JOIDES EXECUTIVE AND SCIENCE COMMITTEES JOINT MEETING

THE WASHINGTON MONARCH HOTEL
WASHINGTON, D.C.

15 FEBRUARY 2000

Executive Committee - EXCOM

Helmut Beiersdorf (Chair)	Bundesanstalt für Geowissenschaften und Rohstoffe, Germany
James Briden	Environmental Change Unit, Oxford University, United Kingdom
Maria C. Comas	Instituto Andaluz de Ciencias de la Tierra, Universidad de Granada, Spain, (ECOD)
G. Brent Dalrymple	College of Oceanic & Atmospheric Sciences, Oregon State University, USA
Robert Detrick	Woods Hole Oceanographic Institution, USA
Chris Harrison	Rosenstiel School of Marine & Atmospheric Science, University of Miami, USA
Richard Hiscott	Earth Sciences Department, Memorial University of Newfoundland, Canada (PacRim)
Dennis Kent	Department of Geological Sciences, Rutgers University, USA
Roger Larson	Graduate School of Oceanography, University of Rhode Island, USA
John Mutter	Lamont-Doherty Earth Observatory, Columbia University, USA
John Orcutt	Scripps Institution of Oceanography, University of California, San Diego, USA
David Prior	College of Geosciences, Texas A&M University, USA
C. Barry Raleigh	School of Ocean and Earth Science and Technology, University of Hawaii, USA
Paul Stoffa	Institute for Geophysics, University of Texas at Austin, USA
Asahiko Taira	Ocean Research Institute, University of Tokyo, Japan

Associate Member Observers - EXCOM

Mathilde Cannat	Laboratoire de Pétrologie, Université Pierre et Marie Curie, Paris, France
Wang Zhixiong	Marine High Technology Bureau, Beijing, China

Science Committee - SCICOM

Sherman Bloomer	Department of Geosciences, Oregon State University, USA
Millard Coffin	Institute for Geophysics, University of Texas at Austin, USA
Steven D'Hondt	Graduate School of Oceanography, University of Rhode Island, USA
Patricia Fryer	Department of Geology and Geophysics, University of Hawaii, USA
William Hay (Chair)	GEOMAR Research Center, University of Kiel, Germany
Nils Holm	Department of Geology and Geochemistry, Stockholm University, Sweden (ECOD)
Jock Keene	School of Geosciences, University of Sydney, Australia (PacRim)
Emily Klein	Department of Geology, Duke University, USA
Kenneth Miller	Department of Geological Sciences, Rutgers University, USA
Gregory Mountain	Lamont-Doherty Earth Observatory, Columbia University, USA
David Rea	Department of Geological Sciences, University of Michigan, USA
Alastair Robertson	Department of Geology and Geophysics, University of Edinburgh, United Kingdom
Hidekazu Tokuyama*	Ocean Research Institute, University of Tokyo, Japan
Douglas Wiens	Department of Earth and Planetary Science, Washington University, USA
James Zachos**	Department of Earth Sciences, University of California, Santa Cruz, USA

Associate Member Observers - SCICOM

John Ludden	Centre de Recherches Pétrographiques et Géochimiques, CNRS-Nancy, France
Zhou Zuyi***	Department of Marine Geology & Geophysics, Tongji University, Shanghai, China

* Alternate for Yoshiyuki Tatsumi
** Alternate for J. Casey Moore
*** Absent

Liaisons

Jack Baldauf	Ocean Drilling Program (ODP), Texas A&M University, USA
Jeff Fox	Ocean Drilling Program (ODP), Texas A&M University, USA
David Goldberg	Lamont-Doherty Earth Observatory (LDEO), Columbia University, USA
Neil Lundberg	Department of Geology, Florida State University, USA
Bruce Malfait	National Science Foundation (NSF), USA
Kathryn Moran	Joint Oceanographic Institutions, Inc. (JOI), USA
Julie Morris	Department of Earth and Planetary Science, Washington University, USA

Guests

James Allan	National Science Foundation (NSF), USA
James Austin	Institute for Geophysics, University of Texas at Austin, USA
Mahlon Ball	U.S. Geological Survey, Denver, USA
Keir Becker	Rosenstiel School of Marine & Atmospheric Science, University of Miami, USA
J. Paul Dauphin	National Science Foundation (NSF), USA
Margaret Delaney	Department of Ocean Sciences, University of California, Santa Cruz, USA
John Diebold	Lamont-Doherty Earth Observatory, Columbia University, USA
Sören Dürr	Deutsche Forschungsgemeinschaft (DFG), Germany
John Farrell	Joint Oceanographic Institutions, Inc. (JOI), USA
Chris Franklin	Natural Environmental Research Council (NERC), United Kingdom
James Gill	Department of Earth Sciences, University of California, Santa Cruz, USA
J. Frederick Grassle	Department of Geological Sciences, Rutgers University, USA
Roy Hyndman	Geological Survey of Canada, Sidney, B.C., Canada
Tom Janecek	Antarctic Research Facility, Florida State University, USA
Hajimu Kinoshita	Japan Marine Science and Technology Center (JAMSTEC), Japan
Kazuhiro Kitazawa	Japan Marine Science and Technology Center (JAMSTEC), Japan
Shin'ichi Kuramoto	Science and Technology Agency (STA), Japan
Ted Moore	Department of Geological Sciences, University of Michigan, USA
Arthur Nowell	School of Oceanography, University of Washington, USA
Robert Owen	Department of Geological Sciences, University of Michigan, USA
Nicklas Pisias	College of Oceanic & Atmospheric Sciences, Oregon State University, USA
Warren Prell	Department of Geological Sciences, Brown University, USA
Michael Purdy	National Science Foundation (NSF), USA
Mary Reagan	Lamont-Doherty Earth Observatory, Columbia University, USA
Masanori Shinano	International Working Group (IWG) Support Office, USA
Thomas Shipley	Institute for Geophysics, University of Texas, USA
Shiri Srivastava	Geological Survey of Canada Atlantic, Bedford Institute of Oceanography, Canada
Neil Sullivan	Department of Physics, University of Florida, USA
Kiyushi Suyehiro	Japan Marine Science and Technology Center (JAMSTEC), Japan
Shinichi Takagawa	Japan Marine Science and Technology Center (JAMSTEC), Japan
Takeo Tanaka	Japan Marine Science and Technology Center (JAMSTEC), Japan
Philippe Vidal	Centre National de la Recherche Scientifique (CNRS), Paris, France
James Watkins	Joint Oceanographic Institutions, Inc. (JOI), USA
Robert Winokur	Consortium for Oceanographic Research and Education (CORE), USA

JOIDES Office

Warner Brückmann	GEOMAR Research Center, University of Kiel, Germany
Bettina Rohr	GEOMAR Research Center, University of Kiel, Germany
Jeffrey Schuffert	GEOMAR Research Center, University of Kiel, Germany

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FINAL MINUTES

A. Welcome, Introductions, and Logistics

Helmut Beiersdorf welcomed everyone to the joint portion of the EXCOM and SCICOM meetings and asked the participants to introduce themselves when speaking. Beiersdorf hoped that this special joint meeting would foster communication among all parts of ODP and help to dispel the perception that EXCOM sat too far removed from the science planning process. He emphasized the importance of these goals, given the difficult task of planning the phase-out of the old program and phase-in of the new one. Beiersdorf looked forward optimistically to a successful meeting and thanked the management at JOI for arranging the meeting facilities and social events.

Kate Moran explained the meeting logistics and introduced Bridget Chisholm and Jenny Ramarui as assistants from JOI. She also noted a few minor changes to the schedule and reminded everyone about a special ODP seminar scheduled for the following evening at the Canadian Embassy.

B. Approval of Agenda of Joint Meeting

Beiersdorf announced several minor changes to the agenda for the joint meeting, and all committee members approved the revised agenda by consensus.

C. Selected ODP Achievements

Warren Prell reported on the preliminary results of Leg 184, the first major drilling expedition in the South China Sea (SCS). He stated the main goal of understanding the Southeast Asia monsoon system and then described the strategy of studying different sedimentary regimes with different sedimentation rates. Prell showed the seasonal pattern of rainfall migration across Southeast Asia and explained that sedimentary records from the SCS should preserve the effects of that seasonal migration and its variability through time. He noted that they drilled at five sites, one in the southern SCS and four in the northern SCS, and logged at four of the five sites. He also noted that to reach the target objectives at three sites, they had to drill deeper than planned because of higher than expected sedimentation rates. Prell said that all of the sites should yield high-resolution records of climate variability on orbital and sub-orbital time scales. In particular, the section recovered at Site 1144 extends to only 1 Ma but has a very high sedimentation rate and thus offers an excellent chance for studying rapid, abrupt climate change. Site 1146 yielded a continuous section extending to 20 Ma with no significant disturbances or turbidites, and Site 1148 penetrated Oligocene (32 Ma) deep-water sediment, thus resolving a debate over the nature and depth of the seismic reflectors at that site.

Hay asked whether sedimentation rates increased in the SCS at 8 Ma, as expected by analogy with the Arabian Sea. Prell said that some of the SCS sites showed an increase in sedimentation rates, but only during last 300 kyr. Miller asked if they had determined the onset of the monsoon system, but Prell said that it would take much more analytical work to answer that question. D'Hondt asked whether the recovered sequences remained rich in sulfate or showed evidence of methanogenesis. Prell said that some methane occurred in the lower parts of the sections. Robertson asked if the results from Leg 184 might shed any light on the tectonic history of the SCS. Prell confirmed that their results definitely could contribute to a better understanding of what happened tectonically at the boundary between continental and oceanic crust.

John Ludden reported on the preliminary results of Leg 185 to the Izu-Mariana forearc. He described the leg as a study of subduction zone fluxes in terms of global geochemical balances and explained the goals of characterizing the geochemistry of the subducting sediment, pore fluid, organic matter, and crust. Ludden said that they returned to Site 801, penetrating the oldest known piece of oceanic crust from a fast-spreading ridge, and drilled a new hole nearby at Site1149. He noted that they found evidence in the basaltic glasses for microbial alteration. Other leg highlights included the first shipboard microbiology tests for contamination and culturing of bacteria and the discovery that a rapid switching of the magnetic signal downhole could explain the apparent magnetic quiet zone as measured from the surface.

Raleigh asked if the sedimentary sections looked fractured as well as the basement. Ludden said that no one looked specifically for fracturing, though one scientist measured shear strength downhole. Comas asked about the recovery at Site 801. Ludden said that they had a recovery rate of 40-50%. Robertson asked if they found any signs of local hydrothermal alteration. Ludden said that they drilled through two active alteration zones, with silica-rich deposits, at temperatures of 50-60˚C. Larson described the alteration zones as still very permeable but not active. Morris asked whether the style of alteration differed at these sites compared to other sites such as Hole 504B. Ludden replied that they saw a difference even between the two sites drilled on this leg.

Suyehiro reported on the preliminary results of Leg 186 to the Japan Trench. He described the main objective of installing two geophysical observatories as part of the ION project and mentioned that borehole sensors provide a better signal than seafloor sensors. Suyehiro showed a map of seismic activity around Japan since 1926 and explained that these records played a crucial role in selecting the two drilling sites, with Site 1150 located in a region of high seismic activity and Site 1151 located in an aseismic zone. He characterized the regional subduction zone as tectonically erosive and said that sedimentation rates varied from 20–200 cm kyr^{-1}. Suyehiro described the challenges of drilling through old sediments and cementing instruments in the borehole at 1200 mbsf. He said that the leg ultimately succeeded, although JAMSTEC installed the actual sensors later. Suyehiro showed ROV camera photos of the seafloor package in place, noting the power and data recovery connections on top of the reentry cone. He said that the system can run for several years on battery power, and replacement of the batteries could extend the life of the observatories for many years.

Morris asked if they planned to install a cable for real-time data recovery. Suyehiro confirmed that they planned to extend an existing cable about 10 km to the new sites. Wiens asked when they would retrieve the first data, and Suyehiro said in September 2000. Orcutt asked if they grouted the seismometers in the hole, and Suyehiro said yes. Raleigh asked about the type of transducer used in the instruments. Suyehiro stated that they used a standard linear vertical differential transducer (LVDT). Robertson wondered if any other useful science might result from this leg. Suyehiro replied that other topics of study would include volcanic ash layers, subsidence history, and the much greater decrease in salinity than observed at other active margin sites.

Following the leg reports, Hay offered a summary of recent papers in *Science* and *Nature* related to ODP results. He noted that the authors did not always mention ODP in the title or abstract, but they often used ODP data as reference sections to compare with other new data. Hay said that paleoclimate studies had made an especially strong showing, with emphasis on young sedimentary records, particularly of Holocene age.

