

# IODP Science Planning Committee

7<sup>th</sup> Meeting, 6-9 March 2006

Hilton St. Petersburg BayFront  
St. Petersburg, Florida, U.S.A.

## *Science Planning Committee - SPC*

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Keir Becker (chair)	Rosenstiel School of Marine & Atmospheric Science, University of Miami, USA
Barbara Bekins	U.S. Geological Survey, USA
Hans Brumsack	Institute for Marine Chemistry and Biology (ICBM), University of Oldenburg, Germany
Tim Byrne	Department of Geology and Geophysics, University of Connecticut, USA
Bob Duncan	College of Oceanic & Atmospheric Sciences, Oregon State University, USA
Gabriel Filippelli <sup>a</sup>	Department of Geology, Indiana University–Purdue University Indianapolis, USA
Patricia Fryer	Hawaii Institute of Geophysics, University of Hawaii, USA
Benoît Ildefonse	Laboratory of Tectonophysics, ISTEEM, University of Montpellier II, France
Jun-ichiro Ishibashi <sup>b</sup>	Department of Earth and Planetary Sciences, Kyushu University, Japan
Hodaka Kawahata	Geological Survey of Japan, Japan
Hiroshi Kitazato	Institute for Research on Earth Evolution (IFREE), JAMSTEC, Japan
Chris MacLeod	Department of Earth Sciences, Cardiff University, United Kingdom
Katsumi Marumo*	Geological Survey of Japan, Japan
Harue Masuda	Department of Geosciences, Osaka City University, Japan
James Mori (vice-chair)	Disaster Prevention Research Institute, Kyoto University, Japan
Greg Mountain	Department of Geological Sciences, Rutgers University, USA
Ritsuo Nomura	Faculty of Education, Shimane University, Japan
Julian Pearce <sup>c</sup>	Department of Earth Sciences, Cardiff University, United Kingdom
Rolf Pedersen	Department of Earth Science, University of Bergen, Norway
Terry Quinn	College of Marine Science, University of South Florida, USA
Hiroyuki Yamamoto	Department of Marine Ecosystem Research, JAMSTEC, Japan
Zuyi Zhou	Department of Marine Geology and Geophysics, Tongji University, China

<sup>a</sup>Alternate for Patricia Fryer during proposal review and ranking exercise.

<sup>b</sup>Alternate for Katsumi Marumo.

<sup>c</sup>Alternate for Chris MacLeod during proposal review and ranking exercise.

\*Unable to attend.

## *Liaisons, Guests, and Observers*

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Jamie Allan	National Science Foundation (NSF), USA
Jack Baldauf	JOI Alliance, Texas A&M University, USA
James Channell (Exp. 303/306)	Department of Geological Sciences, University of Florida, USA
David Divins	JOI Alliance, Joint Oceanographic Institutions, Inc. (JOI), USA
Nobuhisa Eguchi	IODP Management International, Inc., Sapporo Office, Japan
Dan Evans	ECORD Science Operator (ESO), British Geological Survey, United Kingdom
Peter Flemings (EDP)	Department of Geosciences, Pennsylvania State University, USA
Jeff Fox	JOI Alliance, Texas A&M University, USA
Holly Given	U.S. Science Support Program, Joint Oceanographic Institutions, Inc. (JOI), USA
David Goldberg	JOI Alliance, Borehole Research Group, Lamont-Doherty Earth Observatory, USA
Ulrich Harms (ICDP)	GeoForschungsZentrum Potsdam, Germany
Susan Humphris (SPPOC)	Woods Hole Oceanographic Institution, USA
Tom Janecek	IODP Management International, Inc., Washington, D.C. Office, USA
Akihiro Kano (Exp. 307)	Department of Earth and Planetary Systems Science, Hiroshima University, Japan
Barry Katz (EPSP)	Energy Technology Company, Chevron, USA
Yoshihisa Kawamura	Japan Agency for Marine-Earth Science and Technology (JAMSTEC), Japan
Kenji Kimura	Ministry of Education, Culture, Sports, Science, and Technology (MEXT), Japan
Shin'ichi Kuramoto	Center for Deep Earth Exploration (CDEX), JAMSTEC, Japan
Hans Christian Larsen	IODP Management International, Inc., Sapporo Office, Japan
Mike Lovell (STP)	Department of Geology, University of Leicester, United Kingdom
Alberto Malinverno	JOI Alliance, Borehole Research Group, Lamont-Doherty Earth Observatory, USA
Catherine Mevél	ECORD Managing Agency (EMA), Paris Geophysical Institute (IPGP), France

Greg Moore	Center for Deep Earth Exploration (CDEX), JAMSTEC, Japan
Frank Rack	JOI Alliance, Joint Oceanographic Institutions, Inc. (JOI), USA
Jeff Schuffert	IODP Management International, Inc., Sapporo Office, Japan
Roger Searle (SSP)	Department of Earth Sciences, University of Durham, United Kingdom
Rüdiger Stein (SSEP)	Geosciences Research Division, Alfred Wegener Institute, Germany
Mike Underwood (SSEP)	Department of Geological Sciences, University of Missouri, USA

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7<sup>th</sup> Meeting, 6-9 March 2006

Hilton St.Petersburg BayFront  
St. Petersburg, Florida, U.S.A.

## EXECUTIVE SUMMARY

### 1.3. Approve SPC meeting agenda – highlight action items

**SPC Consensus 0603-1:** The SPC approves the agenda of its seventh meeting on 6-9 March 2006 in St. Petersburg, Florida, U.S.A.

### 1.4. Approve last SPC meeting minutes

**SPC Consensus 0603-2:** The SPC approves the minutes of its sixth meeting on 25-27 October 2005 in Kyoto, Japan.

### 1.5. Items approved since October 2005 SPC meeting

**SPC Motion 0601-01:** The SPC approves the following members for the Industry–IODP Science Program Planning Group (IIS PPG), in addition to those already appointed by the program members: Didier-Hubert Drapeau, John Hogg, Andrew Pepper, David Roberts, Richard Davies, and Eugene Shinn.

*Kitazato moved, Brumsack seconded; 17 in favor, none opposed, 2 non-voting (Pedersen and Zhou)*

## 7. IODP Science Advisory Structure

### 7.1. Panel reports

#### 7.1.1. Science Steering and Evaluation Panel (SSEP)

**SPC Motion 0603-3:** The SPC appoints Ryuji Tada as a new co-chair of the Science Steering and Evaluation Panel (SSEP), effective immediately.

*Byrne moved, Bekins seconded; 17 in favor, 2 non-voting (Pedersen, Zhou).*

#### 7.1.2. Site Survey Panel (SSP)

**SPC Consensus 0603-4:** The SPC accepts SSP Recommendations 0602-1 and 0602-2 on maintaining an open access policy for the IODP site-survey data bank (SSDB) and sharing site-survey data and metadata with other international scientific organizations and data banks.

#### 7.1.3. Environmental Protection and Safety Panel (EPSP)

**SPC Motion 0603-5:** The SPC appoints Toshifumi Matsuoka as the new vice chair of the Environmental Protection and Safety Panel (EPSP), effective immediately.

*Quinn moved, Duncan seconded; 17 in favor, 2 non-voting (Pedersen, Zhou).*

#### 7.1.4. Scientific Technology Panel (STP)

**SPC Consensus 0603-6:** The SPC receives STP Recommendation 0601-2 and recommends that the U.S. implementing organization (USIO) investigate the possibility of providing underway magnetometer capability, when circumstances warrant its use, on the new scientific ocean drilling vessel (SODV).

**SPC Consensus 0603-7:** The SPC receives STP Recommendation 0601-3 and forwards it to the IODP-MI to investigate the feasibility of establishing a high-pressure facility for measuring seismic wave velocities ( $V_p$  and  $V_s$ ) in core samples acquired primarily through deep riser drilling.

**SPC Consensus 0603-8:** The SPC receives STP Recommendation 0601-4 on seismic sources for IODP platforms and forwards it to the IODP-MI for consideration. The committee suggests that the implementing organizations should approach the Scientific Technology Panel (STP) with specific questions about the recommended specifications for seismic sources.

**SPC Consensus 0603-9:** The SPC accepts STP Recommendation 0601-8 and forwards the downhole temperature and pressure tools report to the IODP-MI for implementation.

**SPC Consensus 0603-10:** The SPC accepts STP Recommendation 0601-9 on developing digital taxonomic dictionaries for use on all IODP platforms and forwards it to the IODP-MI for implementation.

**SPC Consensus 0603-11:** The SPC receives STP Consensus 0601-1 on larger diameter drillpipe for the new scientific ocean drilling vessel (SODV) and awaits an analysis of the benefits and drawbacks by the U.S. implementing organization (USIO).

**SPC Consensus 0603-12:** The SPC receives STP Consensus 0601-2 on installing a laser-ablation inductively coupled plasma mass spectrometer (LA-ICP-MS) on IODP platforms and awaits the results of the planned testing of such an instrument onboard the *Chikyu*.

**SPC Consensus 0603-13:** The SPC accepts STP Consensus 0601-3 to seek advice from the Engineering Development Panel (EDP) concerning the current technology and applicability of open-hole, vertical seismic profile (VSP) experiments.

**SPC Consensus 0603-14:** The SPC receives STP Consensus 0601-5 on the initial measurements plan for Expedition 313 New Jersey Shallow Shelf and reaffirms SPC Consensus 0410-20 on measuring sedimentary temperature profiles wherever feasible on IODP expeditions.

#### **7.1.5. Engineering Development Panel (EDP)**

**SPC Consensus 0603-15:** The SPC receives EDP Consensus 0601-2 on nominating Masafumi Fukuhara as the new vice chair of the Engineering Development Panel (EDP). The SPC will seek immediate advice from the Science Planning and Policy Oversight Committee (SPPOC) concerning a potential conflict of interest before deciding on this appointment.

#### **7.3. SSEP requests for PPGs and DPGs (refer back to agenda 6)**

**SPC Consensus 0603-16:** The SPC approves the terms of reference for a detailed planning group (DPG) on hotspot geodynamics (see Appendix A of these minutes) and nominates Rob van der Voo to serve as chair. The committee thanks the Science Steering and Evaluation Panel (SSEP) for drafting the DPG terms of reference in response to SPC Consensus 0510-18.

**SPC Consensus 0603-17:** The SPC receives the terms of reference for a program planning group (PPG) on Cretaceous and Paleogene extreme climates. Given the recent influx of paleoclimate proposals and the general desire to involve more new, young scientists in the program, the committee instead recommends convening a synthesis workshop before creating another PPG on this topic. The committee nonetheless thanks the Science Steering and Evaluation Panel (SSEP) for drafting the proposed PPG terms of reference in response to SPC Consensus 0510-19.

## **8. Presentation and discussion of proposals**

### **8.2. Environmental Change, Processes, and Effects**

**SPC Consensus 0603-18:** The SPC notes the good progress in collecting new seismic data for Proposal 548-Full2 Chicxulub K-T Impact Crater and in organizing the joint IODP-ICDP workshop on that topic. The committee reaffirms SPC Consensus 0406-13 and encourages the proponents to submit a revised proposal or addendum as soon as possible after the workshop.

### **9. Clarify status of proposals remaining with Operations Task Force (OTF)**

**SPC Consensus 0603-19:** The SPC recognizes the value of Hole 1256D as a potential site for drilling through the ocean crust. The committee requests that the USIO identify the operational requirements (i.e., casing plan) for further drilling in Hole 1256D and make that information available before the Mission Moho workshop planned for September 2006. The proponents of Proposal 522-Full3 Superfast Spreading Crust should present their plans for deepening Hole 1256D at the workshop and then submit an addendum if they believe that their original objectives remain unachieved; otherwise, they should submit a new proposal.

## **10. Global ranking of proposals**

### **10.1 Select proposal pool to rank**

**SPC Consensus 0603-20:** The SPC will include in the ranking pool all of the proposals reviewed at this meeting, except for Proposal 548-Full2 Chicxulub K-T Impact Crater (see SPC Consensus 0603-18).

### **10.4 Select ranked proposals to forward to Operations Task Force (OTF)**

**SPC Motion 0603-21:** The SPC in principle forwards the top thirteen of seventeen ranked proposals to the Operations Task Force (OTF) for potential scheduling in FY2008 and beyond, with the top six assigned to the highest priority Group I (677-Full Mid-Atlantic Ridge Microbiology, 603D-Full2 Nankai Trough Seismogenic Zone Observatories, 637-Full2 New England Shelf Hydrogeology, 605-Full2 Asian Monsoon, 549-Full6 Northern Arabian Sea Monsoon, and 537A-Full5 Costa Rica Seismogenesis Project Phase A) and the next seven assigned to the lower priority Group II (537B-Full4 Costa Rica Seismogenesis Project Phase B, 552-Full3 Bengal Fan, 505-Full5 Mariana Convergent Margin, 659-Full Newfoundland Rifted Margin, 654-Full2 Shatsky Rise Origin, 555-Full3 Cretan Margin, and 667-Full Northwest Australian Shelf Eustasy). In practice, however, the SPC retains hold of Proposals 637-Full2, 552-Full3, 654-Full2, 555-Full3, and 667-Full because of notable deficiencies in the completeness of their associated site-survey data. The committee will reconsider forwarding those proposals individually to the OTF in the event of any improvement in their site-survey completeness. As in the past, proposals in Group I will remain with the OTF for future scheduling until further notice, and those in Group II will return to the SPC for the next review and ranking exercise if not already scheduled by then.

*Pearce moved, Mori seconded; 15 in favor, 2 abstained (Kawahata, Yamamoto), 1 absent (Pedersen), 1 non-voting (Zhou).*

## **11. Presentation and discussion of ancillary project letters (APLs)**

### **11.1 Proposal 666-APL2 SCIMPI Tool Development**

**SPC Consensus 0603-22:** The SPC advises the proponents of Proposal 666-APL2 SCIMPI Tool Development to follow the IODP third-party tools policy and explore alternative locations for conducting the proposed deployment of the device.

### **11.2 Proposal 638-APL2 Adelie Drift**

**SPC Consensus 0603-23:** The SPC forwards Proposal 638-APL2 Adelie Drift to the Operations Task Force (OTF) for potential scheduling.

## **12. Prioritization of FY07/08 engineering development**

**SPC Consensus 0603-24:** The SPC accepts EDP Consensus 0601-4 on amending the accepted process for developing engineering projects (see also EDP Consensus 0509-1) and EDP Consensus 0601-5 on defining the role of the Engineering Development Panel (EDP) in evaluating proposals for engineering development.

**SPC Consensus 0603-25:** The SPC receives the unreferenced and informal EDP recommendations on the FY2007 engineering proposals from the U.S. implementing organization (USIO) for developing a pulse telemetry module and a logging-while-coring core barrel (see also EDP Consensus 0601-3), and forwards these recommendations to the IODP-MI for consideration.

## **13. IODP Management Forum Report – Mission Concept II**

*[Note: the committee received a revised draft mission implementation plan from the SPPOC working group shortly after the meeting and voted by e-mail to approve it.]*

**SPC Motion 0603-26:** The SPC accepts the draft mission implementation plan as produced and revised by the SPPOC working group.

*Kawahata moved, Kitazato seconded; 13 in favor, 1 abstained (Quinn), 3 absent (Fryer, Masuda, Mori), 2 non-voting (Pedersen, Zhou).*

## **14. IODP policy development**

### **14.1. Third-party tools policy**

**SPC Consensus 0603-27:** The SPC accepts STP Consensus 0601-8 and forwards the revised draft third-party tools policy to the Science Planning and Policy Oversight Committee (SPPOC) for approval.

## **15. Operations Task Force (OTF) report**

**SPC Consensus 0603-28:** In choosing the specific options within individual scheduling models, the SPC retains the relative priorities originally ascribed in forwarding proposals to the Operations Task Force (OTF) in Groups I and II.

**SPC Consensus 0603-29:** The SPC approves the revised FY2007-09 operations schedule of the U.S. scientific ocean drilling vessel (SODV) as proposed in Model 1B of the Operations Task Force (OTF). The recommended expeditions would begin in August 2007 and proceed through March 2009 as follows:

- Equatorial Pacific Paleogene Transect I (Proposal 626-Full2)
- Costa Rica Seismogenesis Project Stage 1 (Proposal 537A-Full5)
- NanTroSEIZE Stage 1 (Proposals 603A-Full2, 603B-Full2, 603C-Full)
- NanTroSEIZE Stage 1 continued (Proposals 603A-Full2, 603B-Full2, 603C-Full)
- Bering Sea Paleoceanography (Proposal 477-Full5)
- Juan de Fuca Flank Hydrogeology III (Proposal 545-Full3)
- Equatorial Pacific Paleogene Transect II (mini expedition, Proposal 626-Full2)
- Canterbury Basin (Proposal 600-Full)
- Wilkes Land Margin (Proposals 482-Full3, 638-APL2)

The SPC recognizes this scenario as a preferred model subject to significant change, especially pending further knowledge about the actual SODV drydock location and starting date for IODP operations. The committee thus encourages the OTF to explore further possibilities of revising the FY2007-09 operations schedule before the August 2006 SPC meeting.

#### **19. Review of motions and consensus items**

**SPC Consensus 0603-30:** Hodaka Kawahata is an active marine geochemist who investigates a wide range of geochemical topics in the oceans. Since joining the SPC at its first meeting in Sapporo, he has made invaluable contributions to the committee and to the program in general through his wide range of knowledge and broad scope. His hobby has been visiting three-star restaurants at any place in the world where SPC meetings were held. Everyone had a chance to hear him lecture about world gourmet food. We regret that Hodaka Kawahata leaves the SPC; however, we are sure that he will stay involved with the IODP community and continuously promote scientific ocean drilling with his passionate science/gourmet power. The SPC thanks him for his powerful works as a member of this committee.

**SPC Consensus 0603-31:** The SPC thanks Terry Quinn and JOI for hosting this meeting in sunny St. Petersburg, Florida, and for the evening reception at the University of South Florida. Terry and JOI were exemplary hosts, even though Terry (a) has been on sabbatical from his home institution this year and (b) was not sure until late last week whether his other IODP duties would prevent him from attending!

# IODP Science Planning Committee

7<sup>th</sup> Meeting, 6-9 March 2006

Hilton St.Petersburg BayFront  
St. Petersburg, Florida U.S.A.

## FINAL MINUTES

**Monday**

**6 March 2006**

**09:00-18:00**

### **1. Introduction**

#### **1.1. Call to order and self-introductions**

Keir Becker called the meeting to order at 09:00 and asked the participants to introduce themselves.

#### **1.2. Welcome and meeting logistics**

Terry Quinn welcomed everyone to St. Petersburg and explained the meeting logistics, noting the reception on Monday evening at the nearby campus of the University of South Florida.

