



InterRidge

Steering Committee Meeting Report 2009

**CNRS, Paris, France
10-11 July 2009**

**Chair, Jian Lin
Co-Chair, Chris German
Coordinator, Stace Beaulieu**



Participants at 2009 StCOM meeting:

From left: Jiabiao Li, Hide Kumagai, Jian Lin, Jun-ichiro Ishibashi, Nadine Le Bris, Sung-Hyun Park, P. Dass Bissessur, Y. John Chen, Jerome Dymont, Chris German, Dan Fornari, Pedro Ferreira, Benoit Ildefonse, Stace Beaulieu, and K. A. Kamesh Raju.

8 September 2009

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Absent Steering Committee Members:

Colin Devey (Germany, 1999)
Nicole Dubilier (Germany, 2004)
Tim Henstock (UK, 2004)
Rolf Pedersen (Norway, 2001)
Alex Rogers (UK, 2007)

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Appendices

APPENDIX I

InterRidge Chairs and Coordinators; Steering Committee Members;
National Correspondents

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APPENDIX II: InterRidge Estimated Budget for 2009

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Meeting Agenda Day 1, Friday, 10 July, 9AM - 5:30PM

1	Welcome and introduction	J. Lin
2	Accept 2008 meeting report, accept 2009 meeting agenda, and confirm Steering Committee Members	J. Lin
3	InterRidge Office	
A	Coordinator - Update	S. Beaulieu
B	Education and Outreach - Update	S. Beaulieu
C	IR budget 2009	J. Lin
D	Status of payment of billed nations	J. Lin
Coffee Break		
4	Review 2008 meeting Action List <i>(due to time constraints, conducted over email following the meeting)</i>	J. Lin
5	Discuss UK proposal for next InterRidge Office 2010 - 2012	J. Lin
Lunch at CNRS Canteen		
6	National Updates	
A	Principal members	China - J. Chen / J. Li, France - J. Dymont / N. Le Bris, Germany - C. German (report prepared by C. Devey), Japan - J. Ishibashi / H. Kumagai, UK - B. Murton, USA - D. Fornari
B	Associate and corresponding members	India - K.A. Kamesh Raju Korea - S.-H. Park Portugal - P. Ferreira
C	Status of potential membership upgrades / additions	J. Lin
Coffee Break		
7	Working Groups - Updates	
A	Monitoring and observatories	J. Escartin
Dinner at Le Congrès d'Auteuil		

Meeting Agenda Day 2, Saturday, 11 July, 9AM - 12:30PM

7	[Continued] Working Groups - Updates	
B	Deep Earth sampling	B. Ildefonse
C	Hydrothermal energy and ocean carbon cycles	N. Le Bris
D	Long-range ridge exploration	C. German
E	Mantle imaging beneath mid-ocean ridges	Email from N. Seama, presented by S. Beaulieu
F	Seafloor mineralization	S. Beaulieu
G	Vent ecology	Report from S. Hourdez, presented by S. Beaulieu
Group Photo and Coffee Break		
8	Workshop and Meeting Reports 2009	
A	Science and Policy Workshop on Deep-Sea Mining of Seafloor Massive Sulfides	J. Lin / S. Beaulieu
B	KOPRI's 16 th International Symposium on Polar Sciences	S.-H. Park
C	4 th International Symposium on Chemosynthesis-Based Ecosystems	S. Beaulieu
9	Workshops and Meetings proposed for later 2009 and 2010	S. Beaulieu
10	InterRidge Student and Postdoctoral Fellowship Program - Details	S. Beaulieu
11	InterRidge Website, E-mail lists, and Databases - Details	S. Beaulieu
A	Website and email lists	
B	Member Database	
C	Cruise and Vents Databases	
12	InterRidge liaisons with other programs (e.g., SCOR, IODP)	J. Lin
13	Action List for 2009 <i>(due to time constraints, sent over email following the meeting)</i>	S. Beaulieu / J. Lin
14	Next Steering Committee Meeting Location	J. Lin
15	Meeting adjourns	J. Lin
Lunch at nearby restaurant		

1 Welcome and introduction

Our meeting in 2009 was hosted by Françoise Gaill, Director of the new Institute for Ecology and Environment (INEE), and Jérôme Dymont, *Chargé de Mission* of the National Institute for Earth Science and Astronomy (INSU), at CNRS headquarters in Paris, France. Many thanks to Françoise, Jérôme, and colleagues at CNRS for an enjoyable and successful meeting. The agenda of the 2009 Steering Committee meeting was circulated over email to all Steering Committee members and Working Group Chairs for comments prior to the meeting.

2 Accept 2008 meeting report, accept 2009 meeting agenda, and confirm Steering Committee Members

The 2008 Steering Committee Meeting Report was finalized in May 2009 and is available on the IR website at: <http://www.interridge.org/stcom/reports>. At our 2009 Meeting, we accepted the 2008 report and 2009 agenda, and we welcomed three new Steering Committee members: Pedro Ferreira (Portugal), Hidenori Kumagai (Japan), and Nadine Le Bris (France). At the end of the meeting, we also thanked Jérôme Dymont and Chris German, who will be rotating off the Steering Committee at the end of 2009. According to the IR policy established in 2004, Jian Lin (current IR Chair) will stay on as a non-voting *ad hoc* member of the IR Steering Committee in 2010 to assist the transition of the IR Office to the new location. *Action item:* With the office leaving the USA at the end of 2009, USA will need to appoint a second StCOM member.