Beiersdorf stressed the importance of evaluating the scientific literature for ODP content because of the need to document the achievements of ODP more clearly in the phase-out plan and to address a shortcoming identified by the PEC-V. Allan commented that he had searched the literature last summer, mostly in *Science* and *Nature*, and found over 100 articles related to ODP science. He admitted feeling surprised at how much use the cores had received and the generally good level of acknowledgement to ODP. Watkins recommended that the program should view this as a public

affairs opportunity and do a thorough, systematic job of identifying this information over the next two years. He also suggested approaching the authors and asking them what they would have lost without the ODP data. Beiersdorf hoped to make it a broader, more visible effort. Hay said that SCICOM would definitely devote time to this issue and again emphasized the hidden nature or lack of direct attribution to ODP. Mountain asked if that reflected upon authors from outside of the ODP community or upon those who should know better. Hay replied that the slighting of ODP did not seem intentional. Mountain suggested that the authors of these papers might make good candidates for the distinguished lecture series. Allan saw it as a more serious problem of researchers not properly documenting or acknowledging the source of their samples. Hay said that sometimes he could only trace the link to ODP through the reference list or figure captions. D'Hondt asked whether the papers usually included site numbers. Hay answered yes, but they did not always identify the sites as ODP holes and sometimes even used the pre-drilling site designation. Coffin felt that this simple exercise illustrated the success of the program but also the failure to show that ocean drilling comprises a vital part of the scientific community. He added that even after 30 years of success, we still have to justify the need for more ocean drilling, whereas astronomers, for example, do not have to do this. Raleigh suggested that we have to convince our fellow scientists, not the public or the government.

D. NSF/ODP Council Report

Bruce Malfait diagrammed the NSF programmatic structure and updated the report distributed in the Agenda Book, noting recent personnel changes at NSF, such as the hiring of Margaret Leinen in mid January, and mentioning that some developments had occurred with respect to India joining the program. An audit of JOI indicated that everything essentially balanced out, with unallowable charges amounting to less than $5000 and a few allowable but uncharged items identified. Malfait explained that the U.S. Government Performance Results Act now requires every federal agency to identify its goals for each year and report on how it met those goals. ODP fared well in the sense that it experienced a very low rate of facility downtime, less than 1%, throughout the program. Malfait showed the agenda for the upcoming IWG meeting, noting that Ted Moore would deliver a status report on IPSC and Peggy Delaney would report on progress of the CDC. IWG would also discuss international arrangements for the future program as well as the response concerning the IODP Initial Science Plan.

E. Country/Consortium Reports

Beiersdorf accepted the country and consortium reports as read and invited each national representative to offer additions as necessary. Rick Hiscott introduced himself and Jock Keene as the new PacRim representatives for EXCOM and SCICOM, respectively. Menchu Comas announced that Ireland plans to join ECOD and that ESF would soon submit a Letter of Intent to participate in IODP planning. Asahiko Taira distributed the report from Japan and added that Japan and France would cooperate this year to obtain further 3-D seismic data from eastern Nankai. Jim Briden announced that David Falvey would replace him after this meeting, and Chris Franklin would represent the U.K. at the IWG meeting this week. He also noted that the U.K. would hold an ODP meeting in early March. Mathilde Cannat and Wang Zhixiong had nothing to add to their reports. Beiersdorf introduced Sören Dürr as the replacement for Dietrich Maronde from DFG.

Beiersdorf reported on an ESF sponsored workshop on 27 January 2000 in Strasbourg, France. He said that the workshop participants fully endorsed the IODP Initial Science Plan, and he listed specific topics of interest to European scientists, including the deep biosphere, gas hydrates, Arctic drilling, deep margins, and tectonic processes. Beiersdorf also listed the members of an advisory group for establishing a joint European Ocean Drilling Initiative toward participating in IODP and for advising European funding agencies on ODP/IODP matters. Cannat expressed optimism about this effort. Holm added that the European consortium now had everyone on board to issue a Letter of Intent to join the new program. Taira asked if the European goals on infrastructure included

other platforms. Beiersdorf replied that those goals could include platforms, laboratories, or tools, but they could not yet offer specific details before talking further with funding agencies, political entities, and industry.

F. ODP Management and Operations Report

F.1 FY2001 Budget

Moran illustrated how the FY2001 target budget of $46.1M would distribute among TAMU, LDEO, and JOI and said that the exact numbers could change by about $200K. She showed a map of the FY2001 drilling schedule and explained that Legs 193 (Manus Basin), 196 (Nankai II), and 198 (Hydrate Ridge) would require special operating expenses for LWD. In addition, two advanced CORKS on Leg 196 and microbiology in general would entail added costs.

Moran proposed to switch the schedule for Legs 198 (Hydrate Ridge) and 199 (Equatorial Pacific) because this would effectively defer one relatively expensive leg until the next fiscal year. Detrick asked if such a switch would push Hydrate Ridge into an unfavorable weather window. Moran replied that it looked marginal toward the end of the leg, but Leg 146 had succeeded in the same area during that time of year, plus LWD could wait until the end of the leg and tolerate marginal weather conditions.

F.2 Drydock

Moran identified various shipboard facilities upgraded during drydock, including the data management system, auto station-keeping, the seventh level on the lab stack (primarily for microbiology and downhole tools), the main core lab, H_2S safety equipment, and the Schlumberger data acquisition unit.

F.3 Microbiology

Moran noted several recent achievements with regard to microbiology, including a LExEn grant of $250K for shipboard equipment, definition of shipboard sampling protocols and technical needs by the Biology Under Ground Steering Committee (BUGSCOM), and submission of two microbiology proposals. She said that further plans call for extensive modification of the shipboard microbiology lab on the transit leg in May 2000, with routine staffing of microbiologists beginning on Leg 190 (Nankai Trough). Moran also expressed optimism about moving forward on microbiology collaborations in Europe.

Morris asked about the division of labor between BUGSCOM and the Deep Biosphere PPG. Moran replied that BUGSCOM did its work and has ended. She explained that JOI formed BUGSCOM to implement the recommendations of the Deep Biosphere PPG and SciMP. BUGSCOM provided direct guidance on what equipment to buy and what protocols to follow. Beiersdorf added that the ODP managers had agreed to form this small group to fill a short-term need for quick action before the Deep Biosphere PPG could hold its next meeting.

F.4 ODP Industry Partnerships

Moran reported that good progress had occurred on the HYACE project and the JAMSTEC/JOI agreement for developing the advanced diamond core barrel (ADCB), and work might start soon on retractable bit technology. She described a recent joint academic–industry workshop in Houston as very successful and said that JOI had consequently received seven pre-proposals for review. The proponents planned to prepare those pre-proposals for submission before the 15 March 2000 deadline. Moran commended John Armentrout and Felix Gradstein for their efforts in organizing and leading the workshop and said that a second workshop on geopressures would occur in March 2000. Moran gave a talk to the Canadian Society of Petroleum Geologists in Calgary before a group of more than 800 industry scientists who meet for lunch every two weeks, and JOI had prepared a paper for the Offshore Technology Conference in May 2000. Other scheduled events included a special meeting at AAPG on the Gulf of Mexico and a follow-up workshop in Europe

this summer. Moran also recommended establishing a formal industry liaison committee in ODP and IODP.

F.5 Performance Evaluation Committee (PEC-V)

Moran reported that JOI had received the PEC-V report and obtained comments on it from the ODP subcontractors. She planned to present those comments to the JOI BoG this week and seek their approval to submit the overall report to NSF. She then expected to distribute the report to others in JOIDES for comment. Moran said that PEC-V concluded that program management and operations had improved significantly since the previous evaluation. She explained that although the report contains minor detailed recommendations on management, the major concern of PEC-V centers on the prospect of a drilling gap between ODP and IODP.

Beiersdorf said that EXCOM should see the PEC-V report as soon as possible because it might contain suggestions about JOIDES management with respect to planning and policy making. He conceded that EXCOM had to accept the decision not to distribute the full report yet. Moran said that the JOIDES Office had received a copy and could certainly distribute any part of it. Briden questioned the unprecedented route of implementing the report without obtaining advice from the JOIDES advisory structure. He understood the formal reporting requirements, but noted that all previous PEC reports had gone to EXCOM and SCICOM, and he wondered if the JOI BoG felt content that it could do an optimum job without going through that loop. Raleigh did not think they intended to miss that step. Although he had not seen this report, he noted that previous PEC reports typically dealt with subcontractor issues, and JOI had to assemble the comments of the subcontractors to complete the overall report to NSF. Raleigh promised that EXCOM would receive the report before the JOI BoG acts upon it. Pisias reiterated that the JOIDES Office received the report, so the advisory structure should have it. Hay confirmed that the JOIDES Office had received the report and responded to specific questions posed to it by JOI, but had not seen anything further.

Briden said that as he understood it, the report would go to the JOI BoG, they would report to NSF and that would represent the final step. Moran explained that the full report to NSF would include the PEC-V report and the comments from the subcontractors, including the JOIDES Office, but JOI needed approval from the JOI BoG before they could officially send anything on contracts to NSF. Moran believed that the process had proceeded appropriately. Beiersdorf said that EXCOM would have to review the report carefully and make suggestions at the next meeting on how to respond to immediate issues identified by PEC-V concerning the JOIDES advisory structure. Briden asked if that meant that no action would occur until after July. Raleigh replied that action could occur as soon as the BoG had given their approval. Moran said that they could do so at the meeting this week. Raleigh said that the JOI BoG had no problem with the procedure, and he did not know why it appeared that one existed. Beiersdorf read a portion of the executive summary from the PEC-V report that criticized the lack of a document summarizing the overall achievements of the program. He said that EXCOM must prepare to address this serious issue at its next meeting after receiving copies of the full report.

F.6 Public Affairs

Moran commented on the success of recent public affairs activities, including the June 1999 port call in Yokohama, Japan, the ODP booth at the December 1999 AGU meeting in San Francisco, and the series of four ODP Seminars on Capitol Hill that would conclude this week. She also mentioned several upcoming activities such as the ODP booth and special symposium at the February 2000 AAAS meeting, the March 2000 port call in Hobart, Tasmania, and the May 2000 American Society of Microbiologists meeting.

F.7 Communications
Moran reported that a meeting of representatives from the international program offices in September 1999 at JOI had successfully improved communication and understanding on a program-wide basis. She hoped to schedule a similar meeting in early 2002. Over 300 scientists attended the ODP town meeting at the December 1999 AGU meeting, and the managers of the ODP contractors continue to meet on a regular basis.

G. SCICOM Report, Amendment of Terms of Reference
Hay reported on the final membership of the new PPGs for Hydrogeology and the Arctic's Role in Global Change. He noted that the program effectively had industry money coming in to support Martin Hovland as chair of the Arctic group. Watkins expressed concern about integrating the new USCG cutter Healy into the plans for Arctic drilling. Hay believed that some of the U.S. members on the PPG had the knowledge to address that issue.

Hay presented the following request from SCICOM to amend the Terms of Reference regarding the establishment of liaisons to PPGs.

SCICOM Motion 99-2-16: SCICOM requests EXCOM to amend the Terms of Reference for Program Planning Groups as follows:

6.5 **Liaison.** ~~SCICOM establishes liaison with the PPGs by the appointment of non-voting liaisons~~. The SSEPs will appoint liaisons to the PPGs, and ~~The~~ PPG Chairs ~~will~~ may attend one meeting of the SSEPs per year, ~~as~~ if requested by the SSEPs Chairs.

Mountain asked about the reason for not requiring the PPG chairs to attend a SSEPs meeting once per year. Hay said that the proposed change allows the SSEPs chairs the flexibility to decide when and how often the PPG chairs would attend. Mountain wondered why SCICOM constitutes the PPGs and then lets the SSEPs decide how to incorporate their input into the program. Lundberg explained that the question of how the panel structure should handle the PPGs has a long history, especially concerning the conflict of interest issue, and although SCICOM establishes the PPGs, they decided that the PPGs should report to the SSEPs. He said that the SSEPs hope to communicate more closely with the PPGs and had invited the two new PPG chairs to the next SSEPs meeting, but they do not necessarily want to receive the final PPG reports. Hay added that the PPG chairs now consult regularly with the SSEPs. Beiersdorf deferred voting on this issue until the separate EXCOM session.

H. Partnerships with ODP

H.1 International Continental Drilling Program (ICDP)
Hay reported on the progress of cooperative efforts between ODP and ICDP. He announced that a JOIDES observer would attend the next ICDP meeting for proposal discussion and ranking, and an ICDP observer would attend the next SSEPs and SCICOM meetings. In addition, TEDCOM would meet with the ICDP drilling technology group in Potsdam, Germany. Hay also raised the question of how to pay for liaisons to non-JOIDES meetings.

Larson asked about the membership and budget of ICDP. Miller explained that ICDP has three full members, the U.S., Germany, and Japan, and several associate members, including China, Mexico, and Poland. He also clarified that the $2M annual ICDP budget acts only as leverage; the actual drilling projects have a much higher total budget. Mutter suggested identifying and pursuing the result desired several years from now in terms of a joint commitment, but Hay saw the first step as just getting to know each other. Larson recalled that several years ago the continental drilling side had taken a very open and encouraging view toward merging with ODP. He thought it seemed reasonable from a conceptual standpoint, if not a political one. Beiersdorf stressed the importance of increasing the manpower in ODP to run more platforms and said that he viewed ICDP as the best place to start because of the strong overlap in interests.

Fox noted that TAMU had already received support from NSF and DOSECC for a half-time engineer to design and build a portable lake-drilling platform for ICDP projects. Orcutt mentioned EarthScope and the San Andreas Fault Observatory at Depth (SAFOD) project, but Miller commented that EarthScope did not represent an ICDP or DOSECC activity. Orcutt replied that it nonetheless represented continental drilling and it would most likely receive funding. Fryer noted that COMPLEX had identified high-latitude drilling as an important goal and wondered if EXCOM or SCICOM had considered land-based drilling in Antarctica or the Arctic. Beiersdorf thought that the Arctic PPG could consider the issue and redirected the discussion toward strengthening the connection between ODP and ICDP. He hoped to clarify the liaison and funding issues tomorrow. Miller suggested coordinating along the lines of publications and archiving, two areas where ODP performs well but other groups lack capability. Beiersdorf agreed that the ability to archive non-ODP material represented a good topic of future discussion among EXCOM, SCICOM, and IPSC.