#### **1.3. Approve SPC meeting agenda – highlight action items**

Keir Becker highlighted the various actions expected for this meeting. The committee agreed to start the meeting at 08:30 on Tuesday morning to allow more time for completing the proposal presentations and reviews. Becker proposed modifying the agenda to discuss the ancillary project letters (APLs) separately from the rest of the proposals (see Agendum 11) and to add a report from the Operations Task Force (see Agendum 15). The committee offered no further changes and approved the agenda by consensus.

**SPC Consensus 0603-1:** The SPC approves the agenda of its seventh meeting on 6-9 March 2006 in St. Petersburg, Florida, U.S.A.

#### **1.4. Approve last SPC meeting minutes**

Keir Becker asked the committee for any recommended changes to the draft minutes of the previous meeting. Mountain offered praise for the overall high quality of the minutes. The committee suggested no further changes and approved the minutes by consensus.

**SPC Consensus 0603-2:** The SPC approves the minutes of its sixth meeting on 25-27 October 2005 in Kyoto, Japan.

#### **1.5. Items approved since October 2005 SPC meeting**

Keir Becker reported that the committee had decided only one matter by e-mail voting since the previous SPC meeting in October 2005, namely to approve the additional members of the Industry–IODP Science Program Planning Group (IIS PPG).

**SPC Motion 0601-01:** The SPC approves the following members for the Industry–IODP Science Program Planning Group (IIS PPG), in addition to those already appointed by the program members: Didier-Hubert Drapeau, John Hogg, Andrew Pepper, David Roberts, Richard Davies, and Eugene Shinn.

*Kitazato moved, Brumsack seconded; 17 in favor, none opposed, 2 non-voting (Pedersen and Zhou)*

Becker noted that he had decided not to call a special e-mail vote in January for deciding the question of whether to add a fourth Superfast Spreading Crust expedition to the FY2008 schedule because of the complexities of the scientific and operational issues. Instead the committee discussed that matter here under Agendum 9.



## **1.6. SPC procedures and protocol**

### **1.6.1. Terms of reference, Robert's Rules, ranking and voting procedures**

Becker briefly reviewed the procedures and protocol concerning the SPC terms of reference, Robert's Rules of Order, and the ranking and voting procedure. He emphasized that the committee would adhere to parliamentary procedures for fair, thorough discussions and that the chair would keep order and facilitate discussion.

### **1.6.2. Conflict-of-interest policy and statements**

Becker reviewed the conflict-of-interest policy and statements. He stressed that everyone in the room must declare all potential conflicts of interest, including institutional, although the committee had not usually regarded such institutional conflicts as grounds for exclusion in the past. The committee members and other meeting participants declared the following direct or potential indirect conflicts of interest regarding the proposals on the agenda.

***Proponent of proposal currently up for review:*** Fryer (505-Full5), MacLeod (535-Full5), Pedersen (547-Full4), Moore (603-CDP3, 603D-Full2), Underwood (603-CDP3, 603D-Full2).

***Proponent of proposal currently residing with the Operations Task Force:*** Bekins (621-Full), Mountain (564-Full, currently scheduled as Expedition 313), Flemings (589-Full3).

***Proponent of proposal related to APL currently up for review:*** Bekins (621-Full, 666-APL2).

***Former proponent of proposal currently residing with the Operations Task Force:*** Becker (545-Full3).

***Colleague at same institution as proponents of proposal currently up for review:*** Becker (535-Full5, 537-CDP7, 537A-Full5, 537B-Full4), Duncan (547-Full4), Ildefonse (537A-Full5), Kawahata (505-Full5, 603-CDP3, 603D-Full2, 605-Full2), Kitazato (505-Full5, 535-Full5, 537-CDP7, 537B-Full4, 584-Full2, 603-CDP3, 603D-Full2, 654-Full2), MacLeod (555-Full3, 584-Full2), Baldauf (535-Full5, 584-Full2, 654-Full2), Flemings (537-CDP7, 537A-Full5, 537B-Full4, 603-CDP3, 603D-Full2), Searle (654-Full2).

***Colleague at same institution as proponents of proposal currently residing with the Operations Task Force:*** Ishibashi (477-Full4), Kawahata (477-Full4, 595-Full3), Kitazato (477-Full4, 553-Full2), MacLeod (626-Full2).

***Other potential conflicts for proposals currently residing with the Operations Task Force:*** Ildefonse (522-Full3, sample request accepted for Expedition 312), Quinn (519-Full2, member of science party for Expedition 310).

Becker concluded that Fryer, MacLeod, Pedersen, Moore, and Underwood must leave the room as conflicted proponents during the entire proposal review and ranking exercise under Agenda 8 and 10. He noted that Filippelli and Pearce would serve as alternates for Fryer and Pedersen, respectively, during those sessions, but no one would serve as an alternate for MacLeod, the non-voting ECORD member at this meeting. Moore and Underwood indicated that they would not attend any part of the meeting after today. Becker excluded Bekins and Flemings from the discussion of their proposals under Agendum 9.2 and he excluded Flemings from the decision on forwarding proposals to the OTF under Agendum 10.4. He also proposed that the many institutional conflicts and the special circumstances of Ildefonse and Quinn did not pose any real conflict of interest. The committee agreed on all points.

## **2. Agency reports**

### **2.1. Lead Agencies report**

The lead agencies did not give a joint report to the committee.

### **2.2. Japan Ministry of Education, Culture, Sports, Science, and Technology (MEXT)**

Kenji Kimura had nothing to add to the MEXT report given in the agenda book.

### **2.3. U.S. National Science Foundation (NSF)**

Jamie Allan took the NSF report as read and added that the U.S. implementing organization (USIO) had made good progress on the effort to identify environmental impact statement requirements for the Monterey Bay Observatory project. He also noted that this represented the last meeting for Kenji Kimura as the MEXT liaison to the NSF. Allan commended Kimura for a job well done.

### **2.4. ECORD Managing Agency (EMA)**

Catherine Mevél referred to the EMA report in the agenda book. She announced a joint IODP-ICDP town hall meeting planned for the upcoming meeting of the European Geophysical Union (EGU) in early April. She also publicized the schedule of the European-sponsored Magellan workshop series in 2006.

### **2.5. China Ministry of Science and Technology (MOST)**

Zuyi Zhou had nothing to report from MOST.

## **3. IODP Management International, Inc. (IODP-MI) report**

Hans Christian Larsen referred to the IODP-MI quarterly report in the agenda book. He listed the areas of responsibility for the IODP-MI and highlighted various activities in data management during the past year. Larsen illustrated the program components of the data management system and described the development of the new IODP information portal known as the Scientific Earth Drilling Information Service (SEDIS). He presented a timeline showing three separate phases for SEDIS development over the next three years, with a request for proposals issued for each phase. He also diagrammed the flow of sample information through the new Sample Materials Curation System (SMCS) slated for development by the IOs in FY2006-07. Larsen outlined the various types of program publications and stated a desire to establish open Web access to expedition related publications in the open literature. He referred to the Expedition 302 results and the second issue of the program journal, *Scientific Drilling*, as ready for distribution, and he cited the NanTroSEIZE complex drilling project as a test case for truly integrated publications from multi-platform operations in Phase II of the program. Larsen briefly previewed the forthcoming SAS meeting schedule and showed an example of a new type of site summary form intended to illustrate the site-survey data for each proposed drilling site. He described the new site-summary form as a trial option for the next round of proposal submissions and likely a mandatory requirement thereafter. Larsen summarized the outcome of the recent NanTroSEIZE project-management team meeting in Sapporo, Japan, and identified the main topics of discussion for the upcoming IODP management forum in Salt Lake City, Utah, U.S.A. He mentioned the new task forces for data management and possibly QA/QC and listed the forthcoming steps in the process for implementing the mission concept. Larsen briefly described the status of planning for four workshops funded partly or wholly by the IODP-MI on fault-zone drilling, the deep biosphere, a mission to the Moho, and continental breakup and sedimentary basins.

Fryer asked about the potential peer reviewed component of *Scientific Drilling*. Larsen called it a matter for discussion and said that he would appreciate community feedback on the desire to make part of the journal peer reviewed. Given inquired about the experience so far in

coordinating publications for the first two expeditions with different IOs and about the progress in establishing a procedure for monitoring compliance of expedition participants with the obligations policy. Larsen explained that the ESO would provide the content of the MSP expedition reports to the USIO for production. He said that the procedure worked very smoothly and productively for Expedition 302, and the ESO would like to proceed the same way in the future. Larsen added that only small progress had occurred so far on the non-trivial issue of how to monitor compliance with the obligations policy. MacLeod inquired about the extent of coordination for workshop planning among the various international components of the program. Larsen believed that it had involved quite a bit of coordination, as reflected by the multiple sponsors of several forthcoming workshops. Bekins referred to the past SPC recommendation that the IODP should measure borehole temperature profiles at each sedimentary site (see SPC Consensus 0410-20) and wondered how to ensure that it gets done. Lovell responded that the STP had recommended borehole temperature measurements as part of the general IODP minimum measurements suite, as well as specifically for the upcoming MSP expedition.

#### **4. Implementing Organization (IO) reports**

##### **4.1. Center for Deep Earth Exploration (CDEX)**

Shin'ichi Kuramoto described the first coring results from the *Chikyu* in late 2005. He characterized the tests as very successful overall, yielding 120 m of core with only minor problems, and he illustrated the visual core description using J-CORES. Kuramoto updated the status of the Nankai 3-D seismic survey, a joint project of CDEX/JAMSTEC and the University of Hawaii. He reported that they contracted a vessel in early January 2006 for conducting an 800-km<sup>2</sup> survey in April-May 2006 and would complete the processing and interpretation of the data by December 2006. Kuramoto showed a map of the survey area and the specifications for data acquisition. He mentioned various outreach efforts, including over 35,000 visitors to the *Chikyu* since her delivery to JAMSTEC in July 2005. He also showed a schedule of the *Chikyu* shakedown cruises before IODP drilling begins in September 2007. Kuramoto noted the potential for international scientific participation on the shakedown cruises.

Mori asked for more details on the scientists invited to participate on the test cruises. Kuramoto answered that CDEX would invite scientists who have the appropriate expertise for the various laboratories. He noted that they already sent a formal invitation to the USSSP and would announce details later as plans develop.

##### **4.2. ECORD Science Operator (ESO)**

Dan Evans illustrated the mobilization of the Tahiti Sea Level Expedition 310 and emphasized the crowded conditions on deck that limited the amount of shipboard work and measurements. He showed some of the initial results from the recovered cores and mentioned some of the outreach efforts. Evans described the operation of the onshore science party that just completed work at the new core repository in Bremen. He said that they benefited from the new facilities and the experience gained from the onshore science party for the Arctic Coring Expedition 302. He added that the ESO had already delivered the preliminary expedition report to TAMU. Evans previewed the New Jersey Shallow Shelf expedition. He said that ECORD now had the finances in place, with a decision pending from the ICDP on additional finances, and they had begun forming the science party. Evans stated that the ESO would make every effort to implement the expedition in FY2006, but several reasons such as tenders and clearance issues could delay it until FY2007, and they would review matters in mid March and determine how to proceed.

Quinn said that he participated in the onshore science party for Expedition 310 and expected to see some exciting results to come, and he commended the ESO and the staff of the Bremen core repository for a job well done. Kawahata asked about the potential schedule for drilling the second half of Proposal 519-Full2 South Pacific Sea Level on the Great Barrier Reef. Evans noted the main problem of the incomplete site survey, though the proponents had collected new data at one site and had plans in place for funding of additional surveys in 2007. He added that environmental restrictions had not hampered the site survey efforts so far, but the possible impact on the drilling plan remained unknown. Kitazato asked about the schedule for the New Jersey Shallow Shelf expedition and cited the difficulty of finding candidates in Japan without fixed dates. Evans encouraged scientists to apply and then work out any scheduling difficulties when the exact dates become known.

#### **4.3. U.S. Implementing Organization (USIO)**

Frank Rack reviewed the demobilization of the *JOIDES Resolution* in January 2006. He announced that the ship would depart in late March for a gas hydrates project off India and after completing that project would then enter drydock for the conversion. Rack noted several staff changes at the USIO since the last SPC meeting and referred to the ongoing efforts toward preparing for submission of the FY2007 annual program plan. He mentioned the current data management efforts and outlined several education and outreach activities, particularly noting the School of Rock Expedition on the transit prior to the start of Expedition 312.

Duncan asked if the operation off India would involve any IODP scientists. Rack confirmed that the project would involve several U.S. scientists, coordinated by the U.S. Geological Survey, plus a loan of some scientific equipment. Brumsack asked when operations would start with the new SODV. Rack said that operations should start in August 2007, and he would describe more under the next agenda item.

#### **4.4. Scientific Ocean Drilling Vessel (SODV) update**

Frank Rack reported on the status of the SODV project. He identified the overall goals of the project and referred to the funds allocated for FY2005-06 and pending for FY2007. Rack stated that the USIO signed a contract for the SODV in December 2005 with Overseas Drilling Ltd. He cited the goals of the engineering design phase that would continue until April 2006 and outlined the competitive bid process for selecting the shipyard by August 2006. Rack showed an organizational chart of the project components and identified the membership of the oversight and implementation committees and the conversion design teams. He explained that the conversion management team would prioritize various elements of the project. Rack said that the converted ship would extend 30 feet longer with a new section added in middle. He listed various new features and improvements planned and said that the lab stack would have 60% more space. Rack reported that the USIO had selected a logging contractor and awaits the final review and signing of the contract.

Duncan asked about the possibility of increasing the drill pipe diameter and the potential implications. Rack replied that the ongoing engineering design study would consider that factor, and it would have a large potential impact for borehole logging and measurements tools. Becker noted that the STP and the EDP had issued inconsistent recommendations on increasing the drill pipe diameter, and the committee would return to this issue later under the STP and EDP reports.

#### **5. Science Planning and Policy Oversight Committee (SPPOC) report**

Keir Becker reported on the outcome of the January 2006 SPPOC meeting. He stated that the SPPOC approved the FY2007-08 science plan with projections into FY2009, as formulated at

the October 2005 SPC meeting. Becker said that the SPPOC approved four planning workshops for FY2006, co-sponsored by the IODP and other organizations, and they endorsed the SSEP proposal for a geohazards workshop in FY2007. He noted that the SPPOC approved the changes to the STP and EDP terms of reference, reclassified their own program-assessment working group as a standing subcommittee, and recommended the SPC vice chair as a member of that subcommittee. Becker reported that the SPPOC accepted the SSEP-recommended definition of missions with one wording change and established a working group to consider how to implement the mission concept. He added that the SPPOC also encouraged the SPC and the OTF to assess the level of advanced scoping required for riser drilling proposals as soon as the SPC receives them.

Given asked if the SPPOC had intended the scoping assessment just for riser proposals or all proposals. Becker said that the SPPOC recommendation referred specifically to riser drilling projects in response to concerns of the IODP-MI Board of Governors about a lack of riser drilling proposals in the advanced stages of planning. MacLeod asked if the SPPOC considered other workshops already planned, particularly for geohazards. Becker said that the SPPOC just approved the concept of the geohazards workshops; hence, a chance remains for coordinating with other planning efforts.

## **6. IODP Management Forum – Mission Concept**

### **6.1. Developments since October 2005 SPC meeting**

Keir Becker noted that chair of the SPPOC working group for mission implementation would attend this meeting later and present the current plan in greater detail (see Agendum 13). He explained that the small group report incorporated the previous comments of the SPC and the SSEP and outlined a system for evaluating mission propositions in an analogous way to preliminary proposals. Becker presented the definition of missions as modified by the SPPOC from the SSEP recommendation and noted that some SPPOC members criticized the small-group plan as too complex. He reported that the SAS would determine the initial missions based partly on the outcomes of the FY2006 workshops, and they would determine subsequent missions through a simpler proposal process than the one proposed by the small group. Becker expected that the board of governors would ask the SPPOC to approve the final plan by email and present it to the board for approval by 1 April. He proposed deferring further discussion until Agendum 13.

### **6.2. SPC Discussion I – prepare for agendum 13**

Byrne noted the two issues of relating missions to the initiatives of the IODP Initial Science Plan and determining exactly how to implement missions through the mission teams. Bekins asked if missions and PPGs and DPGs would compete for the same funding. Becker believed that mission teams would form under the IODP-MI and thus receive support from commingled funds. Allan clarified that the funding agencies still needed to discuss the source of funding for mission teams. Byrne wondered what would happen to CDPs. Becker replied that the new scheme might eliminate CDPs.

## **7. IODP Science Advisory Structure**

### **7.1. Panel reports**

#### **7.1.1. Science Steering and Evaluation Panel (SSEP)**

Mike Underwood reported on the November 2005 SSEP meeting. He noted that the group of proposals reviewed at that meeting weighted heavily toward the environment theme and made it difficult to assign watchdogs given the balance of expertise on the panel. Underwood summarized the proposal dispositions and discussed the SSEP rating scheme for proposals forwarded to the SPC. He reported that the panel also organized working groups on

improving communications with proponents, the SSEP role in mission planning, and long-range planning.

Underwood presented the outcome of the working group on improving reviews and communicating with proponents. He explained that although the issue originated from concerns expressed by a very limited number of specific proponent groups, the group recognized the need to write reviews in a more consistent and less ambiguous manner. They decided to provide a more detailed template to panel members for writing reviews, and the co-chairs drafted a form letter to describe the SSEP nurturing role to proponents. Underwood stated that the panel perceived no point in forwarding proposals to the SPC with a grouping of only one or two stars. He urged the SPC to deliver a strong message to the SSEP if they desired to see a broader range of grouping.

Underwood presented the results of the working group on the mission concept. This included SSEP Recommendations 0511-3, -4, -5, -6, -7, and -8, as already considered by the small group and the SPPOC working group for drafting a plan for implementing the mission concept. Underwood also presented the results of the working group on long-range planning. This included SSEP Recommendations 0511-9, -10, -11, and 12 on forming specific PPGs and DPGs and sponsoring a planning workshop on the subject of geohazards. Underwood presented SSEP Recommendation 0511-14 on appointing Ryuji Tada as a new SSEP co-chair. He noted that the panel narrowly avoided losing a quorum on the last afternoon of its previous meeting as many panel members departed early, and he urged the national programs to take note.

Becker noted that the committee would discuss the mission concept later under Agendum 13. He also deferred further discussion of PPGs and DPGs until later under Agendum 7.3. Becker then sought approval of the new SSEP co chair.

**SPC Motion 0603-3:** The SPC appoints Ryuji Tada as a new co-chair of the Science Steering and Evaluation Panel (SSEP), effective immediately.