3 InterRidge Office

3.a Coordinator - Update

Stace Beaulieu, InterRidge Coordinator, highlighted the activities below in terms of how they apply to InterRidge's "Four Main Functions" (<http://www.interridge.org/4mainfunctions>).

Major activities for the Coordinator since the 2008 StCOM meeting included:

- Last quarter of 2008: Annual IR Newsletter;
 - First quarter of 2009: Science and policy workshop and colloquium on Deep-Sea Mining of Seafloor Massive Sulfides (agenda Item 8A; also discussed under Item 7F: Seafloor Mineralization WG) [*note: Stace also had separate WHOI funding of 1-month salary for this effort*];
 - Second quarter of 2009: Follow-up to workshop on deep-sea mining, preparation for 3 InterRidge meetings in June/July 2009 (agenda Items 8B and 8C and StCOM meeting), and selection of 2009 InterRidge Fellows;
- Expected 3rd quarter of 2009 = Vents database;
Expected 4th quarter of 2009 = IR Newsletter and office transfer.

Other activities for the Coordinator since the 2008 StCOM meeting included:

- Revising the InterRidge Cruise, Vents, and Member Databases (agenda Item 11);
- Invoices to member nations, payments to IR-sponsored meetings, coordinating with WGs;
- Education and outreach activities below.

3.b InterRidge Education and Outreach – Update

Major accomplishments in Education and Outreach since the 2008 StCOM meeting included:

- Grant awarded in Nov. 2008 for \$30,000 USD from the International Seabed Authority (ISA) Endowment Fund to supplement funding for the InterRidge Student and Postdoctoral Fellowship Program (agenda Item 10);
- Awarded 2 Fellowships in May 2009: 1 supported by InterRidge and the other by the ISA (agenda Item 10).

Other recent E & O activities for the Coordinator included:

- Presenting the IR statement of responsible research practices at the 4th CBE Symposium in Okinawa, Japan, July 2009 (agenda Item 8C);
- Representing InterRidge program at KOPRI’s 16th International Symposium on Polar Sciences (Item 8B);
- Interviews for Science North (Canada), Deutsche Welle (Germany) and National Public Radio (USA);
- GLOBE/FLEXE (<http://www.globe.gov/projects/flexe>): contacted IR members in the countries for which teachers are involved in the 2009 FLEXE program and offered the opportunity of serving as featured scientists for the students to be in contact with during the program. At the StCOM meeting, Dan Fornari provided two additional slides to describe the FLEXE project. To date, FLEXE has worked with USA R2K scientists. In the next unit, we would like to feature Nicole Dubilier as one of the FLEXE Forum scientists, which will allow us to more directly present the InterRidge program to students.

Note: E & O activities in 2009 did not include either the cruise blog in multiple languages or the International Earth Science Olympiad proposed at last year’s meeting.

Action items: Planned E&O activities for later in 2009:

- InterRidge Global Hydrothermal Vent Fields Database on Google Earth;
- InterRidge on Wikipedia.

3.c InterRidge Budget 2009

Please refer to Appendix II for a table with the estimated budget for 2009. We expect the budget to be balanced in 2009. Consequently we expect the overall budget of the WHOI Office to be balanced for 2007-2009. The WHOI office will transfer to the next IR Office the \$52,521 USD surplus fund inherited in 2007 from the IR German Office as well as \$25,000 USD ISA funding for IR/ISA Student/Post-doc Fellowships for 2010-2011.

3.d. Status of payment of billed nations

At the end of 2008, Portugal was able to pay the Associate Member fees for both 2007 and 2008. As of Mar. 2009, all member fees were paid for 2008. As of the end of July 2009, outstanding payments for 2009 are Korea, Japan (½ JAMSTEC, ½ project “TAIGA”), and Norway. *Action items:* Stace still needs to send a 2009 invoice to Portugal. The 2010 invoices will be sent to China, France, and Germany in early Aug. 2009, and USA in Nov. 2009 prior to the transition to the next office.

4 Review 2008 meeting Action List

(Due to time constraints, the list below was reviewed over email following the meeting.)

List from 2008 StCOM report:

3	InterRidge Office	
A	Coordinator – Update	Stace – Make the link to the IR “Code of Conduct” more visible on the

InterRidge 2009 Steering Committee Report

		IR website. <i>Action: Jan. 2009 – now listed as first item under the main header button “Publications”.</i>
B	Education and Outreach – Update	Stace – If we decide to pursue a large outreach effort in 2009, send email to StCOM to vote on either the international cruise or the Earth Science Olympiad (or other) options. <i>Neither option was pursued in 2009.</i>
C	IR budget 2008	Stace, Jian – Send out final 2008 budget to StCOM in early 2009. <i>Final 2008 budget was included in 2008 StCOM final report.</i>
6	National Updates	
A	Principal members	Stace - Help coordinate information exchange re: a planned Chinese OBS experiment at SWIR with international collaborators. <i>No action needed as of July 2009.</i>
B	Associate and corresponding members	Stace - Provide Sergei with current list of Russian InterRidge members to inform the new staff at the Academy of Sciences. <i>Completed Dec. 2008.</i> Stace - Canada (needs new national correspondent) – <i>Emailed Kathy Gillis in Sep 2008 and Feb 2009 – no response.</i> Next try full list of Canada members or targeted to Laurence Coogan, Anna Metaxas, others involved in hosting the upcoming 5 th CBE Symposium. Stace - New Zealand (needs new national correspondent) – <i>Contacted Cornel de Ronde in Feb 2009 and then Matt Leybourne in Apr 2009 – no response.</i> Dan Fornari said that he could help with NZ contacts.
C	Status of potential membership upgrades / additions	Stace - request new correspondent to Spain (e.g., Xavi Garcia, Carlos Garredo, Eulalia Gracia, or Cesar Ranier). <i>Sent email to Rosario Lunar in Dec 2008 – no response. Update Aug. 2009: Spain is planning to buy an ROV.</i> Stace - For Denmark, Benoit suggested contacting Paul Holm. <i>Sent email in Feb. 2009 – no response. Note: Stace was told that John Hopper is back in Denmark, and sent an email to him in June 2009 – no response.</i> Stace - For SOPAC, Donna/Chuck suggest contacting Doug Wiens and Fernando Martinez for recommendations. <i>No action as of July 2009. Note: could also try contacting John Collen (SOPAC STAR) and/or contacts between SOPAC and UNEP/GRID-Arendal.</i> Stace - Canvas the 32 countries that have individual InterRidge members but are not Corresponding Members. <i>Completed Feb. 2009. As a result, Bulgaria was added as a new IR Corresponding Member.</i>
7	Working Groups – Updates	
C	Monitoring and observatories	Stace - Inform any new members and any inactive members that will no longer be included as part of the WG. <i>Completed Dec. 2008.</i> Dan/Donna - Request Emilie Hooft serve as point person between R2K and IR MoMAR WG.
D	Ultra-slow spreading ridges	Stace/Jian – Disband the Ultraslow WG, send thank you to Jon Snow and ask to submit new proposal at any time if interested. <i>Completed Nov. 2008.</i>
F	Mantle imaging beneath mid-	Stace – Inform Nobi that StCOM suggests broader membership for the

	ocean ridges	WG, e.g., including members from Germany and UK. <i>Completed Nov 2008.</i> Stephane/Chuck – identify new co-chair for 2009, e.g., to represent Asia or Canada. <i>The WG appointed Yoshi Fujiwara at 4th CBE Symposium in July 2009.</i>
H	Vent ecology	Stace – Obtain spreadsheet from Stephane to set up an online form for people to submit high-throughput molecular studies. Entries in the form will be listed as a table similar to the current online cruise database. <i>Completed May 2009.</i> Stephane – work with Maria Baker at ChEss office to include frozen samples on list of biological samples for sharing. <i>Note: this is now an action item for IR office in 2009, as discussed at July 2009 Vent Ecology WG meeting.</i> Stace - 4 th CBE Symposium - Plan for two \$700 student poster/talk awards. <i>Awarded July 2009.</i>
9	Workshops and Meetings Proposed for 2009	Stace - ICES Symposium on issues confronting the deep oceans - Chuck recommended that IR send a representative to this Symposium. <i>IR participants included Fernando Barriga, Maria Baker, Ana Colaço, Eva Ramirez Llodra, Pierre Marie Sarradin, Paul Tyler, and Cindy Van Dover.</i>
10	InterRidge Student Fellowship Program	Stace - IR must create a standard form so that all proposals may be compared directly with each other. <i>Completed Jan. 2009.</i>
11	InterRidge Website, E-mail lists, and Databases - Details	Stace – Check lists of cruises at Integrated Study Sites (ISS)’s that were prepared for the fall 2008 R2K ISS workshops. <i>Completed May 2009.</i> Stace – Check with Sergei Silantsev re: updating list of Russian cruises for the database. <i>Not completed as of July 2009.</i> Stace – Provide list of each country’s cruises from the database to the respective StCOM members for confirmation. <i>Completed prior to StCOM meeting 2009.</i>
C	Cruise and Vents Databases	Stace – add Chinese cruises to SWIR at end of 2008 and additional cruises in early 2009 and send John Chen list of recent Chinese cruises from database for confirmation – <i>Completed prior to StCOM meeting 2009.</i> Stace - Enable cruise metadata entry without requiring member log in (but requiring admin approval to publish to the database). <i>Completed May 2009.</i>
12	InterRidge liaisons with other programs (SCOR, IODP)	Stace - Invite IODP SPC representative(s) to 2009 StCOM meeting. <i>Invited Jim Mori and Bill Ussler.</i>

5 Discuss UK proposal for next InterRidge Office 2010 – 2012

Bram Murton attended the StCOM meeting to present his bid with Jon Copley to host the next InterRidge Office at the National Oceanography Centre (NOC), Southampton, UK. At present NOC has the largest assemblage of ridge scientists and technology in the UK, and a number of ridge-related field programs are planned for UK scientists in the next few years. The vision for the new office includes a focus on encouraging the next generation of ridge scientists. One keystone concept of the proposal is for InterRidge to act as a “broker” for berths for young scientists on research cruises (*note: Pedro expressed this concept best as “the roots on a tree;” discussion of this item included: Nadine – biology cruises tend to be “over-booked” with no extra berths available; Javier – also important for students to go to meetings not just cruises*). The vision also includes extending the scope of InterRidge science to processes that are applicable outside of mid-ocean ridge systems, such as at active arc systems (*note: discussion of this item included: Jiabiao – “ridge” is narrow but should not broaden perspective too far, should keep scope separate from InterMargins; more discussion in Agenda Item 6.c*). Another new aspect in the bid is incorporating social networking into the InterRidge website (*note: discussion of this item included: Stace – Drupal has several tools for social networking*).