H.2 Industry

Beiersdorf reported on a forum held last November at BGR in Hannover to familiarize German industry with ODP activities. Twenty engineers, managers, and scientists from industry attended the forum, and fifteen ODP scientists gave talks on a variety of themes. The industry representatives requested more meetings of this sort and offered to assist in proposal preparation. Beiersdorf foresaw increased industry participation at the annual German ODP meeting and an expanded basis for recruiting industry experts to staff ODP/IODP advisory panels, though the instability within industry would remain a problem. Briden commented that the European industry forum last year resulted in an increased level of engagement focusing on margins and slopes and a greater awareness of ODP among service and technology components of industry. Beiersdorf noted that industry also participated at the recent Strasbourg workshop, and the European Ocean Drilling Initiative had since begun drafting a proposal aimed toward improving links among various industries and entities for achieving full European membership in IODP. Ludden clarified that they hoped to establish a rotating position for a liaison between national secretariats and industry. Beiersdorf added that the workshop participants stand fully behind this approach and hope to succeed in obtaining funding from Brussels for common proposals or for better databases and technologies.

H.3 Other Scientific Initiatives

Beiersdorf noted that EXCOM at its last meeting had named a subcommittee (Taylor, Mutter, Orcutt, Beiersdorf) for promoting cooperation with other scientific initiatives around the world. He said that although the subcommittee had nothing substantial to report yet, they planned to contact other initiatives such as InterRidge, InterMargins, and ION before the next meeting. Beiersdorf suggested that all EXCOM members could look into these types of initiatives and alert the subcommittee. He viewed this as a first attempt to find common ground for encompassing a larger community, and he said that EXCOM would revisit the issue at all subsequent meetings and discuss how to improve their efforts.

H.4 Distance Learning Initiative

Jack Baldauf reported that the Colleges of Geoscience and Education at TAMU had formed a partnership to establish a Distance Learning Initiative within ODP. TAMU had already received a $350K grant for this project from the State of Texas, and they planned to seek additional external support from corporate sponsors. As an immediate goal, TAMU hoped to sail a high school science teacher on Leg 194. The teacher would broadcast lessons by INMARSAT to students in the classroom, initially targeting rural middle schools (grades 6-8) in Texas. This initiative would deliver shipboard and classroom equipment, a web-based curriculum, instructional material, real-time communication between the ship and classroom, and a professional development workshop at TAMU for teachers. Other benefits would include an enhanced link between ODP and the K-12 education community, direct teacher involvement, and delivery of today's science into the

classroom. The Distance Learning Initiative would greatly increase the educational capability of the *JOIDES Resolution*, and it would lay the foundation for a broad-based educational outreach program. TAMU therefore sought endorsement from EXCOM for sailing secondary school teachers and for the time resources required of ODP/TAMU staff to complete the project.

Cannat asked whether the international community would have access to the web-based curriculum, Klein asked about its availability in other languages besides English, and Fryer asked if TAMU hoped that NSF would support the international effort. Baldauf replied that the international community would have full access to the web-based material and that TAMU hoped to obtain international support for the long-range goals of an expanded outreach program, available in multiple languages. Fryer also asked how this project would affect the berthing of scientists, but Baldauf could not say because TAMU had not yet completed the staffing of Leg 194. Fox mentioned that ODL often had extra berths and perhaps ODP could use one for a teacher. Mutter asked to what extent the teachers would participate in the science onboard. Baldauf said that he would prefer to have them involved, perhaps by training them for one of the simpler jobs, but selecting the right individuals would pose the greatest challenge. Fryer asked how far the plan had progressed, and Bauldauf repeated that TAMU had already received funding and proceeded now with planning how to implement the program. Klein mentioned that some textbooks have a feature box about ODP and urged TAMU to contact publishing companies about publicizing the web links.

Bauldauf showed a USSAC Consensus Statement encouraging SCICOM to sail high school teachers on the *JOIDES Resolution*. Delaney clarified that USSAC approved that statement in the absence of any information from TAMU about their initiative and added that it would have helped to have received an update at the recent USSAC meeting. Prior explained that the TAMU initiative arose from a concern about the quality of science education in the State of Texas. He emphasized that it would build upon previous efforts in the science and education colleges and provide a springboard for a broader outreach program in the future. Beiersdorf applauded TAMU for their initiative toward the important issue of enhancing science understanding across the globe. He suggested that SCICOM should decide whether the distance learning initiative would have a net positive or negative effect on ODP, balancing the primary concerns about berth space and support for TAMU staff to finish the planning effort against the benefit of expanded educational outreach. Beiersdorf requested SCICOM to craft a motion the following morning and send it back to EXCOM in the afternoon because TAMU could not wait until the next meeting for an answer.

I. IODP Planning

I.1 OD21 Report

Asahiko Taira began by showing a silhouette of the *JOIDES Resolution* superimposed on a silhouette of the much larger OD21 riser drilling ship. Shin'ichi Kuramoto continued with an update on the status of the OD21 science, budget, organization, and basic design and construction of the ship. He showed a timeline of various OD21 activities and stated that STA had already received authorization for 74% of the total $500M budget. Shinichi Takagawa reported that JAMSTEC would complete the design of the riser drilling ship by the end of February 2000 and that construction would begin in March 2000. He showed schematic drawings of the ship and its facilities for core processing, other lab space, and research management. Takagawa explained that the ship would accommodate 150 personnel, mostly with single-room berths (128 single, 11 twin), and the typical single room would occupy 10 m^2 of floor space.

Hiscott asked about the proportion of scientists versus crew. Takagawa said that the basic design allotted for 31 scientists, 21 technicians, and the rest crew, with eight reserves. Harrison noted that the *JOIDES Resolution* accommodates about the same number of scientists and technicians and wondered whether some operations of the riser drilling ship might require a larger science party. Takagawa said that JAMSTEC expected a turnover of the science party during a leg because riser

legs would last at least six months rather than two. Taira added that re-supply operations would provide a chance for turnover of scientific personnel. Larson asked if JAMSTEC had chosen a construction contractor, and Takagawa answered no, not yet.

I.2 Conceptual Design Committee (CDC) Progress Report

Peggy Delaney reported on the charge, strategy, and progress of the CDC. NSF and USSAC established the CDC to formulate a conceptual design for a non-riser vessel. The CDC would identify the optimal capabilities needed for scientific drilling, provide a feasibility survey of existing and planned vessels, and prepare a detailed report by 1 March 2000. Delaney listed the CDC membership, noting that it included a private technical consultant and a liaison from IPSC. The CDC met in June and September 1999 and adopted a strategy for synthesizing high-priority science into type sections and defining the technical requirements for drilling those type sections. They also canvassed existing international ship owners, matched the technical requirements with known ship capabilities, and recommended ships with possible capital modification to NSF.

The CDC requested target sections from the U.S. chairs of the COMPLEX working groups and the PPGs. They asked them to consider high-priority science themes and objectives and specific factors such as water depth range, maximum penetration, lithology, thermal gradients, minimum core recovery limits, maximum core disturbance limits, number of holes, sampling, testing, and logging needs, site survey needs, and environmental conditions. The CDC received thirty target sections and reduced these to nine synthetic target sections related to observatories, rifting processes, convergent margins, oceanic plateaus, hydrothermal massive sulfides, oceanic crust, passive-margin stratigraphy, deep-ocean sediments, and carbonate reefs, atolls, and banks. They determined that the ideal non-riser vessel would drill and keep station in a wide range of water depths (<20–10,000 m), operate globally for up to eight weeks without re-supply, and carry a shipboard party of sixty scientists. It would also have the capabilities to reach target depths of >2000 mbsf, deploy a total drill-string length of ~11,000 m, store sufficient mud and casing, sample continuously, and use the latest sampling, coring, and logging tools. After considering SciMP recommendations, OD21 plans, and consulting with IPSC, the CDC identified other basic shipboard requirements such as 1800 m^2 of heated and air-conditioned interior laboratory space, deck space for ten 20' core-storage reefers and five 20' special-purpose modules, and an underway geophysics lab on the stern.

The CDC contacted nineteen international ship owners to gather information about existing and planned drilling ships. They received twelve responses representing 31 of the 41 ships on their list and compiled an extensive summary of vessel characteristics and operating parameters. Some of the ships do not have dynamic positioning or other basic requirements. The CDC also discussed other platforms, such as geotechnical drilling ships, submersibles, and semi-submersible, jack-up rigs. Delaney distributed a draft survey report to the CDC in December 1999 and submitted a complete vessel survey to NSF in January 2000.

Cannat noted that the *JOIDES Resolution* appears on the CDC list and asked if it met the basic requirements. Delaney answered that every vessel on the list would require at least some modification. Hyndman suggested that the riser ship could also operate in non-riser mode, though not efficiently, and wondered if that might loosen the restrictions on the non-riser ship. Delaney said that the CDC considered whether a non-riser vessel could operate with a seafloor blowout prevention system to drill certain objectives, such as Santa Barbara Basin, and concluded that they would not expect the non-riser ship to do well-control drilling in water deeper than 500 m. They also concluded that shallower-water objectives that need well-control drilling might also require a riser platform and could pose the most difficulty. Hyndman asked whether the riser ship could handle certain deep-water objectives in non-riser mode. Delaney replied that they could set a different screening depth for the total length of drill string, but that would not really change the number of vessels on the list. Fox asked whether any of the ships identified by the CDC already

had long-term contracts that would preclude their availability at the start of the new program. Malfait said that NSF did not ask the CDC for that information and did not receive it. Larson asked how many of the ships would not fit through the Panama Canal, and Delaney said that about half of them would not. Beiersdorf asked if any of the ships had an ice-class rating. Delaney said that only one did, and in all likelihood, ice operations would require another vessel.

I.3 European Initiatives Report

Beiersdorf said that he had already covered this issue in other reports and summarized by saying that the European ocean-drilling community had begun working hard to supply a third leg to IODP. Ludden added that further discussion would take place on new ways to capitalize European involvement in IODP.

I.4 COMPLEX Report

Nick Pisias announced that the COMPLEX Report had reached the final stages of editing, and he expected to see it finished by the end of this month and published by the middle of March. Beiersdorf led EXCOM and SCICOM in applauding the completion of the COMPLEX report.

I.5 IPSC Report

Ted Moore reported on the status of the industrial-liaison, technical-advice, and science-plan working groups and said that the main effort of IPSC so far had focused on the latter group. The science-planning group began work in September and quickly drafted the Initial Science Plan, structured around three general scientific themes and subdivided into nine specific initiatives. The draft plan went for review by mid November and detailed reviews came back in a month. The review board recommended to 1) include an implementation strategy, 2) increase the emphasis on drilling the seismogenic zone, 3) strengthen the justification for a multi-platform drilling program, 4) shorten the document, and 5) correct errors in grammar, punctuation, and editing. IPSC had since named an *ad hoc* advisory group to devise an implementation strategy. They also had posted a revised science plan on the web for further review. Moore thought that the browser version worked best and asked about the experience of others in downloading the science plan. Larson said that the figures did not come out well in the downloadable version.

Moore presented a schedule for reviewing, revising, and submitting the Initial Science Plan. Purdy commented that the IWG had not yet approved that schedule. Robertson asked about the timing of finishing the remaining items of the science plan, and Detrick stressed the importance of seeing a complete document at some point and not just the partial one available now. Miller asked about the appropriate level of discussion and comment to engage in at this meeting. Beiersdorf supposed that everyone had not yet had a chance to read the plan carefully, but all should have an opportunity to provide input. Moore stated that he would like to receive written comments from the ODP community in the next few weeks. Mountain asked if IPSC expected to produce another version of the science plan. Moore replied that the next version would involve a serious rewrite. Beiersdorf congratulated IPSC for their progress on the science plan and asked about the deadline for providing input. Moore said that EXCOM would see the final draft in June.

Moore outlined the basic principles of the IODP scientific advisory structure. Although the new structure would look similar to the current one, it would also include a few new parts, such as a technical planning group, an industry advisory committee, an education committee, and detailed planning groups for riser legs. Harrison suggested that the science committee would have a greatly expanded workload because they would have to deal with multiple platforms. Moore, however, expected that the workload of the science committee would not increase much because the number of riser sites or alternate platforms used per year would remain low. Wiens wondered how the evaluation of riser sites would fit within the guise of the current advisory structure. Moore acknowledged that it would require a lot of work, and he expected that the detailed planning groups would handle most of it. Wiens then asked if proposals would come from outside or within the

detailed planning groups. Moore said that SCICOM would have to decide that. Pisias noted that one of the biggest challenges would stem from the much longer lead time needed for planning a riser drilling leg and how the panel structure would maintain that longer-term view. Moore suggested that planning for the first riser site could begin in 2003 or 2004 and perhaps for the second site before drilling starts at the first site. Ball said that SSP planned to discuss at its next meeting how their workload would change with respect to riser drilling. Beiersdorf noted that the new advisory structure would not begin taking shape for another two years, and for now IPSC only sought approval of the guiding principles rather than the details. Meanwhile, the current advisory structure had to develop a plan for phasing itself out, keeping in mind the contingency that a future program may or may not come into existence. Moore said that IODP would certainly have a different proportional representation than ODP, and he raised the question of how to review proposals during the transition to the new program before knowing its membership. Morris remarked that some proponents had already started showing concern about the continuity between programs. Moore suggested reminding proponents that NSF had already indicated a certain commitment to a new program. He thought proponents should also receive advice on the likelihood of seeing their proposal scheduled in the next program.

