Report of the

JOIDES Scientific Measurements Panel

Casa Munras Garden Hotel

Monterey, California

December 12th-14th, 2000

Summary of SCIMP Recommendations to OPCOM/SCICOM

The following eight recommendations resulting from the December, 2000 SCIMP meeting in Monterey, California are forwarded to OPCOM/SCICOM for comment and approval.

SCIMP RECOMMENDATION 00-3-1: Hand-Held Digital Camera purchase
SCIMP RECOMMENDATION 00-3-2: Hard Rock Core Description Protocols
SCIMP RECOMMENDATION 00-3-3: Automated Titration System
SCIMP RECOMMENDATION 00-3-4: Personal Computer Policy
SCIMP RECOMMENDATION 00-3-5: Computer Hardware upgrades
SCIMP RECOMMENDATION 00-3-6: Email Charges
SCIMP RECOMMENDATION 00-3-7: Ephemeral Property measurement Protocols
SCIMP RECOMMENDATION 00-3-8: MRC maintenance in IODP

SCIMP RECOMMENDATION 00-3-1
SCIMP recommends the immediate purchase of a medium resolution (e.g., 3-megapixel), unmounted, camera for quick and easy recording of interesting sedimentological features in cores by the shipboard scientists.
See page 12 in Report for more details

SCIMP RECOMMENDATION 00-3-2
SCIMP recommends that the Excel worksheet-format Hard Rock Core Description data files that are now being converted to PDF files for inclusion into the Initial Report CD-ROM should be preserved (in Excel format) for eventual migration into the ODP data archive at the end of the program. In addition, these Hard Rock Core Description files should be included on the Initial Report CD ROM in their original format (Excel). Any Excel formatted Hard Rock Core Description Data files from previous legs that have been converted to PDF files and that have not been destroyed should be preserved and published as an appendix on the ODP website (in the event the Leg CD ROM has already been produced)
See page 14 in Report for more details

SCIMP RECOMMENDATION 00-3-3
To provide more efficient, accurate, and precise measurements of chlorinity, Ca, and Mg concentrations, SCIMP recommends that an automated titration system be purchased for the chemistry laboratory on the JOIDES Resolution
See page 15 in Report for more details

SCIMP RECOMMENATION 00-3-4:
ODP-TAMU should provide a concise manual/letter for shipboard scientists that outlines responsibilities of both shipboard scientists and the ODP-TAMU Marine Computer specialists with respect to setting up and maintaining personal laptop computers on the JOIDES Resolution. This manual/letter should be sent out to shipboard scientists upon their acceptance to a leg.
See page 19 in Report for more details

SCIMP RECOMMENDATION 00-3-5:
SCIMP registers concern regarding the decision by ODP-TAMU to stop routine upgrades of computer hardware onboard the JOIDES Resolution for the remainder of ODP. We acknowledge that uncertainties regarding operating systems and program budgets may cause temporary interruptions in computer hardware upgrades, but nevertheless caution the science operator that it would be unwise to allow significant differences to develop between shipboard computer capabilities and those used by shorebased researchers.
See page 20 in text for more details

SCIMP RECOMMENDATION 00-3-6: SCIMP recommends that at least the first 500,000 bytes of sent and received email be free-of-charge to Shipboard Scientists and ODP technical staff.
See page 20 in Report for more details

SCIMP RECOMMENDATION 00-3-7: SCIMP recommends that ODP-TAMU develop protocols to ensure that timely measurements are made of ephemeral properties on all cores that are not fully processed aboard the ship.
See page 23 in Report for more details

SCIMP RECOMMENDATION 00-3-8: SCIMP recognizes the Micropaleontological Research Center collections as a valuable legacy of ODP. To provide for maintenance and growth of the MRC collections in IODP, SCIMP endorses the continued support of the MRC effort by national ODP offices and recommends that IODP continue to both recognize the MRCs as component of the new drilling program and provide a mechanism for oversight of the MRCs within the new advisory structure.
See page 24 in Report for more details

Scientific Measurements Panel Participant List

SCIMP Members

Jamie Allan	(US, Appalachian State University)
Christian Buecker	(Germany, GGA)
Bernard Celerier	(France, Universite de Montpellier II-CNRS)
Mike Fuller	(US, University of Hawaii)
Thomas Janecek	(US, Florida State University
Dae Choul Kim	(PACRIM, Pukyong National University)
Masataka Kinoshita (alt)	(Japan, Tokai University)
Mike Lovell	(UK, Leicester University)
Ken MacLeod	(US, University of Missouri)
Philip Meyers	(US, University of Michigan)
Peter Michael	(US, University of Tulsa)
Sverre Planke	(ESF, University of Oslo)
Carlos Pirmez	(US, ExxonMobil Upstream Research Co)
David Smith	(US, University of Rhode Island)
Geoff Wheat	(US, W.Coast &Polar Reg Undersea Res Ctr)

Liaisons

Keir Becker	(JOIDES)
Paul Dauphin	(NSF)
Dave Goldberg (alt)	(ODP-LDEO)
Frank Rack	(JOI)
Carl Richter	(ODP-TAMU)

Guests

David Divins	(NGDC)
Brad Julson	(ODP-TAMU)
Bill Mills	(ODP-TAMU
Charlie Paull	(Monterey Bay Aquarium Research Institute)
Bill Ussler	(Monterey Bay Aquarium Research Institute)
Roy Wilkens	(Office of Naval Research)

Regrets

Gerry Iturino	(ODP-LDEO)
Eiichi Kikawa	(Japan, JAMSTEC)
Joe Ortiz	(US, Lamont-Doherty Earth Observatory)
Jeff Schuffert	(JOIDES)

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 Tuesday, December 12, 2000 at 8:30 am and ended on Thursday, December 14th, 2000 at 12:00 p.m.

The Chairman welcomed the panel to the meeting and expressed a special welcome to new members Jamie Allan, Phil Meyers and Carlos Pirmez. Masataka Kinoshita attended as the Japanese alternate for Eiichi Kikawa. Dave Goldberg attended as the alternate for Gerry Iturrino.

Regrets received from Gerry Iturrino, Eiichi Kikawa, Joe Ortiz, and Jeff Schuffert.

Geoff Wheat, 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 Chair continued with the Agenda.

B) Liaison Reports

1) NSF

Paul Dauphin reported to the panel that the NSF FY01 budget increased by 13%. The FY01 budget for ODP was $48.1M (Legs 192-198) with $22,845 added for data legacy issues. Dauphin noted that the US now supports 64% of the Program.

Dauphin also reported on the meeting of the ODP Council in June 2003 (including the PEC V review), the reorganization of the NSF Ocean Sciences Division, and new personnel at NSF. One note of concern was the PEC V review of the Scientific Measurements Panel. See Appendix 00-3-1 for this review and SCIMP's rebuttal comments *(Note: the comments were actually written for the SCIMP 00-1 report but the JOIDES office requested that they be deleted because the PEC V review was not officially distributed when the SCIMP 00-1 report was finalized*)

Finally, Dauphin discussed aspects of the new Program Plan. The reader is directed to the website - *www.iodp.org* - for details on the IODP, IPSC and IWG meeting minutes, and the program timeline.