After discussion, the following is the list of 8 recommendations for revisions to the UK bid:

1) Develop the third Decade Plan: The current IR Next Decade Plan is 2004-2013. The revised bid should explicitly state a planning process to organize the IR community in a workshop to develop the third decade plan. This effort should be budgeted into at least year 2012 of the UK office budget. (*Note: Discussion of this item included that the next office will only host until the end of 2012, and the first year of the third decade plan would not start until 2014; Benoit – the decadal plan does not have to match the schedule of office rotation.*)

2) Capacity building

(a) The proposal should express a vision for a continuous effort to increase the exposure of IR to emerging economy nations and regions. Part of this vision is expressed in concept of the original bid, but needs more development of plans for implementation, in the proposed travel award program for cruise berths. (*Note: Discussion of this item included: Bram - importance of individual contacts for expanding InterRidge into new countries.*)

(b) The general consensus on the cruise berth program was positive, but there should be flexibility in the number of such awards especially as the program starts (*note: discussion of this item included: Dan/Stace – will need to establish mechanisms by which the applicants are attracted; Bram –two different parties are involved: scientists with available berths and the applicants for those berths; Dan – stressed quality vs. quantity, should start with a few students and then do iterative process for the next year*). Another idea mentioned was the concept of “traveling ambassadors;” apparently, there is such a model program in IODP.

3) Industry and ISA involvement

(a) IR office should continue to be cautious in engaging and interacting with industry, especially for funding. All industry involvement should be discussed and approved by StCOM. One model that IR may look to is the IODP “industrial liaison panel.” (*Note: Discussion of this item included funding from Hydroid for Long-Range Exploration WG meeting in Woods Hole planned for Sept. 2009.*)

(b) Related to mineral resources in particular, IR should continue to have communication and contacts with ISA for collaboration. (*Note: Discussion of this item included: Jerome – InterRidge has an important role now that there is commercial economic interest and not just basic research at ridges; Bram - agreed that IR should expand societal relevance and mentioned that he serves on IODP’s Environmental Protection and Safety Panel.*)

4) Outreach

(a) Explicitly state that outreach work during the UK office will not directly benefit Jon Copley’s private company.

- (b) IR, being an international program, would need to have the outreach products available in multiple languages. The new office could include in the plan for the migration of the IR web site to the UK office, to ensure that more content of the web site is made available in different languages. (*Note: Discussion of this item included: Jerome – problem with IR's E&O in the past was that it was only in English, and that could not be justified to French funding agencies. Jian – previously similar issue with China, Japan, and Korea. Dan – Expect non-trivial to migrate website to new office.*)
- 5) Newsletter and e-news: The consensus of the StCOM was that IR should not produce a peer-reviewed journal but rather should encourage special issues of existing journals. Another consensus was that biweekly e-news is an appropriate frequency for rapid dissemination of IR-related information. (*Note: Discussion of this item included: Nadine – it is good to have an outlet for non- peer-reviewed news that is provided rapidly to the InterRidge community; Kamesh – should disseminate hard copies of IR Annual News, not just PDF file, esp. to those in developing countries.*)
- 6) Working Groups: The revised proposal should put more emphasis on Working Groups as an effective mechanism to achieve the mission of IR. The WG's (and their workshops) should be evaluated on a case-by-case basis, based on the WG mandate and not based on a strict metric of proposals produced. The StCOM meetings effectively provide an annual review of each WG's activities.
- 7) External review of IR: There should be clarification of the effort involved in the proposed UK annual external review of IR.
- 8) Budget revisions
- IR contribution to Student and Postdoctoral Fellowship Program is \$5,000 each year;
 - ISA Endowment Fund contribution is \$10,000 per year for 2009-2011;
 - Flexibility in the budgeting of the new cruise berth program.

Action items: This list of 8 recommendations from the StCOM was emailed to Bram and Jon after the meeting, and we asked for a revised bid by early August for a final decision by the end of August.

6 National updates

Since the 2008 StCOM meeting, InterRidge gained one regional and national Corresponding Member (Bulgaria). As of July 2009, the total number of IR regional/national memberships is 31.

6.a Principal Members

China: J. Chen and J. Li reported on InterRidge China. Since the last StCOM meeting, China has conducted two cruises (one biology and one geology) to the Southwest Indian Ridge in Oct 2008-March 2009. The first Chinese OBS experiment in the South China Sea was conducted in Apr-Jun 2009 (PI Jiabiao Li; 37 OBS deployed, 34 OBS recovered). The next voyage of R/V Dayang Yihao starts at EPR in July 2009 and will repeat the track of the 2005 cruise. They encourage use of R/V Dayang Yihao by scientists of other countries. The first Chinese OBS experiment at the Southwest Indian Ridge at 50°W is planned in Jan-Feb 2010 (expect to deploy 24 OBS). They also mentioned future plans for a COMRA SWIR Observatory and a potential proposal for ocean drilling of Indian Ocean vents. Questions included: Jian – what is the status of China's 7000-m submersible? John/Jiabiao – a test of the 7000-m human-occupied vehicle is planned for late 2009 or early 2010. A ship has not yet been chosen to host this vehicle. In June 2009 a Chinese ROV was tested in the South China Sea.

France: J. Dymont and N. Le Bris reported on InterRidge France. Cruises highlighted: completed = GEISEIR 1 (SEIR 87-99°E); postponed to Sept. 2009 = BATHYLUCK (MAR Lucky Strike); scheduled for 2010 = HYDROBS-MOMAR (MAR, S. Azores), MOMARSAT (MAR Lucky Strike), BIG (Guaymas), PARISUB (EPR 16°N), MESCAL (EPR 9, 11, 13°N), GEISEIR 2 (SEIR 82-88°E), OAHASIS-BIO (CIO); and planned but not yet scheduled = SMOOTHSEAFLOOR (SWIR 61-66°E). In terms of the French research fleet, R/V L'Atalante was refurbished last winter, and ROV Victor will be refurbished next winter. InterRidge France has very limited funding from CNRS INSU, which is just enough to pay for the IR StCOM participation and some travel. CNRS INEE (led by Françoise Gaill) will provide a similar funding, allowing for more community action starting by a meeting in November 2009, in Brest.