Moore reported that IPSC had discussed five possible management structures, and he diagrammed the two selected for further consideration. Miller noted that one of the management structures showed two project managers and asked if that would include two levels of archiving, publications, etc. Beiersdorf saw it as premature to address such details. Pisias wondered whether two project managers would suffice. Moore said that IPSC also discussed the needs for expanded shore-based labs, an expanded OPCOM, an engineering development office, database management and acquisition, science synthesis and educational outreach, improved science and technology exchange with industry, detailed planning groups for riser sites, and long-term monitoring. Coffin suggested that IODP would need a mechanism to ensure adequate site surveying and preparation, saying that industry typically devoted 10% of total drilling costs to such efforts. Moore cautioned that the site surveying necessary to justify a proposal differed from that necessary to justify safety. Hyndman also cited the high cost of riser drilling and associated site surveying, and said that the unlikely chance of getting approval for one without an advance commitment to the other meant that overall approval would have to come much earlier. Moore agreed and said that it would help to develop better ties with industry in this regard.

Beiersdorf felt satisfied with the outcome of the joint meeting and adjourned the committees at 5:00 PM.

JOIDES SCIENCE COMMITTEE MEETING

THE WASHINGTON MONARCH HOTEL
WASHINGTON, D.C.

16-17 FEBRUARY 2000

Science Committee - SCICOM

Sherman Bloomer	Department of Geosciences, Oregon State University, USA
Millard Coffin	Institute for Geophysics, University of Texas at Austin, USA
Steven D'Hondt	Graduate School of Oceanography, University of Rhode Island, USA
Patricia Fryer	Department of Geology and Geophysics, University of Hawaii, USA
William Hay (Chair)	GEOMAR Research Center, University of Kiel, Germany
Nils Holm	Department of Geology and Geochemistry, Stockholm University, Sweden (ECOD)
Jock Keene	School of Geosciences, University of Sydney, Australia (PacRim)
Emily Klein	Department of Geology, Duke University, USA
Kenneth Miller	Department of Geological Sciences, Rutgers University, USA
Gregory Mountain[a]	Lamont-Doherty Earth Observatory, Columbia University, USA
David Rea	Department of Geological Sciences, University of Michigan, USA
Alastair Robertson	Department of Geology and Geophysics, University of Edinburgh, United Kingdom
Hidekazu Tokuyama[b]	Ocean Research Institute, University of Tokyo, Japan
Douglas Wiens	Department of Earth and Planetary Science, Washington University, USA
James Zachos[c]	Department of Earth Sciences, University of California, Santa Cruz, USA

Associate Member Observers

John Ludden	Centre de Recherches Pétrographiques et Géochimiques, CNRS-Nancy, France
Zhou Zuyi*	Department of Marine Geology & Geophysics, Tongji University, Shanghai, China

[a] Alternate for Gerard Bond
[b] Alternate for Yoshiyuki Tatsumi
[c] Alternate for J. Casey Moore
* Absent

Liaisons

Jack Baldauf	Ocean Drilling Program, Texas A&M University, USA
David Goldberg	Lamont-Doherty Earth Observatory, Columbia University, USA
Neil Lundberg	Department of Geology, Florida State University, USA
Bruce Malfait	National Science Foundation (NSF), USA
Kathryn Moran	Joint Oceanographic Institutions, Inc. (JOI), USA
Julie Morris	Department of Earth and Planetary Science, Washington University, USA

Guests

James Allan	National Science Foundation (NSF), USA
James Austin	Institute for Geophysics, University of Texas at Austin, USA
Mahlon Ball	U.S. Geological Survey, Denver, USA
Keir Becker	Rosenstiel School of Marine & Atmospheric Science, University of Miami, USA
Margaret Delaney	Department of Ocean Sciences, University of California, Santa Cruz, USA
John Diebold	Lamont-Doherty Earth Observatory, Columbia University, USA
John Farrell	Joint Oceanographic Institutions, Inc. (JOI), USA
Jeff Fox	Ocean Drilling Program, Texas A&M University, USA
Roy Hyndmann	Geological Survey of Canada, Sidney, B.C., Canada
Tom Janecek	Antarctic Research Facility, Florida State University, USA
Hajimu Kinoshita	Japan Marine Science and Technology Center (JAMSTEC), Japan
Kazuhiro Kitazawa	Japan Marine Science and Technology Center (JAMSTEC), Japan
Shin'ichi Kuramoto	Science and Technology Agency (STA), Japan
Charles Langmuir	Lamont-Doherty Earth Observatory, Columbia University, USA
Ted Moore	Department of Geological Sciences, University of Michigan, USA
R. John Parkes	Department of Earth Sciences, University of Bristol, United Kingdom

Charles Paull	Monterey Bay Aquarium Research Institute, USA
Nicklas Pisias	College of Oceanic & Atmospheric Sciences, Oregon State University, USA
Warren Prell	Department of Geological Sciences, Brown University, USA
Mary Reagan	Lamont-Doherty Earth Observatory, Columbia University, USA
Masanori Shinano	International Working Group (IWG) Support Office, USA
Thomas Shipley	Institute for Geophysics, University of Texas, USA
Shiri Srivastava	Geological Survey of Canada Atlantic, Bedford Institute of Oceanography, Canada
Kiyushi Suyehiro	Japan Marine Science and Technology Center (JAMSTEC), Japan
Shinichi Takagawa	Japan Marine Science and Technology Center (JAMSTEC), Japan
Takeo Tanaka	Japan Marine Science and Technology Center (JAMSTEC), Japan
James Wright	Department of Geological Sciences, Rutgers University, USA

JOIDES Office

Warner Brückmann	GEOMAR Research Center, University of Kiel, Germany
Bettina Rohr	GEOMAR Research Center, University of Kiel, Germany
Jeffrey Schuffert	GEOMAR Research Center, University of Kiel, Germany

JOIDES SCIENCE COMMITTEE MEETING

THE WASHINGTON MONARCH HOTEL
WASHINGTON, D.C.

16-17 FEBRUARY 2000

SUMMARY OF MOTIONS

SCICOM Motion 00-1-1: SCICOM endorses sailing a secondary education science teacher aboard the *JOIDES Resolution*, assuming minimal impact on leg scientific staffing. SCICOM also endorses the time resources required of ODP/TAMU staff (a total of 12 weeks or 2 weeks/FTE) to complete the Distance Learning Initiative. SCICOM requests ODP/TAMU to prepare a final report on the pilot project that would include recommendations for internationalizing this educational outreach program.

Klein moved, Miller seconded; 14 in favor, 1 absent (Rea).

SCICOM Motion 00-1-2: SCICOM recognizes the importance of distributing proposal comments to the community at large and will endeavor to report all comments, both positive and negative, in its minutes and in letters to proponents. On the advice of PANCH, SCICOM will not attribute its comments to specific individuals other than the proposal watchdogs.

Miller moved, Keene seconded; 14 in favor, 1 absent (Rea).

SCICOM Motion 00-1-3: At SCICOM scheduling meetings, proposal watchdogs should draft letters to proponents and the committee should review those letters before the end of the meeting. Immediately thereafter, the JOIDES Office will send the letters to proponents, with copies to the SSEP chairs.

Klein moved, Bloomer seconded; 14 in favor, 1 abstain (Rea).

SCICOM Motion 00-1-4: SCICOM requests the JOIDES Office to draft and distribute the minutes from SCICOM scheduling meetings as early as possible, at least two weeks before the following proposal deadline.

Klein moved, Miller seconded; 15 in favor.

SCICOM Motion 00-1-5: SCICOM recommends that EXCOM make every effort to ensure that active ODP proposals carry forward to the IODP, with SSEP groupings and SCICOM rankings clearly reported. SCICOM recommends that these documents form a basis for initial programming in the IODP.

Wiens moved, Klein seconded; 15 in favor.

SCICOM Motion 00-1-6: SCICOM adopts the following three changes to the science plan for FY2001 and beyond, as recommended by OPCOM:

1. Leg 190 (Nankai I) will have reprioritized drilling sites as proposed by the co-chiefs.
2. Leg 192 (Ontong Java Plateau) will receive three additional days to correct a miscalculation of transit time. SCICOM recognizes the scientific priorities of drilling basement to at least 150 m and logging basement at as many sites as possible. The co-chiefs may decide the best way to implement this plan and maximize the scientific benefits.
3. Legs 198 (Gas Hydrates) and 199 (Equatorial Pacific Paleogene) will switch places on the schedule to save money on port calls and to move the Gas Hydrates leg into the next fiscal year.

Fryer moved, Miller seconded; 11 in favor, 3 abstain (Coffin, Rea, Tokuyama), 1 absent (Mountain).

SCICOM Motion 00-1-7: SCICOM approves the minutes of the August 1999 meeting.

Bloomer moved, Robertson seconded; 11 in favor, 1 abstain (Rea), 3 absent (Fryer, Miller, Zachos).

JOIDES SCIENCE COMMITTEE MEETING

THE WASHINGTON MONARCH HOTEL
WASHINGTON, D.C.

16-17 FEBRUARY 2000

FINAL MINUTES

WEDNESDAY 16 FEBRUARY AM

SCICOM Subcommittee (Chaired by Mike Coffin)

A. Formulate Comments on IPSC Report

A.1 IODP Initial Science Plan

Mike Coffin explained that EXCOM expected later in the morning to receive comments and recommendations from SCICOM concerning the IPSC report. He suggested discussing first the Initial Science Plan (ISP) and said that, as one of its authors, he would abstain from the discussion. Coffin recalled that the previous Long-range Plan underwent numerous, tortuous reviews. To avoid repeating this procedure, the working group decided to adopt a similar, though slightly modified structure for the ISP, and they included only those scientific initiatives identified in the CONCORD and COMPLEX reports. Coffin noted that previous reviewers of the ISP had identified several areas of weakness, including the sections on the International Ocean Network (ION), mantle tomography, sea-level change, and continental breakup and sedimentary basin formation. Coffin said that although the working group that wrote the ISP included experts in some of these fields, he deemed these criticisms as valid and asked for further comments.

Moore complimented the working group that wrote the ISP. He explained that reviewers criticized the first draft for not clearly emphasizing the seismogenic zone, and the working group responded by highlighting this topic at the forefront and integrating the relevant discussion into the geodynamics section. Mountain did not see the seismogenic zone as an integral part of the ISP, and he asked Moore to define its target audience and explain its underlying structure. Moore replied that the ISP should address the general international scientific community. He said that its outline moves logically from the hottest new science, i.e., the deep biosphere, to climate and then geodynamics, with the seismogenic zone falling naturally at the end of the geodynamics section. Moore added that the need to emphasize the seismogenic zone as the first target of the riser drilling ship presented a challenge in structuring the ISP, and other ideas included moving this topic to the beginning of the geodynamics section or moving the whole geodynamics section.

Wiens approved of emphasizing the seismogenenic zone and suggested that the ISP should include a brief summary that also highlights other exciting new initiatives such as the deep biosphere. Srivastava agreed that the executive summary should highlight other topics of the new program besides the seismogenic zone. Bloomer felt that the seismogenic zone deserved emphasis because it would probably occupy the largest share of resources in the new program. He suggested that the ISP should also highlight one of the new initiatives for the non-riser ship. Keene expressed concern about placing too much emphasis on the seismogenic zone because the program needed to have other platforms and targets of equal importance for the rest of the community. Mountain remarked that drilling the seismogenic zone would mean penetrating through gas hydrates and the deep biosphere. Allan stated that the executive summary should clearly show the importance of the riser and the non-riser ships. Wiens suggested stressing the hazard aspect of the seismogenic zone because the ISP would likely reach an audience that does not possess a thorough knowledge of marine geology. In other words, it should underline that hundreds of millions of people live in

areas threatened by earthquakes. Moore agreed but said that EXCOM had cautioned him against oversimplifying the science.

Bloomer felt that the ISP did not adequately convey the depth of the discussions at COMPLEX on subduction factory processes and the seismogenic zone. Fryer agreed and stated that it seemed inappropriate to integrate the complex array of subduction factory processes with the well-defined experiment for the seismogenic zone. Coffin explained that the first draft of the ISP contained distinct subduction factory and seismogenic zone components, but the subduction factory disappeared in the second draft after a member of the editorial review board rewrote the entire geodynamics section. Coffin invited input for strengthening that section, noting that although it covers two more initiatives than the other thematic sections, it should have a similar length.

Bloomer expressed concern about the lack of emphasis on Arctic drilling, especially considering the attention this topic received at COMPLEX and the ongoing discussion about alternate platforms. Coffin replied that the ISP would not focus on geographic areas; therefore, Arctic drilling appeared in the climate section, though perhaps less prominently than in the COMPLEX report. Ludden noted that although the Arctic qualifies as a geographic area, its control on climate makes it as worthwhile to study as the seismogenic zone, plus it represents the only new feature in the program. Bloomer asked about the possibility of highlighting the Arctic as a special initiative within the climate section. Moore felt that the executive summary could describe the different platforms available for Arctic drilling.

