However, the microscope should remain available to paleontologists who need epiflourescence, phase contrast, and/or differential interference contrast. Significant potential conflicts between paleontologists and microbiologists should be anticipated and resolved ***prior*** to sailing on legs where both paleontologists and microbiologists expect to use the microscope. Finally, on paleoceanographic legs a replacement microscope with adequate magnification for nannofossil studies should be put in the space where the epiflourescence microscope now sits.

> ***ACTION ITEM:*** *ODP-TAMU needs to inform co-chiefs at the pre-cruise meeting of the potential conflict between paleontologists and microbiologists over the use of the epiflourescence microscope and work to resolve this issue* ***prior*** *to sailing.*

•Technical Support and Inventory

On paleoceanographic legs, additional technical support is needed (specifically help in processing samples). This person should be in addition to existing staff who have responsibilities in the paleontology lab. On legs without high paleo needs, technical support is adequate. The number of contact people has caused some confusion among shipboard paleontologists early in legs. Currently, the microscopes are serviced by the photographer; supplies are requested through the XRF technician; and database questions are handled by the computer staff. As the paleontologists become familiar with the system and anticipate needs relative to the shifts worked by technical personnel most problems seem to disappear.

Inventory of supplies and reference materials has been raised as a concern by many paleontologists. As most reference collections have been removed from the ship, the reference materials are mostly publications. Procedures are in place to track material before and after legs. The availability of expendable supplies and replacement equipment (*e.g.*, sieves) is only a problem when previous material have been taken from outside the system and therefore caused records and inventory to mismatch.

ACTION ITEM*: SCIMP Recommendation 99-2-5 specifically deals with the concerns raised in this section. See Section B "Update of Recommendations" for the ODP-TAMU response to the issues of technical support. The SCIMP Paleontology LWG members will monitor ODP-TAMU's support over the next few Legs and report on how well they have responded to this recommendation.*

•PAL Application

The completion of the PAL application allows paleontological observations across many fossil groups to be recorded in a consistent fashion. To handle uniformly different groups, the application needs to be somewhat complex and several working files need to be setup before data can be efficiently entered. Currently shipboard paleontologists have the option of pre-cruise training at College Station, and this training option seems worthwhile to continue. It would also be useful for one or more or the computer specialists to be familiar with the application (which has not always been the case). The PAL cookbook should also be expanded to include step-by-step instructions to perform expected functions (*e.g.*, downloading, merging, and uploading the observations of paleontologists working on the same group on different shifts). That information is available in the manual, but is not broken down on a task by task or "frequently asked questions" format. The combination of optional training, on board expertise, and a task-focussed manual should address most problems that might arise with the PAL application.

The utility of the data entered into the PAL application seems to be the biggest obstacle to having the paleontologists embrace the system. Currently, the data goes in and can be exported, but nothing is gained in process. With completion of the Age Model application, the total paleontological data set as well as other stratigraphic data can be assembled in tabular form and used to generate integrated age models all within Janus.

Although the Age Model application does not have a large impact on safety, drilling decisions, or the measurement of ephemeral properties; it will significantly improve efficiency and integration in report preparation and help meet the goals and potential of the Janus database. Thus, its completion should be a high priority.

•Digital Images

Anotther concern is the establishment of a plan for the systematic documentation and storage of digital images of thin sections. Especially on hard rock legs, hundreds of digital images of thin sections are generated for use in the Initial Reports. On Leg 187, the task of maintaining and insuring adequate documentation and consistent storage of these images was assumed by the staff scientist. To insure that data are not lost, the procedure and responsibility should be formalized.

> ***ACTION ITEM****: SCIMP Paleontology LWG will work with the ODP-TAMU Information Services group to formalize the procedure to archive digital thin sections.*

•Micropaleontological Reference Centers

Michael Knappertsbusch (MRC, Basel) has replaced Brian Huber (MRC, NMNH) as the lead curator. The curator reports that activity at the MRCs is at a normal level and significant progress has been made toward updating the stratigraphic and micropaleontological database. Concerns and uncertainties regarding the processing and distribution of nannofossil samples and associated documentation among several nannofossil satellite MRC's are being addressed by the MRC curators. Processing of the radiolarian samples at Utsunomiya (see below) is progressing well.