*Byrne moved, Bekins seconded; 17 in favor, 2 non-voting (Pedersen, Zhou).*

Allan did not see any problem with the SSEP rating scale. He believed that the panel already used the full range but just did not forward proposals that would receive only one or two stars. Quinn cited the broader range of expertise on the SSEP than on the SPC and encouraged the SSEP to use the full range of their five-star rating scale or else not bother rating at all. Duncan agreed that by not using the full range the SSEP rating did not really provide any more information than the written reviews. Byrne expressed concern about perceiving the star rating as a relative ranking, which goes beyond the SSEP mandate. Fryer said that she attended the last SSEP meeting as a liaison and understood the reluctance to forward proposals with only one or two stars, especially given the difficulty of comparing proposals across widely different disciplines. Ishibashi confirmed that SSEP members have difficulty recommending forwarding a proposal to the SPC with only one star. He added that the SSEP needed a clearer opinion from the SPC on the value of the SSEP grouping.

Mori wondered about the difference in scientific evaluations between the SSEP and the SPC. He asserted that a low star rating would not necessarily translate into a low ranking by the SPC. Bekins recalled some past grumbling if a low-rated proposal from the SSEP received a high ranking at the next level. She asserted that the SSEP puts great effort into nurturing proposals and should rightly feel that everything going forward merits at least three or four stars. Underwood still sensed a disparity between how the SSEP and the SPC perceived the meaning and value of the star rating. Ildelfonse noted that the SSEP only grouped those

proposals forwarded to the SPC, yet they could not readily define the meaning of the five stars. He proposed that a three-star rating system might suffice, with one star meaning not the best but no longer improving after multiple revisions, two stars meaning generally good, and three stars meaning one of the few outstanding proposals. MacLeod agreed that a five-star rating amounted to a ranking, and he agreed that three stars, if all used, would represent an improvement. Becker suggested that the SSEP did not have to group in stars at all. He recalled that they originally grouped proposals according to their relevance to the long-range plan. Kitazato wanted in any event to receive more detailed information from the SSEP regarding the maturity of proposals. Underwood replied that such details should appear in the summary review, and the panel had started trying to make those more uniform.

#### **7.1.2. Site Survey Panel (SSP)**

Roger Searle reported on the February 2006 SSP meeting. He listed the proposals reviewed at the meeting, described the modified site readiness classification scheme, and presented the classifications for all proposals reviewed with new data. Searle stated that the new site-survey data bank generally works very well and the online access to data allows the panel to prepare better before its meetings. He noted that proponents do not always submit data in the correct format or in a well-organized fashion, but the new guidelines and site summary form should help to address this problem. Searle indicated that the Web access mostly works well, though with some difficulty for viewing large SEG-Y files, and the panel had trouble with the wireless connection during the last meeting. He expected the SSDB staff to work on those problems but said that the panel did not yet feel confident relying entirely on Web access during its meetings.

SSP Consensus 0602-1: The SSP urges IODP-MI to support the July 2006 SSP meeting with at least one technician from the SSDB team and to provide resources for a back-up, portable databank (laptop and router) on site.

Larsen responded that the recommended portable databank could cost as much as \$20,000. Mountain thought it could represent part of the responsibility of the SSDB team to deliver data to the panel and the IOs as necessary. Larsen said that it involved complicated contract issues, and he would prefer to make the system work without paying for an extra service that should not be necessary. Allan agreed that the program could not expect a contractor to deliver new services without paying for it.

Searle discussed the implementation of the MATRIX concept for informing proponents of needed data types. He said that the IODP-MI had begun investigating how to do it and would likely aim for a combination of text guidelines and a basic online Web tool. Katz advised making it clear that the MATRIX provides recommendations and not necessarily requirements.

Searle referred to discussions among the SSDB advisory board and the SSP and said that both groups seek a clearer formulation of the IODP policy for public availability of data. He noted that the SSDB mission statement does not seem to preclude open access but also does not encourage it. Searle referred to questions about the long-term future of data holdings within the SSDB and how best to collaborate with other international science and data-bank organizations. He presented SSP Recommendations 0602-1 and 0602-2 stating that the panel desires a policy of maximizing openness and prefers sharing data and metadata. Searle noted the next SSP meeting scheduled for 24-26 July 2006 in Sapporo, Japan.

SSP Recommendation 0602-1: The SSP believes that a policy of maximizing the openness of the site-survey data bank (SSDB) is desirable and that it would be in the best interests of the IODP and science in general to make the accumulated data as widely available as possible. The SSP thus encourages the IODP to move towards a policy of maximum data release. Such release would be subject to proponents being told that data are subject to release unless designated proprietary and that putting data in the SSDB does not meet their obligation to funding agencies to archive their data. Also, all credit to funding agencies needs to be maintained.

SSP Recommendation 0602-2: Given the great value of the site-survey data bank (SSDB) as a resource and the desired policy of maximizing its openness, the SSP recommends sharing the SSDB data and metadata with other international science and data-bank organizations. If that proves unfeasible, the SSP recommends at least sharing the metadata since they identify the data submitters, or as a last resort sharing only the data without the metadata.

Becker asked for the opinion of the SPC liaison to the SSP on matters of data access and availability. Mountain advised overseeing the data bank functions carefully during the continuing developmental phase. He noted that the past and present data bank managers had indicated that the facility serves only about fifteen new users per year. Mountain wanted to encourage much more open access to allow anyone, particularly new members of the community, to determine what data exist in the data bank. Becker proposed that the SPC could recommend a policy to the SPPOC. Quinn wondered about the possible downside. Mori suggested that it could involve a large expense for so few new users. Moore worried about mission creep and the SSDB requesting more funding in the out years to implement any changes. Larsen stated that the IODP-MI defined open access as a requirement from the beginning, but the SSDB had not yet fully implemented it because other matters of providing fundamental archiving and access to the panels had taken greater priority. Becker asked if the SPC could accept the SSP recommendations on a policy of maximum openness and on sharing data and metadata. The committee agreed by consensus.

**SPC Consensus 0603-4:** The SPC accepts SSP Recommendations 0602-1 and 0602-2 on maintaining an open access policy for the IODP site-survey data bank (SSDB) and sharing site-survey data and metadata with other international scientific organizations and data banks.

### **7.1.3. Environmental Protection and Safety Panel (EPSP)**

Barry Katz reported on the December 2005 EPSP meeting. He briefly summarized the reviews of Proposals 477-Full4 Okhotsk and Bering Seas Paleooceanography, 482-Full3 Wilkes Land Margin, 564-Full New Jersey Shallow Shelf, 603A-Full2 NanTroSEIZE Reference Sites, and 638-APL2 Adelie Drift, plus the preview of Proposal 600-Full Canterbury Basin Sea Level. Katz noted that for Proposal 564-Full the panel considered only the shallow hazard survey and not the geotechnical properties of the targeted sediment. He also noted that for Proposal 603A-Full2 the work plan calls for the *Chikyu* to perform logging-while-drilling (LWD) and measurements-while-drilling (MWD) prior to coring by the SODV, and the panel raised issues concerning hole stability and shallow sands, overpressure, and thermogenic hydrocarbons. Katz stated that Proposal 600-Full might require multiple drilling platforms to complete the project, and the panel expressed concerns about high-amplitude events and possible structural closure at several sites. Issued series of specific requests. He identified a shallow hazard survey as a requirement for final approval and deemed it likely that some of the sites would require the use of a riser.



Katz announce that the EPSP unanimously nominated Toshifumi Matsuoka to serve as its vice chair and that the vice chair would serve as a permanent liaison to the SSP. He added that the panel also recommended that the standard safety package and presentation should include data acquisition and processing parameters. Katz reviewed the experiences with LWD and MWD on Expeditions 308 and 311, including the first real-time use of LWD during scientific drilling. He noted the use of different logging tools for each expedition and said that the measurements did not necessarily reflect conditions at the bit. Katz identified several related issues, such as whether the current approach limits the ability to revise operational plans based on initial LWD and MWD results, what role conventional geochemical monitoring should play in light of the success with LWD and MWD, and the use of a seafloor camera to enhance safety monitoring. He said that the panel did not expect a universal drilling protocol but planned to develop a template for identifying key risks. Katz indicated that the EPSP planned to hold its June 2006 meeting in Nice, France, and its December 2006 meeting in Yokohama, Japan.

Duncan asked if the EPSP discussed Proposal 621-Full Monterey Bay Observatory. Katz said no because of its removal from the operations schedule. Larsen asked about the experience of the EPSP with the new SSDB. Katz replied that the EPSP does not generally use the SSDB facility because the proponents present the necessary data for review. With no further questions asked, Becker sought approval of the EPSP vice chair.

**SPC Motion 0603-5:** The SPC appoints Toshifumi Matsuoka as the new vice chair of the Environmental Protection and Safety Panel (EPSP), effective immediately.

*Quinn moved, Duncan seconded; 17 in favor, 2 non-voting (Pedersen, Zhou).*

#### **7.1.4. Scientific Technology Panel (STP)**

Mike Lovell reported on the January 2006 STP meeting. He presented STP Recommendation 0601-2 on not equipping the SODV with an underway magnetometer and explained that the panel regarded the SODV as primarily a drilling ship and therefore recommended minimizing the underway systems that require technical support and upkeep. Becker inquired about the level of past usage and the requirements for technical support. Ildefonse knew of occasional usage. Lovell described it as a huge area that has not received as much technical support as it should. MacLeod thought such measurements could prove very useful on certain expeditions. He preferred retaining the capability as long as it would not place too great a drain on resources and technician time. Ildefonse agreed that such data had proved very useful in some remote areas of the ocean, and it surprised him to see such a recommendation from the STP. Quinn favored retaining enough flexibility to use a magnetometer, though not on a routine basis. Janecek asked whether underway magnetics comprised part of the minimum or standard measurements suite. Lovell said no. Baldauf reflected that the STP considered the issue partly because of the need to prioritize where to invest the initial resources in equipping the ship. He suggested recommending having the capability of putting the instrument onboard if needed. Bekins lacked a context for prioritizing this instrument among all other items of shipboard equipment, and she asked whether the Expedition 304-305 science party anticipated using it beforehand. Ildefonse thought they decided onboard. Becker recognized the difficulty of treating such instruments one by one, but he sensed an agreement that the USIO should investigate the possibility of providing this particular capability when needed.

**STP Recommendation 0601-2:** The STP recommends that the USIO not include an underway magnetometer in the SODV suite of instrumentation.

**SPC Consensus 0603-6:** The SPC receives STP Recommendation 0601-2 and recommends that the U.S. implementing organization (USIO) investigate the possibility of providing underway magnetometer capability, when circumstances warrant its use, on the new scientific ocean drilling vessel (SODV).

Lovell presented STP Recommendation 0601-3 on Vp and Vs measurements at elevated pressures for the riser vessel and described such measurements as useful for core-log-seismic integration. Becker asked if the recommendation referred to shore-based equipment. Lovell said yes and added that the responsibility for supplying the system could perhaps rest with the community and not necessarily with the IOs. Allan noted that other central facilities exist outside of the IODP and do not require support through commingled funds. Mountain inquired about the rationale for limiting the recommendation only to the riser drilling vessel. Lovell explained that the riser vessel would more likely drill to greater depths. Mountain suggested just recommending such measurements for specific depths regardless of the platform. Bekins thought that would require changing the standard requirements. Goldberg cited the value for integrating core-log-seismic data in the absence of standard measurements. Flemings remarked that the problem had existed for years and required individuals to conduct the measurements in their own labs. Fryer suggested just providing support for scientists to visit an appropriate lab for conducting the measurements. Bekins wondered if those interested in making these measurements normally know how and where to do them. Flemings said not necessarily. Mountain wanted more information on the cost and safety issues before accepting the recommendation. Becker believed that the committee lacked the appropriate expertise to make an informed judgment. He sought a consensus just to receive this STP recommendation and forward it to the IODP-MI to investigate the feasibility of implementing it.

STP Recommendation 0601-3: The STP recommends that an elevated pressure velocity measurement system be established for the riser drilling ship program.

**SPC Consensus 0603-7:** The SPC receives STP Recommendation 0601-3 and forwards it to the IODP-MI to investigate the feasibility of establishing a high-pressure facility for measuring seismic wave velocities (Vp and Vs) in core samples acquired primarily through deep riser drilling.

Lovell presented STP Recommendation 0601-4 on seismic sources for IODP platforms and explained that the issue arose from the core-log-seismic integration workshop. Rack characterized the recommendation as rather ambiguous in the specifications and not very helpful as currently worded. He asked for an example of when the seismic data acquired with the drilling ship proved inadequate. Ildefonso recalled the previous SPC decision not to forward Proposal 668-APL to the OTF because the ship did not have a powerful enough seismic source to achieve the proposed objectives (see SPC Consensus 0503-25). Searle stated that the SSP briefly discussed the issue of seismic sources on the SODV and agreed that they would not want to restrict the source to some minimum level; hence, the SSP would support this STP recommendation. Becker did not sense a consensus to accept this recommendation and suggested that the SPC could just receive it. Duncan thought it seemed like an implementation issue between the panel and the IOs. Allan suggested forwarding the STP recommendation to the IODP-MI and the IOs and letting the IOs go back to the STP with specific questions about the specifications. The committee agreed to receive the recommendation and forward it to the IODP-MI.

STP Recommendation 0601-4: The STP recommends that seismic sources acquired for IODP platforms be of sufficient power to reach an appropriate total depth (not hole depth) at all operational water depths and that operators be appropriately trained in their operation.

**SPC Consensus 0603-8:** The SPC receives STP Recommendation 0601-4 on seismic sources for IODP platforms and forwards it to the IODP-MI for consideration. The committee suggests that the implementing organizations should approach the Scientific Technology Panel (STP) with specific questions about the recommended specifications for seismic sources.

Lovell presented STP Recommendation 0601-8 on accepting the downhole temperature and pressure tools report. Becker found the report reasonable and acceptable and asked for further opinions from the committee. Bekins agreed to endorse the report. Ildefonse also supported having a minimum acceptable quality of data. Flemings asked if the STP made any specific suggestions on how to archive the data in the database. Lovell replied that the report refers to data archiving and online accessibility. Becker sought a consensus to approve the recommendation, and no one objected.

STP Recommendation 0601-8: The STP recommends to SPC acceptance of the Temperature and Pressure Tools report and the report be forwarded to IODP-MI for implementation.

**SPC Consensus 0603-9:** The SPC accepts STP Recommendation 0601-8 and forwards the downhole temperature and pressure tools report to the IODP-MI for implementation.

Lovell presented STP Recommendation 0601-9 on developing digital taxonomic dictionaries and explained that it referred to a proposal by the micropaleontology reference centers (MRCs). Becker believed that the STP did a good job of responding to the previous SPC recommendation (see SPC Consensus 0510-9). He proposed accepting this recommendation and forwarding it to the IODP-MI. MacLeod inquired about the frequency of use for the MRCs. He recalled previous indications that it amounted to only a few times per year at most. Lovell reiterated that the recommendation referred merely to a proposal for one confined task and letting the IODP-MI decide what level of funding to provide to that task. Fryer recalled the original agreement that the MRCs would provide the all of the necessary support for maintaining, updating, and providing access to the facilities, but she supported this proposal for a limited task. Nomura strongly supported the proposed activity from a scientific and financial standpoint. Duncan also supported it as worthwhile endeavor. Becker sought consensus to accept the STP Recommendation.

STP Recommendation 0601-9: The STP recommends that IODP-MI coordinate the development of a paleontologic taxonomic/stratigraphic reference standard, with MRC involvement, to ensure continued effective use of DSDP-ODP legacy sites, as well as to improve IODP's own paleo data resolution and reproducibility.

These dictionaries are required across all platforms and should be developed with appropriate funds provided by IODP-MI to the MRCs. The MRCs, while outside the IODP structure, can provide significant input to this process, including digital taxonomic dictionaries (DTDs) for microfossil taxa, linking DSDP-ODP and current taxonomic concepts. This is an important part of the QA/QC process and the STP is seriously concerned that further delay will adversely impact IODP science.

**SPC Consensus 0603-10:** The SPC accepts STP Recommendation 0601-9 on developing digital taxonomic dictionaries for use on all IODP platforms and forwards it to the IODP-MI for implementation.

Lovell presented STP Consensus 0601-1 on larger drillpipe diameter for the SODV. He emphasized the benefits for enhanced logging and downhole measurements capabilities. Becker suggested discussing logging tools now and deferring a decision until after hearing the EDP report. MacLeod strongly supported the rationale but questioned the need to adhere to a larger standard given the many slim-hole tools still available or under development. Katz identified the biggest concern of the EPSP as the operational impacts of the larger pipe. Becker believed that the SODV conversion teams would examine the trade-offs of using larger diameter drillpipe and try to reconcile the STP and EDP recommendations. Baldauf confirmed that the SODV teams had begun exploring the many options but did not have enough information yet to make a decision. Becker suggested receiving the STP recommendation and waiting for the USIO analysis.

STP Consensus 0601-1: The STP strongly supports larger drillpipe diameter on the SODV to allow new downhole logging tools.

**SPC Consensus 0603-11:** The SPC receives STP Consensus 0601-1 on larger diameter drillpipe for the new scientific ocean drilling vessel (SODV) and awaits an analysis of the benefits and drawbacks by the U.S. implementing organization (USIO).

Lovell presented STP Consensus 0601-2 on a laser-ablation inductively coupled plasma mass spectrometer (LA-ICP-MS) and explained that it relates to an STP action item on further testing of such an instrument onboard the *Chikyu*. Becker felt unsure about what the SPC could do with this recommendation. Quinn could imagine making the same argument for several other instruments and wondered about the limits of how sophisticated to make the shipboard labs. MacLeod agreed that the same logic could apply to many other instruments, and he thought that this example involving difficult measurements seemed rather excessive. He asserted that the program could not equip the platforms for all possible rare occurrences of a need for particular measurements, and he noted that scientists might occasionally bring critical instruments onboard for specific expeditions. Kawahata asked how many elements the instrument could measure for pore water and hard rock samples. Lovell did not know but said that he could find out and reply later. Brumsack stressed that an expedition must generate first and foremost the data for ephemeral properties. He could not see how this particular instrument would help significantly to guide the drilling operations, and he doubted that it would give good quality data onboard the ship. Lovell agreed and noted again the action item for testing onboard the *Chikyu*. Becker suggested receiving the STP recommendation and waiting for further results of the *Chikyu* testing.

STP Consensus 0601-2: The STP wishes to thank Clive Neal and Taka Sugihara for their presentations on the prospect of LA-ICP-MS usage in the SODV and the current status of a similar instrument on the *Chikyu*, respectively. STP recognizes that LA-ICP-MS analytical capability is important for IODP science, but most especially in providing critical (real time) analyses needed to direct drilling operations.