Mountain commented that the new program should also ensure the availability of alternate platforms for working in low latitudes or shallow water. D'Hondt asked about the number and types of alternate platforms needed. Rea answered that IODP should include platforms for ice-covered regions and shallow-water regions, i.e., two alternate platforms. D'Hondt then asked whether the *JOIDES Resolution* could drill in the Arctic Ocean with icebreaker support. Ludden said that insurance problems would probably prohibit that. Moore expressed sensitivity to the issue of shallow-water drilling and hoped to break the circle wherein a platform would not materialize without proposals, and vice versa. He noted that the implementation part of the ISP specified an allocation of efforts and funds for alternate platforms during the first ten years. Ludden stated that the European committees had set an objective to provide a third platform to the new program. Fryer mentioned the PROD system as a possible alternative to a drill ship in shallow areas. Moore saw this as a very complex issue regarding costs and logistics.

Suyehiro stated that Leg 186 underscored the need for ION borehole stations. He believed that the non-riser vessel could provide the best opportunity to expand the system, and he volunteered to contribute information on this topic for the ISP. Wiens suggested highlighting the framework provided by existing borehole seismic networks on land and the value of getting long-term coverage in the ocean. He expressed concern that if ODP does not drill more boreholes for seismic studies in remote parts of the ocean, then seismologists would have to rely on less-effective and less-sensitive seafloor instruments. Allan thought that sea-floor instruments might work well for shorter period observations. Wiens explained that seafloor and borehole instruments give comparable results only for intermediate period signals, whereas for short and extremely long period signals, borehole instruments provide much better results. Allan remarked that fluid flow produces noise in some boreholes and asked about the need for technology development. Suyehiro confirmed the need to minimize fluid flow in the borehole. Wiens recognized the importance of borehole observatories for geochemistry and said that development had already begun on the technology needed for operating such systems. Ludden asked about the accomplishments expected by 2003. Suyehiro noted that the current schedule includes five ION pilot stations, and he hoped that a few more stations would make the schedule by 2003. He added that ION would ideally require about twenty

stations, but this would take patience to achieve. Coffin asked whether the ultimate goals of ION had changed, and Suyehiro answered no.

Fryer stated that many of the scientific objectives of IODP would require monitoring of fluid circulation and geochemical fluxes, yet the ISP barely mentioned hydrologic monitoring. She thought that the relevant sections of the ISP should highlight this critical need and Coffin agreed. Allan said that if long-term observatories represent an important need, then the ISP should say so. Coffin asked whether this included seismometers. Wiens doubted that anyone would submit proposals to ODP for long-term seismic monitoring. He noted that those who work with land-based stations normally go through IRIS. D'Hondt asked whether IRIS plans to cooperate with ODP on sea-floor monitoring stations. Wiens reported that IRIS had strongly supported the ocean seismic network and seafloor monitoring but would probably receive funding for these activities through other sources. D'Hondt wondered whether ODP/IODP would assume responsibility for long-term monitoring given that most post-cruise science receives funding through the national programs. Fryer characterized the transition period as the ideal time to establish mechanisms for developing and deploying monitoring devices in a sensible manner.

Armentrout commented that the future program would differ from the existing one only in that it would integrate the use of multiple platforms. He also stressed that the way we have collected data so far has not allowed us to monitor and understand processes. Rather than rewriting the individual sections of the ISP, Armentrout suggested writing an executive summary that emphasizes the fundamental interrelationship of the primary research topics and the multidisciplinary effort needed to expand the geographic, stratigraphic, and temporal scope of the existing database. Wiens stated that the ISP should emphasize new goals such as riser drilling as much as possible because of the widespread misconception that ODP keeps drilling holes and doing the same thing over and over again. Ludden commented on the importance of integrating with other programs like Margins and IRIS. Coffin said that IODP could cooperate only with other international programs. Mountain asked about ties with the Margins Initiative regarding common issues such as sediment transport, sedimentary budgets, and impacts on the deep biosphere. Wiens said that he serves on the Margins Steering Committee. Coffin reiterated that IODP would have to interact with InterMargins, not Margins. Moore replied that the partnership section of the ISP would address this topic and could certainly emphasize international programs, though he could not see why it should not also refer to national programs.

Coffin summarized the discussion of the ISP saying that several topics needed strengthening, including mantle tomography, sea level, Arctic climate, continental breakup and sedimentary basin formation, and hydrologic monitoring. The seismogenic zone also should receive greater emphasis as a major allocation of resources. Coffin suggested that Wiens and Suyehiro could work on the mantle tomography section, while Miller and Mountain try to improve the sea-level section. He also welcomed input from John Armentrout for the section on continental breakup and sedimentary basin formation. Fryer noted that the ISP did not mention non-accretionary margins and offered to write additional text. Bloomer mentioned the topic of subduction factories. D'Hondt volunteered to help with the deep biosphere and environmental change sections. Coffin encouraged all SCICOM members to review the ISP and send their comments directly to Moore by the end of February. Moore said that he could make small changes himself, but he did not want to change the length of the ISP significantly, and large structural changes would require a consensus of IPSC. Ultimately, he hoped that the ISP would address the scientific interests of the entire ocean drilling community.

A.2 IODP Science Advisory Structure

Coffin shifted the discussion toward the proposed science advisory structure of IODP and noted the absence of a Detailed Planning Group (DPG) for alternative platforms. Moore explained that

SCICOM usually appoints DPGs to work with the proponents of an existing proposal, or a set of proposals such as those submitted by ANTOSTRAT, to finalize the science plan before it reaches SCICOM for ranking. He promised, however, to examine how this mechanism could apply to alternate platforms. Mountain preferred the idea of having a standing advisory group with appropriate expertise because the use of alternate platforms would probably involve a complex array of tools. Klein suggested adding a technical planning group for alternate platforms. Mountain replied that those groups would report only to OPCOM, whereas a PPG would advise on science and work with the proponents. Moore noted that PPGs lack the status of standing committees.

Fryer asked whether OPCOM could provide suggestions on the availability of alternate platforms or appoint DPGs for specific needs. She suggested that a standing committee or technical planning group for alternate platforms could provide appropriate advice to proponents or the SSEPs. Klein also pictured a loop from a small, knowledgeable advisory group back to drilling proponents. Moore disagreed about the need for a dedicated committee and suggested that one of the other technical planning groups, such as the one for industry liaisons, could provide the necessary information and make it available on the web to proponents. Klein suggested having an optional committee. Bloomer suggested SciMP, but all disagreed. Rea and Allan thought that the operator or one of the contractors could do it. Bloomer noted that IODP would have multiple contractors for riser and non-riser drilling. Moore asked what would happen if IODP has two science operators. Mountain suggested having three advisory groups to the SSEPs, i.e., for riser, non-riser, and alternate platforms as needed. In addition, the technical planning groups or the industry group should provide information about the availability of different tools.

Coffin summarized the discussion saying that IPSC needed to consider how alternate platforms would fit into the advisory structure and how proponents could obtain information about the nature and availability of alternate platforms. Wiens asked how the advisory structure would work with large, complex riser proposals that would require an order of magnitude more resources. Suyehiro replied that Roy Hyndman would give an outlook on that scenario the next day in the SEIZE DPG report. Coffin concluded the discussion saying that IPSC should clarify how the new program would handle proposals for riser drilling. Moore added that IPSC had tried to calculate the costs of the first riser site and estimated that site surveys alone would cost at least $9-10 million and perhaps more than twice that much.

A.3 IODP Management Structure

Coffin asked for comments on the IODP management structure. Moore identified the biggest difference in management as the fact that JAMSTEC would play a large role in the new program. He presented two management models, one showing separate project managers for riser and non-riser drilling and the other showing a single project manager overseeing the operations of both primary vessels. Bloomer asked if the first model implied that two different organizations would manage the storage of cores. Moore said no, but added that with two project managers, a real choice would exist for locating other projects such as monitoring devices, data management, and publications. Miller wondered where archiving and publication would fit in the management structure. He believed that these activities required central coordination and that this should constitute a scientific issue and not a management decision. Moore replied that the preferred model allowed for coordinated activities only at the International Program Manager level. Bloomer suggested including the tasks for each entity shown in the models. Moore replied that IPSC had designed the models in the simplest possible way for IWG, not SCICOM, and for now the concerns of IWG focused exclusively on the future program manager and the financial input.

Ludden mentioned the European initiative to contribute to IODP in terms of alternate platforms and asked how this component fit within the management models. Moore believed that the

management models should not include a third major cost center until IPSC sees a firm commitment of sufficient financial support. He added, however, that with enough proposal pressure, this or any other program could include alternate platforms on an "as needed" basis. Coffin asked whether a consensus existed among SCICOM to recommend that the management models should include a separate box for alternate platforms. Srivastava felt that such a model would help the efforts of the European consortium. Bloomer recognized the importance of the European initiative, but said that he would not explicitly include alternate platforms in the management model without a more concrete plan. Coffin suggested recommending to EXCOM that if financial support emerges for alternate platforms, IPSC should consider including a separate box for them in the project management structure. Fryer agreed, but Klein said that it would amount to EXCOM discussing a question mark. Wiens found the discussion premature and suggested forwarding only a comment so that IWG would start thinking about alternate platforms. Moore explained that he had presented only two of the five models considered by IPSC. Coffin stated that although management issues do not primarily concern SCICOM, alternate platforms do, but lacking a consensus, SCICOM could only advise EXCOM that they wanted to receive an update on this matter as it progressed.

B. Appointment of Liaisons to Other Panels

Coffin announced that SCICOM needed to appoint a new liaison to ICDP because Ken Miller would rotate off SCICOM after the August 2000 meeting. As discussed previously, the new liaison should attend the April 2000 ICDP meeting in Mexico. Coffin noted that Rea had volunteered to serve as liaison to ICDP and appointed him in absence to replace Ken Miller. Coffin also appointed D'Hondt as watchdog for the Arctic PPG and Andy Fisher in absence as watchdog for the Hydrogeology PPG. (Ed. note: Fisher's term on SCICOM begins at the first meeting in 2001.)

C. Other Topics

C.1 Distance Learning Initiative

Coffin opened a discussion of the Distance Learning Initiative, as described by Baldauf during the joint meeting, and asked for comments on the two recommendations. Baldauf explained that the project could involve a trade-off between berthing a scientist or an educator. He thus wanted to ensure that TAMU received an endorsement to move forward, specifically concerning Leg 194. Baldauf stressed that the program would take advantage primarily of available funds from the State of Texas, but TAMU also sought endorsement for a small salary component related to ODP employee efforts, totaling twelve weeks of time or two weeks each for six individuals.

Klein favored endorsing the recommendations. Miller saw the initiative as a good use of resources but expressed concern about filling a science berth with a teacher, especially for a leg such as Leg 194 that would require an intensive effort by the shipboard scientific party. He also wanted to define better the shipboard role of the teacher. Fryer suggested as a compromise having the teacher sail as a technician who would assist with core processing, archiving, or photography. Baldauf answered that TAMU definitely wants to involve the teacher in shipboard activities, and they view the technical component as a way to minimize the potential impact on the science. Miller recognized the importance of maintaining maximum flexibility for Leg 194 and TAMU and said that he would approve the recommendation if it included the phrase "assuming minimal impact on leg staffing". Bloomer called for an explicit commitment on the cost-sharing effort because it concerned co-mingled funds. Baldauf agreed that this would require additional consideration for the long-term approach, but for now TAMU wanted only to devote the personnel to install the necessary equipment on board.

D'Hondt favored the initiative but had concerns about asking the foreign partners to fund a secondary education project in the U.S. Klein suggested adding a phrase about the intent of internationalizing it. Baldauf replied that he had seen an opportunity to advance the initiative while

bringing in significant external funds, but he understood the concerns. Coffin invited comments from the international committee members. Ludden approved of the initiative and supported making it an international project in the future. Tokuyama also approved and asked about the possibility of international teachers. Baldauf described the initiative as a pilot project for Leg 194, with some technical hurdles to overcome, but TAMU hopes eventually to establish it as a routine program and expand it to a global system. Klein suggested requesting a written report that would include suggestions on how to internationalize the project. Baldauf replied that TAMU already intended to do deliver such a report. Mountain suggested that TAMU should come back to SCICOM in August with an updated plan.

Tokuyama asked how much time the teachers would spend onboard. Baldauf answered that the teacher would participate for the entire cruise on Leg 194. Mountain preferred this option because otherwise the teacher might end up onboard only for operations such as logging. Wiens noted that two months represents quite a long time and asked whether TAMU could check with other organizations about their experience in this respect. Baldauf said that he would gladly take suggestions for additional contacts. He explained that TAMU planned a significant training program directed toward helping the individuals involved understand the scientific objectives. Prell asked about the time dedicated to training. Baldauf replied that for students it would depend on the individuals and could range up to several days. Coffin asked whether the current proposal funding covered one teacher sailing on one leg. Baldauf replied that TAMU had not yet received the funding. Coffin thanked Baldauf for his efforts and noted that Hay had asked the committee to present a motion with regard to the Distance Learning Initiative to EXCOM. After a brief discussion about the wording of the motion, Coffin asked Klein and Miller to rewrite it accordingly, and a vote followed.

SCICOM Motion 00-1-1: SCICOM endorses sailing a secondary education science teacher aboard the *JOIDES Resolution*, assuming minimal impact on leg scientific staffing. SCICOM also endorses the time resources required of ODP/TAMU staff (a total of 12 weeks or 2 weeks/FTE) to complete the Distance Learning Initiative. SCICOM requests ODP/TAMU to prepare a final report on the pilot project that would include recommendations for internationalizing this educational outreach program.

Klein moved, Miller seconded; 14 in favor, 1 absent (Rea).