Germany: C. German provided a brief update during the StCOM meeting. C. Devey sent the following report over email: The German Ridge program entered its final phase of operations in 2009. The program officially ends on 30 Sept. 2009, although the IR full member contribution is guaranteed for 2010. As of 2011 the status of the IR contribution is presently unsure - discussions within the German community will be held at the wrap-up session of the program on 21-23 September, just before the INVEST meeting in Bremen. The German Ridge group, together with colleagues from other IR nations, has approached G-cubed about an interdisciplinary theme with the title: "From the mantle to the ocean: Life, energy and material cycles at slow-spreading ridges." We are presently compiling a list of authors and titles to prepare the full proposal for G-cubed. During 2009 we also had the last two cruises in the German Ridge program, one to Logatchev (MSM10/3) and one to the south equatorial area MAR 4-11°S. Highlights of these cruises were extensive in situ biological work at Logatchev and the first successful deployments of the new 6000 m-capable ridge research AUV "ABYSS." "ABYSS" is equipped with E_h and turbidity sensors specifically for hydrothermal prospecting as well as a multibeam echosounder (Reson 7125), side-scan, sediment-penetrating echosounder and camera/flash system. The first mapping work in the region around the Lilliput hydrothermal area at 9°30'S in 1500-m water depth has returned maps in unprecedented detail which will greatly help with volcanological interpretations. [Also, from Chris's update – Turtle Pits vent site near 5°S is still at 407°C.] Ridge work in Germany will not of course finish with the German Ridge program. Already cruises to the Woodlark Basin are planned for Nov. 2009 (PI C. Devey) to study ocean basin formation. [Nicole added - the German Research Foundation funded a Cluster of Excellence at Marum, Bremen for the years 2008 - 2012 that includes a large research program for geological, chemical and biological research on hydrothermal vents. The following cruises are funded through this program: a) MomarMap, RV Poseidon P402; 30 Jul - 10 Aug 2010; Menez Gwen, Azores; AUV and ROV Cherokee Bremen; Chief Scientist: Christian Borowski; b) MenezMar, RV Meteor M82/3; 30 Aug – 08 Oct 2010; Menez Gwen, Azores; ROV Quest Bremen; Chief Scientist: Nicole Dubilier; c) Bambus, RV Sonne, June 2011; Manus Basin; ROV Quest Bremen; Chief Scientist: Wolfgang Bach. For both cruises to Menez Gwen, Portuguese scientists have been invited.]

Japan: J. Ishibashi and H. Kumagai reported on InterRidge-Japan. Project TAIGA (Trans-crustal Advection & In-situ bio-geochemical processes of Global sub-seafloor Aquifer), an interdisciplinary study program, has been funded for FY2008-2012 as "Grant-in-Aid for Scientific Research on Priority Areas" by MEXT (200 million yen x 4.5 yrs). Project TAIGA has the following five program teams: A01: Relation between geophysical & geochemical characters in various TAIGA; A02: Biogeochemical impact of TAIGA on deep-sea environment; A03: Time dependent variation of TAIGA; A04: Interaction between physico-chemical character & microbial activity in TAIGA; A05: Construction of TAIGA in the laboratory. The field study plan has three integrated

studies sites: Okinawa Trough, S. Mariana BSC, and Indian RTJ. Sixty members participated in the second annual meeting of the TAIGA project earlier this year (note: Jun-ichiro distributed the IR “Code of Conduct” guidelines at this meeting). Cruises scheduled for 2009 and early 2010 include: NT09-10-2 (Okinawa Trough), YK09-08 (Southern Mariana), NT09-11 (Okinawa Trough), KT09-16 (Okinawa Trough), YK09-12-1 and YK09-12-2 (Central Indian Ridge), and KH09-5-4 (SWIR). Cruises are proposed but not yet scheduled for later 2010-2012. They would like to promote international collaborations by exchange of on-board scientists and through international workshops. InterRidge-Japan domestic meetings include two annual meetings: regular session “Marine Geoscience” at the JpGU meeting in May, and ridge study symposium in Oct supported by ORI, U Tokyo, and with special lecture for students and young scientists, as well as ad hoc meetings in 2009 (TAIGA in March and June, and Geochem Soc Jpn, Hiroshima, Sept). Questions: Bram – Is benthic multicoring system (BMS) rock drill similar to British or German rock drill? Answer – yes, penetrates ~20m. Dan – there is some interest in USA for shallow drilling technology.

UK: B. Murton provided a brief update on UK research cruises from this past year, including the JR224 ChEsSo cruise to the East Scotia Ridge in which a high-temperature vent was discovered at 2500-m depth and the JC24 cruise led by Roger Searle to study axial volcanic ridges of the northern Mid-Atlantic Ridge. In summer 2009 the AUV Autosub 6000 and a remotely-operated TV grab system will be tested to 6000-m in the Cayman Trough. In early 2010 there will be a second UK expedition to the East Scotia Ridge and another cruise to the Cayman Trough with Autosub and TOBI. As a consequence of collaborations deriving from an InterRidge ridge-hotspot interaction workshop in 2003, Bram will be leading a follow-up cruise in 2010 to v-shaped ridges at the Reykjanes Ridge. Bram mentioned that there is currently no formal or informal structure for ridge scientists to meet in the UK. The NERC support for the proposed IR Office will be encouraging to scientists in the UK; NERC previously supported the BRIDGE program.