A request has been submitted for the formation of a new radiolarian satellite MRC at Utsunomiya University in Japan. SCIMP endorses the formation of this new MRC with the understanding that funds will be provided by Utsunomiya University and/or the Japanese Science Foundation.

11) <u>Publications</u>

See the ODP-TAMU Science Operator's report for a complete update on Publications Status. Several Publications issues related to SCIMP recommendations are discussed below.

•GEOREF ODP/DSDP Citation index

SCIMP previously recommended that ODP-TAMU purchase a web-based version of the GEOREF DSDP/ODP citation index (See SCIMP 99-02 report and Update of Recommendations, this report). The response by JOI to purchase only a single copy of the GEOREF ODP/DSDP citation list was not met with great enthusiasm by the Panel.

The Panel felt the citation list should be easily available to the community rather than merely being used as a yearly report. SCIMP members feel that easy access to the citation list is a service that ODP should provide, in a similar manner as it provides core samples. Not all institutions have ready access to GEOREF (For example, Florida State University recently removed their copy from the main library computer system) and it is not an easy task for a single user to generate such the complete citation list for searching references.

At the time of the meeting it was not clear what could be done with the single copy that resides at ODP-TAMU. Can the citation list be reproduced and distributed to others (in digital or hard copy forms)? Is ODP-TAMU willing to allocate personnel to perform searches of the Citation list if requested (and to advertise they will perform this service). Further SCIMP response to this issue awaits answers to these questions.

> ***ACTION ITEM:*** *Tom Janecek to query ODP-TAMU Publications manager as to how the current copy of the ODP/DSDP Citation list can be used.*

•Synthesis Papers

In response to SCIMP Recommendation 99-1-10, the Manager of Publications sent the new policy guidelines to co-chiefs reminding them of their responsibility to write or coordinate a leg-synthesis paper to be published in the *Scientific Results* volume. In response, co-chiefs committed to writing leg-synthesis papers for Legs 170, 171A/B, and 174B and leg-synopsis papers for Legs 169, 172, 173, and 174A/AX. Starting with Leg 175, co-chiefs are required to provide a leg-synthesis paper.

•Publication Policy-Non-Performers

The Department stopped tracking non-performers as of February 1998 at the recommendation of JOI. ODP/TAMU has resumed tracking and the Senior Publications Coordinator is reporting this information directly to JOI (F. Rack).

12) <u>Microbiology</u>

See Microbiology --Section G below

13) Miscellaneous

The state of the manuals ("cookbooks") varies quite substantially between laboratories. SCIMP and TAMU need to address this disparity and work toward bringing the manuals in all labs to a high quality that reflects the current state of technology and procedures.

> ***ACTION ITEM****: Dave Anderson will post a "cookbook" assessment outline on the SCIMP message board to begin process of upgrading manuals.*

***ACTION ITEM**: TAMU/SCIMP LWG members supervise the revision of "cookbooks" to reflect new shipboard configuration and procedures. The revised cookbooks should be available online as PDF files.*

Finally, SCIMP commends ODP-TAMU on the implementation of "Fusion" which ports drilling parameters, in digital form, to the Drilling Superintendent's office and allows this data to be used by all shipboard members. ODP-TAMU employees are enthusiastic about this advance and state the ability to continually monitor drilling parameters has resulted in better drilling decisions.

F) JANUS Prioritization Committee Report

David Fackler (senior member of ODP in-house applications development staff) presented the results of the ODP-TAMU JANUS Application Review committee (See Appendix 00-1-5 for mandate of committee and its timelines). The committee was formed to review JANUS applications and develop a plan to deal with existing and future JANUS applications. The committee had three objectives: (1) to evaluate the current status of JANUS applications; (2) to identify JANUS applications which are currently underway and planned for the near term; and (3) to identify and prioritize JANUS applications over the next three years.

Fackler provided a brief overview/background of JANUS to SCIMP. Essentially, it is a comprehensive central database containing quantitative and qualitative measurements related to the core material and drilling. Over 30 data types and approximately 1200 sites of data are found in the database. In addition to being a comprehensive database, JANUS is also a collection of tools and processes for acquiring, disbursing, and analyzing data.