C.2 SCICOM minutes and proposal comments

Miller explained that since the JOIDES Office had begun posting the official minutes on the web, SCICOM had not formulated a policy of how to present the discussion of proposals without attributing comments to specific individuals. He believed that up to now the minutes contained rather the positive comments, though he recognized the importance of also conveying the criticisms to the proponents. Miller also said that even in a sanitized version of the minutes, one could often still identify the source of certain comments. Bloomer stated that the community should not necessarily see the full minutes, but we should at least keep them informed about actions, decisions, and a summary of the proposal discussion. Klein replied that SCICOM had to address the separate issues of what to include in the minutes and the content of the letters to proponents. She noted that the proposal watchdogs currently write rather short notes that do not capture the entire discussion.

Bloomer believed that some proponents may have felt frustrated by the lack of information after the previous SCICOM meeting, and he stated that this problem needs fixing. Miller characterized the meeting as extremely busy, but he agreed that SCICOM should distribute the proposal comments as quickly as possible. Lundberg added that letters did go out quickly to the proponents but did not contain enough information, and the proponents then contacted the SSEPs watchdogs, who did not know anything about the SCICOM discussions. Wiens suggested that SCICOM should allot the necessary time for writing their proposal comments during the meeting. Miller admitted that a

number of SCICOM watchdogs had delayed in forwarding their reports to the SSEPs and suggested that the SCICOM chair should ensure that these reports go out immediately after the meeting. Bloomer asked whether it would solve the problem with the minutes if these letters counted as minutes. Lundberg noted that the minutes contained far more information than the letters; therefore, he asked to have the minutes published well before the next proposal deadline so proponents could benefit from the proposal discussion. Mountain doubted that proponents would want to see their rejection letters posted as minutes on the web. Miller replied that the minutes had to remain public. Bloomer thought that the benefits of communicating the SCICOM discussion outweighed the possible side effects.

Coffin felt that by the time a proposal reaches SCICOM, it has already experienced more than one review and should thus represent a good proposal. Lundberg disagreed and said that the SSEPs had to forward to SCICOM all externally reviewed proposals regardless of quality. Miller noted that SCICOM could decide not to include a proposal in the global ranking, but they at least had to discuss it. Coffin still believed that most proposals received harsher reviews externally than in the SCICOM discussions. Klein did not favor a synopsis because the minutes contained many more details. Bloomer asked whether this meant rewriting the minutes as a generic discussion. Morris thought that this brought matters back to the initial suggestion of Miller. Miller wanted the current minutes to mention as an operational request that SCICOM watchdogs should receive the final copies of the letters. A brief discussion ensued about whether the motion should refer just to scheduling meetings or to all meetings. Miller questioned the feasibility of the latter and noted that this motion would set as a first priority to publish the SCICOM minutes in a timely manner.

SCICOM Motion 00-1-2: SCICOM recognizes the importance of distributing proposal comments to the community at large and will endeavor to report all comments, both positive and negative, in its minutes and in letters to proponents. On the advice of PANCH, SCICOM will not attribute its comments to specific individuals other than the proposal watchdogs.

Miller moved, Keene seconded; 14 in favor, 1 absent (Rea).

SCICOM Motion 00-1-3: At SCICOM scheduling meetings, proposal watchdogs should draft letters to proponents and the committee should review those letters before the end of the meeting. Immediately thereafter, the JOIDES Office will send the letters to proponents, with copies to the SSEP chairs.

Klein moved, Bloomer seconded; 14 in favor, 1 abstain (Rea).

SCICOM Motion 00-1-4: SCICOM requests the JOIDES Office to draft and distribute the minutes from SCICOM scheduling meetings as early as possible, at least two weeks before the following proposal deadline.

Klein moved, Miller seconded; 15 in favor.

Morris explained that the issue of communication between SCICOM and the SSEPs arose when the SCICOM liaison to ESSEP could not attend the last meeting. She said that the SSEPs wanted SCICOM to name alternate liaisons, but she did not know whether this required merely an agreement or a motion. Miller explained that SCICOM generally does appoint liaisons and alternates on an established rotation schedule, and he asked whether the agenda included this item. Coffin answered no because the current SSEPs liaisons would not rotate off SCICOM until next year. Lundberg stated that SCICOM had not named alternate liaisons to the SSEPs. Fryer asked whether this constituted an important issue. Morris replied yes because although the single SCICOM liaison tried last time to inform both ESSEP and ISSEP about SCICOM opinions, it would have helped to have a second liaison present. Coffin did not see a need for a motion because an established procedure already existed. Lundberg said that the SSEPs chairs would at least like to know the identity of the alternate liaisons from SCICOM so that they could keep them informed.

Morris mentioned that the panel chairs had discussed during their meeting the importance of the PPGs keeping minutes and subsequently posting them on the web. Coffin suggested postponing discussion of this item to the later session chaired by Hay.

C.3 Fate of ODP Proposals in Transition to IODP

Klein acknowledged an existing concern among proponents regarding the fate of drilling proposals in the transition from ODP to IODP and identified the need for a general statement by SCICOM. A brief discussion ensued about the exact wording of the statement. Coffin proposed to mention EXCOM because they would receive the motion. Allan noted that the IODP planning document would include a section about the transition strategy and partly cover the issues discussed here. D'Hondt consequently questioned the need for a motion, but all disagreed. Morris reiterated the need to send a signal to proponents that SCICOM regards this as an important issue. Mountain suggested a slight change in the wording and rewrote the motion accordingly.

SCICOM Motion 00-1-5: SCICOM recommends that EXCOM make every effort to ensure that active ODP proposals carry forward to the IODP, with SSEP groupings and SCICOM rankings clearly reported. SCICOM recommends that these documents form a basis for initial programming in the IODP.

Wiens moved, Klein seconded; 15 in favor.

C.4 Reviewers for IODP Initial Science Plan

Coffin noted that Moore had asked SCICOM to provide a list of about ten persons who could serve as external reviewers of the Initial Science Plan. Rea read a statement that EXCOM had asked him to write and deliver to SCICOM. The committee then compiled an international list of possible reviewers for the latest version of the IODP Initial Science Plan.

C.5 ODP Greatest Hits, Vol. II

Coffin reported on the proposed ODP Greatest Hits, Volume II and said that Hay had suggested considering only ODP, not DSDP. Bloomer asked about the purpose of such a volume. Coffin replied that the purpose remained the same as for Volume I, which had received criticism only for its lack of an international scope. Ludden suggested that Volume II should have come out two years ago, and he questioned the need for it now. Coffin agreed and added that the Initial Science Plan included a summary of about thirty achievements of DSDP and ODP. Furthermore, the JOI web pages also listed additional ODP achievements apart from those in the Greatest Hits, Volume I. Without a clear understanding of the reasons behind this proposal, Coffin decided to return to it later and adjourned the morning session.

SCICOM/OPCOM Joint Meeting (Chaired by Coffin and Pisias)

A. Update on Planning for Scheduled Legs

Pisias related the discussion from the morning OPCOM session concerning proposed changes in the planning for Legs 190, 192, 198, and 199.

A.1 Leg 190 (Nankai I)

Pisias reported that the proponents have requested to reprioritize the drilling sites after completing a 3-D seismic survey. The new high-priority sites located further upslope would intersect thrust faults that penetrate the seismogenic zone. At the other high-priority site, WNT-O3B, the revised strategy calls for reducing the amount of time by not worrying about the upper section and instead sampling the expanded section off the frontal thrust. Pisias noted that the proposed changes would not affect the overall amount of time required for Leg 190 and would benefit Leg 196 (Nankai II). OPCOM therefore approved the idea.

Morris asked about the strength of the seismic evidence for a connection between the faults and the seismogenic zone. Pisias replied that as a paleoceanographer he had to trust that the 3-D survey characterized the area very well. Ludden noted that SCICOM had criticized the original plan because it lacked a 3-D component in the upper thrust zone. Wiens said that the problem then had been the missing 3-D seismic data for East Nankai, and he noted that a cruise scheduled for this summer would collect that data. Pisias reiterated that OPCOM viewed the proposed change as quite logical from an operational standpoint. He added that the new plan would not affect operations and appeared to meet the scientific objectives considered in ranking the proposal. Ludden asked if the original proposal included the upper sequence thrust sites and expressed concern that SCICOM might approve science that the SSEPs had not reviewed. Pisias asked whether moving the sites would eliminate any of the originally proposed science. Baldauf replied that the goal of studying the dipping discontinuity sequence on the western transect would depend on the availability of time. Miller said that he would approve the proposed changes but felt uncomfortable with the fact that the seismic information and the new plan had not gone forward to the SSEPs or to SCICOM. He noted that SCICOM in the future should refrain from acting without a written justification. Coffin replied that the system should remain flexible enough to respond if new data comes in. Miller noted that the proponents had enough time to provide SCICOM with this information. Baldauf explained that the issue arose at the last PPSP meeting and Hay had discussed it there.

The discussion then turned to the question of whether this issue should go back to the SSEPs. Morris recalled that the new sites and the remaining old ones would satisfy the science objectives. Robertson felt that such changes should normally go to the SSEPs for review because of major new features, though he suspected that they had to accept the changes this time. When asked if he agreed with the interpretations, Shipley answered that he did not doubt the connection to the seismogenic zone. Miller stressed that he had not questioned the science, but only the procedure, and he suggested endorsing the proposed changes. Coffin noted that Hay had approved the changes, so the question remained whether SCICOM wished to change the procedure in the future. After Hay had joined the meeting, Pisias summarized the OPCOM recommendations and Miller explained the concerns of SCICOM about the suggested changes in the Leg 190 site locations.

A.2 Leg 192 (Ontong Java Plateau)

Pisias noted that the proponents had requested more days for operations and to reduce the amount of logging. Furthermore, the transit time had been miscalculated. OPCOM suggested adding three extra days for the transit but did not see the possibility of adding any more time. They recognized as priorities to drill basement as deep as possible, to log the basement, and to do this at as many

sites as possible. OPCOM recommended letting the co-chiefs decide how to implement the leg science.

D'Hondt expressed concern about saving time during Leg 192 by washing away sediments because he would like to see the environmental effects of Ontong Java volcanism studied. Pisias and Robertson replied that OPCOM saw this as the most reasonable compromise given the main goal of studying the evolution of the basement by means of maximum basement penetration. Under the time limit, they had to look at the leg priorities.

A.3 Legs 198 (Gas Hydrates) and 199 (Equatorial Pacific Paleogene)

Pisias described the switching of Legs 198 and 199 as a purely budgetary issue designed to avoid having three cost-intensive legs in FY2001. Also, a change in the port call from Dutch Harbor to Honolulu would save about $150,000. The switch would give the Gas Hydrates leg a couple more days and the option of one extra reentry site, as well as address the budget problem. OPCOM had raised concerns about the weather window for Gas Hydrates but felt reinforced by the successful operations of Leg 146 in the same area and same weather window. Furthermore, the Gas Hydrates leg includes a logging-while-drilling component that would depend less on weather and could occur near the end of the leg. Given the alternatives, OPCOM viewed the switch as a reasonable solution.

Wiens asked about the alternatives, but Pisias answered that no good alternatives exist without additional money. Rea asked about the number of additional days for the Gas Hydrates leg. Pisias replied that it would add two days, and the Equatorial Pacific Paleogene leg would not lose any operational days. SCICOM members also expressed concern about the possibility of bad weather conditions.

SCICOM Motion 00-1-6: SCICOM adopts the following three changes to the science plan for FY2001 and beyond, as recommended by OPCOM:

1. Leg 190 (Nankai I) will have reprioritized drilling sites as proposed by the co-chiefs.
2. Leg 192 (Ontong Java Plateau) will receive three additional days to correct a miscalculation of transit time. SCICOM recognizes the scientific priorities of drilling basement to at least 150 m and logging basement at as many sites as possible. The co-chiefs may decide the best way to implement this plan and maximize the scientific benefits.
3. Legs 198 (Gas Hydrates) and 199 (Equatorial Pacific Paleogene) will switch places on the schedule to save money on port calls and to move the Gas Hydrates leg into the next fiscal year.

Fryer moved, Miller seconded; 11 in favor, 3 abstain (Coffin, Rea, Tokuyama), 1 absent (Mountain).

B. Other Matters

B.1 SciMP Report

Pisias summarized the report that OPCOM had received from the last SciMP meeting. He noted that SciMP Recommendations 00-1-1 and 00-1-2 pertained to the issue of morale aboard the *JOIDES Resolution*. SCICOM endorsed the first two SciMP recommendations and deferred further discussion of the rest until the full committee met the next day.

B.2 ODP Greatest Hits Volume II (continued from morning session)

Coffin summarized the morning discussion and concluded that a consensus did not exist in favor of pursuing a second volume. A short discussion followed. Ludden still saw it as too late for such a publication. Rea recognized the value of keeping track of ODP publications in major journals. Robertson said it was an omission that they had not been effective with general publicity during the past few years. Moran expressed surprise that SCICOM did not want to pursue this. She said that USSAC had sponsored an intern at JOI to search for ODP science in major journals, and the ODP managers thought that this successful effort should continue. Ludden replied that the IODP planning document already identified many past highlights, and he did not see how such a volume

would help from the international perspective. Fryer agreed with Moran and asked whether anyone else had undertaken similar efforts to form a collection of ODP publications. Srivastava mentioned a meeting in Canada in May to highlight ODP achievements over the last 30 years. Ludden inquired about the JOI list of publications. Moran described it as an Endnote file so far, but added that she could most likely present it at the next SCICOM meeting. Coffin concluded that although SCICOM did not endorse a glossy brochure, they certainly endorsed everything else done in this regard and therefore encouraged Moran to continue linking the achievements of ODP with the Long-range Plan. Coffin added that if national organizations like USSAC strongly support the publication of a glossy brochure, then SCICOM should reconsider this issue at the next meeting. Dauphin said that USSAC had already started looking into this because it would help the planning of IODP to have a document compiling ODP achievements.