2) JOI
Frank Rack reported on the changes in the JOI office since the last meeting, the Program budgets, the Program Development Plan, Long Range Plan initiatives and future planning in the Program (see Appendix 00-3-2 for complete details). Of immediate concern to SCIMP is the potential shortfall in the budget of up to $1.2M because of higher than expected fuel prices. Any budget shortfall could pose delays in purchasing equipment SCIMP has deemed essential for the program (e.g. a digital imaging system).

3) JOIDES
Keir Becker reported on the move of the JOIDES office from GEOMAR to RSMAS (Miami). Personnel at the new office include Keir Becker (Director), Aleksandra Janik (Science Coordinator) and Elspeth Urquhart (International Liaison). See http://joides.rsmas.miami.edu for more details about the office.

Becker further reported on the aspects of the current advisory structure and that for IODP. He noted that SCIMP will need to meet regularly until the end of the current program as the panel's mandate includes shipboard instrumentation, publications, and downhole measurements. These are all issues that will require oversight throughout the length of the Program. At the next SCIMP meeting, iSAS (interim Science Advisory Structure) observers may be present. It is not clear at this point, however, the manner in which the current JOIDES advisory structure and the ISAS structure will meld.

4) ODP-TAMU
Carl Richter reported that the ODP-TAMU operator's update (Appendix 00-3-3) stands as read. Richter fielded several questions regarding the Davis-Villinger tool, which the Chair deferred to the "Laboratory/Services" update and review section later in the day.

5) ODP-LDEO
Dave Goldberg presented highlights from the Borehole Research Group's SCIMP report (Appendix 00-3-4), in particular the results of the deployment of the Multisensor Gamma Ray tool on Leg 191 and Logging While Drilling (LWD) operations on Leg 193. Goldberg then reported on the status of the IESX project, including tasks completed to date and future activities. The IESX project plays an integral role in the establishment of a seismic-log-core integration capability aboard the JOIDES *Resolution.* Details of this project and how it ties in with SCIMP's ad hoc Working Group on seismic-log-core integration are found in Section G "Update on Workshops" of this report.

C) Update of Previous Meeting Recommendations

The five recommendations resulting from the June, 2000, SCIMP meeting are summarized below. A short background/summary section is presented for each

recommendation. Detailed discussion of these recommendations can found in the June, 2000 SCIMP report and associated appendices (posted on the JOIDES website).

SCIMP REC 00-2-1: Data Integration Working Group
SCIMP REC 00-2-2: Digital Imaging of Split Cores
SCIMP REC 00-2-3: Data Protocols for Non-ODP equipment
SCIMP REC 00-2-4: Data Protocols for Legacy Holes
SCIMP REC 00-2-5: Software for Discrete Digital Images

1) SEISMIC/DOWNHOLE/CORE DATA INTEGRATION

Background

The lack of routine exchange, use, and integration of seismic/downhole/core data by scientists aboard the JOIDES Resolution has been a problem throughout the history of the program. The software and hardware necessary for the establishment of a Seismic/downhole/core data integration capability aboard the JOIDES Resolution now exist. Seismic/downhole/core data integration, however, encompasses a wide variety of issues and thus, input from SCIMP members, SSP members, ODP-TAMU, and ODP-LDEO is needed before expenditures are made. For example, The minimum capabilities required for routine seismic/downhole/core data integration aboard the *JOIDES Resolution* are not well defined. 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? In order to keep moving forward with this issue, SCIMP recommended 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 defined 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.

Update:

The ad-hoc working group was formed during Fall, 2000 and a meeting, chaired by Sverre Planke (SCIMP member) was held at Lamont-Doherty Earth Observatory on October 30, 2000. A Draft Report of that Working Group is presented in Appendix 00-3-5. See Section G "Workshop Reports" for the details of SCIMP's discussion of the report and recommendations to be forwarded to SCICOM.

2) DIGITAL IMAGING OF SPLIT CORES

Easy acquisition, processing, and distribution of digital core images while at sea is central to developing more objective core description procedures and analyses. In June 1999, SCIMP made a recommendation (SCIMP Recommendation 99-2-12) that ODP-TAMU purchase a commercially-available RGB line-scan digital imaging system and that this system be fully functional and replace the existing core photography system on board the *JOIDES Resolution* by July 2000. SCICOM approved this recommendation and forwarded it to JOI. Although SCIMP did not specifically name a vendor, panel members did inform ODP-TAMU personnel of the system of choice (GEOTEK).

Seven months later at the January, 2000 SCIMP meeting, panel members were informed by ODP-TAMU personnel (perhaps incorrectly or inadvertently) that ODP-TAMU was moving forward with the purchase of the GEOTEK system. SCIMP recommendation 00-1-4 specifically applauded ODP's decision to purchase this system and reiterated the request that the system be fully operational as specified in SCIMP recommendation 99-2-

12. SCICOM approved this recommendation and forwarded it to JOI. At this point, SCIMP members believed the purchase and deployment of the system was "on schedule" per SCIMP recommendation 99-1-12.

Unbeknownst to SCIMP members, ODP-TAMU had been seriously investigating other systems that required additional development (i.e., not off-the-shelf, commercially-available systems as specified in two SCIMP recommendations). An RFQ finally was finally submitted in early March, 2000 to vendors of digital core-imaging systems. This RFQ was developed by the ODP-TAMU digital imaging project team without SCIMP or JOI input. ODP-TAMU received responses from three vendors as of the closing date for the RFQ. Review of the responses to the RFQ was ongoing as of early May, 2000 when the ODP-TAMU project team was informed by ODP-TAMU management that because of budgetary constraints related to the high cost of fuel the digital imaging project would be shelved and the RFQ closed.

Fully one year after the first SCIMP recommendation, the *JOIDES Resolution* is still without digital imaging capabilities for split cores and a vendor has not been selected.

The off-the-shelf GEOTEK line-scan 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. 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.

UPDATE: (From ODP-TAMU Report)
The digital imaging system issue is currently being re-examined. The digital imaging working group has had several conversations with three potential vendors regarding the need for a less expensive system. This can probably be achieved by purchasing an off-the-shelf system that will not be custom modified to suit ODP's needs. During the week of 27 November, a review meeting attended by SCIMP chair Tom Janecek and Frank Rack (JOI) was held at ODP-TAMU, and a request went out to vendors for bids on such digital imaging systems December 5. The bids were due January 5 so that a selection of an imaging system will have taken place before the next SCICOM/OPCOM meeting at which time funds may be reprioritized. Since there will be no funds available before the SCICOM meeting, the bidding and selection procedure will not delay the purchase of a digital imaging system.

3) LEG-SPECIFIC (NON-ODP) DATA ACQUISITION AND DISTRIBUTION

SCIMP discussed how data from non-standard, leg-specific equipment and instrumentation (brought on board by shipboard scientists) was distributed and archived. The panel discovered that data distribution protocols for this type of equipment are not discussed 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.

UPDATE: (From ODP-TAMU Report)
This recommendation is in accordance with the spirit of data acquisition on the JOIDES Resolution and will be supported and enforced by ODP-TAMU personnel.

4) DATA DISTRIBUTION FROM LEGACY HOLES

SCIMP 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 regarding legacy hole use and data distribution 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 in IODP, 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.

UPDATE:
SCICOM approved Recommendation. Forwarded to IPSC for consideration.