**SPC Consensus 0603-12:** The SPC receives STP Consensus 0601-2 on installing a laser-ablation inductively coupled plasma mass spectrometer (LA-ICP-MS) on IODP platforms and awaits the results of the planned testing of such an instrument onboard the *Chikyu*.

Lovell presented STP Consensus 0601-3 on requesting EDP advice on open-hole VSP experiments. Becker asked if the EDP possessed the appropriate expertise to investigate the matter. Flemings said yes. Becker proposed accepting the STP recommendation and asking the EDP to follow through at its next meeting.

STP Consensus 0601-3: The STP recognizes that improvements in open hole VSP operations need to be made in IODP. Specifically, advancements in either receiver technology and/or implementation of downhole sources should be investigated. STP requests advice from EDP in exploring the state of the art in these areas and their applicability to IODP requirements. STP nominates Kasahara as a liaison to EDP for this issue.

**SPC Consensus 0603-13:** The SPC accepts STP Consensus 0601-3 to seek advice from the Engineering Development Panel (EDP) concerning the current technology and applicability of open-hole, vertical seismic profile (VSP) experiments.

Lovell presented STP Consensus 0601-5 on conducting temperature measurements on the New Jersey Shallow Shelf expedition, given that the IODP minimum measurements plan includes such measurements. Mountain wondered how to implement the recommendation in a general sense when the expedition schedule remains unknown. Becker suggested receiving this STP recommendation and reaffirming the earlier SPC recommendation on making temperature measurements whenever possible.

STP Consensus 0601-5: The STP received and reviewed the initial measurements plan for the New Jersey Transect. STP thanks the ESO for a thorough plan. Temperature measurements were not included in the initial plan, but need to be considered as it is an IODP minimum measurement (note action item and recommendation above). STP accepts the measurement plan subject to IODP minimum measurements being met.

**SPC Consensus 0603-14:** The SPC receives STP Consensus 0601-5 on the initial measurements plan for Expedition 313 New Jersey Shallow Shelf and reaffirms SPC Consensus 0410-20 on measuring sedimentary temperature profiles wherever feasible on IODP expeditions.

Lovell reported on the STP considerations of the SODV project. He said that the panel advocated following the minimum measurements plan and delivering the capability for the full suite of standard measurements. He emphasized that the panel expressed concern about the USIO having enough time to implement its full plans for analytical capabilities before the SODV begins operating, and the panel recommended looking for off-the-shelf components whenever possible. Lovell briefly reviewed the other STP recommendations not presented for SPC consideration and mentioned that the STP planned to hold its June 2006 meeting in Helsinki, Finland.

#### **7.1.5. Engineering Development Panel (EDP)**

Peter Flemings reported on the January 2006 EDP meeting. He briefly reviewed the EDP mandate and remarked that the ambitious IODP science plan required a strong program of engineering development. Flemings presented EDP Consensus 0601-1 outlining the proposed agenda of the next EDP meeting. He also presented EDP Consensus 0601-2 on nominating Masafumi Kasahara as vice chair of the EDP.

Becker sought approval of the EDP vice chair. Quinn moved to approve the nominee, and MacLeod seconded the motion. Given asked about the potential conflict of interest with having an EDP vice chair and eventually chair from a commercial company. Becker asked if

the EDP discussed that issue. Flemings said no. Katz asked if the nominee works in the research and development branch of the company. Bekins said yes. Goldberg noted that the USIO has open-ended contracts with Schlumberger. Allan stated that the panel just makes recommendations and the real conflict comes at the operator level. Becker suggested that the SPPOC has the ultimate judgment of conflicts of interest. MacLeod and Quinn withdrew the motion. MacLeod proposed just receiving the recommendation and seeking advice from the SPPOC about the potential conflict of interest. Becker sought a consensus to receive the EDP recommendation and pass it to the SPPOC executive committee for advice.

**SPC Consensus 0603-15:** The SPC receives EDP Consensus 0601-2 on nominating Masafumi Fukuhara as the new vice chair of the Engineering Development Panel (EDP). The SPC will seek immediate advice from the Science Planning and Policy Oversight Committee (SPPOC) concerning a potential conflict of interest before deciding on this appointment.

Flemings presented EDP Consensus 0601-6 on developing a technology roadmap. He noted that the panel would strive to release a first draft of the roadmap by late June 2006. Flemings presented EDP Consensus 0601-7 summarizing the process for providing feedback on the SODV project. He said that the panel identified and prioritized several types of engineering developments that could have a positive impact on achieving IODP science through new and important measurements. He noted several recommendations concerning drill string stabilization, the ability to deploy large diameter logging tools, and establishing an infrastructure for ROV capability. Flemings also presented an EDP statement on improving the coring, logging, and sampling capabilities in existing and future tools.

### **7.2. Industry-IODP Science Program Planning Group (IIS PPG) update**

Keir Becker explained that the IIS PPG originally intended to schedule their first meeting in early April 2006, in conjunction with an AAPG meeting, but they could not develop a sufficient agenda in time to receive advance approval of the meeting. He expected to see a new request to hold the first IIS PPG meeting sometime in June or July 2006.

### **7.3. SSEP requests for PPGs and DPGs**

Keir Becker reviewed SPC Consensus 0510-18 on approving a detailed planning group (DPG) on hotspot geodynamics and referred to the draft terms of reference from the SSEP as included in the agenda book. Duncan commented that the draft mandate seemed acceptable. Bekins suggested spelling out the abbreviations in the terms of reference. Becker sought a consensus to approve the terms of reference for the DPG. He also outlined the procedure for appointing the membership and noted that the SPC must nominate and appoint a chair. The committee identified several candidates for chair and several members offered supporting comments. Becker sought a consensus to approach one particular candidate and see if he would accept the job. Bekins suggested also asking the SSEP if they prioritized the list.

**SPC Consensus 0603-16:** The SPC approves the terms of reference for a detailed planning group (DPG) on hotspot geodynamics (see Appendix A of these minutes) and nominates Rob van der Voo to serve as chair. The committee thanks the Science Steering and Evaluation Panel (SSEP) for drafting the DPG terms of reference in response to SPC Consensus 0510-18.

Becker referred to the draft mandate provided by the SSEP for a new program planning group (PPG) on extreme climates. He wondered whether the SPC should form any PPGs at this point before seeing how the mission concept develops. Humphris suggested moving ahead since the program probably would not conduct many missions anyway. Quinn observed a discrepancy between the list of proposed members for this PPG and the stated goal of involving new young scientists. Becker said that he would add one aspect to the mandate to

investigate deeply buried high-resolution sections through riser drilling, as specified in the IODP Initial Science Plan; however, he preferred seeing a synthesis workshop convened first before creating another PPG on this topic. Bekins supported that approach, given the influx of climate proposals and the more open nature of a workshop compared to a PPG. Becker suggested that the SPC liaisons at the next SSEP meeting should try to get a better sense of the priorities for PPGs.

**SPC Consensus 0603-17:** The SPC receives the terms of reference for a program planning group (PPG) on Cretaceous and Paleogene extreme climates. Given the recent influx of paleoclimate proposals and the general desire to involve more new, young scientists in the program, the committee instead recommends convening a synthesis workshop before creating another PPG on this topic. The committee nonetheless thanks the Science Steering and Evaluation Panel (SSEP) for drafting the proposed PPG terms of reference in response to SPC Consensus 0510-19.

**Tuesday**

**7 March 2006**

**09:00-18:00**

### **8. Presentation and discussion of full proposals**

Keir Becker outlined the procedures for reviewing and ranking proposals. He stressed that the discussions should focus on the scientific merits of the proposals and not venture too much into operational details. He also emphasized the importance of completing the watchdog review letters before the end of the meeting. The committee reviewed the eighteen full proposals in the order shown below, as organized on the agenda according to the three main themes of the IODP Initial Science Plan. For each proposal, the lead watchdog presented the scientific objectives and the committee discussed the objectives in detail. SPC members Fryer, MacLeod, and Pedersen remained out of the room for the entire proceedings as conflicted proponents. Filippelli substituted for Fryer, Pearce substituted for MacLeod, and no one substituted for Pedersen as the non-voting ECORD representative. SSEP co-chair Underwood and CDEX liaison Moore had already left the meeting.

<b>Proposal</b>	<b>Short title</b>	<b>Watchdogs</b>	<b>Conflicts</b>
<b><i>Deep Biosphere and Seafloor Ocean</i></b>			
505-Full5	Mariana Convergent Margin	Bekins/Pearce/Yamamoto	Fryer
547-Full4	Oceanic Subsurface Biosphere	Kitazato/Yamamoto/Bekins	Pedersen
555-Full3	Cretan Margin	Duncan/Byrne/Ildfonse	None
584-Full2	TAG II Hydrothermal	Ishibashi/Bekins/Brumsack	None
637-Full2	New England Shelf Hydrogeology	Masuda/Mountain/Pearce	None
677-Full	Mid-Atlantic Ridge Microbiology	Yamamoto/Brumsack/Bekins	None
<b><i>Environmental Change, Processes, and Effects</i></b>			
548-Full2	Chicxulub K-T Impact Crater	Brumsack/Mori/Filippelli	None
549-Full6	Northern Arabian Sea Monsoon	Filippelli/Kawahata/Mountain	None
552-Full3	Bengal Fan	Kawahata/Quinn/Nomura	None
605-Full2	Asian Monsoon	Filippelli/Nomura/Brumsack	None
618-Full3	East Asia Margin	Kawahata/Zhou/Quinn	None
667-Full	NW Australian Shelf Eustasy	Mountain/Zhou/Ishibashi	None

### ***Solid Earth Cycles and Geodynamics***

535-Full5	Atlantis Bank Deep	Pearce/Ildefonse/Duncan	MacLeod
537A-Full5	Costa Rica Seismogenesis Phase A	Mori/Duncan/Byrne	None
537B-Full4	Costa Rica Seismogenesis Phase B	Byrne/Mori/Ildefonse	None
603D-Full2	NanTroSEIZE Observatories	Ildefonse/Masuda/Becker	Underwood Moore
654-Full2	Shatsky Rise Origin	Duncan/Ildefonse/Byrne	None
659-Full	Newfoundland Rifted Margin	Pearce/Byrne/Zhou	None

After reviewing Proposal 548-Full2 Chicxulub K-T Impact Crater, the committee issued the following recommendation to the proponents.

**SPC Consensus 0603-18:** The SPC notes the good progress in collecting new seismic data for Proposal 548-Full2 Chicxulub K-T Impact Crater and in organizing the joint IODP-ICDP workshop on that topic. The committee reaffirms SPC Consensus 0406-13 and encourages the proponents to submit a revised proposal or addendum as soon as possible after the workshop.

**Wednesday**

**8 March 2006**

**09:00-18:00**

### **9. Clarify status of proposals remaining with Operations Task Force (OTF)**

#### **9.1. Proposals scheduled or recommended for FY2006-2009**

Keir Becker summarized the current FY2007-2008 operations schedule. He noted the need to fill one slot on the SODV schedule in FY2008. Filippelli asked at what point the SPC would reconsider the schedule if the SODV does not come online as anticipated. Becker deferred answering that question until after the OTF meeting planned for that evening.

Becker reported that he had just received e-mail correspondence that morning from the proponents of Proposal 522-Full3 Superfast Spreading Crust, but he hesitated to accept it as an official document for the committee to consider. He instead preferred advising the proponents to put forth their plans to the Mission Moho workshop in September 2006. Quinn expressed concern about setting a precedent of accepting last-minute messages into the record. Larsen found it unacceptable to accept such messages from proponents during a meeting. Byrne agreed. Ildefonse wondered if enough time would remain after the Mission Moho workshop to consider this project for the open slot in FY2008. Becker noted that the USIO had indicated that the tight timelines already precluded scheduling an FY2008 expedition that would involve anything complicated like a major casing effort. He cited the high value of the hole and preferred not rushing the decision. Ildefonse also did not want to jeopardize the hole by proceeding too hastily. Becker suggested asking for the necessary scoping of the casing effort to begin right away so that the proponents could receive that information before the workshop, and then if they still believe that the previous expeditions did not fully achieve the original objectives, they could submit an addendum aimed at scheduling another expedition as early as FY2009.

**SPC Consensus 0603-19:** The SPC recognizes the value of Hole 1256D as a potential site for drilling through the ocean crust. The committee requests that the USIO identify the operational requirements (i.e., casing plan) for further drilling in Hole 1256D and make that information available before the Mission Moho workshop planned for September 2006. The proponents of Proposal 522-Full3 Superfast Spreading Crust should present their plans for deepening Hole 1256D at the workshop and then submit an addendum if they believe that their original objectives remain unachieved, otherwise they should submit a new proposal.



Becker referred to SPC Consensus 0503-16 concerning the unscheduled Irminger Basin sites of Proposal 572-Full3 North Atlantic Paleoclimate and noted the remaining question of what to do with the sites in the Labrador Sea that did not get drilled on Expedition 306. He explained that the SPC could recommend including those sites in a new proposal or leave them with the OTF for potential scheduling at an opportune moment, perhaps as a test of the new SODV. Janecek stated that the committee could generalize the question toward any proposal that does not fulfill all of its operational objectives for one reason or another. Brumsack did not want to generalize such a rule because any subsequent expeditions would have a different science party. Becker believed that the general procedure should call for incorporating any unachieved objectives in a new proposal with an assessment of the initial results of the completed part.

Becker identified other potential questions concerning the lengthy drilling time required for Proposals 626-Full2 Pacific Equatorial Age Transect and 600-Full Canterbury Basin Sea Level and said that the OTF would address those issues. Duncan asked about the unresolved status of the EPSP safety assessment for Proposal 600-Full. Katz anticipated completing the assessment without a problem but forewarned that the non-riser vessel probably could not handle all of the scientific objectives. Baldauf expected to have the shallow hazard assessment completed by the June 2006 EPSP meeting.

## **9.2. Proposals available for future consideration by Operations Task Force (OTF)** ***477-Full4 Okhotsk and Bering Seas Paleooceanography***

Becker explained that an inadequate data presentation to the EPSP in June 2005 kept this proposal off the schedule, but the situation improved greatly at the December 2005 EPSP meeting. He mentioned some clearance issues and the weather window to consider but regarded this proposal as ready for immediate scheduling.

### ***519-Full2 South Pacific Sea Level***

Becker mentioned the recent and planned site-survey activity to support the remaining Great Barrier Reef component of this proposal. He suggested leaving it with the OTF for scheduling after the proponents complete the site surveys.

### ***553-Full2 Cascadia Margin Gas Hydrates***

Becker noted that the proponents submitted a formal addendum describing what remains from the original proposal. He suggested leaving it with the OTF for scheduling at the earliest opportunity.

### ***589-Full3 Gulf of Mexico Overpressures***

Becker understood that the remaining part this proposal consisted of the original proposed observatory. He suggested asking the OTF for an update of the possible timeline for achieving that objective.

### ***595-Full3 Indus Fan and Murray Ridge***

Becker proposed leaving this proposal with the OTF because of the potential to conduct non-riser drilling operations in that region in FY2009. He referred to SPC Consensus 0406-17 on forming a scoping group but noted that the OTF had not yet done so.

### ***621-Full Monterey Bay Observatory***

Becker inquired about an update on the permitting issues that have twice delayed the scheduling of this proposal. Bekins left the room as a conflicted proponent. Rack identified the primary issue concerning who takes responsibility for managing and maintaining the boreholes. He mentioned the question of liability and said that ORION has not yet identified an operator for the observatories. Janecek stated that the real function and purpose of drilling

the boreholes at that particular location remained unclear to the OTF. He questioned if it just served the purpose of developing a test bed for the IODP, if the proponents chose those sites only because of the seafloor cable and ready accessibility from MBARI, whether the drilling ship would ever need to return to the site, and whether the project would ever involve any scientific experiments. Allan characterized the major problem for the marine sanctuary officials as the lack of scope described in the proposal. He said that it could require a new environmental impact statement every time anyone returns to the site, especially with the drilling ship, and he added that they regarded the physical presence of a drilling ship visible from shore as an impact. Rack stated that the sanctuary representatives expressed a willingness to work with the program and resolve these issues, but the chance remained that it could get turned down. He added that MBARI had agreed to serve as temporary stewards but wanted to identify someone else as the long-term steward. He also cited the need to develop a comprehensive vision for the long-term usage. Becker referred to SPC Consensus 0406-14 wherein the committee decided not to rank this proposal on scientific grounds. He recalled the excitement about the combination of the seafloor cable and ROV access and suggested that someone might have to develop a schedule of plans to use the facility. Becker understood the very complicated nature of the issue and recognized the lack of a clear timeline for resolving it. He recommended leaving this proposal with the OTF for now but said that the committee should understand that it might never happen if the USIO cannot resolve the clearance issues.

## **10. Global ranking of proposals**

### **10.1 Select proposal pool to rank**

Keir Becker briefly reviewed the process for selecting the pool of proposals for ranking. Mountain as a new committee member wanted to clarify the process. He wondered what criteria to use for ranking and what status the ranking would confer to a proposal. Becker explained that the committee members should rank each proposal according to its scientific merit and relevance to the IODP Initial Science Plan (ISP), and the highest ranked proposals could move on to the next stage of the scheduling process. Mountain opined that making the safest choices for the good of the program could exclude some exciting proposals because of time and expense. Becker replied that the committee members must consider for themselves exactly how to rank, and they could take as much time as necessary.

Becker proposed including all of the proposals reviewed at this meeting except Proposal 548-Full2 Chicxulub K-T Impact Crater, and not ranking that proposal again until the proponents revise the proposal to reflect the newly acquired site-survey data and incorporate input from a pending IODP-ICDP workshop. Searle noted that the proponents had collected the new data but not yet submitted it all to the data bank. Mori supported the idea and emphasized that proponents should not interpret a low ranking in the pool as a discouraging sign because he regarded all of the proposals as high quality.

<p><b>SPC Consensus 0603-20:</b> The SPC will include in the ranking pool all of the proposals reviewed at this meeting, except for Proposal 548-Full2 Chicxulub K-T Impact Crater (see SPC Consensus 0603-18).</p>
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### **10.2 Balloting by SPC members**

Each of the seventeen SPC members present and eligible to vote assigned the numerical rankings of one through seventeen to the seventeen proposals in the global ranking pool. The members submitted their rankings on signed ballots. Zhou was the only non-voting member present.

### 10.3 Tabulation of results

Eguchi and Schuffert collected the ballots and tabulated the following results for the seventeen proposals ranked by the committee.