Fackler explained that the JANUS review committee was a collaborative effort of ODP-TAMU Information Services personnel, Lab Working Groups, Staff Scientists, and the ODP community. The prioritization report of the committee is summarized in spreadsheet form in Appendix 00-1-5. This summary represents a formal reporting tool to show change and progress with respect to development and maintenance of JANUS.

SCIMP reviewed the summary and commended the effort by ODP-TAMU as an excellent first step. To assist ODP-TAMU with further prioritization, SCIMP developed an additional set of prioritization criteria. In order of generally decreasing priority these criteria are: (1) safety considerations (2) drilling decisions, (3) ephemeral properties, (4) efficiency of operation (5) essential to report writing and (6) essential to accomplishing objectives of the Long Range Plan. The results of this additional prioritization are presented in Appendix 00-1-5. The applications are ranked in priority from 1 (highest) to 3 (lowest) within each laboratory (e.g., Chemistry, Physical Properties). No attempt was made to make one ranking list of all applications.

G) Microbiology

David Smith presented a summary of the JOI Microbiology Steering Committee (BUGSCOM) meeting to SCIMP members. The report can be found in Appendix 00-1-6. Smith summarized for the panel members the rationale behind Deep Biosphere research and how ODP is moving forward with integrating microbiology into the ODP structure. The Microbiology Steering Committee report is quite thorough and provides an excellent summary of the laboratory equipment needs, sample handling protocols, technical support needs, and the microbiologist's role on the JOIDES Resolution. While details need to be finalized for some sampling protocols and analyses, SCIMP endorses the spirit and goals of the report and supports continued efforts toward realizing the integration of microbiology into the ODP structure. SCIMP will also add microbiology expertise to the panel before the its June 2000 meeting.

David Smith then led a discussion on the potential use of radioisotopes for microbiological research aboard the JOIDES Resolution. Smith outlined the types of radioisotopes (see Appendix 00-1-6), what information they can provide, and safety and containment issues. Support for radioisotope usage comes from the Deep Biosphere PPG, and the Microbiology Steering Committee (BUGSCOM) report. In addition money is available from NSF LExEN grant for purchase of necessary equipment.

Radioisotope usage on UNOLS research vessels is fairly common and SCIMP does not believe that proper use onboard the JOIDES Resolution will be detrimental to any other science program on the ship or pose a health hazard. SCIMP believes that the use of radioisotopes aboard the JOIDES Resolution is essential for the microbiological program. SCIMP endorses the use of radioisotopes aboard the JOIDES Resolution for microbiological research with the implementation of standard UNOLS guidelines and compliance with TAMU's NRC license. SCIMP will want to review all radioisotope usage guidelines before final implementation.

SCIMP discussed whether the formulation of a Working Group (or an ad hoc Advisory Committee) for Microbiology was necessary given the installation of the new microbiology laboratories, and ancillary issues of curation, radioisotope usage, database concerns, etc. It is the conclusion of SCIMP that these issues and responsibilities are best met by the entire SCIMP, as coordinated by the new Microbiology membership of the committee. These panel members will work with other members of SCIMP, other JOIDES panels, the new TAMU Microbiology Lab Working Group (see action item below), and with members of the community-at-large to ensure that the needs of the laboratory and the microbial aspects of the Long Range Plan are well served.

> ***ACTION ITEM****: ODP-TAMU/SCIMP to create a Microbiology Laboratory Working Group prior to Leg 190.*

Finally, SCIMP is impressed by the flexibility and success of TAMU technical, scientific, and administrative personnel in handling the development and implementation of the Microbiology Laboratory and wishes to commend them on the progress to date.

H) Post-2003

The IODP Planning Sub-Committee (ISPC) requested input from SCIMP on alternate platform laboratories and shore-based laboratories. In particular IPSC requested the following

1. What the minimum shipboard equipment requirements might be for:

    a) the OD21 ship if only safety, "drilling decision", and "ephemeral properties" measurements are made and
    b) alternate platforms where space may be very limited

2. If IODP is to have real shore-based labs, with measurement equipment, technical help, and office space, what sort of equipment and laboratory space would be essential?