5) PROTOCOLS FOR HANDLING DISCRETE DIGITAL IMAGES

SCIMP discussed the handling of digital photomicrographs (and other single-frame digital images). Current single-frame digital image archiving protocols aboard the *JOIDES Resolution* are ad hoc in nature. The panel discussed the use of commercial asset management applications (e.g., Extensis Portfolio and Cumulus Canto) that could be utilized by ODP for organizing, viewing, sharing, and previewing digital files across networks and platforms. 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. The purchase and routine use of this commercial software would relieve ODP-TAMU of the burden of developing such an asset management package. 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 Portfolio 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.

UPDATE: (From ODP-TAMU Report)
Jay Miller has tested the digital image handling software that SCIMP recommended to investigate in terms of handling digital images. Jay's detailed report is provided in the Science Services update section of the ODP-TAMU Report (See Appendix 00-3-3).

Summary
Pros
** Great for shipboard scientist use (provided it is archived properly)*
** Relatively inexpensive ($200 for each single user-$2500 for server version which allows easier administration and $200 for each additional client over 5)*
Cons
** Does not guarantee proper archiving*
** Does not provide required original file security*
** Does not guarantee proper storage of metadata*
** Does not provide for ease of transport off the ship*
** Requires heavy administration to even potentially overcome the above cons*

This type of software provides some of the user friendly (shipboard only) features ODP needs, but is not transportable, does not ease the administration tasks (in fact they will probably increase), and does not provide the security ODP requires.

NOTE: See panel discussion and associated action items in Section D (Core Description) of this meeting report for SCIMP response.

D) Laboratory / Services Review

1) Core Description:

Digital Imaging system

Carl Richter updated the panel about the status of the acquisition of a digital imaging system (See ODP-TAMU operator report --Appendix 00-3-3 for full details). Richter reported that a request for bids went out on December 5th, 2000. The bids were due on January 5 so that a selection of an imaging system could take place before the SCICOM/OPCOM meeting, at which time funds may be reprioritized. SCIMP emphasized that it is ***imperative*** that ODP-TAMU pick a vendor after this bidding process so, that should funds become available, the operator can move quickly to acquire the system. SCIMP also emphasized that ODP-TAMU should involve SCIMP members (in particular, Joe Ortiz) in discussions surrounding the selection of the appropriate vendor.

Hand-Held Digital Camera

Panel members discussed the need not only for the acquisition of standardized digital images (via a track system) but also for a hand-held, medium-resolution digital camera for easy and quick acquisition of interesting sedimentological and petrological features in the core. This capability would allow shipboard scientists more freedom to select close-up photographs for inclusion in the Initial Reports than is afforded with the current (analog) format. Panel members also heard about a more dedicated, copy-stand-mounted system being considered by ODP-TAMU personnel. This request for a hand-held digital camera should be considered a separate issue.

SCIMP RECOMMENDATION 00-3-1
SCIMP recommends the immediate purchase of a medium resolution (e.g., 3-megapixel), unmounted, camera for quick and easy recording of interesting sedimentological features in cores by the shipboard scientists.

Archiving of Digital Photographs

The acquisition of discrete digital images is rapidly increasing aboard the JOIDES Resolution (e.g., paleontology, core description). Proper management and archival of these images is a concern to the panel. Indeed, a recommendation was made at the

previous meeting (Recommendation 00-2-5) regarding the establishment of protocols for handling these images. SCIMP recommended that ODP-TAMU investigate the use of commercially-available, off-the-shelf, software for management of these images (e.g., Extensis Portfolio). By utilizing an off-the-shelf product, ODP-TAMU would not need to invest time and effort into developing an application. ODP-TAMU evaluated these commercially available packages and came to the conclusion that: "*This type of software provides some of the user friendly (shipboard only) features ODP needs, but is not transportable, does not ease the administration tasks (in fact they will probably increase), and does not provide the security ODP require (from ODP Operator's Report --Appendix 00-3-3).*

Although these commercial applications may not be ideal, SCIMP members still believe that the Program needs a consistent protocol for handling discrete digital images. Several ideas were suggested by panel members for methodologies that would preserve the required metadata associated with the digital images and not be an undue burden on the scientists or ODP-TAMU personnel. SCIMP members will work with ODP-TAMU personnel to develop the necessary protocols for discrete digital image archival.

Action Item*: Core description SCIMP LWG members (Peter Michael and Jamie Allan) will confer with Jay Miller (ODP-TAMU) and other LWG members (e.g., Paleo) to forge a plan and protocol for acquiring, recording, and labeling all types of digital images.*

Hard-Rock Core Description.

ODP-TAMU staff scientists and publications personnel requested input from SCIMP on an issue concerning Hard Rock Core Description data. According to ODP-TAMU personnel, the protocols for archiving and publishing data such as alteration, vein logs, and structural geology description scans is inconsistent from leg to leg. On some legs the staff scientists seem to consider this material, which is generated on Excel spreadsheets, as "prime data" and on other legs they consider it as supplemental data.

SCIMP members feel that these Excel worksheet-format Hard Rock Core Description data files are generally the best core description record generated from the leg and should be considered "prime data. In addition, the Excel files should be kept (and published on the Initial Report CD-ROM) in Excel format. Changing the Excel file to an ASCII or pdf file can (and often does) result in the deletion of key information. Although the Excel format is not an "archive-quality" format (i.e., ASCII), panel members felt that, for now, it was more important to retain and publish this Excel-based information in its original format (as most everyone currently has access to Excel). The conversion of these files to an "archive-quality" format that retains all the original information will have to be addressed towards the end of the program.

SCIMP members made the following recommendation concerning Hard Rock Core Description data:

SCIMP RECOMMENDATION 00-3-2

SCIMP recommends that the Excel worksheet-format Hard Rock Core Description data files that are now being converted to PDF files for inclusion into the Initial Report CD-ROM should be preserved (in Excel format) for eventual migration into the ODP data archive at the end of the program. In addition, these Hard Rock Core Description files should be included on the Initial Report CD ROM in their original format (Excel). Any Excel formatted Hard Rock Core Description Data files from previous legs that have been converted to PDF files and that have not been destroyed should be preserved and published as an appendix on the ODP website (in the event the Leg CD ROM has already been produced)

The question of the development of a more useful (perhaps GIS-based) Hard-Rock core description application was again brought before the panel. The current JANUS application is considered useless by most petrologists (hence, the use of Excel-based spreadsheets). Any new Hard-Rock Core Description Program should be based on the presentation and annotation of rapidly-acquired digital images. As the Program currently does not have the capability, the panel decided to defer pursuing the development of such an application until this image-capture capability is available.

SCIMP member heard about an easy-to-use (Microsoft Access-based) core description program developed for the Hawaii Drilling Project. The application looked promising as an interim-application for certain hard-rock legs. SCIMP members will investigate the application in more detail and report back on its utility at the next meeting.

Action Item: *Core description LWG members (both SCIMP and ODP) acquire a copy of the core description program utilized by the Hawaii Drilling Project and evaluate its utility for potential modification and use onboard the JOIDES Resolution.*

2) Chemistry

Automated Titration equipment

At its previous meeting (June, 2000) SCIMP heard about requests from scientists for purchase of an automated titration system. SCIMP felt it needed more information about the nature of the request and the benefits to the program before it could make a specific recommendation. Geoff Wheat prepared a report that outlined the current (manual) methodology (and associated problems) and the benefits of an automated titration system.