Rank	Proposal #	Short Title	Mean	Stdv
1	677-Full	Mid-Atlantic Ridge Microbiology	2.4	2.1
2	603D-Full2	Nankai Trough Seismogenic Zone Observatories	2.9	1.9
3	637-Full2	New England Shelf Hydrogeology	3.9	3.6
4	605-Full2	Asian Monsoon	5.9	3.6
5	549-Full6	Northern Arabian Sea Monsoon	6.0	3.2
6	537A-Full5	Costa Rica Seismogenesis Project Phase A	6.6	3.5
7	537B-Full4	Costa Rica Seismogenesis Project Phase B	8.6	3.4
8	552-Full3	Bengal Fan	9.7	3.9
9	505-Full5	Mariana Convergent Margin	10.5	3.6
10	659-Full	Newfoundland Rifted Margin	10.6	3.1
11	654-Full2	Shatsky Rise Origin	11.1	3.4
12	555-Full3	Cretan Margin	11.5	4.7
13	667-Full	Northwest Australian Shelf Eustasy	11.8	4.0
14	535-Full5	Atlantis Bank Deep	12.2	3.5
15	584-Full2	TAG II Hydrothermal	12.5	4.2
16	618-Full3	East Asia Margin	13.0	3.4
17	547-Full4	Oceanic Subsurface Biosphere	13.8	2.9

### 10.4 Select ranked proposals to forward to Operations Task Force (OTF)

Keir Becker reviewed the scheme used at previous SPC meetings for selecting ranked proposals to forward to the OTF and identifying three groups of highest to lowest priority. He noted that proposals in Group I have so far remained with the OTF, whereas those in Groups II and III have returned to the SPC for consideration in future rankings. Janecek stated that the OTF would consider scheduling proposals from any group. He wanted to avoid having the SPC question why the scheduling options included particular proposals and not others. Becker presented the list of rankings and suggested that the top three statistically defined a group. Quinn suggested that the next three statistically formed another group.

Becker identified three proposals that lacked critical elements required for scheduling and proposed not forwarding those proposals to the OTF until completely ready. Duncan also preferred not forwarding proposals that did not qualify as operationally ready for scheduling. Mountain asked if the SPC would then need to review those proposals again. Filippelli thought the SPC should reconsider such proposals. He opposed holding a proposal back and then automatically forwarding it when the proponents submit more site-survey data because that just amounted to deferring the inevitable. Mountain suggested that the SPC should receive further input from the SSP on site-survey readiness. Searle and Becker agreed. Ildefonse remarked that a high ranking implies that the committee judges a proposal as scientifically ready for scheduling. He proposed identifying two exclusionary categories, one for proposals not ready for ranking and another for those not ready for scheduling because of incomplete data. Duncan argued that ranking served to promote a proposal and could help to secure the necessary site surveys if lacking. He favored the idea of having the SPC liaison to the SSP and perhaps the lead watchdog judge whether to forward such proposals when ready.

Mori preferred having only one holding bin and looking at each proposal on a case-by-case basis. Becker sensed a consensus to have a holding bin for proposals identified as not ready for scheduling, but the committee still needed to decide where to draw the lines with the current ranking.

Byrne asked how many proposals the OTF needed. Becker noted that six proposals currently remain with the OTF from previous rankings. He suggested that the SPC should forward at least ten more proposals this time, and he wondered how long it would take the OTF to schedule some of these proposals. Janecek described the OTF as ready now to start scheduling for FY2009 and FY2010 and said that they could not have too many proposals given all of the operational constraints on scheduling. Allan added that the funding agencies take a dim view of sending the ship on long transits. Quinn understood the need to give the OTF maximum flexibility, but he recalled the past criticism from the SPPOC concerning the scheduling of a relatively low-ranked proposal. Pearce proposed drawing the line at least below the eleventh ranked proposal, and the committee agreed. Ildefonse argued that that would not give enough flexibility for scheduling. He observed that excluding those proposals waiting for additional survey data and those requiring considerable scoping would leave about ten proposals. He did not see a clear place to exclude two or three additional proposals at the bottom of the ranking and thus suggested forwarding all seventeen ranked proposals. Becker reminded the committee that the expeditions would not take place until FY2009 or FY2010, thus leaving time for providing additional site-survey data and detailed scoping if necessary. He also emphasized that the proposals forwarded in Group I would remain with the OTF for future scheduling, whereas the others would return to the SPC if not scheduled in this round. Mori understood the difficulty of drawing the line in the lower half and recommended first deciding what proposals to place in the holding bin.

The committee initially identified Proposals 637-Full2 New England Shelf Hydrogeology, 552-Full3 Bengal Fan, 555-Full3 Cretan Margin, and 667-Full Northwest Australian Shelf Eustasy as candidates for the holding bin because of incompletely characterized drilling sites. Searle recommended also including Proposal 654-Full2 Shatsky Rise Origin because five of the six drilling sites needed better images and the proponents did not have any surveys scheduled. Bekins regarded Proposals 637-Full2 and 552-Full3 as scientifically ready, whereas Proposals 555-Full3 and 667-Full required more site-survey data to evaluate the science fully. She asked for more information on the shortcomings of the site-survey data for Proposal 654-Full2. Searle clarified the SSP review. Bekins agreed that the committee should place Proposal 654-Full2 in the holding bin lest it second-guess the SSP. Becker wondered what accomplishments might result from drilling only three or four of the proposed sites on the Shatsky Rise. Duncan believed that such an expedition could satisfy the primary objectives of Proposal 654-Full2 and complete a large part of the geochemical work. Katz commented that the overall program assessment would consider the proposals that went forward for scheduling, and it would not look good for the program to schedule projects if it could not accomplish all of the objectives operationally. Ildefonse asked for more information on the site-survey status of Proposal 555-Full3. Duncan reviewed the status of the available and missing site-survey data. Ildefonse thought the situation for Proposals 552-Full3 and 555-Full3 sounded similar and more positive than the case for Proposal 667-Full. Brumsack predicted that forwarding Proposal 555-Full3 to the OTF would prompt a decision in Europe to fund the site survey. Quinn noted that the survey data already exist for Proposal 667-Full and just need processing.

Brumsack supported sending the top ten proposals to the OTF. He believed that more proposals would come forward soon from the SSEP. Stein noted that only three proposals

underwent external review in the current cycle. Schuffert clarified that any proposals recommended for external review at the May 2006 SSEP meeting could also come forward for the next SPC ranking in March 2007. Pearce thought that the four lowest-ranked proposals could still improve and benefit from upcoming workshops. He proposed drawing the line under the top thirteen proposals, but with the twelfth and thirteenth ranked proposals in the holding bin. Mori seconded the idea. Becker sought a consensus for allowing only the top three proposals to remain with the OTF. Filippelli objected. Becker then sought a consensus for allowing the top six proposals to remain with the OTF, whereas the others would return to the SPC for future ranking if not scheduled in this round. Schuffert strongly recommended adhering to the same group definitions as used at previous SPC meetings. Mori agreed. Becker sought a consensus to disregard the initial grouping and instead assign the top six proposals to Group I and the next seven proposals to Group II. Mountain noted that that would separate the two phases of CRISP. Ildefonse remarked that the design of CRISP Phase B would depend anyway on the results of Phase A.

**SPC Motion 0603-21:** The SPC in principle forwards the top thirteen of seventeen ranked proposals to the Operations Task Force (OTF) for potential scheduling in FY2008 and beyond, with the top six assigned to the highest priority Group I (677-Full Mid-Atlantic Ridge Microbiology, 603D-Full2 Nankai Trough Seismogenic Zone Observatories, 637-Full2 New England Shelf Hydrogeology, 605-Full2 Asian Monsoon, 549-Full6 Northern Arabian Sea Monsoon, and 537A-Full5 Costa Rica Seismogenesis Project Phase A) and the next seven assigned to the lower priority Group II (537B-Full4 Costa Rica Seismogenesis Project Phase B, 552-Full3 Bengal Fan, 505-Full5 Mariana Convergent Margin, 659-Full Newfoundland Rifted Margin, 654-Full2 Shatsky Rise Origin, 555-Full3 Cretan Margin, and 667-Full Northwest Australian Shelf Eustasy). In practice, however, the SPC retains hold of Proposals 637-Full2, 552-Full3, 654-Full2, 555-Full3, and 667-Full because of notable deficiencies in the completeness of their associated site-survey data. The committee will reconsider forwarding those proposals individually to the OTF in the event of any improvement in their site-survey completeness. As in the past, proposals in Group I will remain with the OTF for future scheduling until further notice, and those in Group II will return to the SPC for the next review and ranking exercise if not already scheduled by then.

*Pearce moved, Mori seconded; 15 in favor, 2 abstained (Kawahata, Yamamoto), 1 absent (Pedersen), 1 non-voting (Zhou).*

Searle wanted to clarify how to handle a quick review of Proposal 654-Full2, assuming that the proponents could readily address at least some of the concerns about the site characterizations. Becker called for carefully worded review letters to explain matters to the proponents of each of the proposals placed in the holding bin. Filippelli asked when the alternate SPC members should step aside. Becker said after nominating the co-chiefs under the next agenda.

### **10.5 Nominate co-chief scientists for forwarded proposals**

Bekins, Duncan, Kitazato, Brumsack, Ildefonse, and Pearce nominated several or more prospective candidates as potential co-chief scientists for each of the thirteen highest-ranked proposals that qualified in principle for forwarding to the Operations Task Force. The IODP-MI science coordinators promised to solicit the program member offices for a CV of each candidate plus any additional nominations and forward the information to the appropriate IOs by early June 2006.

## 11. Presentation and discussion of ancillary project letters (APLs)

Keir Becker stated that the review of the two APLs would differ from the review and competitive ranking of regular proposals. He explained that the committee must decide on a case-by-case basis whether to forward an APL to the OTF or what else to do with it. For each APL, the lead watchdog presented the scientific objectives and the committee discussed the objectives in detail. Fryer and MacLeod rejoined the proceedings. Bekins left the room during the discussion of 666-APL2 as a conflicted proponent of the related Proposal 621-Full Monterey Bay Observatory.

<b>Proposal</b>	<b>Short title</b>	<b>Watchdogs</b>	<b>Conflicts</b>
666-APL2	SCIMPI Tool Development	Kitazato	Bekins
638-APL2	Adelie Drift	Nomura/Filippelli	None

### 11.1 Proposal 666-APL2 SCIMPI Tool Development

The committee expressed enthusiasm about the general SCIMPI concept and its potential as a low-cost alternative to CORKs, but they noted that the proponents had not yet received funding to build a prototype device. They also noted that the design had changed significantly from the previous version of the APL and now required the use of a cable, which could severely limit the options for deploying the device at alternative locations. The committee raised other technical questions concerning how well the device would perform when deployed in a borehole and whether the borehole would close as required. One committee member suggested doing a feasibility study with ROV retrieval and adapting the device later for use with a cabled facility.

The committee recognized the permitting difficulties associated with tying this APL to Proposal 621-Full Monterey Bay Observatory, and they noted that another proposal at the SSEP level includes SCIMPI deployments as an integral part of its objectives. More fundamentally, the committee deemed it premature to consider an APL for deploying a tool that remains just a concept, and they questioned whether an APL represented the appropriate format for this type of proposal. The committee thus decided not to forward this APL to the OTF. They concluded that the proponents did not need to tie the tool to a particular expedition at this point and instead should follow the approved procedures for developing a third-party tool, perhaps after gaining input from a planned workshop.

**SPC Consensus 0603-22:** The SPC advises the proponents of Proposal 666-APL2 SCIMPI Tool Development to follow the IODP third-party tools policy and explore alternative locations for conducting the proposed deployment of the device.

### 11.2 Proposal 638-APL2 Adelie Drift

The committee strongly supported this APL associated with Proposal 482-Full3 Wilkes Land Margin and recognized its potential to give the highest resolution paleoclimate record in the Southern Hemisphere. They also cited it as a good example of how an APL should work. The committee wondered about the possibility of penetrating deeper than planned but noted a questionable depth conversion factor and the desire not to penetrate the underlying units. They also recognized the possible need to prioritize the objectives of Proposal 482-Full3 to accommodate the APL, and they understood that the OTF would consider the issues of weather windows and ice cover.

**SPC Consensus 0603-23:** The SPC forwards Proposal 638-APL2 Adelie Drift to the Operations Task Force (OTF) for potential scheduling.

## 12. Prioritization of FY2007-08 engineering development

Peter Flemings reported on engineering development plans for FY2007-08 and cited the EDP mandate to identify long-term needs and recommend an annual plan. He referred to EDP Consensus 0509-1 concerning a four-stage process for developing engineering projects and presented EDP Consensus 0601-4 on modifying that process. Flemings explained that proposals for engineering development could originate (a) from the IOs, (b) in response to requests by the program, or (c) as unsolicited proposals from third parties. He stated that the EDP would review the proposals and forward them to the SPC for approval and then to the IODP-MI. Flemings also presented EDP Consensus 0601-5 on the EDP role in the review process. He noted that engineering development projects could involve technological advancements not previously considered by the EDP but relevant to the IODP Initial Science Plan.

EDP Consensus 06-01-4: The EDP recommends three avenues for submission of engineering development proposals to allow effective implementation of the engineering development goals of the IODP. These avenues are:

- a) For implementing organizations to submit proposals to the IODP-MI based on internal needs assessment.
- b) For interested parties to submit proposals to the IODP-MI in response to requests for proposals (RFPs) issued by the IODP-MI.
- c) For third parties to submit unsolicited proposals to the IODP-MI.

All proposals will be submitted directly to the IODP-MI. Proposals must satisfy the requirements of the concept stage, as specified in EDP Consensus 0509-1. Any proposal submitted will be identified by the proponents as addressing one or more of the remaining three stages of engineering development: design, fabrication, or implementation, as further specified in EDP Consensus 0509-1.

EDP Consensus 06-01-5: The EDP recommends that the IODP-MI adopt a unified process to obtain EDP input on engineering development proposals. This process is illustrated in the attached flowchart. The EDP will review all concept proposals. The EDP will evaluate the proposal relative to the engineering development roadmap or relative to achieving the goals of the Initial Science Plan if the proposed development is not yet addressed in the roadmap. The evaluation will assess how well the proposal meets established needs of engineering development and provide a recommended course of action to the SPC. In the event a proposal does not address an established need, it will be evaluated with regard to its benefit to overall IODP-MI needs. For EDP review, the proposal must be submitted to the IODP-MI one month prior to the EDP meeting when it will be reviewed. Concept proposals will generally be reviewed at the winter EDP meeting. The IODP-MI may or may not request EDP review of proposals submitted in response to specific requests for proposals.

Becker questioned whether the IODP-MI could respond to unsolicited proposals. Janecek indicated that the IODP-MI would solicit input from the EDP and the SPC on such proposals and not act directly. Allan confirmed that anyone could submit unsolicited proposals, and the lead agencies want the IODP-MI to consult with the SAS in considering such proposals. Bekins remained uncertain if the IODP budget included funds for tool development. She noted that proposals could also go to the funding agencies or the national programs, and she wondered what information would exist in the public domain for proponents to use in approaching outside funding sources. Flemings did not know if a significant budget existed for engineering development but said that this process would help to create a demand for

those funds. He explained that the EDP planned to create a roadmap for engineering developments that proponents could use to follow any of the paths for funding. Allan stated that the annual program plan defined the activities that would occur under engineering development and engineering science support, and those tasks should come from the priorities and guidance given by the SAS. He added that the roadmap would represent a very important criterion to use. Fryer imagined some blurring of the lines between third-party tools for drilling applications and projects ancillary to drilling, and she questioned the purpose of establishing a new policy for receiving proposals for engineering development projects when the program already has a policy for third-party tools. Becker believed that the third-party tools policy should apply to all tools, and no one envisioned that the EDP would review all of those proposals. Flemings responded that the EDP would focus on developments needed to achieve the IODP Initial Science Plan. Janecek noted that third-party tools receive funding from outside the program, whereas this issue refers to mainstream developments within the program. Fryer explained that her concern applied mostly to the category of unsolicited proposals. Becker sought a consensus to approve the two EDP recommendations.

**SPC Consensus 0603-24:** The SPC accepts EDP Consensus 0601-4 on amending the accepted process for developing engineering projects (see also EDP Consensus 0509-1) and EDP Consensus 0601-5 on defining the role of the Engineering Development Panel (EDP) in evaluating proposals for engineering development.

Flemings sought early feedback on the concept of the technology roadmap under development by the panel (see EDP Consensus 0601-6). He also presented EDP Consensus 0601-3 on the two USIO engineering projects for FY2007, for logging while coring and pulse telemetry. Flemings briefly reviewed the developmental history of two components of the pulse telemetry module, the drilling sensor sub (DSS) and the retrievable memory module (RMM), and explained that these devices should enhance drillstring stability, improve core recovery and quality, and help monitor the effectiveness of heave compensation. He noted that the USIO deployed such devices on ODP Leg 208 with limited success and subsequently modified and improved them, and now they have asked for an engineering design study costing \$30,000. Flemings highlighted the EDP concerns about the true costs of the full project and the narrow timeline. He noted that EDP members voted 6-3 in favor of supporting the USIO proposal for a design and feasibility study of the pulse telemetry module. [*Note: The EDP did not assign a reference number to this recommendation nor include it in the formal record of their proceedings. Moreover, the panel apparently failed to achieve a quorum in its vote.*]

Becker outlined the ideal process whereby engineering developments would come to the SPC at the same time as the annual science plan. He said that in this case presumably the SPPOC would have to act to include these projects in the FY2007 program plan. Duncan noted the lack of unanimous support among the EDP members and asked about the main concerns. Flemings replied that some EDP members worried about moving ahead before fixing the current problems with the system. Mountain asked if the SPC could postpone this matter and consider it again with the batch of other budgetary issues at its next meeting. Becker responded that the IODP-MI then would not have approval from the SPC to include it in the FY2007 program plan. He believed that a \$30,000 feasibility study represented a relatively modest investment. Bekins wondered how this item related to other priorities and whether any budget existed for it. Janecek encouraged the committee not to weigh these projects against other elements but just determine if they have enough intrinsic importance to move forward. He said that the IODP-MI could then weigh these recommendations against other resource needs within the program.