B.3 Reviewers for IODP Initial Science Plan

Coffin distributed a list of names for the Initial Science Plan external review board, as compiled during the morning session. He instructed SCICOM members to select their top candidates from the list and suggested making the final decision on the eleven review board members the next day.

Meeting adjourned at 2:50 PM.

WEDNESDAY 16 FEBRUARY PM

EXCOM/SCICOM/OPCOM/PANCH Joint Science Symposium (Chaired by Hay)

Speaker	*Presentation*
Miller	Global sea-level change: and ODP perspective.
D'Hondt	The influence of biogeochemical cycles on oceans and climate over geological time.
Holm	Formation of organic matter by the reaction between water and rock.
Robertson	Overview of recent tectonics-related drilling results.
Coffin	Notes from deep underground: ODP and mantle dynamics.

Symposium adjourned at 5:00 PM

SCICOM/OPCOM Joint Meeting (Chaired by Hay)

A. Approval of August 1999 SCICOM Minutes and Matters Arising

Hay called the meeting to order and asked for approval of the minutes from the previous meeting. No other comments or matters arose.

SCICOM Motion 00-1-7: SCICOM approves the minutes of the August 1999 meeting.

Bloomer moved, Robertson seconded; 11 in favor, 1 abstain (Rea), 3 absent (Fryer, Miller, Zachos).

B. Leg Reports

Warren Prell reported on Leg 184 to study the Southeast Asian monsoon history in the South China Sea. One highlight included the recovery of high-resolution drift sediments. Results from these and other samples will provide a continuous environmental history of the SCS from 32 Ma, define the meridional gradients for the last 8 My, and place constraints on the Plio-Pleistocene deep-water ventilation.

John Ludden reported on Leg 185 to study element fluxes and mass balances at the Mariana-Izu convergent margin. They drilled two sites in 160 My old oceanic crust and conducted the first tests of downhole contamination for microbiology. The biology and geochemistry groups worked well together. Pisias asked about an operational issue related to site order. Mountain asked about the reasons for overestimating the sediment thickness by 50% at one site.

Kiyushi Suyehiro reported on Leg 186 to install geophysical observatories along the northern part of the Japan Trench. Installation of the borehole sensors proved technically challenging, but ultimately successful. Another objective involved looking at volcanic records in the upper part of the section. A general discussion followed on the future of borehole observatories.

C. Panel Reports

C.1 TEDCOM Report

Hay presented the TEDCOM recommendations and suggested endorsing them by consensus. Baldauf remarked that TAMU had already acted on some of them.

TEDCOM Recommendation 99-2-1: TEDCOM reaffirms its earlier recommendation that MATLAB simulation studies be carried out as a matter of urgency on the data obtained from drillstring deployments using the passive and active heave compensation systems, downhole measurements of string dynamics, and rig-floor instrumentation.

Hay explained the rationale for learning as much as possible about heave compensation on the *JOIDES Resolution* before going to another vessel in the next program and starting over with a new system. Baldauf noted that TEDCOM has pursued this objective for some time and TAMU hoped to finalize it in the next six months.

TEDCOM Recommendation 99-2-2: TEDCOM requests that, if necessary, a commissioning engineer for the active heave compensation system sail with the vessel on a science leg in order that this development is fully working and available in the shortest possible time.

Baldauf said that a technician would sail on the first ten days of Leg 189 to train the crew and fine-tune the system and would return for Leg 190 to train the other crew.

TEDCOM Recommendation 99-2-3: TEDCOM strongly recommends continuation of funding for development engineering until the completion of the present Ocean Drilling Program.

Hay noted that a question had arisen as to whether to stop development of the ongoing engineering projects that will not see use in ODP. He said that some of those projects could play an important role in the next program, and TEDCOM would regard it as a waste of resources not to complete half-finished projects and then have to start all over again in the future. Hay suggested that perhaps the ODP phase-out plans could include additional funding for completing the most important engineering development projects. Pisias wondered whether TEDCOM and the ODP engineers could specify how to bring those projects to a satisfactory level of completion for handing them off to the next program. Baldauf said that TAMU plans to evaluate the status of the ongoing projects before the next SCICOM meeting. Hay called for a consensus to forward the TEDCOM recommendations and no one objected.

C.2 SciMP Report

Nick Pisias presented the SciMP recommendations forwarded from OPCOM. Hay said that if he did not hear any serious objections to a given recommendation, he would assume that SCICOM approved it by consensus.

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 1 January 2002.

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.

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.

Klein asked for a description of AppleCore. Pisias identified it as a graphical tool for describing core sections and said that it works well for soft sediment but poorly for hard rocks. Ludden confirmed that AppleCore frustrated the hard-rock petrologists who tested it on Leg 185.

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 (SCICOM-approved). Appropriate resources should be focused on integrating the GEOTEK line-scan camera into the ODP infrastructure, including deployment of required resources, data storage and archive procedures, JANUS data model, and a 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 aboard 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.

Miller asked whether the magnetic susceptibility meter and natural gamma ray sensor would remain on-line with removal of the multi-sensor track. Janecek clarified that the whole-core multi-sensor

track and all of its sensors would remain onboard. SciMP recommended removing the archive- or split-core multi-sensor track that includes the Minolta spectrophotometer, now redundant with the line-scan camera; the point-source magnetic susceptibility unit, which has seen little or no use; and the frame camera, which does not work properly.

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 the 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.

Pisias said that SciMP recognized a tremendous benefit in reorganizing the lab stack and putting the microbiology and chemistry labs on the same floor. He described the XRF as redundant now that the chemistry lab has a new ICP-ES. He also noted that SciMP intends to discuss further the overall merits and necessity of the shipboard XRD before recommending whether to purchase a new one. Parkes emphasized the benefits of putting the microbiology facilities next to the chemistry lab. Ludden asked what would happen to the old XRF. Baldauf said that it might come off the ship as soon as the next port call in Hobart and would return to TAMU for use in the shore-based lab. Klein asked if SciMP discussed keeping the XRF onboard as a backup to the ICP. Janecek replied that any instrument could malfunction and we cannot keep backups onboard for all of them. Pisias said that TAMU has to remove the XRF to implement this plan.

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 evaluation of U/G operations. Any repairs or other expenses should be deferred pending the U/G report.

Pisias noted that the shipboard geophysics systems have aged and deteriorated and SciMP believes that they no longer provide high-quality data. He wondered how many legs really need that equipment on the ship. Janecek added that SciMP saw it as part of a larger issue of overall use of shipboard resources and training of the technical staff. SciMP wants to evaluate the need for geophysics on the upcoming legs and decide whether it makes more sense to outsource this service or have TAMU devote resources to maintain the equipment. Coffin stated that you could not always predict the need for the geophysics equipment and emphasized that at least three of the last six legs had used it. Miller said that he would not want to compromise the success of a whole leg because the ship did not have an underway geophysics capability. He argued that SCICOM should direct SciMP to ensure that we maintain an operational seismic survey system onboard the *JOIDES Resolution* for the remainder of the program. Robertson agreed, saying that it could prove disastrous for a leg to have seismic capability only if deemed necessary in advance. Prell doubted whether SCICOM would have even scheduled Leg 184 without shipboard geophysics because of the necessity to obtain seismic crossing lines during that leg.

Bloomer imagined that some sites might have sufficient 3-D seismic data for selecting several good alternate sites in advance, and he saw it as reasonable to ask whether we could conduct shipboard geophysics in a more efficient and economic way. Pisias stressed that SciMP had not recommended removing the geophysics equipment, but only determining whether we could provide this service as needed without an expensive upgrade of equipment. Coffin said that the proponents of Leg 183 thought they had the best possible seismic data in advance, but they still needed to use the shipboard geophysics systems to select alternate sites. Wiens predicted that if ODP contracts for this service on a leg-by-leg basis, then budget discussions would inevitably arise about saving money, and a particular leg might not have the capability for underway geophysics when they need it.

Moran stated that the *JOIDES Resolution*, although not a seismic vessel, must maintain some level of seismic capability to ensure that every leg has the utmost chance of success. She noted that the seismic equipment works now, though perhaps not perfectly, and she expects to receive the advice from SciMP to decide if it needs upgrading or not. Moran characterized the SciMP recommendation as appropriate given their responsibility to evaluate the shipboard equipment and ensure that it meets the program needs. Austin saw the issue as not just about equipment but also about having the trained staff needed to use the equipment. Pisias repeated that SciMP recommended investigating the staffing needs. Allan asked if the concerns centered on improving the system or maintaining it. Pisias described it as a matter of maintaining an aging system. Baldauf added that TAMU just wants to assess the current situation and develop a suitable plan. Austin suggested assessing the role that underway geophysics has played over time in the existing program. Janecek said that later SciMP recommendations would address that issue.

Mountain wondered whether SCICOM could add to the SciMP recommendation to convey the points raised here about the importance of keeping the capability for both equipment and staff. Hay said that the minutes would convey that concern. Coffin asked how long the GI gun purchase had been deferred. Moran said that it had been deferred for a long time, perhaps eight years. Pisias said that the issue of providing this service through a contractor and making budget decisions implies setting priorities and identifying where you want to take risks. Moran noted that the co-chief reviews had not mentioned anything about inadequate provisions for geophysics; therefore, she viewed the SciMP recommendation as an appropriate way to proceed. Pisias summarized the discussion by suggesting that SCICOM agree to proceed with the recommendations on underway geophysics, but with the recognition of a strong desire to maintain this capability on a continuous basis. Mountain still wanted to add to the recommendation that TAMU should do everything possible to maintain the proper personnel. Janecek said that the SciMP minutes include a discussion of the personnel issue. Pisias confirmed that SciMP recognizes that you cannot separate the personnel and equipment issues, and he added that personnel always cost more in the long term than equipment.

SciMP Recommendation 00-1-9: SciMP recommends that:

1) Shipboard facilities for seismic/log/core integration include a separate workstation dedicated to this effort.
2) The IESX software be able to plot directly to large-scale (36") plotters and printers and that this capability be implemented by the June 2000 SciMP meeting.
3) ODP-LDEO and ODP-TAMU provide a plan for integrating the Unix network on the ship.

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 (SCICOM-approved).

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.

Goldberg briefly described an ongoing pilot project at LDEO to develop shipboard software for integrating seismic, logging, and core data. The new system should prove useful, for example, in relocating drill sites during a leg using pre-cruise seismic data. Diebold asked about the possibility of having a mirror site at TAMU to allow for independent evaluation. Goldberg saw that as a data issue rather than a software issue. Mountain asked who would prepare and upload the project files to the ship. Goldberg expected that a shipboard scientist could bring the necessary project files to the ship and do the work.

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 and navigation data and 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.

Pisias explained that SciMP wants to develop new data submission guidelines that address the issues of handling proprietary data and requiring proponents to submit digital seismic data. He identified the current lack of digital seismic data and the lack of a requirement to submit such data as a major problem in expanding the LDEO pilot project. Diebold confirmed that no requirement exists for submitting digital data, although the site-survey databank has the capability to receive and display it. D'Hondt expressed concern about requiring digital data before considering a proposal for scheduling. He imagined that certain new legs might not need new seismic data if sufficient data already existed from a previous leg in the same area, and he wondered whether all old seismic data met the current standards.

Shipley recalled that OPCOM agreed to table this recommendation and not present it to SCICOM before seeing the results of the LDEO pilot project. Pisias acknowledged the premature status of the recommendation, but said that it would ultimately come back to SCICOM once SciMP had settled the details of how to submit data. Moran suggested viewing the need for data integration as another approach for a leg rather than as an essential requirement. Pisias believed that if data integration comprises an integral part of a leg, we would eventually have to require the proponents to submit digital data. Mountain asked about the need for specialists to maintain this type of data at the databank. Pisias saw that as a major issue, and Goldberg said that LDEO wants to evaluate that

as part of the pilot project. Coffin noted that the new requirements would only apply to the last few legs of drilling, but he saw this as an important exercise in preparing for IODP. Hay asked for the final OPCOM opinion. Pisias said that OPCOM just wanted to inform SCICOM for now. He expected that SciMP would forward a revised recommendation to OPCOM once they review the results of the pilot study.

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.

Pisias explained that the need for determining core temperatures applies principally toward designing a strategy for rapidly detecting and sampling gas hydrates on the catwalk. Possible methods range from simple temperature sensitive tape placed along the outside of the core liner to a sophisticated infrared video system that would provide a whole-core image.

C.3 SSP Report

John Diebold noted the difficulty of mandating the need for digital seismic data because many good analog data already exist. He said that the databank sometimes receives adequate data, but they always like to receive better data. Diebold believed that it would cost too much to have contractor for shipboard geophysics. Diebold reported on upcoming rotations of SSP panel members and noted that SSP faces a greatly increased workload with so many legs now scheduled and so many proposals in the system. Morris asked whether the SSEPs could do anything that would help SSP. Diebold said that it would help if the SSEPs could amplify the concerns of SSP to proponents.