Titration techniques are the most accurate and precise means for determining concentrations of chlorinity, calcium, and magnesium, three important (essential) measurements for understanding the oceanic geochemical environment. Given the small changes in chlorinity (typically <2%) that are meaningful to a variety of researchers, chlorinity must be measured at sea to avoid problems associated with evaporation. Several automated titration systems are available on the market. These systems provide many benefits, including decreased sample processing time and the elimination of the use

and disposal of butanol. An added benefit would be the removal of the present old spectrophotometer and hence, reclamation of needed lab counter space.

Expected costs for the upgrade of the current system are approximately $13,000. Considering that the current schedule is full of legs that would benefit from such a capital expenditure late in the Program (including gas hydrate legs, continental margin legs, and several paleoceanographic legs), this request is modest and should be implemented.

SCIMP RECOMMENDATION 00-3-3
To provide more efficient, accurate, and precise measurements of chlorinity, Ca, and Mg concentrations, SCIMP recommends that an automated titration system be purchased for the chemistry laboratory on the JOIDES Resolution.

Organic Extraction Upgrades

The panel was informed of requests by shipboard scientists for new organic analysis extraction equipment. The panel, however, did not have much information on the types of equipment and availability of funds. The chemistry LWT members felt the need to more fully investigate the nature of the issues associated with this request for new equipment before approaching SCIMP with specific recommendations.

Action Item: *Phil Meyers to investigate the issues associated with the request for new extraction equipment of organic analyses and report back to the panel at the June 2001 meeting.*

Miscellaneous

Panel members noted that over $21,000 for supplies and $10,000 for maintenance were allocated in the Fiscal Year 01 budget for X-ray diffraction. At the risk of micro-management, some panel members wanted to know why these numbers are so high.

Action Item: *Brad Julson to report back to panel about x-ray expenditures.*

At some point, the old XRD may cease to operate and have to be replaced. In order to avoid some of the problems associated with the purchase of the digital image system (e.g., not having a vendor selected when funds are available), SCIMP asks that ODP-TAMU continue to update its vendor information (and bids) and keep SCIMP apprised of potential vendors and expected costs. In this way, SCIMP and ODP-TAMU can move quickly in the event a replacement system is needed (and warranted).

3) Physical Properties:

Resistivity Measurements

Several requests have come before the panel for acquisition or development of as systematic means to collect resistivity measurements (Formation Factor) on board the JOIDES *Resolution* (See Appendix 00-3-6). The panel heard about a four-point resistivity meter and several other instruments in current use by researchers. Panel members noted that this type of measurement can be difficult to make and is very operator and machine dependent. Standardized data collection protocols are essential. A consensus developed that it would be best for Physical Property and Chemistry LWG members to identify a methodology (both hardware and protocols) for the next meeting. The technique will be reviewed by panel members at the next meeting and a formal recommendation made to SCICOM.

Action Item*: Physical Property and Chemistry LWG members to identify a systematic means to collect resistivity measurements (Formation Factor) on board the JR (including equipment and data collection protocols).*

Pycnnometer

The Qauntachrome pycnometer, while not ideal, remains the instrument of choice for moisture and density measurements made onboard the JOIDES Resolution. Sufficient spares and replacement parts have been purchased by ODP-TAMU to keep at least one system running. The major problem with the pycnometer stems from the large number of samples analyzed each leg. The equipment is not designed for such a large throughput. In addition, the pycnometer is used in an environment (at sea) where it was not designed to operate. Panel members suggested that ODP-TAMU work with Physical Property scientists to minimize the number of samples run. ODP-TAMU Physical Property technical staff and staff scientists should stress, that in most situations, the pycnometer is best used as a calibration tool for the high-resolution bulk density data gathered on the multi-sensor track. This application of the pycnometer would help to reduce the overall number of moisture and density samples collected and analyzed on the ship and relieve stress on the pycnometer (and the physical property scientists, too!).

Natural Gamma improvements

SCIMP members briefly discussed what progress has been made toward upgrading the natural gamma detectors on the multi-sensor track. At the June 2000 SCIMP meeting, Prof. Rob de Meijer from the Kernfysisch Versneller Institut reported on a new generation of natural gamma detectors and analytical techniques. The bismuth germanate (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. Such an increase in sensitivity would reduce analytical time and make the acquisition of high-resolution gamma data more feasible for core-log integration. Unfortunately, with the increased sensitivity comes a high financial

cost. Given the current equipment priorities and a budget severely affected by high fuel prices, it is not feasible to develop this new detection system within the current Program. The BGO-based natural gamma system, however, should be utilized on the next generation Multi-sensor track built for IODP.

4) Paleomagnetics:
SCIMP and ODP-TAMU Paleomagnetics Lab Working Team members reported that the Paleomagnetics laboratory is functioning well. Most items brought to the LWT's attention are being addressed. The manual, modeled after the Physical Properties "cookbook", is being developed.

5) Underway Geophysics:
Most discussion concerning Underway Geophysics issues was deferred until the panel heard the report from the Seismic-Core-Log Working Group (See Section G "Seismic-Core-Log" Working Group discussion and Appendix 00-3-5 for more details of the draft report).

Scientist cruise evaluations report that several U/G items could (or should) be surplussed as they are no longer used or functioning. These items include the old Magnavox GPS, the Galatee speed log, and the Hamco 200 gun. ODP-TAMU personnel said the first two items were scheduled for surplus but the Hamco 200 gun is still needed and thus remains on the ship.

SCIMP members noted what appears to be a deficiency in trained U/G technicians. ODP-TAMU personnel responded that a technician is currently being trained and several other technicians (although not assigned to the lab) are well-versed in U/G operations.

6) Downhole Tools:
An overview of current tool usage and development was provided to the panel (See Drilling Services Update in Appendix 00-3-3 and Specialty Tool and Engineering Developments in Appendix 00-3-4). Specific downhole tools/issues requiring SCIMP input are discussed below.

<u>Davis-Villinger Temperature Tool</u>
The Davis-Villinger Temperature Tool (DVTP) is being adopted as an ODP operational tool. Appendix 00-3-3 (Drilling Services Section) outlines the steps taken by TAMU toward this implementation. Several prototype upgrades to the tool, including the integration of a pore pressure measurement and a LabView based communication and

data reduction program have been tested recently. The next major deployment of the DVTP is Leg 195.

Action Item: *SCIMP and ODP-TAMU Downhole Laboratory Working Teams to monitor DVTP tool status to ensure the tool is ready for deployment on Leg 195.*

Maintenance of CLIP software

Maintenance and upgrades to the Core-Log Integration Platform (CLIP) software have been inconsistent since its implementation on the JOIDES Resolution. The Chair of SCIMP and the Borehole Research Group (BRG) worked on a maintenance/upgrade protocol to ensure the CLIP software is properly maintained and available for use (Appendix 00-3-7). First, BRG will continue to maintain software and support shipboard users through such mechanisms as daily user support (e.g., training, email/ phone queries), updating user manuals, maintaining current versions of the software on the workstation, and ensuring compatibility with operating system upgrades. New software modules and/or enhancements to the CLIP software may be proposed by community users (e.g., through JOI, USSSP, or NSF proposals) with a pre-review by BRG. This maintenance and upgrade program will ensure the CLIP application is always usable and allow scientists to propose enhancements as the need arise.