Flemings described the logging while coring system for \$75,000 and explained that it would allow for recovering core correlated exactly with logging data. He reviewed the history of development, noting that the USIO tested it successfully on land and used it on ODP Legs 204 and 209, but with poor core recovery. Flemings reported that the EDP did not unanimously believe it would result in high quality and high recovery of core, and it could have a major impact if deployed on multiple platforms. He noted that EDP members voted 7-2 in favor of supporting the USIO proposal for designing and building two special core barrels for use with logging-while-coring technology. *[Note: The EDP did not assign a reference number to this recommendation nor include it in the formal record of their proceedings. Moreover, the panel apparently failed to achieve a quorum in its vote.]*

Ildefonse regarded this as an invaluable development for hard rock coring if it works. Mountain had difficulty seeing how it would improve significantly over coring first with high recovery and then logging. Malinverno remarked that difficulties always arise in correlating and compensating for the exact depth scale. MacLeod explained that the borehole wall in hard rock suffers quite badly during drilling and impacts the ability to obtain good quality logging images. Becker expressed reluctance to let the SPC worry about the details of individual proposals without first having the roadmap in place. Janecek suggested that once the EDP finalizes the roadmap then the SPC could provide a second opinion on whether the types of proposed development would help address any scientific objectives. Becker proposed just to receive these two recommendations and forward them to the IODP-MI. Mountain recalled embarking on development paths in the past that lead to expensive dead-ends. He recommended managing expenses very carefully given that funding seems in such short supply. Allan commented that the USIO put forward this \$30,000 proposal for SAS examination when, according to their contract, the low expenditure level allowed them to proceed with it anyway. He advised that the SPC should delegate the responsibility to examine these individual issues to the EDP and the STP. Bekins agreed with just receiving these recommendations and forwarding them on, but she also wanted to clarify the role of the SPC in the process. Becker stated that the SPC mandate specifies delivering an annual science and engineering plan to the SPPOC for approval. He sought a consensus to receive the EDP recommendations.

**SPC Consensus 0603-25:** The SPC receives the unreferenced and informal EDP recommendations on the FY2007 engineering proposals from the U.S. implementing organization (USIO) for developing a pulse telemetry module and a logging-while-coring core barrel (see also EDP Consensus 0601-3), and forwards these recommendations to the IODP-MI for consideration.

### **13. IODP Management Forum Report – Mission Concept II**

Susan Humphris, chair of the SPPOC working group, reported on the development of the mission concept. She noted that the IODP-MI Board of Governors indicated that they would act in April to implement the mission concept whether or not they received any input from the SAS. Humphris presented the definition of a mission and cited several reasons why the IODP should conduct missions, including the need for coordinated and focused drilling strategies, active pursuit of scientific goals, prolonged planning of complex projects, and entraining new scientists in the program. She identified three goals of the mission concept and described three principles of designating and implementing missions. Humphris explained that the plan for designating missions in the first year would differ from the following years in that the first three missions would derive from the planned FY2006 workshops on the Moho, the deep biosphere, and continental breakup, and the SAS would review and approve the workshop outcomes and identify any existing proposals that already fit those mission themes. She also

explained that in future years the SAS would suggest areas for mission proposals, designate and approve missions based on proposals from the community, and integrate the mission concept as closely as possible into the current proposal submission process. Humphris outlined a scheme for the development, review, and approval of missions and presented a timeline for designating and implementing the first mission. She also suggested forming a small working group to consider how to implement those objectives of the mission concept. Humphris referred to SPC Consensus 0510-26 on implementing the mission concept and indicated what aspects the working group had incorporated so far for the first year plan and those that they might incorporate later.

Kawahata understood the supposed advantage that proposals would advance more effectively and efficiently from submission to drilling, and he inquired about the current typical timeline. Humphris replied that planning for the seismogenic zone projects had taken four to five years so far, though other simpler missions could take less time. Pedersen supported the plan and wondered about the timeframe and format for organizing the workshops. Humphris noted that the IODP-MI had already started organizing the workshops and several large workshops would occur later this year. MacLeod asked about the possibility of incorporating new proposals into a mission plan after already formulating the plan. Humphris felt that mission plans should address large objectives and come as a package, but she did not know yet the scheme for evaluating individual proposals. MacLeod referred to unhappiness among the community about the possibility that the program would devote a large share of resources to something without the same standard of review as other proposals. Humphris intended that mission proposals would come right back to the SAS for review, and the SAS could reject them.

Quinn supported any concept that would increase the number and diversity of participants in the program, but he remained unconvinced of the need for the mission concept given the already observed fact that high-quality proposals can advance from initiation to implementation in a very short time. He argued that the plan for developing the first three missions from proposals already in the system indicated that the current system actually works quite well. Humphris asserted that the program must conduct really spectacular science through multiple expeditions and must nurture truly integrated projects with a global strategy. Bekins believed that the SPC could only try to shape the concept more to its liking at this stage, given that the board of governors intended to approve the concept on 1 April no matter what. She also noted that the plan did not include all of the points listed by the SSEP as to what a mission should include. Humphris replied that the SPC and the SPPOC would approve the final plan, and the full details of what a mission proposal should include remained unspecified. Bekins asked about the process for choosing the current workshop committees. Humphris replied that the national and international organizations that have funded the workshops cooperate in choosing the steering committees based on input from the SPPOC. Given described the deep biosphere committee as weighted more toward the U.S. because USSSP would provide significant funding. MacLeod remarked that while no quotas exist now on submitting unsolicited proposals, the restricted international balance for workshop participants could severely limit the intellectual input to missions.

Larsen clarified that the original management forum never discussed the topic of workshops, but they would have to follow the appropriate international balance if supported by commingled funds. Byrne felt bothered by the idea of co-opting the workshops after the fact as part of the mission concept. He proposed the alternative of developing missions from the ground up by asking the SSEP to identify missions from existing proposals. Humphris replied that the workshops provided a convenient way to get a head start toward implementing the

first missions. She worried that a call for mission proposals would just create another kind of proposal. Zhou commented that several proposals for studying monsoons already exist in the system but do not fit the proposed topics of the first missions. Humphris regarded it as worthwhile for the SPC to propose other missions based on existing proposals. Kitazato preferred accepting several different ways to select missions and not just through workshops. Humphris cited the importance of looking to other groups outside of the IODP.

Fryer noted that Humphris used the phrase complex drilling project several times, whereas missions would not include several of the defined aspects of CDPs, particularly the idea that certain components of a CDP might not stand alone. She hoped to see those elements folded into the mission concept. Byrne observed that in comparison with CDPs, the review timeline of only three or four months for missions seemed drastically short and unrealistic. Humphris conceded that six months might prove more realistic. Byrne suggested that it might take at least eighteen months. Humphris agreed but emphasized the intent to make it as short as possible. Byrne asked if the SAS involvement in the review included just the SPC and the SSEP. Humphris answered that it specifically meant that the SPC would designate and approve missions, and presumably the SPC would delegate matters to the rest of the SAS as necessary. Ildefonse thought that regular functioning of the mission concept beyond the first year and the role of the SAS seemed almost identical to CDPs. Humphris noted the distinct difference that CDPs develop after a proposal comes into the system, and she viewed mission development as more inclusive of the whole system. MacLeod said that he had assumed that missions would replace CDPs, but now it seemed that they would coexist. He wondered if the program should still promote and consider CDPs. Humphris suggested having only one or the other, with better planning further in advance.

Bekins inquired about the process for selecting and funding mission team members to attend meetings. Humphris believed that the IODP-MI would manage and fund the process, and the teams should include the best-qualified people. MacLeod called it a fundamental shift from the way the IODP operated in the past and deemed it unwise to discard those practices. Fryer inquired about the lifespan of a mission and whether it could continue drawing in new persons throughout its lifetime. Humphris replied that it probably would depend on the mission, with some representing well-defined projects and others more general and open-ended affairs. Mountain understood that a mission team would not necessarily disband after one year; hence, several missions could conceivably exist at the same time. Humphris replied that large mission teams would require a lot of resources and would not last a long time, but smaller scoping groups might persist for a while, and their membership could change over time. Mountain noted that such groups would still involve the use of finite resources. Humphris cited the purpose of achieving important goals of the Initial Science Plan. Allan understood that the mission concept arose because of perceived shortcomings in how well the program addresses the Initial Science Plan. He said that it also would address the issue of program members having very different means of supporting the scientific requirements of developing proposals. Fryer did not see any difference between missions and CDPs, except for the aspect of not accommodating proposals that would not stand on their own. She suggested that the SPC could disband mission teams at any time.

MacLeod expressed concern about the statement that mission teams would exist for only about one year. He doubted the likelihood of developing and forwarding proposals through the SSEP, the SPC, and the OTF in only one year and worried that new mission proposals coming in from the bottom would not have any funds to support them. Humphris envisioned that a mission team would prepare a complete drilling plan that would come through the SAS. MacLeod wondered how such plans could receive the same rigorous SAS review in such a

short time. Humphris expected mission proposals to undergo an even more rigorous review. Searle said that one reason the SSP heard for the mission concept involved freeing up funds for site surveys, which some program members have difficulty obtaining, but that argument did not impress the SSP because most program members have difficulty getting surveys approved. Byrne again recommended asking the SSEP to identify missions and including the fault-zone drilling workshop as a potential mission in the first year. Becker wondered if the SPPOC wanted some sort of recommendation. Humphris thought it would help the SPPOC working group Becker proposed forming a small SPC working group to draft a recommendation. Bekins, Byrne, MacLeod, and Kawahata volunteered.

The committee resumed discussing the mission concept on Thursday morning. Byrne presented the recommendations from the working group discussion. Bekins explained that the group tried to streamline the process and provide an avenue to get started immediately. MacLeod added that they also tried to inject and emphasize a more bottom-up approach. Ildefonse inferred that an October 1 deadline for mission propositions would mean that the workshops scheduled for this year could not contribute to the first missions. Stein found it unrealistic to have the SSEP work on planning the mission concept in May 2006 and then review the first mission proposals already in November 2006. Humphris worried that too many missions would exist at once after having the SSEP suggest the initial missions in May from existing proposals and then receiving the first mission propositions in October. Byrne disagreed because those missions would coexist in different stages of development, and he stressed that this plan would serve to initiate the first missions sooner. Quinn regarded the mission concept as fundamentally flawed and disagreed with the entire principle. He characterized the process as running too fast to meet an artificial deadline and throwing out the years of planning it took to develop the current system. Becker proposed distributing a paper copy of the working group report and returning to the discussion later that day. Mori favored that idea.

The committee resumed discussing the mission concept after lunch. Humphris presented a revised, slightly lengthened timeline for designating and implementing the first missions and incorporating the SSEP involvement. Becker wondered who has the authority to determine that some element of the mission concept gets implemented. Humphris replied that the management forum reported originally to the IODP-MI board of governors, who requested input from the SPPOC by April 2006. She therefore supposed that the SPPOC should approve the plan. Bekins noted that PPGs and DPGs represent part of the SAS and CDPs come from the community, whereas the proposed plan has missions originating within the system. She wondered who would choose the mission themes and mission teams and said that she would prefer to see missions originate from a proposal. Allan stated that when the program comes up for renewal the funding agencies would assess its success against the Initial Science Plan. He noted that the mission concept represented a fundamentally different way of addressing the goals of the Initial Science Plan instead of relying solely on unsolicited proposals from the community. Allan suggested that from the perspective of those who conceived the mission concept, it would represent a bottom-up approach because the community drafted the Initial Science Plan.

Larsen agreed that the program needed a mechanism to oversee and ensure long-term planning, particularly to get renewed. Bekins identified the question of whether the program needed a different mechanism besides PPGs and DPGs to fill in potential gaps related to the science plan. Ildefonse reasoned that proposals could not follow the same review process and different timelines. He regarded workshops as an appropriate way to generate mission proposals but wondered how to decide what workshops to organize. Mori questioned the need

for designating the first missions so fast. Humphris cited the long lead-time required to start the missions and the need to demonstrate that the program addressed the Initial Science Plan when it comes up for renewal. Mori thought that the SSEP report indicated that the existing proposals covered the Initial Science Plan fairly well, and if that represents the main goal of missions then he did not see the urgency. Ishibashi stressed the need for a new system to involve new scientists from other communities. He cited the difficulty of studying new locations that lack geological and geophysical surveys and remarked that microbiologists and geochemists often need help from geologists and geophysicists to prepare good proposals. Yamamoto concurred that microbiologists find it very difficult to join with other individuals who have the appropriate expertise to develop a complete proposal. Mountain recognized certain efforts made to broaden the scope of proponent groups and questioned exactly how the mission concept would work to enfranchise new communities in the program. Humphris identified the goal of including other stakeholders on the mission teams. Byrne wondered who in the IODP-MI would receive input to create mission teams. Humphris believed that Larsen would handle that task.

Becker decided to ask each SPC member whether or not they supported the mission concept in general, whether the revised timeline presented by Humphris looked better than the original, and whether they would subscribe to the statement of the working group as a consensus of the committee. Byrne noted that the committee had already made comments to revise the working group statement. Becker limited the query to just the first two items for now.

Masuda would support the mission concept and accept the timeline, and she mostly agreed with the working group statement. She hoped that new members would find it easier to get involved through mission teams, and she wanted to include small proposals under the mission concept. Kitazato basically supported the mission concept and noted that even geologists do not know the IODP system well. He thought it might take more time to construct mission teams, and he would support the working group statement. Ishibashi supported the mission concept, appreciated the workshop mechanism, and would support the working group statement. Ildefonso supported the mission concept and the working group statement. Kawahata supported the mission concept, the timeline, and the working group statement. He favored involving new scientists and providing better support for site surveys, but he still recognized the need to retain a bottom-up approach. Yamamoto would support the mission concept if it truly helped to involve newcomers and promote new science, and he could accept the timeline as long as it remained flexible. Pedersen supported the mission concept. He suggested that the Moho project, for example, did not require a proposal to get started but could just start with a workshop and go to it, and anyone who wanted to could participate in the workshops.

Fryer could support the mission concept but would prefer eliminating CDPs, DPGs, and PPGs. She also did not feel entirely satisfied with the draft timeline. MacLeod saw a need for cooperating to bring proposals together efficiently and thus supported the mission concept on that basis, but he had serious questions about the implementation plan. He described the timeline as improved but still an ideal. He called it unrealistic to expect missions to represent fully formed articles at birth because most would probably need time to mature. He remained dissatisfied by the idea that one could only generate missions or mission proposals through workshops because that would send an exclusionary message. Mori supported the mission concept in terms of packaging and bringing in new communities and said that if it just represented a matter of packaging science then he would not mind a more top-down approach. He viewed missions as very different from CDPs, which represent specific projects. Byrne supported the mission concept but learned from the development of CDPs that such big

changes take time, and he did not feel ready to jump onboard before seeing the implementation plan defined in better detail. Nomura wondered how to get a sense of priorities among the various proposals that might gather under the umbrella of missions. Bekins would support missions in the sense of having an integrated plan to pursue large targets and a higher level of support for writing proposals and supporting site surveys. She objected to the timeline for the first year because it did not require a proposal for designating missions, and she wondered what documents the program would assess and exactly how. Bekins supported the working group statement because it addressed the longer-term process.

Zhou disagreed with the mission concept for several reasons. He stated that the IODP has a good reputation and tradition as a program driven by proposals from the international community, and he expected many practical problems in implementing the mission concept. He also noted that the present system already takes care to ensure that proposals meet the Initial Science Plan, and he believed that other ways exist to solve the perceived problems effectively through the present system and workshops. Zhou would support the working group statement. Quinn viewed the mission concept and its implementation plan as flawed and totally unnecessary. He said that the fact that one could take workshops and create missions implied that the current system works. Quinn commended the SPC working group, however, for doing a good job. Mountain did not support the mission concept or the timeline. He did not favor making such a wholesale change to the program structure for the stated goals, and he believed that the program could accomplish those goals through CDPs, though perhaps with some earlier financial backing added to the process. Becker agreed with Quinn from purely a science planning perspective that the current system works very well and has the necessary mechanisms in place to succeed. He also saw the benefit of implementing technical planning earlier and would support the concept if it promoted that aspect, but he remained unsure about the necessity of missions. Becker said that he had hoped that the January 2006 SPPOC meeting would have resulted in a clear statement on the necessity of mission planning.

Becker could not discern a consensus among the committee and concluded that the issue probably required a motion. Ildefonse described the timeline as unrealistic. He noted that many persons perceived the program as a closed club, and he feared that the mission concept would only make it worse. He saw much similarity between missions and CDPs and would prefer the name of missions. Bekins remarked that the committee had no guarantee that the final concept would include the aspects that it favored. She proposed adding several points to the consensus statement and suggested separating it into one statement for the first year and another for the later years. Becker doubted that the committee could agree to a revised consensus statement without seeing it on paper, though perhaps they could do it by e-mail. Byrne asked if the committee truly could not have any more time to evaluate and plan the mission concept. Humphris replied that she must say something to the board of governors in April, though she could at least present the SPC and SPPOC opinions.

Becker concluded that the committee could not reach a consensus at this meeting. He proposed trying to revise the draft recommendation by e-mail into something more acceptable. Kawahata observed that a majority had favored the draft recommendation of the working group and suggested that a motion probably would pass. He thus moved to approve the working group statement. MacLeod asked if that meant the original typed version or the modified version. Becker said that it must refer to the original version because no one had prepared the modified version yet. No one seconded the motion. Quinn supported working further on the working group statement. Bekins asked for another representative from Japan to assist. Yamamoto volunteered. Becker proposed a two-week deadline for drafting a revised

statement. Bekins doubted that the committee could reach consensus on a revised recommendation. Becker closed the discussion for now. [Note: the committee received a revised draft mission implementation plan from the SPPOC working group shortly after the meeting and voted by e-mail to approve it.]

**SPC Motion 0603-26:** The SPC accepts the draft mission implementation plan as produced and revised by the SPPOC working group.

*Kawahata moved, Kitazato seconded; 13 in favor, 1 abstained (Quinn), 3 absent (Fryer, Masuda, Mori), 2 non-voting (Pedersen, Zhou).*

#### **14. IODP policy development**

##### **14.1. Third-party tools policy**

Mike Lovell presented an overview of the revised third-party tools policy. He explained how it differed from the old policy used in the ODP and noted that it focuses on policy and not procedures. He added that the policy did not necessarily fully cover observatories, but he expected that aspect to evolve with input from the Observatories Task Force. Lovell presented STP Consensus 0601-8 and sought approval from the committee.

Bekins thought that the new policy made things a little more difficult for proponents. Becker believed that the requirements seemed reasonable and for the good of the program. Duncan thought the STP did a good job of developing and revising policy. Becker sought a consensus to accept the STP recommendation.

**SPC Consensus 0603-27:** The SPC accepts STP Consensus 0601-8 and forwards the revised draft third-party tools policy to the Science Planning and Policy Oversight Committee (SPPOC) for approval.

##### **14.2. Proposal guidelines (handling and length/format)**

Keir Becker recalled the intent of revising the proposal guidelines for ancillary project letters (APLs) but said that this had not happened yet. He no longer regarded it as necessary at the moment, especially with the potentially broader changes pending to incorporate the mission concept in the proposal guidelines. The committee agreed to take no action at this time.