C.4 PPSP Report

Jack Baldauf reported briefly on the PPSP meeting in December 1999. He said that advance preparation had begun for selecting alternate sites for Leg 194 because of a possible problem getting clearance in Great Barrier Reef National Park. PPSP also previewed the Hydrate Ridge program.

C.5 SSEPs Report

Neil Lundberg and Julie Morris summarized the events of the SSEPs meeting in November 1999. Lundberg noted foremost that the submission of new pre-proposals in October 1999 indicates that proponents continue to look ahead to the new program. He reported that the SSEPs have formed joint working groups to review cross-disciplinary proposals in gas hydrates, microbiology, the seismogenic zone, and climate-tectonics links, and they would probably form another working group for oceanic lithosphere proposals. Morris stressed the importance of maintaining continuity for proposals through the transition to the new program. She believes that some proponents have started feeling anxious because they fear that politics might begin to play a more important role in the fate of their proposals as the current program approaches its end. Morris thanked the former SSEP chairs, John Tarduno and Ted Moore, for establishing smooth operating procedures, but expressed regret that about half of the SSEP members had rotated off the panels between the fall and spring meetings. Lundberg suggested that in the future the SSEP chairs should not rotate at the same time. (Ed. note: Lundberg and Morris began their terms as SSEP chairs after the May and November 1999 meetings, respectively.)

Lundberg noted that the SSEPs devoted time at their last meeting toward reviewing the special issue of combining the proposals for Marion Plateau and Shatsky Rise into one drilling leg. The SSEPs also heard reports from the Shallow-water Systems and Gas Hydrates PPGs and named liaisons to the new PPGs for Hydrogeology and the Arctic's Role in Global Change. Julie Morris said that the revised Terms of Reference for PPG liaisons should help to improve communications, and it would

help further if all of the PPGs posted their minutes on the web and passed them along to the SSEP chairs. Paull suggested that the PPGs might have posted more material on the web if a formalized process existed for submitting such material.

Mountain asked if the SSEP members saw the proposals before they arrived at the meeting. Morris said yes, the SSEP chairs receive the proposals from the JOIDES Office and distribute them to the panel members two to three weeks before the meeting. Mountain asked how many proposals each SSEP member had to handle, and Morris answered typically five to eight. Lundberg added that he would not mind if they could distribute at least some proposals electronically. Miller suggested distributing all proposals electronically to panel members and having, say, six complete sets of hardcopies available at the meeting for all to share. Lundberg said that proponents must now submit text electronically, but figures pose more difficulty. Austin suggested distributing figures on a CD-ROM. Hay commented that AGU encourages electronic submission of abstracts by extending the deadline a few days past that for paper submissions.

Morris noted that the SSEPs will hold their next meeting in Cambridge, England, with observers from the U.K. ODP community, an observer from the International Continental Drilling Program (ICDP), the two new PPG chairs, and perhaps extra non-voting U.S. members in attendance. The SSEPs also plan to hold a town meeting with the U.K. ODP community. Robertson mentioned the need to focus on science presentations for the town meeting and not organizational structures. Coffin asked whether any extra international members would attend the next SSEP meeting. Lundberg replied that it might happen.

D. Seismogenic Zone DPG Final Report

Roy Hyndman delivered the final report of the Seismogenic Zone (SEIZE) DPG, first listing the membership, mandate, and meeting history of the group. He described the scientific objectives defined by SEIZE and some of the criteria identified for selecting drill sites. Hyndman characterized the seismogenic zone as a topic of particularly acute concern in Japan and said that its study requires the OD21 capability for deep drilling, extensive downhole measurements and experiments, and long-term monitoring. Hyndman also suggested that seismogenic zone drilling would require a very different advisory and management structure than ODP, perhaps with a small oversight committee and larger subcommittees for various aspects of each project. Coffin thought that IPSC should receive the SEIZE DPG report and Hay agreed.

Fox asked whether one deep drill hole, rather than a family of holes, would adequately solve the problem. Hyndman said that multiple holes would certainly provide more answers than a single isolated hole. Fryer asked what it would require to drill multiple sites. Hyndman said that a complete picture requires a transect through a well-surveyed and well-studied region with simple earthquake, tectonic, structural, and thermal regimes. Other site requirements would include 1) a shallow trench and subduction angle, 2) accessibility by riser and non-riser drilling, 3) a recent great earthquake that ruptured within study area, 4) good seismic images of the subduction thrust, and 5) a well-defined seismogenic zone on the thrust. D'Hondt asked what temperatures they expected to encounter. Hyndman said that temperatures would reach 100-150˚C. Wiens asked about the timeframe for extending the depth capability of riser drilling. Dauphin said that industry had already drilled more than 8000' deep and expected to go deeper. Wiens then asked if the depth limit reflects an engineering problem. Pisias answered yes, until you reach the fracture pressure of the mud column. Robertson asked whether the SEIZE DPG considered existing proposals. Hyndman replied that all existing proposals concern non-riser drilling through only the aseismic zone, and he cautioned that the new ship could still only reach the shallow subduction zone because of its initial 2500 m riser limit. Wiens mentioned the uncertainty of how far the seismogenic zone extends toward the trench. Hyndman replied that it extends to somewhere between 0-100 km of the trench. Suyehiro hoped that data acquired from ongoing surveys would answer that question. Tokuyama

asked why the décollement dips at different angles on East and West Nankai. Hyndman confirmed that a difference exists but did not know why.

E. PPG Final Reports:

E.1 Architecture of the Oceanic Lithosphere

Charlie Langmuir stated that the AOL PPG made substantial progress in focusing on existing drilling proposals, but their mandate perhaps did not allow enough time to accomplish all goals for developing a drilling program. He diagrammed the processes of ridge magmatism and crust formation, explained the concepts of focused and distributed mantle upwelling and melt migration, and compared the processes and products at slow and fast spreading ridges. The PPG believes that existing technology can address many inherently important problems such as fluid circulation in ridge systems.

D'Hondt asked if all of the interesting objectives involve ridge crests. Langmuir said that other objectives involve troughs and transform faults and obtaining a complete section of crust away from the ridge. Bloomer asked if the PPG struggled with a strategy or order, say mantle before lower crust. Langmuir said that some of the PPG members wanted to set priorities, but others wanted to work at strengthening existing proposals. Bloomer said that the SSEPs and SCICOM would welcome guidelines from the PPG on how to make good decisions in judging these proposals. Morris added that the PPG did a good job of developing proposals, but she agreed that it would help to have criteria for judging them. Langmuir mentioned one problem of not having site surveys and magnetic surveys conducted in exactly the same place. Morris said that it definitely would help other advisory groups if the PPG could identify such issues.

Ludden saw it as a weak point in the IODP Initial Science Plan to propose drilling a complete section of oceanic crust in 2500 m of water when such a site might not exist. He would advise waiting for the deeper capabilities of the riser ship. Langmuir conceded that perhaps the PPG had not addressed that issue sufficiently. Fryer asked if the PPG had an opinion about using offset drilling rather than trying to obtain a whole section in one hole. Langmuir saw offset drilling as a good alternative strategy, but not a sufficient substitute for obtaining an intact section from a single hole. Robertson mentioned the relationship between ophiolites and normal oceanic crust, but Langmuir said that the PPG did not consider marginal basins. Allan asked if the PPG discussed the diamond core barrel and how it would help drilling at some of these sites. Langmuir said no. Janecek asked if they identified any other shipboard needs not available now. Langmuir said that he would mention that idea to the PPG and try to have it addressed in the final report.

E.2 Climate and Tectonics

Jim Wright reviewed the mandate of the Climate-Tectonics Links PPG and said that they divided into two subgroups for gateways and continental tectonics, with only the chair participating in both subgroups. As general topics of future research, the PPG recommended studying 1) the effects of orographic changes on climate, either directly or indirectly via CO_2, 2) the role of ocean gateways in redistributing heat, and 3) the role of oceanic ridges and plateaus in modifying atmospheric CO_2. They also recommended specific regions and topics of study, distinguishing their goals between the current and future drilling programs. Wright said that the PPG expressed concern that certain priorities would require more than a single drilling leg. They also identified the need for enhanced interactions between scientists studying the marine and terrestrial realms, improved recovery of sedimentary fan deposits, and improved estimates of past atmospheric CO_2 variability.

Klein asked what types of indicators those who favor Arctic drilling want to study. Wright said that they wanted to look for changes in sedimentation, but he did not know how they would date such changes. Janecek asked if the PPG anticipated any requirements for downhole measurement capabilities. Wright said that they did not consider that issue. Robertson thought that the PPG had not clearly recommended exactly how and where to proceed.

E.3 Gas Hydrates

Charlie Paull outlined the approach taken by the Gas Hydrates PPG. He said that they endorsed an end-member strategy for developing and selecting proposals for drilling, and they regard the Hydrate Ridge leg already scheduled by SCICOM as a cornerstone for future efforts. Issues not addressed by that leg include a) slope failure and its effects on climate, b) natural climate related perturbations in gas hydrate distributions, c) drilling in an active hydrocarbon provenance, and d) gas hydrate distribution away from BSRs. The PPG also reviewed the status of existing technology for detecting and sampling gas hydrates and found it inadequate. They identified a need for allocating funds to build and use the necessary hardware, noting that it takes dedicated space and engineers to run PCS tools. The PPG views HYACE as a complement to PCS, not a competitor of it, and they see CORK experiments as appropriate for gas hydrate research.

Fryer recognized the importance of preserving samples, but she expressed surprise at the lack of a recommendation for borehole monitoring, given the sensitive nature of gas hydrate stability. Paull said that proper borehole experiments would require a lot of thought because of the difficulty in obtaining robust data. Becker explained that CORKs work well for characterizing *in situ* conditions and properties away from BSRs, but not for capturing transient phenomena. Paull added that the drillship might not provide the best means for looking at seafloor occurrences of gas hydrates. Parkes wondered if the Hydrate Ridge proposal had covered microbial processes well enough. Paull noted that geomicrobiology exists in the absence of gas hydrates, but not vice versa. D'Hondt suggested that microbiologists should submit an ancillary program letter for the Hydrate Ridge leg. Tokuyama mentioned that the Japan National Oil Corporation succeeded in recovering gas hydrates at eastern Nankai.

E.4 Deep Biosphere

John Parkes reviewed the goals, mandate, and meeting history of the Deep Biosphere PPG and summarized recent research on bacterial processes in marine sediments. He also presented new data on bacterial counts from Leg 185 and hailed the success of the contamination tests. D'Hondt noted that the shipboard microbiology work on Leg 185 focused primarily on the contamination tests, with much other work planned by shorebased investigators. Hyndman wondered if any sites exist with an established upward fluid flux that bacteria could utilize. Parkes said yes, and such a flux can cause an increase in bacterial populations at depth. He then showed evidence from a previous ODP leg for the presence of bacterial populations at temperatures of 175-200˚C in a mixing zone between different subsurface flow regimes. Parkes said that ODP does not necessarily need to target a specific leg for deep biosphere studies but rather get equipment in place for routine use. He argued for staged implementation of shipboard analytical techniques and added that routine does not mean that anyone can do it.

Klein asked Parkes about special techniques from his laboratory that would work well on the ship. Parkes commented on the value of patience and training at using small samples and extensive field-of-view assaying experience. Diebold asked what nonbiological measurements would prove most helpful to microbiology studies. Parkes said that microbiologists would like to know where to sample based on geochemistry and fluid flow, but they do not really need any new types of measurements at the moment. Allan asked if the PPG report addresses shipboard use of radioisotopes. Parkes noted that the PPG has not yet produced its final report, but they do expect eventually to use radioisotopes in a separately contained facility onboard the *JOIDES Resolution*. Tokuyama asked about the proportion of total sedimentary organic carbon contained in bacteria. Parkes explained that bacteria account for only a small amount of carbon because of their small size and high water content.

Srivastava asked about plans to publicize further involvement of microbiology in ODP. Parkes replied that progress had occurred on several fronts and he felt certain that the available

opportunities would generate considerable interest. Moran downplayed concerns about getting microbiologists interested in ODP because of the competition already witnessed for shipboard participants. Parkes said that the PPG expects to see a microbiological component in many drilling proposals as well as scheduled legs, and they believe that ODP therefore needs continued input from microbiologists. Hay appointed a small subcommittee consisting of Holm, D'Hondt, Bloomer, and Lundberg (SSEP liaison) to work with Parkes in establishing a group for providing continuing advice on microbiology.

F. OPCOM Report
See item C.2, SciMP report.

G. SCICOM Subcommittee Report
No issues came forward for further discussion.

H. Time and Place of Next Meetings
Shiri Srivastava of the Canadian ODP Secretariat will host the next SCICOM meeting on 1-4 August 2000 in Halifax, Nova Scotia. Wang Pinxian will host the winter 2001 meeting in Shanghai, China, and Steve D'Hondt offered to host the summer 2001 meeting in Puerto Rico.

I. Other Matters
Hay presented the following draft motion from EXCOM regarding conflicted SCICOM members and the voting and ranking procedure.

EXCOM Motion 00-1-7
EXCOM advises the JOIDES office to ensure that a non-conflicted alternate member replaces, for the relevant business, any SCICOM member with a conflict of interest on a drilling proposal considered by SCICOM.

SCICOM members asked about various details. Rea mentioned a concern about distribution of expertise among the alternates. Wiens asked if this applied to proposals excluded from ranking because their study areas lie far removed from the likely ship track. Morris suggested forwarding the SSEPs grouping of proposals by theme to the national committees for consideration in choosing alternates.

Meeting adjourned at 6:00 PM.