Natural Gamma Tool Status

The third party Multisensor High-Resolution Gamma tool (MGT) was successfully deployed on Leg 191. An initial analysis shows the data are of excellent quality. The tool is scheduled for deployment on Legs 194, 199 and 201. SCIMP needs to determine whether the MGT should move toward certified tool status by evaluating the need for this tool throughout the remainder of the program.

Action Item*: SCIMP and ODP-TAMU Lab Working Team members to evaluate need for the MGT throughout remainder of program and determine if recommendations should be made to move the tool toward certified status.*

High-Resolution Magnetic Susceptibility Tool

The development of a Seismic-Log-Core integration capability is dependent on the ability to measure parameters on cores and in the borehole at the same spatial resolution. Magnetic susceptibility and natural gamma are two of the best (and easier) measurements to make both downhole and on the cores at the same resolution. BRG reported to the panel that it is possible to develop a high-resolution magnetic susceptibility tool that can be run downhole independently or with the MGT tool (see above). Development time for telemetry, electronics, and software design and testing is about 3 months with another 1.5 months for the pressure casing. Costs are expected to about $60,000 for tool development. SCIMP Downhole Lab Working Team members need to evaluate the potential for the tool throughout the remainder of the program. If such a tool is deemed essential upon evaluation, SCIMP can put forth a recommendation that Program costs be

allocated toward development and deployment and rank this development and deployment with other requests.

***Action Item**: SCIMP Downhole Lab Working Team members to evaluate need for a high-resolution magnetic susceptibility tool throughout remainder of program and provide the panel with enough information to put forth a recommendation, if necessary, at its next meeting.*

7) Shipboard Computers/Networks

Laptop usage

Laptop PC usage aboard the JOIDES Resolution is becoming more common. The cruise evaluations from recent legs all have complaints about limited power plugs and network connections for laptops. These complaints speak to a larger issue of what are the responsibilities of ODP-TAMU technical staff with respect to the support of personal laptop computers. Issues such as software availability, virus protection, network connections and cabling, and equipment repair need to be addressed by ODP-TAMU. SCIMP has seen a draft document (Appendix 00-3-8) that outlines these responsibilities and would like to see this document finalized and implemented by the next leg.

SCIMP RECOMMENATION 00-3-4: ODP-TAMU should provide a concise manual/letter for shipboard scientists that outlines responsibilities of both shipboard scientists and the ODP-TAMU Marine Computer specialists with respect to setting up and maintaining personal laptop computers on the JOIDES Resolution. This manual/letter should be sent out to shipboard scientists upon their acceptance to a leg.

Equipment and software upgrades

ODP-TAMU has been upgrading/replacing about 30% of the computers on the JOIDES Resolution each year. This upgrade plan has kept the computer environment on the ship relatively state-of-the-art. SCIMP learned that ODP-TAMU does not plan any routine upgrades of computer equipment over the remainder of the program. The result would be that by the end of the program in 2003 most computer equipment in the labstack would be over 3 years old. With current advances in hardware, application software, and operating systems, the Program risks establishing a big gap between what scientists use on shore and what is found on the ship. For example, increasing shipboard acquisition and manipulation of digital images will require continuous improvements in computer speed, memory and operating systems to take advantage of improved software tools.

SCIMP acknowledges growing budget concerns within the Program and understands a fixed hardware and software replacement upgrade scheme of 30% may be unworkable in the current climate. ODP-TAMU, however, must be prepared to make selective upgrades

when needed and develop a plan, with SCIMP input, that keeps the Program's computational capability similar to that used by the community.

SCIMP RECOMMENDATION 00-3-5: SCIMP registers concern regarding the decision by ODP-TAMU to stop routine upgrades of computer hardware onboard the JOIDES Resolution for the remainder of ODP. We acknowledge that uncertainties regarding operating systems and program budgets may cause temporary interruptions in computer hardware upgrades, but nevertheless caution the science operator that it would be unwise to allow significant differences to develop between shipboard computer capabilities and those used by shorebased researchers.

Email

The Groupwise Email system and proposed billing schemes have generated quite a bit of discussion (See Appendix 00-3-9). Two email-related issues have developed. First of all, is Groupwise the best option we (ODP) have at this time for an email platform? The second issue is a more philosophical argument as to whether the scientific and ODP staff should be charged for personal incoming email, outgoing email, or both and how much?

Email is an accepted fact of life and if the Program is to continue to get top quality people on the ship (who by their nature have many pokers in the fire and need daily contact with shore), should we burden them with email costs? In addition, in a critical period where we are trying to maintain some esprit de corps in a technical staff that spends six months on the ship and has a very uncertain future ahead, is it wise to charge the staff for personal email?

In these days of flat-funding, however, any money saved (or recovered) is important. To help us get a handle on the magnitude of costs and put these monetary issues in perspective Carl Richter supplied the panel with costs associated with ODP email (Appendix 00-3-10). With the old CC mail system (Leg 165-Leg 186), the average scientist was charged about $45/Leg (with the first 100 Kbytes free). With the advent of the Groupwise software and more importantly, renegotiated COMSAT rates, the average scientist is now charged about $11 (with the first 200,000 Kbytes). This charge amounts to ODP-TAMU recovering about $250/leg from scientists. SCIMP contends that it is not worth the time and effort of ODP to establish a billing system for such a trivial return. With reasonable filters in place to prevent transmission of large documents or an excessive number of documents SCIMP recommends that ODP mail should be free-of charge to scientific and technical staff. The goodwill generated from such a gesture would be invaluable.

SCIMP RECOMMENDATION 00-3-6: SCIMP recommends that at least the first 500,000 bytes of sent and received email be free-of-charge to Shipboard Scientists and ODP technical staff.

The other email issue, the use of Groupwise software, is a bit more problematic. Clearly, some of the problems with the Groupwise are simply those that result from the use of a new software application on the ship. ODP-TAMU has solved many of the initial problems. Other problems with Groupwise are the result of inadequate or over-complicated manuals. SCIMP suggests that ODP-TAMU review recent complaints about GroupWise software and tailor a short document (revised after each cruise evaluation) that provides concise solutions for common problems.

Action Item*: ODP-TAMU to provide short manual for common email problems*.

Miscellaneous

The computational needs of the microbiology lab need to be addressed (see Microbiology Section below for more details).

Integration of the Unix environment with the shipboard network is poor at best. ODP-TAMU plans to review NetWare 5.1, in terms of its ability to integrate with the UNIX environment (before Leg 196). SCIMP will expect an update as soon as possible.

Action Item*: ODP-TAMU Information Services to supply SCIMP with a review of NetWare 5.1 as soon as possible.*

8) JANUS/Data Migration

Some of the discussion concerning JANUS and data migration was deferred until the panel heard a presentation by Frank Rack (JOI) on archival strategies for the JANUS database at the end of the program (see Section G: JANUS-NGDC Transfer Meetings).

Establishment of Mirror Sites

ODP-TAMU has asked for guidance regarding the distribution of the JANUS database to mirror sites not under the direct control of TAMU. A request for a mirror site had come from an individual scientist. This request raised a number of issues:

(1) Was this a formal request from an ODP member country or from an individual scientist or group of scientists?