##### **14.3. Biodiversity issues - update**

Hiroshi Kitazato reported on the concept of marine protected areas in coastal regions and on the high seas. He cited various examples of marine sanctuaries or marine protected areas around the world and recommended watching carefully the process for establishing new ones. Kitazato expressed concern that many local governments tend to accept the IUCN reports as a standard for establishing marine protected areas and hence could restrict all scientific research within such areas. He also cited efforts to engage the International Seabed Authority in managing the regulation of marine protected areas on the high seas and explained that this would likely involve strict environmental clearance codes for any research activities. Kitazato reviewed the recently established InterRidge code of conduct. He mentioned a UN General Assembly working group meeting on marine biodiversity beyond national jurisdiction and said that the participants recognized IODP and *Chikyu* activities as scientific research. Kitazato recommended (a) establishing a code of conduct, perhaps using that of InterRidge as a starting model, (b) establishing a marine biodiversity consulting group under the SSEP to evaluate proposals, and (c) appointing a liaison officer within each IO for collecting current topics on biodiversity and environmental protection.

Becker asked if the SPPOC had ever addressed this issue. Humphris did not believe so. Becker suggested that he should approach the SPPOC and inquire about the necessity of creating a code of conduct. Janecek noted that the IODP already has a health, safety, and

environment (HSE) policy statement and that each IO has developed its own statement. Becker recalled that the SPC had some involvement in drafting the IODP statement. Katz clarified that the EPSP spent some time drafting the current HSE statement and the SPC reviewed and approved it. He also noted that the EPSP now has a benthic biologist as a member. Katz asserted that the IODP could not operate under guidelines similar to those in the InterRidge code of conduct. Brumsack suggested that the program must emphasize that it helps to protect the environment through basic scientific research. Allan referred to the previous SPC and SPPOC decisions to approve the current HSE policy statement and suggested considering whether or not to modify that if necessary. Katz read the HSE statement.

Becker advised keeping aware of developments because one of the proposed MPAs would encompass part of the study area in a proposal already residing with the OTF. Duncan agreed with the recommendations to keep abreast of developments. Yamamoto advised that the IODP could consider deep-sea biology as another area of research with which to coordinate. Rack cautioned against crossing the boundary between IO responsibility and the science advisory role. He argued that the program already works with due diligence as evidenced by the IODP wide policy and the efforts of the IOs in pursuing environmental obligations. Allan stressed that the USIO had embarked on an extensive and costly exercise to prepare an environmental impact statement for SODV operations. He also noted that the USIO and the NSF already followed the recommendation to establish a liaison officer. Evans added that the Tahiti expedition plan included a draft policy for reef drilling. Becker concluded that the program had already undertaken all of the proposed recommendations. He suggested that the committee should keep aware of the issues but did not need to take action now.

**Thursday**

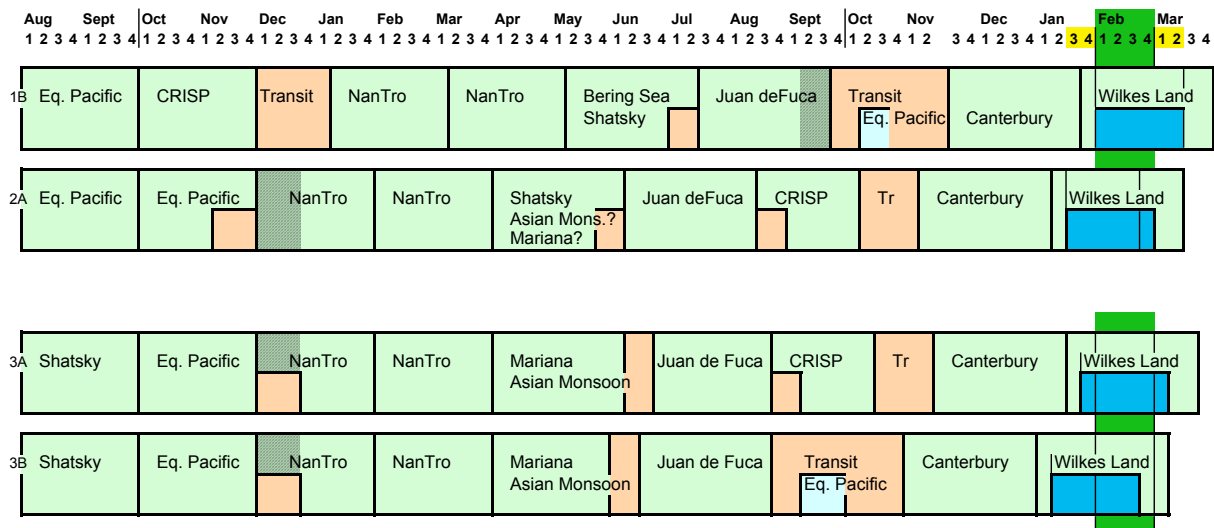
**9 March 2005**

**09:00-15:00**

### **15. Operations Task Force (OTF) report**

Tom Janecek gave an update on the FY2007-08 SODV operations following the OTF meeting the previous evening. Fryer remained out of the room as a proponent of Proposal 505-Full5, and her designated alternate, Filippelli, could not attend this final day of the meeting, leaving the committee short one voting member. Janecek reviewed the scheduling options presented at the October 2005 SPC meeting. He then identified the thirteen proposals available with the OTF for filling the open slots in the FY2008 schedule and described the operating constraints related to geography, environment, and weather conditions. Janecek presented three new models (1A, 1B, and 2A) for a revised SODV operational schedule for FY2007 through early FY2009 and described their pros and cons. He also presented two additional models (3A and 3B) and described their pros and cons. Janecek then eliminated Model 1A because it did not place the Wilkes Land expedition into an acceptable weather window.





Becker suggested first prioritizing the choices within each model. He explained that the proposals in Group I ranked higher than those in Group II and would remain with the OTF if not scheduled. Quinn preferred scheduling the projects that have waited in the queue for a while. Brumsack asked if an additional mini-expedition would fulfill all of the objectives of Proposal 626-Full2 Pacific Equatorial Age Transect. Janecek answered that it would likely result in drilling at least six or seven and possibly all eight of the proposed sites. Becker noted that the SPC essentially had already prioritized the options through the rankings and groupings and thus could just reaffirm those priorities in choosing the options in each model.

**SPC Consensus 0603-28:** In choosing the specific options within individual scheduling models, the SPC retains the relative priorities originally ascribed in forwarding proposals to the Operations Task Force (OTF) in Groups I and II.

Quinn asked if any logistical or operational benefit would accrue from conducting the CRISP expedition before the first NanTroSEIZE expedition. Janecek said no. Ildefonse worried about the added staffing pressure of inserting the CRISP expedition before the NanTroSEIZE expedition. Brumsack noted that the highly ranked Bering Sea expedition appeared in only one model, whereas the lower ranked Shatsky Rise expedition appeared in each of the other three models. He suggested inserting the Bering Sea expedition instead of the Shatsky Rise expedition in Models 3A and 3B. Janecek responded that the weather windows precluded that scenario. Kawahata favored Model 1B because it included the Bering Sea expedition, which had waited a long time and might not get another chance soon. Masuda also supported Model 1B so as to schedule the Bering Sea expedition. Nomura worried that the May-July window might still prove too early for the Bering Sea. Mountain identified the fundamental question of choosing between the Bering Sea and Asian Monsoon expeditions. He asked for more information on the relative merits of those two proposals, as the former went forward to the OTF before he joined the committee. Quinn briefly summarized the objectives of the Bering Sea expedition. Mori recalled that the committee ranked Proposal 477-Full4 Okhotsk and Bering Seas fourth and identified it as a high priority that should have made it onto the schedule in the past.

Ildefonse shared the strong desire for the Bering Sea expedition but still worried about the staffing issue for CRISP and NanTroSEIZE. He suggested that Model 2A would less likely require removing an expedition in the event of a delay in the delivery of the SODV. Janecek confirmed that CRISP would likely drop off the schedule in that case. Quinn did not see much difference in staffing pressure between Models 1B and 2A. Duncan asked about the difference

in transit time between Models 1B and 2A. Janecek said about one week longer in Model 1B. Becker concluded that he had not heard any support for Models 3A or 3B. He thus proposed choosing between Models 1 and 2 with the provision that the OTF continue exploring more efficient scheduling arrangements for FY2008 and FY2009. Humphris worried about making such an extensive long-term commitment to the seismogenic zone initiative. Becker noted that Proposal 537B-Full4 CRISP Phase B would return to the SPC for ranking again. He asked for approval of one of the scheduling models. The committee unanimously preferred the schedule shown in Model 1B.

**SPC Consensus 0603-29:** The SPC approves the revised FY2007-09 operations schedule of the U.S. scientific ocean drilling vessel (SODV) as proposed in Model 1B of the Operations Task Force (OTF). The recommended expeditions will begin in August 2007 and proceed through March 2009 as follows:

- Equatorial Pacific Paleogene Transect I (Proposal 626-Full2)
- Costa Rica Seismogenesis Project Stage 1 (Proposal 537A-Full5)
- NanTroSEIZE Stage 1 (Proposals 603A-Full2, 603B-Full2, 603C-Full)
- NanTroSEIZE Stage 1 continued (Proposals 603A-Full2, 603B-Full2, 603C-Full)
- Bering Sea Paleooceanography (Proposal 477-Full5)
- Juan de Fuca Flank Hydrogeology III (Proposal 545-Full3)
- Equatorial Pacific Paleogene Transect II (mini expedition, Proposal 626-Full2)
- Canterbury Basin (Proposal 600-Full)
- Wilkes Land Margin (Proposals 482-Full3, 638-APL2)

The SPC recognizes this scenario as a preferred model subject to significant change, especially pending further knowledge about the actual SODV drydock location and starting date for IODP operations. The committee thus encourages the OTF to explore further possibilities of revising the FY2007-09 operations schedule before the August 2006 SPC meeting.

## **16. Expedition science assessments**

### **16.1. Expeditions 303 and 306 North Atlantic Climate I and II (see Appendix B)**

Jim Channell presented the initial results of Expeditions 303. He explained the broad objectives and noted that certain sites remained unscheduled because of the need for an ice support vessel. Rüdiger Stein presented additional results of Expedition 306. He noted that they could not drill several sites near the Labrador Sea because of extremely poor weather conditions, and this precluded accomplishing one of the main objectives. Stein reported that they recovered a unique and complete Plio-Pleistocene section. He also described the CORK experiment conducted for separate objectives at one site in the Norwegian Sea.

Quinn asked about the age control and timing of the leads and lags between different proxies and whether they plan to measure other SST proxies besides alkenones. Channell cited the usual difficulty of correlating precisely among various proxies between different sites and the need to find a proxy not affected by climate. He said that they recovered materials that should allow them to correlate at high resolution, but they would have to await the post-cruise results. Stein added that the timing of events such as IRD peaks also depends on location, and they sampled at centimeter-scale resolution for other SST proxies. Kawahata asked about dilution effects on the paleomagnetic intensity records. Channell stressed the importance of finding the right normalizer to get a faithful record. He believed they produced good records because two different normalizers yielded similar results that correlated well with the known climate record. Channell also suggested that the results from Expedition 303 set the stage very well

for Expedition 306, and he expressed disappointment at the inability to drill at the Eirik drift sites. Ildefonse inquired about drilling disturbances and whether this study would send a positive message to the IMAGES community that the IODP provides a reliable tool. Channell replied that APC materials generally exhibit better quality in the upper part of the sediment section than giant piston cores. Mountain asked if having shipboard access to legacy data enhanced the ability to plan contingencies. Stein answered that all of the planned alternatives focused on the same area where they could not operate, and they would have preferred having more alternatives identified in advance with permission to drill. Mountain encouraged making all relevant survey data available to the science party at sea.

#### **16.2. Expedition 307 Porcupine Basin Carbonate Mounds (see Appendix C)**

Akihiro Kano presented the initial results of Expedition 307. He noted the drilling plan limited to three sites on one dead mound and reported the finding that a method of splitting the cores when frozen helped greatly to keep the corals from fragmenting. Kano claimed that the results did not support the hypothesis for a methane seep origin of the mound.

Brumsack asked if the mini-expedition approach succeeded in meeting the scientific objectives. Kano replied that the expedition succeeded in evaluating the main hypothesis about the origin of the mound, and they obtained a new type of sediment never before recovered by ocean drilling. Yamamoto inquired about the cell counting procedures. Bekins noted that they measured viable cell counts. Schuffert asked if they could really conclude from present-day pore-water geochemical profiles that hydrocarbon seepage played no role in the origin and evolution of the mound, since they drilled into a dead mound rather than a live one. Kano admitted that some members of the science party for that very reason still believed in the possibility of a methane-seep controlled origin.

#### **17. International Continental Scientific Drilling Program (ICDP) report**

Ulrich Harms reported for the ICDP. He acknowledged the new journal *Scientific Drilling* as an excellent cooperative effort between the ICDP and the IODP. Harms identified several IODP proposals related directly to ICDP drilling projects. He also described the recent observations of active deformation in the borehole drilled by the SAFOD project.

Larsen asked about the Iceland deep drilling project. Harms explained that the proponents want to drill deep into the hydrothermal reservoirs, and they already secured partial support from industry. Zhou asked if the ICDP had begun developing a new science plan. Harms said yes, and the reviewers urged the ICDP to cooperate with the IODP. Becker asked about any ideas of how the two programs could cooperate better. Harms suggested perhaps by linking the proposal evaluation and steering processes.

#### **18. Other business**

The committee did not raise any other business for discussion.

#### **19. Review of motions and consensus items**

Becker promised to review the motions and consensus statements with the science coordinators after the meeting and produce a draft executive summary as soon as possible. Kitazato presented a farewell address for departing SPC member Hodaka Kawahata. Becker presented a statement thanking Terry Quinn and JOI for hosting the meeting.

**SPC Consensus 0603-30:** Hodaka Kawahata is an active marine geochemist who investigates a wide range of geochemical topics in the oceans. Since joining the SPC at its first meeting in Sapporo, he has made invaluable contributions to the committee and to the program in general through his wide range of knowledge and broad scope. His hobby has been visiting three-star restaurants at any place in the world where SPC meetings were held. Everyone had a chance to hear him lecture about world gourmet food. We regret that Hodaka Kawahata leaves the SPC; however, we are sure that he will stay involved with the IODP community and continuously promote scientific ocean drilling with his passionate science/gourmet power. The SPC thanks him for his powerful works as a member of this committee.

**SPC Consensus 0603-31:** The SPC thanks Terry Quinn and JOI for hosting this meeting in sunny St. Petersburg, Florida, and for the evening reception at the University of South Florida. Terry and JOI were exemplary hosts, even though Terry (a) has been on sabbatical from his home institution this year and (b) was not sure until late last week whether his other IODP duties would prevent him from attending!

## **20. Future meetings**

### **20.1. Liaisons to other panels and programs**

Kitazato volunteered to replace Kawahata as a liaison to the SSEP. Byrne volunteered to serve as a liaison to the IIS PPG. All other liaison assignments remained the same as designated at the October 2005 SPC meeting.

### **20.2. 8<sup>th</sup> and 9<sup>th</sup> SPC meetings**

#### **20.2.1. 28-31 August 2006; (Bergen/Solstrand)**

Rolf Pedersen reported on the plans for the August 2006 SPC meeting in Bergen, Norway. He outlined the preliminary program and noted that any advance meetings on the 27th would take place in Bergen, then everyone would travel by bus to Solstrand on the morning of the 28th and return to Bergen on the afternoon of the 31st. Bekins asked about the possibility of a field trip. Pedersen expected to try organizing an excursion of some sort on the 27th.

#### **20.2.2. March 2007 Japan (or China?)**

Harue Masuda offered to host the March 2007 SPC meeting in Osaka, Japan. Becker proposed the dates of 5-8 March. The committee initially agreed but shortly after the meeting revised the dates to 4-7 March.

Becker adjourned the meeting at 16:45.

## **Appendix A: Detailed Planning Group (DPG) on Hotspot Geodynamics**

**1. General Purpose.** Volcanic chains associated with deep-seated mantle plumes potentially provide valuable information on mantle geochemistry and geodynamics, particularly in establishing the existence and magnitude of true polar wander. Several current IODP proposals (620-Full3 Hotspot Seamounts, 636-Full2 Louisville Seamount, 669-Full Walvis Ridge Hotspot) focus on drilling hotspot chains to address themes related to hotspot-generated volcanic lineaments, including hotspot motion, the temporal evolution of hotspot mantle sources, plate-motion reference frames, and mantle-plume models. The Hotspot Geodynamics DPG should review current approaches and produce a written report that lays out an optimal drilling, logging, and post-expedition science plan for addressing the above objectives.

**2. Mandate.** In particular, the Hotspot Geodynamics DPG should address the following questions:

- What are the minimal or optimal paleomagnetic observations necessary to distinguish true polar wander versus hotspot drift? How many sites are necessary within an ocean basin? In how many ocean basins must seamount chains be drilled? What is the most appropriate order of drilling?
- What geochemical tests are available for discriminating among deep plumes, shallow plumes, or no plumes? How well can geochemical data be used to estimate mantle potential temperatures? What is the best strategy for assessing the geochemical evolution of seamounts by drilling?
- What independent data are provided by mantle flow models? How can seamount paleolatitudes be incorporated to improve these models?
- What is the best strategy to obtain robust paleolatitude estimates from a single seamount? What depth of penetration and how many flows are needed to average secular variation?
- How can independent types of paleolatitude information (e.g., sediment paleoequator, seamount paleopoles) be used better to test true polar wander?

**3. Decisions.** The Hotspot Geodynamics DPG shall make decisions by consensus.

**4. Term and Meetings.** The Hotspot Geodynamics DPG shall have a term of one year, extendable if necessary after review by the SPC. It may convene up to biannually and may hold additional electronic meetings as appropriate. The SPC chair shall approve meeting agendas, dates, and locations, and the IODP-MI vice president of science planning shall authorize the meetings. The DPG chair shall submit meeting minutes to the IODP-MI science coordinators within one month of each meeting.

**5. Membership.** The SPC shall choose the DPG members for their expertise and experience with respect to the assigned mandate. The DPG may have a maximum of fifteen members, including at least two members from each of the main IODP members with lead agency status and at least one member from each of the other IODP members. The DPG members shall have initial terms of one year, extendable upon SPC approval of an extended term of activity for the DPG.

**6. Chair.** The SPC shall appoint the chair of the Hotspot Geodynamics DPG.

**7. Liaisons.** The SPC may appoint a liaison to the Hotspot Geodynamics DPG.

## SPC 0603 Minutes, Appendix B

### SPC Assessment of IODP Expeditions 303 and 306 North Atlantic Climate I and II

(by SPC members Terry Quinn, Hodaka Kawahata, Keir Becker)

IODP Expeditions 303 and 306, conducted in late 2004 and early 2005, were based on Proposal 572-Full3 “Ice-sheet–ocean–atmosphere interactions on millennial timescales during the late Neogene–Quaternary using a paleointensity-assisted chronology (PAC) for the North Atlantic” and Proposal 543-Full2/543-Add “Installation of a CORK in Hole 642E to document and monitor bottom-water temperature variations through time.” The overall objective of Proposal 572-Full3 was to generate a chronostratigraphic template, based on geomagnetic paleointensity, stable-isotope, and detrital-layer stratigraphies, for North Atlantic climate proxies to allow their export and correlation at a sub-Milankovitch scale. The overall objective of Proposal 543-Full2/543-Add was to investigate the feasibility of reconstructing bottom-water temperature histories at the decade to centennial timescale by measuring a high-precision temperature profile in a borehole.