USA: D. Fornari reported on the USA Ridge 2000 Program (R2K; www.ridge2000.org), with office at WHOI as of Nov. 2008. In terms of funded research, Dan listed R2K field programs in 2009 to the three ISS’s: Eastern Lau Spreading Center (ELSC; including a NLSC eruption response cruise), JdFR, and EPR (including Guaymas Basin). One of the cruises to the ELSC was featured during the FLEXE Education & Outreach program. Dan also provided a technology update, mentioning the Hybrid Remotely Operated Vehicle (HROV) Nereus, which recently dove to the Mariana Trench. A new NSF Program Announcement was issued in Jan 2009, and R2K received 40 proposals in the April 2009 proposal deadline. The R2K 2009 Distinguished Lecturer Series features Rob Reves-Sohn, Dana Yoerger, and Breea Govanar, and the 2010 Series features Suzanne Carbotte, Bill Seyfried, Matt Schrenk, and Adam Soule. An R2K Integration and Synthesis Workshop: “Developing a holistic view of oceanic spreading center processes” is planned for 1-3 Oct 2009 in St. Louis, MO, USA. Dan has recently been working on the R2K data compliance plan, and he would like to continue discussion of international data accessibility and IR’s role in fostering international data sharing. Dan’s recent efforts have been geared towards integration and synthesis of R2K research, and he expects to gear more efforts in the next year towards the plan for USA ridge research after the R2K program ends in 2012.

6.b Associate and Corresponding Members

India: K.A. Kamesh Raju reported on the ridge program in India. The Ministry of Earth Sciences (MoES) is funding “Studies on Hydrothermal Sulphides” for 2008-2013 with target areas: Carlsberg Ridge, Central Indian Ridge, and Andaman Backarc Spreading Center. The National Institute of Oceanography, Dona Paula, Goa, is the

nodal lab, and participating labs are NGRI, Hyderabad, Delhi University (DU), New Delhi, IUAC New Delhi. The program encourages participation of graduate students from all over India. Plans include deploying AUVs and ROVs during this phase of exploration of slow spreading ridges in the Indian Ocean. Sanctioned funding is about 8.4 million USD. India is eager to locate new active vent sites in the Indian Ocean and to initiate vent-specific multidisciplinary experiments. Two cruises to the Carlsberg Ridge in May (completed) and Nov. 2009 were planned under the new program to investigate hydrothermal plumes and to locate the active vent site. Unfortunately, in May 2009, WHOI withdrew its commitment to provide the AUV Sentry to the November 2009 cruise because of concerns over piracy in the Indian Ocean that had also caused the cancellation of other U.S. cruises. However, despite U.S. concerns, the first cruise by the Indian team, also in May 2009, had passed off in the same area with no evidence of any risk from piracy. Kamesh also stressed that in order to increase its reach and effectiveness InterRidge has to constantly find ways to assist developing nations. *Action item:* Discuss the option of finding a replacement vehicle for the upcoming Carlsberg Ridge cruise. Dan mentioned the possibility of using WHOI TowCam.

Korea: S.-H. Park reported on ridge-related activities in Korea, including the following:

- 16th International Polar Symposium, KOPRI, 10-12 June 2009 (see details in Agenda Item 8B).
- Icebreaker R/V Araon will be delivered in September and a test cruise will be conducted in Nov. 2009. The mission of Araon is to conduct comprehensive scientific surveys in the polar oceans and logistics to the Korean stations in the Antarctic (King Sejong station in King George Islands and a new station in Antarctic continent). Proposed scientific programs with Araon include: Response of the biogeochemistry and ecosystem in the Southern Ocean and the Arctic Ocean to climate change, Multi-disciplinary exploration of polar ridges such as Pacific-Antarctic and Gakkel ridges, Hydroacoustic monitoring on Antarctic Ocean, and Paleoceanography in Arctic and Antarctic Oceans.
- Fund raising activities for KOPRIDGE Program for the Pacific-Antarctic Ridge, phase I proposed for 2010-2014 and phase II for 2014-2019. There was some discussion of Korea upgrading to principal membership if the KOPRIDGE proposal is funded.
- Hydroacoustic monitoring on Bransfield Strait, December 2008.
- Central Indian Ridge, just north of triple junction (R/V Onnuri, KORDI), December 2009, related to mineral resources.

Portugal: Pedro Ferreira reported the recent purchase of an ROV that has undergone two sea trials and is planned for work related to Portugal's extended continental shelf. The two Portuguese research vessels belong to the government - one hosts the ROV and the other will host a TV grab (not purchased yet). Pedro explained the process by which Portuguese academic researchers apply for funding (once every 3 yrs). Pedro stressed that the Portuguese science community is interested in international collaboration. Pedro is aiming to conduct a multi-disciplinary cruise (geology/biology) at Menez Gwen in October 2010. *Question from the StCOM – how can IR help Portuguese scientists in their work at Menez Gwen, especially considering that there is a German cruise planned there for summer 2010?* Chris – mentioned that Menez Gwen is within Portuguese EEZ and suggested that IR encourage PI's to include Portuguese research teams on cruises to Menez Gwen. Javier – Portuguese researchers involved in every MoMAR cruise. Javier has talked with Nuno Lourenco about the possibility of using the new Portuguese ROV on MoMAR cruise. Jian – is there an opportunity for more formal organization of ridge scientists within Portugal for coordination? Benoit – suggests hosting IR meeting in Portugal to encourage international collaborations and spur internal coordination.