2) If this was not a formal request from an ODP member country, then how should ODP/TAMU respond? One of the primary concerns was how the IS department at ODP/TAMU should prioritize their time with respect to this request?

If the request comes from the ODP national office, then there is mechanism to arrange for the transfer of data within the framework of the memoranda of understanding (MOU's) between the U.S. NSF and internationalODP members, with the appropriate checks and balances about appropriate use and security.

In this case, the request came from an individual at an institution. Frank Rack informed the panel that he had spoken to the person who made the request to ODP/TAMU (in December) advised him on the proper course of action regarding his request, which was to go through the national office first, and then proceed through official channels. The individual is now

The immediate concern that the IS department at ODP/TAMU have, is the following:

Creating a mirror site for JANUS is fairly straightforward (the issues of cost for the computer, software, and staffing notwithstanding), and in this case the capability to limit access to the proprietary data associated with the 1-year moratorium would be preserved. However, if only the non-proprietary data within the JANUS database are to be mirrored, then this would require significant additional programming and staffing resources, which could significantly impact their prioritized work plan.

SCIMP members feel that JANUS data migration efforts and establishing improved data uploading and reporting capabilities are paramount over programming efforts to remove proprietary data from mirror sites. Panel members believe there has to be some level of trust established between ODP-TAMU and the administrators of a qualifed mirror sites in member countries.

Data loss

Jamie Allan reported that there may be significant data losses occurring between the time the data is "finalized" aboard the ship and when it is published on the CD-ROM. Discrepancies may arise during the editorial post-cruise meeting and also during Initial Report manuscript review that many not be reflected elsewhere (i.e., JANUS Database). The extent of the problem is not known and SCIMP will investigate this issue in more detail.

Action Item: *Jamie Allan to begin investigation of the extent of changes that occur in data sets from the ship to the initial post-cruise meeting to the final publication of data on the CD ROMs.*

9) Curation

Curatorial Advisory Board

The Curation LWT reported there has been very little Curatorial Advisory Board activity since the last meeting. This inactivity may mean the new Data Policy and Sample

Advisory Committees are working well. Alternatively, it could mean that shipboard scientists are not fully aware of possible recourses if sample requests are denied or altered. ODP-TAMU personnel were reminded to advise shipboard scientists during the initial port-call group meetings that the new Data Policy provides a mechanism to ensure that scientists are fairly treated with respect to sample requests.

Ephemeral Properties and Sampling

A letter sent by Ellen Thomas (Wesleyan College) to the SCIMP Chair concerning ephemeral property sampling was distributed to the panel (See Appendix 00-3-11). Apparently, cores collected on Leg 178 in the Palmer deep were not fully sampled or analyzed by the micropaleontology lab. Full sampling and analysis did not occur until nearly six months later. At that time, researchers found that almost all calcareous forms had disappeared (presumably dissolved). As a result, the possibility of precisely dating the high-resolution Quaternary cores has been compromised.

Two issues come forth with respect to this letter. First, a mechanism needs to be emplaced by ODP-TAMU to ensure that all cores are properly sampled on the ship. If shipboard sampling is difficult due to time constraints or personnel shortages (as may happen with Ancillary Sites), then researchers (either leg participants or shore-based researchers) need to be identified (preferably at the pre-cruise meeting) to sample the cores immediately upon their arrival at the repository. SCIMP, as an advisory board, can assist ODP-TAMU with this task by identifying legs/sites where routine sampling for ephemeral properties may be a problem.

SCIMP RECOMMENDATION 00-3-7: SCIMP recommends that ODP-TAMU develop protocols to ensure that timely measurements are made of ephemeral properties on all cores that are not fully processed aboard the ship.

The second issue regarding this letter is that it appears there is a problem with core degradation over time. SCIMP members recalled that a geriatric study had once been attempted by TAMU but they did not know what parameters were studied nor the results of the study. Presumably, geriatric studies have been conducted at non-ODP facilities, too. Further action on this second issue was deferred until more information could be gathered

Action Item*: SCIMP curatorial, micropaleontological, and chemistry LWT members to poll the community and determine extent of geriatric studies on core degradation.*

10) Paleontology/MRCs/Thin sections

PAL application

Cruise evaluations from the paleontology scientists register common complaints about The PAL application. Problems persist with application crashes and making/loading non-

standard dictionaries. Several options/fixes have been implemented for 194 and will be evaluated.

Micropaleontological Reference Centers

The most recent report of the Micropaleontological Reference Centers is found in Appendix 00-3-12. Several long-term issues are of concern to the MRC curators including formal recognition in IODP and the accession / transfer / ownership of collections. SCIMP recognizes the value of the MRC collections to the scientific community and sees the need for such a program to continue, in some form, in the next drilling program. SCIMP is not aware of any formal support or designation in the current plans for IODP and makes the following recommendation:

SCIMP RECOMMENDATION 00-3-8: SCIMP recognizes the Micropaleontological Research Center collections as a valuable legacy of ODP. To provide for maintenance and growth of the MRC collections in IODP, SCIMP endorses the continued support of the MRC effort by national ODP offices and recommends that IODP continue to both recognize the MRCs as component of the new drilling program and provide a mechanism for oversight of the MRCs within the new advisory structure.

In concert with this recommendation, MRC curators must propose and justify a plan to carry the MRC program forward into the next Program.

Action Item: *SCIMP and MRC curators will investigate alternatives that maximize support and use of MRC collections on a day-to-day basis, through the end of the program, and into IODP. Issues to be considered include particulars of the status of the center, and support of the Facility by host institutions and national ODP/IODP offices.*

11) Publications

Funding acknowledgements

The lack of acknowledgement of funding sources in ODP manuscripts (IR, SR, and outside) is a concern to the Program. To rectify the situation, JOI, TAMU and NSF developed a standard acknowledgement statement for researchers to use in manuscripts. The statement will be included ODP Data Policy.

It reads:
"This research used samples and/or data provided by the Ocean Drilling Program (ODP). The ODP is sponsored by the U.S. National Science Foundation (NSF) and participating countries under management of Joint Oceanographic Institutions (JOI), Inc. Funding for this research was provided by _____."

Authors would fill in the name of their respective funding agencies as appropriate. In the U.S., for example, the funding for ODP post-cruise research is typically provided by the U.S. Science Support Program (USSSP).

Scientist Cruise Evaluations

The panel was pleased that ODP-TAMU is now supplying SCIMP members with current post-cruise evaluations by the shipboard scientists. Additional format changes are needed, however, to make the reviews easier to use.

Action Item*: The Chair will work with the ODP-TAMU SCIMP liaison to establish a better reporting format for the cruise evaluation*

Equipment Manuals

SCIMP is pleased with the progress being made toward finalizing many of the laboratory "Cookbooks".

Action Item*: In order to keep the development of these valuable resources on track, SCIMP asks that ODP-TAMU supply the panel with "cookbook" status at each meeting (See Appendix 00-3-13 for status of "cookbooks" as of December, 2000).*

12) Microbiology

Dave Smith reported on the establishment of the Microbiology Laboratory on the JOIDES *Resolution* beginning with the temporary lab on Leg 185 to the final relocation of the lab to level 5 (F deck). In addition to establishment of the laboratory, a Technical Note (No. 28) is being prepared and Microbiology now has representation in the JOIDES advisory system (SCIMP).