SCIMP has begun investigating these requirements/needs and will compile the information for IPSC meeting in late February, 2000.

I) Integration of Wireline, Seismic, and Core measurements shipboard:

Peter Flemings presented a summary of the report put together by a SCIMP sub-committee that set forth a vision for the integration of wireline, seismic and core measurements onboard the JOIDES Resolution and for post-2003 drilling. The report is presented in its entirety in SCIMP Appendix 00-1-7 and summarized below

The report stemmed from the concern of the panel and scientists who have sailed on the JOIDES Resolution over the current capabilities to integrate logging, core measurements, and seismic measurements on the JOIDES Resolution. Two levels of desired capabilities were discussed.

In a Level One capability, core sonic and density measurements, log sonic velocity measurements and Vertical Seismic Profile data, and seismic data are displayed side by side and a synthetic seismogram is constructed from the log data. To achieve this a time-

depth tie ('welltie') must be made that typically involves the combination of low frequency check-shot (VSP) data and wireline sonic data to generate a time-depth table. Once this is established, it is possible to post log, core, and seismic data on a single figure, which is a basically a one-dimensional image. However, this image provides an important connection between logging and seismic that has not been utilized consistently on the JOIDES Resolution.

Once wireline and borehole information are time-depth calibrated it is possible to directly post this information on seismic data. This is a second level of complexity because one now must have the seismic data loaded onto a workstation. This information would allow scientists to truly integrate drilling with seismic data on the workstation. Level 2 capability would allow the shipboard party to visualize drilling results and integrate drilling results with previously shot seismic data. This has the potential to increase the interdisciplinary research on the ship.

Efforts to integrate seismic, log, and core data have taken two approaches on the JOIDES Resolution: 1) there are limited capabilities and services provided through the Borehole Research Group (BRG); and 2) individual scientists have brought their own hardware and software on board to achieve this integration.

The SCIMP data integration sub committee made the following general comments and recommendations:

1) Commitment to Integration: The heart of this issue is the commitment to having the expertise on the ship to perform wireline/core/seismic integration on the ship when needed. Currently, there are some ad-hoc procedures by which this can be done at a rudimentary level, but it is extremely difficult for a scientist who is on the ship for a single leg to master these skills. Once the commitment is made to formalizing wireline/seismic/core integration, then decisions such as software are relatively simple.

2) Responsibility: Several options were discussed for whom should be responsible for housing this expertise. At this point, the general consensus is that ODP-LDEO will take on the responsibility to provide Level 1 and Level 2 capability. This means that the ODP-LDEO will provide the software on the ship, will provide training on the beach, and will provide a detailed training manual.

3) Redefining the JOIDES Logger and other positions: There are ongoing discussions within ODP-TAMU and ODP-LDEO concerning how to redefine the JOIDES positions so that there could be an individual committed to core/seismic/wireline integration on legs where this is a defined objective.

4) Solve Level 1 needs first. The immediate and fundamental need is to have on board the JOIDES Resolution the ability to do time depth calibrations and synthetics in a rapid, simple, and consistent manner (Level 1). This is a significantly easier task than is the ability to manipulate seismic data shipboard. Appendix III of ODP-LDEO SciMP report (SCIMP Appendix 00-1-3) implies that ODP-LDEO is moving immediately to implement

the Level 2 needs . We recommend that ODP-LDEO focus first on solving and implementing Level 1 services and demonstrate success in this over the next 6 months. With the installation of IESX software, ODP-LDEO has implemented much of the Level 1 capabilities discussed above.

5) Vendor Issues. We spent a considerable amount of time discussing possible vendors for software to achieve both Level 1 and Level 2 needs. Three possible software suites were discussed: 1) Kingdom (PC based), 2) Schlumberger (Unix-based), 3) Landmark (Unix based). Two members of this report use Landmark's Petroworks and Syntools software routinely and we recognize that this software would immediately meet Level 1 needs.

6) Cost Issues: It is now routine for Landmark and Geoquest (Schlumberger) software to be released for free to academic sites. Software costs are not a problem.