[*Added background note provided by IODP-MI Science Coordinators:* After the SPC reviewed and ranked Proposal 572-Full3, eight new drilling sites (ORPH-3A, LAB-6A, LAB-7A, LAB-8A, LAB-8B, LAB-8C, GAR-1B, and IRD-4A) were presented in the Scientific Prospectus for Expeditions 303 and 306. After Expedition 303, six more drilling sites (LAB-8F, LAB-8G, LAB-8V, LAB-8X, LAB-8Y, and LAB-8Z-alt) were presented in the Scientific Prospectus Addendum for Expedition 306. The former SPC chair and possibly one SPC watchdog reviewed and approved the prospectus addendum, though apparently not the prospectus. The SSP never reviewed any of these new sites, whereas the EPSP approved all but two of them (LAB-8F, LAB-8G). Six of the fourteen added sites were ultimately drilled on Expeditions 303 and 306, as Sites U1302 (ORPH-3A), U1305 (LAB-6A), U1306 (LAB-7A), U1307 (LAB-8C), U1312 (IRD-4A), and U1314 (GAR-1B).]

Expedition 303 recovered sediment cores from seven North Atlantic sites (U1302-U1308), and Expedition 306 recovered sediment cores from three North Atlantic sites (U1312-U1314) plus installed a CORK at one additional site (U1315) in the Norwegian-Greenland Sea. The SPC assessment team used a relative scaling term (strong, moderate, weak) to judge the likelihood of achieving the scientific objectives at each site based on the summary of drilling results presented in the Expeditions 303 and 306 Preliminary Reports and the presentations by the co-chief scientists (Jim Channell and Rüdiger Stein) at the March 2006 SPC meeting in St. Petersburg, Florida.

#### **Expedition 303**

##### ***Sites U1302 and U1303 (Orphan Knoll Region)***

The objective at Sites U1302 and U1303 was to document Laurentide ice-sheet (LIS) instability during and prior to the last glacial cycle. Five holes were APC cored at Site U1302 and two holes were APC cored at Site U1303. A composite record from these two sites yielded a continuous stratigraphic sequence to ~107 mcd, and biostratigraphic data indicate that this sequence spans the last ~1 m.y. Sediments from these sites were judged to be excellent recorders of the geomagnetic field as indicated by the fidelity of the shipboard paleomagnetic record. The downcore MST records provide a guide to the glacial–interglacial cycles and a millennial-scale record of LIS instability through recognition of Heinrich-like detrital events. The sedimentary sequence at Sites U1302 and U1303 provides a high-resolution (13.4 cm ky<sup>-1</sup>) record of LIS instability back to at least Marine Isotope Stage

(MIS) 17, which will serve as a proximal analog to the classic Heinrich-layer stratigraphy of the central Atlantic.

The SPC assessment team judges the likelihood of achieving the scientific objectives at these sites to be strong.

***Site U1304 (Gardar Drift)***

The objective at Site U1304 was to obtain a deep-water record from the southern edge of the Gardar Drift, which should provide a monitor of North Atlantic Deep Water (NADW), sea-surface temperatures (SSTs) and a record of central Atlantic detrital-layer stratigraphy. Four holes were cored with the APC system to a maximum depth of 243.8 mbsf, and overall recovery was 102.6%. Correlation of cores provides a continuous stratigraphic sequence to ~258.1 mcd, with a single potential break at ~199.3 mcd. The almost continuous composite sequence spans the uppermost Pliocene and the entire Quaternary. Sedimentation rates averaged 14.9 cm ky<sup>-1</sup>. The combination of abundant and well-preserved microfossils with a high-fidelity magnetostratigraphic record facilitates the achievement of the research objectives at this site.

The SPC assessment team judges the likelihood of achieving the scientific objectives at this site to be strong.

***Sites U1305, U1306, and U1307 (Eirik Drift)***

The objectives at Sites U1305, U1306, and U1307 were to document changes in the outflow of the Western Boundary Under Current (WBUC), and therefore production of NADW during Pliocene–Quaternary time, and to reconstruct the deep-sea circulation patterns that prevailed during interglacial intervals. Three holes were cored at Site U1305 (average recovery of 104%), just below the main axis of the WBUC, and four holes were cored with the APC system at Site U1306 (overall recovery of 102.5%), within the main axis of the WBUC. Two holes were cored with the APC system at Site U1307 (average recovery of 102%), a location that provides access to Pliocene sediments using the APC system.

Sediments recovered at Sites U1305 and U1306 provide a complete and continuous high-resolution record of paleoceanographic variability in the late Pliocene (U1305) and Quaternary (U1305 and U1306). The development of a paleointensity-assisted chronostratigraphy (PAC) is facilitated by good preservation of calcareous microfossils and a high-fidelity paleomagnetic record. Sedimentation rates are high at both sites (17.5 cm ky<sup>-1</sup> at U1305 and 15.6 cm ky<sup>-1</sup> at U1306).

Sediments recovered at Site U1307 record the Pliocene–Quaternary history of bottom and surface currents and the Laurentide and Greenland ice sheets and provide age control for seismic reflectors that will constrain the sedimentary architecture of the Eirik Drift. Sedimentation rates averaged 4.8 cm ky<sup>-1</sup>, or much lower than at Sites U1305 and U1306. Site U1307, which was not in the initial plan for Expedition 303, was cored because weather conditions caused a delay in drilling at the intended next site (U1308).

The SPC assessment team judges the likelihood of achieving the scientific objectives at these sites to be strong.

***Site U1308 (DSDP Site 609)***

Site U1308 in the central Atlantic is a reoccupation of DSDP Site 609. Significant advances in shipboard and shore-based analytical techniques drove the reoccupation of this seminal site with the objective to recover a demonstrably complete sedimentary section that could be used to establish the isotopic characteristics of NADW, monitor the detrital-layer stratigraphy of the central Atlantic IRD belt, and place this record into a well-constrained chronostratigraphy.

Six holes were cored with the APC system at Site U1307 (average recovery of 95.4%). Sea state (swells up to 6 m), sticky clay, and other debris around the bit and in the BHA complicated coring operations at Site U1308. Despite these adverse conditions, a complete composite section extends to ~3.1 Ma, with a mean sedimentation rate of 7.6 cm ky<sup>-1</sup>. The development of a PAC is facilitated by good preservation of calcareous microfossils and a high-fidelity paleomagnetic record.

The SPC assessment team judges the likelihood of achieving the scientific objectives at this site to be strong.

### **Expedition 306**

#### ***Site U1312 (DSDP Site 608)***

The main objective at Site U1312, a reoccupation of DSDP Site 608, was to obtain continuous records of surface- and deep-water characteristics and their interactions with ice-sheet instabilities during Neogene–Quaternary times.

Severe weather conditions limited drilling operations to two holes at Site U1312. Sedimentation rates were quite low (<1–2 cm ky<sup>-1</sup>), especially in the late Miocene, the major target at Site U1312. Thus, high-resolution studies could not be performed at this site. The interval between 80 and 200 mbsf at Site U1312 is characterized by a weak paleointensity signal. The sedimentary sequence at Site U1312 is almost complete and spans the last ~11 m.y., which should allow the study of climate variability and ocean–atmosphere interactions.

The SPC assessment team judges the likelihood of achieving the scientific objectives at this site to be moderate.

#### ***Sites U1313 (DSDP Site 607)***

Site U1313 is a reoccupation of DSDP Site 607, which has served as a benchmark site for climate records for the subpolar Atlantic. Four holes were drilled at Site U1313, which recovered Miocene to Holocene sediments. Physical properties measurements permitted excellent correlation between the holes. Variations in the color-reflectance signal ( $L^*$ ) closely mimic the global benthic  $d^{18}O$  stack (a proxy of ice volume). Site U1313 provides a complete Pliocene–Pleistocene sediment section, which should allow the investigation of the phasing of the temperature records and its relationship to ice-sheet instability and changes in deep-water circulation throughout the last 5 m.y. High sedimentation rates (~13 cm ky<sup>-1</sup>) in the late-Messinian section should allow a high-resolution study of paleoenvironmental change to be conducted.

The SPC assessment team judges the likelihood of achieving the scientific objectives at this site to be strong.

#### ***Site U1314 (southern Gardar Drift)***

The primary objective at Site U1314 on the southern Gardar Drift was to use the sedimentary sequence to monitor sub-millennial climate variability, especially that associated with NADW. Three holes were cored with the APC system at Site U1314 (average recovery of 102.7%), and a complete, late-Pliocene to Holocene sequence was recovered. Correlations between the holes are straightforward given the prominent variations in assorted physical properties. Sedimentation rates varied from ~7 cm ky<sup>-1</sup> in the late Pliocene to ~11 cm ky<sup>-1</sup> in the Pleistocene.

The SPC assessment team judges the likelihood of achieving the scientific objectives at this site to be strong.



***Site U1315 (Borehole Observatory, close to DSDP Site 642)***

The primary objective at Site U1315 was to install a long-term borehole observatory with a high-resolution, 150-m thermistor string, which was successfully deployed. Site U1315 is proximal to Ocean Weather Station Mike, where fifty years of ocean temperature data have been recorded. These data will be compared with those derived from this borehole experiment and will be used to test the hypothesis that sub-bottom temperature profiles can be used to construct bottom-water temperature histories at timescales on the order of decades to a century. After the CORK was installed, Hole 642E was logged and downhole temperatures indicated significant fluid flow in the hole. This confirms the wisdom of the OTF and SPC decisions to approve the CORK installation in a new hole, instead of in Hole 642E as originally proposed, because of the risk that fluid flow in the old, open hole would obscure the subseafloor temperature signals of bottom-water variations.

The plan is to recover the data from the borehole observatory in approximately four to five years, so no results are known yet. Assuming the instrumentation works well, the SPC assessment team judges the likelihood of achieving the scientific objectives at this site to be strong.

**Overall Assessment of Expeditions 303 and 306**

Overall, the two expeditions were highly successful despite severe weather conditions, especially during Expedition 306, and they fulfilled the objectives outlined in the Scientific Prospectus and Scientific Prospectus Addendum. Some of the drilling sites identified in the original proposal (572-Full3) and the Scientific Prospectus Addendum could not be drilled during Expeditions 303 and 306. Drilling was precluded at the Irminger Basin Sites IRM-2A and IRM-3A prior to the expeditions because of weather considerations. A series of sites down slope from Site U1307 on the Eirik Drift (primary sites: LAB-8V and -8X; alternate sites: LAB-3A, -8A, -8B, -8F, -8G, -8Y, and -8Z-alt) were envisioned to extend the climate record back into the Miocene, but these sites could not be drilled during Expedition 306 because of severe weather conditions. The SPC recommends including the objectives of these high-priority sites and the Irminger Basin sites in a new proposal for future drilling in the North Atlantic (see also SPC Consensus 0503-16).

## SPC 0603 Minutes, Appendix C

### SPC Scientific Assessment of IODP Expedition 307 Porcupine Basin Carbonate Mounds

(by SPC members Hans Brumsack, Patty Fryer, Hiroyuki Yamamoto)

IODP Expedition 307 to drill a carbonate mound structure in the Porcupine Seabight derived from Proposal 573-Full2, which was ranked as a lower Group III drilling target during the June 2004 SPC meeting in Yokohama, Japan (see SPC Consensus 0406-15). The SPC decided to limit the drilling options of Proposal 573-Full2 Porcupine Basin Carbonate Mounds to several sites around one mound. The decision to drill the Challenger carbonate mound, as modified in 573-PRL5, was confirmed at the October 2004 SPC meeting in Corvallis, Oregon, U.S.A. Expedition 307 thus comprised the first IODP mini-expedition, and the question of whether this expedition was scientifically successful may have an impact on future SPC decisions.

The scientific objectives of Expedition 307 were to verify theories on the initiation and growth of the impressive carbonate structures found at the Challenger Mound in the Porcupine Seabight. Two theories have been advocated: (1) oceanographic and paleoenvironmental conditions control mound initiation and growth (external control), and (2) hydrocarbon seepage initiates microbial-induced carbonate formation and indirectly fuels coral growth (internal control). Expedition 307 focused on five major questions or hypotheses:

1. Do gas seeps act as a prime trigger for mound genesis?
2. To what extent have fluids played a role in mound genesis and/or growth?
3. Do prominent erosional surfaces reflect global oceanographic events?
4. May mounds serve as high-resolution paleoenvironmental recorders because of their high depositional rate and contents of organic skeletons?
5. Are the Porcupine mounds present-day analogs for Phanerozoic reef/mud mounds?

During eleven days of drilling operations off southwestern Ireland, eleven holes were drilled at three sites (U1316A-C, U1317A-E, and U1318A-C) transecting the Challenger Mound structure. The drilling sites were selected to constrain the stratigraphic framework of the slope and mound system, to identify and correlate regional erosional surfaces identified in seismic profiles, and to investigate the hypothesized presence of hydrocarbons as the energy source for mound nucleation and sustained growth in a microbe-dominated environment. The drilling efforts were accompanied by an intense regimen of pore-water and microbiology sampling to address the primary objectives related to mound genesis and the potential role of fluids for microbially induced mound growth. Recovery of core material generally was very good, averaging 90.6%.

Site U1316 (965 m water depth) lies down slope of Challenger Mound and served to gain insight into the history of drift deposits on the down-slope flank and the off-mound transport of mound-related skeletal and non-skeletal grains. At this site the expedition recovered a sedimentary suite of post-, syn-, and pre-mound-growth phases that correspond to three lithologic units. Unit 1 encompasses middle- to late-Pleistocene silty clays with dropstone-rich intervals. Below an erosional unconformity, Unit 2 consists of coral-bearing facies (debris flows) of mostly Pleistocene age, followed by a significant hiatus. Unit 3, of most likely Miocene age, is formed by dark-green glauconitic siltstone and is calcareous in the lower part.

The pore-water chemistry is dominated by silicate and carbonate diagenesis. Two zones of enhanced microbial activity were detected which are driven in the upper 10 m by organic matter degradation and in the lower zone by anaerobic methane oxidation. Nevertheless, a significant gas accumulation was not detected. This result is supported by the higher abundance of prokaryotes in the anaerobic methane-oxidation zone.

Site U1317 is located on the northwest shoulder of Challenger Mound and formed the main target of Expedition 307. The boreholes penetrated two lithostratigraphic units: Pleistocene coral-bearing floatstones, rudstones, wackestones, and packstones (Unit 1) and a Neogene siltstone unit (Unit 2), which correlates with Unit 3 at Site U1316. The mound base, at the top of Unit 2, is a firm-ground without lithification features. Although more accurate dating is required during post-expedition investigations, it seems that the mound structure of roughly 150 m was formed within the last 2.5 m.y. For the upper 62 m, a growth rate exceeding 7 cm  $\text{ky}^{-1}$  was established by paleomagnetic measurements. Growth rates seem to be higher during interglacials. It is furthermore indicated that changes in paleoceanographic conditions at approximately 2.5 Ma (establishment of NADW, Mediterranean outflow) provided a major trigger for mound formation.

One of the major findings is that a role for hydrocarbon fluid flow in the initial growth phase of Challenger Mound is not obvious from either lithostratigraphy or the initial geochemistry and microbiology results. As at Site U1316, pore-water gradients are governed by microbial sulfate reduction resulting from organic matter availability and a zone of anaerobic methane oxidation. Major-ion chemistry is governed by carbonate diagenesis, such as dolomitization in deeper intervals. Significant quantities of gas were not detected in the mound or in the sub-basal mound sediments. At least for the dead Challenger Mound, the hypothesis that gas seeps may have triggered mound formation is not supported and might not serve as a model for a microbial origin of Phanerozoic carbonate mounds.

Site U1318 is located upslope from Challenger Mound and served to recover sediments from the three seismic units postulated for the southern Belgica mound province. Unit 1 (about 80 m thick) is <0.26 Ma and corresponds to Unit 1 at Site 1316. It consists of gray-brown silty clay with black mottled structure. Separated by a distinct erosional surface with a hiatus of >0.7 m.y., Unit 2 consists of olive-gray medium-fine sand interbedded with dark, yellow-brown, silty clay. Unit 2 terminates with a basal conglomerate lying on an unconformable boundary with Unit 3. Unit 3 (155 m thick) consists mainly of siltstone and intercalated sandstone beds and is marked by a 10-20 cm thick oyster bed. The boundary between Subunits 3B and 3C is marked by a distinct erosional surface, which creates a high-amplitude reflector in the seismic profile. This reflector tentatively has been identified as the upslope continuation of the mound base reflector.

Some preliminary answers may be given concerning the main scientific questions or hypotheses behind Expedition 307. The shipboard microbial and geochemical measurements have provided enough data to determine the microbial contributions for the carbonate formation. Only low to moderate concentrations of methane or ethane and prokaryote cell counts of  $10^5$  to  $10^7$  cells  $\text{cm}^{-3}$  were detected from samples of the Challenger Mound. These results strongly suggest that hydrocarbon seepage and microbial activity do not contribute significantly to develop the carbonate mound. By contrast, mound growth seems to be related to changes in current speed that seem to be closely linked with paleoceanographic changes. Whether these statements hold through for the whole Belgica mound province remains unanswered until an active (live) mound has been drilled. We also could expect that the further onshore investigations will provide more data to support this preliminary result, and to

make a more distinct profile of the microbial ecosystem driven by geochemical fuel in the carbonate mound.

Erosional surfaces, possibly related to global oceanographic events, form reflectors in the seismic profiles that can be traced as the base for mound growth. Whether mounds serve as high-resolution paleoenvironmental recorders, because of their high depositional rate and contents of organic skeletons, cannot yet be answered unambiguously. Despite the enormous growth rate of the mound structures, a stratigraphic framework is difficult to establish. Challenger Mound shares geomorphologic features with numerous Phanerozoic mud mounds of different ages, but it is not a model for a microbial origin of such structures.

The Expedition 307 mini-expedition was remarkably successful and with hindsight justified the decision of the SPC to schedule this expedition for drilling. Although many of the scientific results are still preliminary, most of the hypotheses and questions were answered and the main goals for drilling were achieved. This is in part related to the well-performed interstitial-water chemistry and microbiology sampling approach. Further highly significant scientific results may be expected from continuing onshore investigations.