Several issues still need attention, however, with respect to establishment of routine microbiological capabilities on the ship. Technical support from ODP-TAMU is paramount. ODP-TAMU has informed SCIMP that hiring of the microbiology technician is on hold for financial reasons.

The microbiology program will soon need access to a radioisotope facility. SCIMP, however, cannot comment further on implementation of this program until the logistics and costs for such a facility have been more fully explored.

Action Item: *Dave Smith and ODP-TAMU microbiology LWG members to investigate issues regarding implementation of Radioisotope van, including costs, insurance, location, swab team, etc. Report/update due at next meeting.*

Additional issues regarding nitrogen gas requirements, establishing shipping and handling protocols, obtaining clean subsamples, determining basic supply inventories, and collecting clean water samples need to be addressed by SCIMP and ODP-TAMU Microbiology LWT members.

E) Pressing Issues -- Recent developments:

Tools/needs identified by the Gas Hydrate PPG (Charlie Paull -MBARI)
Charlie Paull reported on (1) what the community has learned about Gas Hydrate drilling and analysis from previous legs, (2) needs and tools identified by the Gas Hydrate PPG for future legs, and (3) HYACE tool developments

Based upon Leg 164 results Paull told the panel that the most productive measurement for Gas Hydrates is still Chloride. Although some of the baseline Chloride assumptions may be faulty, the measurement is consistent and reliable. Paull stressed, though, that in-situ measurements are a must and hence, a pressure core system (i.e., the PCS). In addition, distinct variations in temperature are commonly observed in freshly recovered core samples from gas-rich sediments. These variations are believed to be due to both the endothermic gas hydrate decomposition and gas expansion, and thus represent fundamental information about the presence and distribution of gas and gas hydrate within cores

Paull then discussed the results of the Gas Hydrate PPG (Appendix 00-3-14) and identified several needs/tools for a successful Gas Hydrate program. First, because even simple degassing experiments take a few hours to perform, and because it takes trained tool specialists ~2-6 hours to prepare the current PCS tool for the next deployment, hardware limitations severely restrict deployment. Thus, at least 2 to 3 PCS tools with 5 chambers are needed, along with two dedicated engineers. Currently, a functional manifold to degas the PCS does not exist. The core material within the PCS sample chamber cannot be directly accessed or transferred without depressurizing the PCS sample chamber.

Finally, Paull discussed HYACE tool development. He noted that the HYACE tool should be considered a complementary tool to the PCS, not a competitive one. In the long run, once proven, it should be a better tool as it (1) has push-in, hammer-coring and drill-in capabilities, (2) obtains larger samples, (3) can be run on the MST, (4) can obtain subsamples through ports and (5) can easily transfer material to a laboratory pressure container.

Based upon Paull's presentation, SCIMP identified several areas to help the Gas Hydrate program move forward. First, a functional manifold is needed. The approximate cost for a manifold is about $5000. ODP-TAMU personnel, however, believe that much of the necessary equipment for construction of a manifold may be available on the ship.

Action Item: *Bill Mills to work with Charlie Paul/Bill Ussler to determine if ODP-TAMU has current parts in stock to assemble a manifold for the PCS.*

A reliable device for measuring core temperatures on the catwalk is a high priority. At a previous meeting, Frank Rack identified several options (See SCIMP 00-1 report and

appendices therein) and compiled a comprehensive list of techniques and vendors. Based upon this information SCIMP Recommendation 00-1-13 asked that ODP-TAMU investigate the capability to measure spatial variations in core temperature on the catwalk. Without a proponent from the Gas Hydrate community identifying a specific catwalk temperature technique and pursuing funding avenues, it will be difficult to move forward on this issue.

Temperature/Pressure/Conductivity tool development efforts (Bill Ussler-MBARI)

Bill Ussler gave the panel an update on the design and development of the Temperature-Pressure-Conductivity tool, a joint project between MBARI and ODP (Appendix 00-3-15). The tool will provide a means of measuring temperature changes and gas evolution from the core every two meters from core acquisition to the sea surface. These changes can then be linked to gas hydrate concentrations through modeling of ascent profiles. Ussler briefly explained the modeling efforts behind the design and then explained the operation of the tool in detail to the panel. Test operations of the tool are proposed for Leg 195.

F) IODP planning

The Chair of IPSC, Ted Moore, requested assistance from SCIMP in devising a conceptual plan for laboratories in an alternate platform environment in IODP. To assist SCIMP in this endeavor, Roy Wilkens was invited to give a presentation on the Hawaii Drilling Project. This well-run project provides a good model as to what can be accomplished in terms of core processing. Dr Wilkens outlined the drilling operation, on-site core analysis, database needs, and data publication methodology for the program. The panel was most impressed with the database and core description programs (e.g., See Section D: Core Description, this report).

Panel discussion following the presentation centered on how to develop this conceptual model requested by IODP. The panel outlined a spectrum of laboratory/core processing ideas. On one end of the spectrum, all cores are processed at a shore-based laboratory(s). On the other end, all cores are fully processed on the platform. Further options include some processing of cores on the platform to measure ephemeral properties with the remainder of the processing done at a shore-based laboratory(s). In many cases, safety considerations, drilling decisions, in-situ testing and monitoring will require additional core processing on the platform. Inherent in many of these options is the need for compact, transportable, mission-specific equipment that can be housed in standard 20ft shipping vans. The specific equipment needs and logistics required for these options, along with some measure of the advantages and disadvantages of the options (both scientifically and financially) will be generated post-meeting.

Action Item: *SCIMP will develop a document for IPSC describing a conceptual plan for alternate platforms in the new IODP. To begin the process, the SCIMP chair will distribute a "strawman" conceptual plan for alternate laboratory environments to SCIMP members. SCIMP members will assist the Chair in "fleshing" out the document.*

G) Workshop updates

1) Seismic-Core-Log Data Integration Meeting
Sverre Planke presented the draft report of the Seismic-Core-Log integration Workshop (Appendix 00-3-5). The report stems from a previous recommendation by SCIMP (Recommendation 00-2-1) to develop a capability to enhance the vastly underutilized seismic, downhole, and high-resolution data collected for each leg. Very little data integration between these three areas occurs because the tools and software have been lacking onboard the ship and protocols for staffing and data acquisition have not been developed.

The Working Group proposes the permanent establishment of an ODP core-log-seismic integration capability by June 2001. The capability will be formed in a collaboration between TAMU, BRG and the Site Survey Data Bank (SSDB). The core-log-seismic integration facility will mainly build on existing facilities and staff, but will require both new and reallocated resources.

The plan involves shore-based, shipboard, and archival aspects (see report for full details). Resources that will be needed to establish this facility include:

- A facility leader based at the BRG.
- A seismic data loader position at SSDB.
- New air guns on JR (GI and GIG gun).
- Development of a hydrophone receiver.
- 2-3 new seismic workstations (hardware, software, plotting).
- Software development (JANUS, SAGAN).
- Training programs for scientists, seismic crew and SSDB/BRG staff.
- Facilities for archiving and distribution of digital seismic reflection data.