Working toward the Long-Term Vision: We applaud ODP-LDEO efforts to work on testing and obtaining seismic software, and further encourage the cooperation with the Site Survey Panel/Data Bank for resolving the issues regarding making digital seismic data available for all ODP cruises. This is an appropriate long-term vision. The recommendations presented in the remainder of this section were crafted to keep the ODP moving toward this long-term vision.

In order to continue toward meeting the Level 1 and Level 2 core/log/seismic integration needs, several hardware/equipment/training issues need to be addressed. Currently, there is only one Wireline/Seismic/core workstation. Thus, during times when logs are being processed it is difficult to conduct Wireline/Seismic/core integration. Plotting data is always a problem. IESX software has an inherent plotting ability with the necessary drivers and thus bootleg solutions are not needed or desired. Finally, to extend the IESX software outside of the logging group, there will need to be a more integrated UNIX shipboard network.

SCIMP makes the following recommendations:

SCIMP Recommendation 00-1-9: SCIMP recommends:

1) That shipboard facilities for Wireline/Seismic/core integration include a separate workstation dedicated to this effort

2) That the IESX software be able to plot directly to large-scale (36") plotters and printers and that this capability be implemented by June 2000 SciMP meeting.

3) That ODP-LDEO and ODP-TAMU provide a plan for integrating the Unix network on the ship.

David Goldberg informed the panel that ODP-LDEO has initiated a review and evaluation of more comprehensive commercial processing packages for ODP (See Appendix 00-1-2 for complete details). ODP-LDEO plans "… *a pilot study to format digital seismic data and to test its use for future cruises. Evaluation of the procedures and level of effort that would be needed for routine digital data access, while enabling some protected release of site survey data, is the long-term objective. The main tasks of this project involve acquiring and converting seismic survey data into IESX-compatible format for use prior to and during a leg. ....."*

SCIMP recognizes the need to have digital seismic data available on each ODP Leg and also recognizes the challenges faced by ODP-TAMU and LDEO in getting such data from scientists. Therefore, SCIMP makes the following recommendation regarding site survey data and wireline/seismic/core integration.

SCIMP Recommendation 00-1-10: SCIMP recommends that LDEO develop a procedure for creating IESX project files for each ODP drill site that will include the digital seismic profiles so that these data can be visualized interactively with the log and core data during and after the drilling of each site. The project file should be the basis for the seismic/log/core integration and time-depth conversion capabilities defined in SCIMP recommendations 99-1-11 and 99-1-12.

SCIMP Recommendation 00-1-11: SCIMP recommends that LDEO also create a tutorial and training project file with seismic /log/core integration for the shipboard "cookbooks" so that technicians and scientists can improve their skills with IESX , GEOFRAME, and the integration process while at sea. This training project and documentation should be available for SCIMP review by June 2000.

SCIMP Recommendation 00-1-12: SCIMP recommends that JOI modify the site-survey data requirements for seismic profiles in the Data Submission Guidelines (DSG). The modification will include the following.

(a) For each final processed seismic profile submitted with a proposal, digital seismic data with navigation supplied and with supporting documentation of the processing stream used, must be provided to the data bank manager in industry standard SEG-Y format on 8-mm tape. The data bank manager will advise the appropriate SSEP when these data are received. This data submission requirement should be rigorously enforced and proposals should not be considered for scheduling by OPCOM until this requirement is met.

(b) the data bank manager will maintain the digital seismic data and support documentation and these data will be treated as ODP proprietary information as specified in the current DSG

J) New Techniques/Measurements

As at previous meetings, SCIMP devotes part of its meeting to hear about new technologies, measurement techniques, or state-of-the art industry analyses that may be beneficial not only to the current program but to IODP. At this meeting, Alan Huffman gave a very informative talk to the panel on industry's use of geophysical methods for pressure prediction. In light of the wide variety of riser-ship targets in the IODP era, such information will be vital in providing well control, assessing well bore stability, and controlling drilling costs. The panel thanks Alan for this very informative presentation.