6.c Status of potential membership upgrades / additions

Note: table of national memberships: http://www.interridge.org/files/interridge/IR_member_nations_table_2009.pdf

Potential upgrade from Associate to Principal Membership: Korea? India?

Potential upgrades from Corresponding to Associate Memberships: Brazil?, Canada? (needs new national correspondent; Bram – wondered why Canada is “missing” from our member nation list; Nadine – might approach Kim Juniper as proposed host of 5th CBE Symposium), Italy? (Benoit – has contacts in Italy), New Zealand? (needs new national correspondent; Dan – may be able to help with contacts), Russia?, Spain?

Potential new Corresponding Members: Ecuador? (Dan - emailed contacts in Galapagos)

Potential subtractions from Corresponding Members: Mexico (not able to get in contact over email with correspondent in Mexico, J. Eduardo Aguayo-Camargo), SOPAC (no one from SOPAC has responded to emails or regular mail; *Action item*: Try to get in contact with SOPAC through ISA or UNEP/GRID-Arendal. Hydrothermal Energy and Ocean Carbon Cycles WG may be interested in teaming with SOPAC for potential workshop in 2011.)

General discussion: Hide – it is surprising that there are 6 Principal Members and only 4 Associate Members. Bram – what is the incentive for full membership? Jian – operationally have 2 members on StCOM and possibility to host the IR office. Kamesh – in India the endorsement of IR helps funding of ridge science projects. Jiabiao - suggested that for some countries, upgrading to a paying membership might be easier if the money went directly to specific items such as cruise participation or student fellowships. Dan – suggested that broadening the scope of IR’s science mission may catalyze some national memberships, e.g., New Zealand probably not interested in mid-ocean ridges but rather interested in seafloor mineralization. In addition linking IR to “practical, societally relevant” work may be attractive to industrial consortia that fund science. Bram – countries with links to industry, e.g., Norway, might want to expand scope of InterRidge to processes such as fluid flow through crust. Jerome – would not want science mission too broad, would compete with SCOR. Jian – SCOR lacks emphasis on marine geology. Chris – this discussion of the scope of InterRidge science will be important for the next decade plan.

7 Current working groups – Updates

In 2009, there are 7 active IR working groups. The StCOM recommended that all WG’s continue into 2010, with the exception of the Monitoring and Observatories WG as described below. The subject of new WG proposals was deferred to the next IR office; however, potential topics for new WG’s were mentioned, such as oceanic detachment faults, shallow drilling, and a new WG for deep drilling.

7.a Monitoring and Observatories

Chairs(2009) - Javier Escartin (France) & Ana Colaço (Portugal)

Group Members - Doug Connelly (UK); Emilie Hooft (USA); Anna-Louise Reysenbach (USA); Ricardo Santos (Azores).

Javier presented an update of recent and planned fieldwork at MoMAR. Due to the use of French deep submergence assets after the Air France crash on 1 Jun 2009, the BATHYLUCK cruise to Lucky Strike was postponed to Sept. 2009 (and reduced in duration). The ESONET Test Seafloor Observatory installation is planned for 2010 at Lucky Strike. A workshop specific to ESONET MoMAR will be held 5-7 Oct 2009, followed by an ESONET best practices workshop on “Instrumentation - Infrastructure – Interoperability” on 8-9 Oct. In 2009 Javier hired for 5-mos a GIS technician to work on an online geodatabase for MoMAR. Chris – is the job of the MoMAR WG

complete? Should the WG disband? Benoit – IR should have a liaison to ESONET’s MoMAR demonstration mission (http://www.esonet-noe.org/main_activities/demonstration_missions/momar). General question – would IR’s MoMAR WG just be PI’s within the ESONET group of PI’s? Dan – IR should help foster collaborations among the various international observatory programs. Chris – this may be important for IR’s third decade plan. *WG assessment from StCOM:* StCOM recommends that this WG wrap up this year but should maintain a liaison between IR and the ESONET MoMAR mission in 2010.

7.b Deep Earth Sampling

Chair - Benoit Ildefonse (France)

Group Members (Canada, China, France, Germany, Japan, UK, USA) - Wolfgang Bach; Mathilde Cannat; Henry J. B. Dick; Katrina Edwards; Kathryn Gillis; Peter B. Kelemen; Chris J. MacLeod; Jay Miller; Yasuhiko Ohara; Jan M. Peter; Damon A.H. Teagle; Douglas R. Toomey; Susumu Umino; & Huaiyang Zhou.

Highlights for this WG since fall 2008 include:

- meeting in Dec. 2008 prior to the AGU Fall Meeting [3 outcomes: request sent to EDP to set up a technology and science planning group for very deep drilling, decision to organize scientific planning workshop before INVEST, and motion sent to Science Planning Committee (SPC) chair to re-state the importance of returning to 1256D as a short-term community priority];
- participation of B. Ildefonse at the March 2009 IODP SPC meeting in Miami, FL, USA (note: Jim Mori, SPC Chair, considered Benoit to have a conflict of interest during the SPC’s discussion of proposal rankings; thus, Benoit left the room for this portion of the SPC meeting);
- convening the Melting, Magma, Fluids and Life (MMFL): Workshop for Scientific Ocean Drilling, 27-29 July 2009, \$3000 approved by IR StCOM (as of early July, there were 68 registrants from 9 countries);
- organizing the ECORD Summer School: Geodynamics of Mid-Ocean Ridges, 31 Aug - 11 Sep 2009, \$3000 approved by IR StCOM; and
- participating in the Sept. 2009 INVEST workshop.