Some of these items are in place (e.g., seismic workstations, SAGAN, training programs at BRG). Some will require new expenditures (e.g., GI Guns), and others will require increased funding levels (e.g., Facility leader at BRG, seismic data loader position at SSDB).

The plan is very ambitious and would provide a new and very much needed routine capability to the program. SCIMP members discussed the report and determined that a phase-in plan must be developed before a final recommendation can be made to SCICOM. This phase-in plan would need to detail when certain aspects of the resources

are needed (i.e., a particular leg) and what purchases/positions could be implemented over time or utilize some current resources to minimize budgetary impact.

NOTE: The final version of the report will be distributed at the OPCOM/SCICOM meeting in Shanghai, and SCIMP's recommendations will be presented at that time.

2) JANUS-NGDC Transfer Meetings

Frank Rack reported on the outcome of two meetings held during Fall, 2000 that explored the resources needed for transfer of the JANUS data base and other ODP data sets to NGDC at the end of the program (See Appendix 00-3-16 for meeting minutes). The objective of these two data transfer/archive meetings was to discover the present status of data holdings throughout ODP and to begin to develop and evaluate options for the long-term maintenance of these resources. The impetus for these meetings stemmed from EXCOM motion 00-2-3 (See Appendix 00-3-17) which speaks to the need of addressing, in a timely manner, many unresolved issues related to ODP-IODP transition. In particular, they have requested that "JOI and the JOIDES Science Advisory Structure will develop options for the long-term maintenance of the ODP data base, JANUS database, core repositories, and other ODP legacies". Understanding the scope of this problem and moving toward a solution will involve three steps. The first is a discovery phase. For example, we need to find the answers to what types data are out there (photos, paper, digital data, etc), where is it stored, how much is there? The second phase will involve some risk/benefit analyses to determine what data should be kept. Finally, a plan of action (with costs and identified resources) will be developed.

Over the next few years, SCIMP increasingly will become involved in many issues identified in this EXCOM motion. In particular, the long-term maintenance of the ODP data base, JANUS database, core repositories, MRC status, and equipment cataloguing are just some of the issues that SCIMP will need to address and provide oversight to ODP-TAMU and the Program.

ODP-TAMU has asked for SCIMP assistance with one the issues outlined above, the JANUS database. In particular, ODP-TAMU is trying to assess what it will take to develop the necessary ASCII files that will be generated from JANUS and sent to NGDC for archival at the end of the program. They need to know which data fields in each data set are important for the archive.

To assist ODP-TAMU in this endeavor, SCIMP will develop a short document that lists the required data fields for each shipboard measurement. SCIMP and ODP-TAMU LWT members will develop this list for their particular labs over the next few months and review it at the next meeting.

***Action Item**: SCIMP Chair to distribute to SCIMP members several examples of ASCII data outputs for the development of the ODP data archive at end of the program. SCIMP*

members will then compile a complete list for each shipboard laboratory/service for next meeting.

Documentation of Laboratory equipment/software

Another legacy/data transfer issue that SCIMP and ODP-TAMU can begin to address is the status of equipment and facilities within the program. ODP-TAMU, working with SCIMP, should begin to compile a document that lists: (1) current lab equipment aboard the JOIDES *Resolution* (and on shore), (2) associated technical manuals (both in-house and vendor manuals), (3) repair and maintenance histories, and (4) other such information that would allow the program to assess what it currently operates, as well as the utility of that equipment for potential use in a new program.

Action Item: *ODP-TAMU will compile a document of current lab equipment which will include a listing of equipment by lab, schematics and vendor manuals, ODP operator manuals, potential use for new program, service contracts, and tech reports. The SCIMP Chair will work with ODP-TAMU on a format for the document.*

3) Geochemistry -Post 2003 Workshop

Geoff Wheat provided a brief update on the recently held JOI/USSSP-sponsored Workshop on Opportunities in Geochemistry in Post-2003 drilling. The workshop, attended by 54 geochemists concentrated on four areas of research including (1) Sediments/Porewater, (2) Chemical Paleoceanography, (3) Deep Igneous Basement/Alteration/Hydrothermal and (4) Biogeochemistry/Microbiology/Hydrates. Although there are no immediate issues for panel to keep an eye on, SCIMP (and its iSAS-equivalent) will have to monitor progress in instrumented CORKs, borehole samples, in-situ anaerobic samplers and advances in organic, biomarker and isotopic analytical equipment.

H) All Other Business

1) New SCIMP Chair

The current Chair, Tom Janecek, rotates off the panel after the SCICOM meeting in March, 2001. The panel discussed potential candidates for Chair. After considerable discussion of the duties required of a chair, the panel decided that a Chair/Vice Chair selection would be preferable to reduce the workload for any one person. Eiichi Kikawa was suggested as Chair and Jamie Allan as Vice Chair. The actual duties of each position are under discussion between the candidates and the current Chair. Once this job description effort is complete, the current Chair, Tom Janecek, will forward the names (and breakdown of duties) to the SCICOM chair for approval.

2) New Member selection

Sverre Planke and Tom Janecek rotate off the panel after this meeting. The major experience gaps on the panel are now the areas of Information Services/data archiving and seismic acquisition and interpretation (Appendix 00-3-18).

With legacy issues taking on an increasing priority over the next few years, it would be most beneficial to the panel to have at least one member with Information Services/data archiving experience. A top candidate for the position is David Divins (NGDC). Dr. Divins is a quite familiar with ODP operations and the data legacy/archive issues facing the program.

3) ODP-TAMU Representation

Panel members have always been impressed with the preparation and input by ODP-TAMU liaisons attending the SCIMP meetings. As the panel deals with both science and technical issues it is important the members are able to interact with both staff scientists and technical staff. While the panel understands the budget ramifications of sending two ODP-TAMU representatives to SCIMP meetings, it stresses that TAMU needs to make every effort to send science and technical representatives to future meetings when the Chair feels the agenda discussion would benefit.

Action Item: *SCIMP Chair to work with ODP-TAMU Science operator to insure presence of both science (Carl Richter) and technical (Bill Mills/Brad Julson) liaisons at future SCIMP meetings.*

I) Next Meeting Date and Venue

Several venues were discussed for the next meeting. The first choice is to hold the meeting at Montpelier, France (Bernard Celerier -host) during the week of June 18-22, 2001.

Action Item: *The Chair will petition the JOIDES office for permission to hold the next meeting in Montpelier.*

J) Acknowledgements

The panel thanks Geoff Wheat for hosting the meeting and Bridget Chisholm (JOI) for help in making the arrangements.

Sverre Planke rotates off the panel after this meeting. The panel will greatly miss his input and assistance. We wish him all the best of luck in his future endeavors and hope to see him on the ship in working on seismic-log-core integration!

Finally, this is the last SCIMP meeting for this Chair. I would like to take this opportunity to thank all of those who have participated as panel members on SCIMP. The selflessness, enthusiasm, and expertise of these people have made the panel a vibrant and pro-active voice in overseeing the myriad of issues that the panel has under its mandate. In addition, I would like to thank the liaisons to SCIMP for their efforts. The working relationship that has developed between SCIMP members and Frank Rack, Gerry Iturrino, Jay Miller, and Carl Richter has ensured that the Program responds in a timely manner to community input and needs.

Simply put, it has been a pleasure to work with all you.