Frank Rack gave a presentation on the state of international research networks and how these networks could be utilized in developing a laboratory environment in a new drilling program. The design of IODP shipboard and shorebased databases must take advantage of this rapidly developing technology. Tapping into the expertise that is already available via joint ventures may be an effective strategy. The panel thanks Frank for this very informative presentation

K) All Other Business

1) New SCIMP Members

During this calendar year (2000) five SCIMP members are scheduled to rotate off of SCIMP. The disciplines represented by these members include Database/Computer technology, Underway Geophysics/Seismics, Downhole Tools, Physical Properties, and Chemistry. The most urgent need is for a Microbiologist and it is requested that this discipline be filled immediately (i.e., before our next meeting in June). After the June meeting, the panel will remain well-represented in Downhole Tools, Physical Properties, and Underway Geophysics but will need expertise in Information Services (database, hardware, new technology expertise) and Organic Chemistry.

2) New PPG Liasons/Watchdogs

Geoff Wheat was appointed as a watchdog to the new Hydrogeology PPG and Tom Janecek volunteered as watchdog for the Arctic PPG.

3) Cruise evaluation forms

SCIMP feels that it is essential to get timely input about the state of the shipboard laboratories from scientists who have recently sailed. One mechanism to gain this information is to utilize the cruise evaluation forms that scientists fill out at the end of a leg. This data from this cruise evaluation form are fed into a database, Filemaker Pro. Tom Janecek and Jay Miller examined this standard ODP cruise evaluation form to determine if appropriate and useful information could be easily collated from the

database. They found that most of the questions relating to laboratories, computers, data management, etc. could be easily collated into a report for SCIMP use. Some concerns were raised over the confidentiality of responses by shipboard participants (i.e. respondees may not wish to have statements forwarded to SCIMP). Tom Janecek reviewed the form with Jack Baldauf and it was decided that a sentence could be placed at the beginning of the form that would inform the scientist which queries would be forwarded to SCIMP. Janecek and Baldauf further decided that the responses would be collated twice a year (before each SCIMP meeting) and distributed electronically to SCIMP members in time to assist panel members in their normal review of the laboratory services.

4) IR Camera

Frank Rack presented the results of a demonstration of off-the-shelf infrared imaging systems that may have potential for mapping gas hydrates in cores on the JOIDES Resolution. The tests, conducted with Infrared Thermal Camera at the USGS in Menlo Park, demonstrated that the IR imaging can provide thermal data for the purposes of measuring and recording "cat-walk" core temperatures (See SCIMP Appendix 00-1-8 for a PowerPoint presentation of this demonstration).

The Gas Hydrates PPG has stated that the measurement of spatial temperature variations (and, by proxy, gas hydrate distribution) is an essential aspect of future gas hydrate work aboard the JOIDES Resolution. The IR camera system appears to have the sensitivity and detail to provide insight into the distribution of gas-hydrates as well as the processes that happen within cores. There may be other technologies that are equally viable. A systematic approach to investigate methodologies to measure spatial variations in cores on the cat-walk must begin in the near future. As such, SCIMP makes the following recommendation:

SCIMP Recommendation 00-1-13: SCIMP recommends that ODP-TAMU investigate the capability to measure spatial variations in core temperature on the catwalk. These non-intrusive measurements should lead to integration into JANUS and should be coupled to measurements made in the physical property laboratory. The results of this investigation should be presented to SCIMP before ODP-TAMU purchases or develops any equipment

L) Future Meeting Date and Place

Several venues were proposed for the next SCIMP meeting. Potential venues include (1) Bremen, Germany, (2) Washington, DC, and (3) the International Arctic Research

Center, Fairbanks, Alaska . The proposed dates are June 14-16 or 25-28 depending on the venue.

ACTION ITEM: *Chair will contact JOIDES office for confirmation of venue*

M) Acknowledgements

The SCIMP Panel members wish to thank Jock Keene and Lindsay Collins for hosting the meeting. The Panel members thoroughly enjoyed the BBQ, the SCIMP dinner, and the Rottnest Island field trip. Jock's bus rescue of stranded Panel members during a torrential downpour is greatly appreciated! The Panel would also like to thank Elaine Baker and Bridget Chisholm for all their help in organizing the meeting.

Peter Flemings and Wonn Soh 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 both the best of luck in their future endeavors.