WG assessment from StCOM: the DES WG should continue into 2010, to follow-up on the July 2009 MMFL workshop and Sept. 2009 INVEST workshop. In 2010 the StCOM may decide that it is time for this WG to disband; however, the StCOM wants IR to maintain a liaison with IODP. *Action items:* Add recently released IODP Thematic Review to InterRidge website. Send email to Jim Mori to restate the wish of InterRidge to maintain a liaison with IODP. Invite IODP representatives to 2010 StCOM meeting.

7.c Hydrothermal energy and ocean carbon cycles

Co-Chairs - Nadine Le Bris (IFREMER, France), Christopher R. German (WHOI, USA)

Group Members - Wolfgang Bach (Univ. Bremen, Germany); Loka Bharathi (National Institute of Oceanography, India); Nicole Dubilier (Max Planck Institute Marine Microbiology, Germany); Katrina Edwards (Univ. Southern California, USA); Françoise Gaill (CNRS, Paris, France); Toshi Gamo (Univ. Tokyo, Japan); Peter Girguis (Harvard Univ., USA); Xiqiu Han (Second Institute of Oceanography, SOA, China); Julie Huber (Marine Biological Laboratory, Woods Hole, USA); Louis Legendre (LOV-UPMC, Villefranche, France); George W. Luther III (University of Delaware, USA); William E. Seyfried Jr. (Univ. Minnesota, USA); Stefan Sievert (WHOI, USA); Ken Takai (JAMSTEC, Japan); Andreas Thurnherr (Columbia Univ., USA); Margaret K. Tivey (WHOI, USA).

Nadine presented the new SCOR Working Group for 2009-2013, co-funded by InterRidge, with full name "Hydrothermal energy transfer and its impact on ocean carbon cycles." This WG effectively replaces the previous IR WG for Biogeochemical Interactions at Deep-Sea Vents. The WG mission is to consider the diverse pathways of biomass generation driven by hydrothermal processes on MOR and the potential contribution that they may make to the global ocean carbon cycle. Three key objectives are: 1) to synthesize current knowledge of mechanisms and rates of chemosynthetic carbon fixation and the transfer of phytoplankton-limiting micronutrients to the open ocean, 2) to integrate these findings into conceptual models of energy transfer and carbon cycling through hydrothermal systems in view of a future assessment of the contribution of these systems to the global-ocean carbon cycle, and 3) to identify critical gaps in quantification of the impact of deep-sea hydrothermal systems on ocean carbon cycles and to propose a strategy for future field, laboratory, experimental and/or theoretical studies to bridge these gaps. The WG has 10 full members according to SCOR guidelines, and also has additional affiliated members. Benoit – suggested a tectonics/magmatism expert should be included as affiliated member (e.g., convener of 2010 Chapman Conference). The first meeting of this WG will be held in Woods Hole on 23-24 Nov 2009. They are targeting 2011 for an international workshop on chemosynthetic primary productivity and mechanisms of CO₂-fixation, perhaps at a venue in the South Pacific, to link with the GEOTRACES effort in 2012 to “slice” through the hydrothermal plume that spans the S. Pacific from Peru to Tahiti. In 2012 they would like to publish a synthesis report and special issue of a journal to be identified. *Consent item:* The StCOM approved \$2,000 USD for the first meeting of this WG. Note: the co-sponsorship with SCOR requires that IR contribute an additional \$1,000 USD to this meeting; for 2009 this can be done with the in-kind support from the IR Office since the meeting will be held in Woods Hole. *Action item:* Talk with conveners of 2010 Chapman Conference re: an expert in magmatic and tectonic drivers of hydrothermal circulation, avoiding already overrepresented countries such as USA and France. A representative from a southern hemisphere country will be particularly welcome.

7.d Long-Range Ridge Exploration

Chair - Colin Devey (Germany)

Group Members (Brazil, China, France, Japan, South Africa, UK, USA) - Lucia Campos, Chris German, Gwyn Griffiths, Hidenori Kumagai, Anton le Roex, Jiabiao Li, Marcia Maia, Sidney Mello, Koichi Nakamura, Cindy Van Dover.

This WG will hold its first meeting on 14-16 Sep. 2009 in Woods Hole, MA, USA. In addition to the \$2000 approved by the IR StCOM for this meeting, the WG was awarded \$7000 USD from Hydroid, Inc., a company near Woods Hole that designs and fabricates AUV's. Chris presented a plot of the global distribution of known hydrothermal vent sites and circled three regions for which this WG may decide to focus: the Southern Ocean in particular the Pacific-Antarctic Ridge, the Chile Rise, and the southern Mid-Atlantic Ridge. With regard to the Southern Ocean, Chris mentioned a talk by Gisela Winckler at the Goldschmidt Conference in June 2009 in which Helium isotopes revealed hydrothermal activity, with data excluding a source of hydrothermal fluids north of 55°S. Discussion: Dan – is the focus of this WG on technical solutions? Chris – motivations are both science and technology. General question of what region the WG will focus efforts, and whether the focus will be on completely unexplored remote region. Kamesh – probably important to go where there is some preliminary information, but where no advanced survey technology has yet been used.

7.e Mantle Imaging

Chair - Nobukazu Seama (Japan)

Group Members (China, France, USA) - Douglas A. Wiens, Alan D. Chave, Douglas R. Toomey, Pascal Tarits, Wayne C. Crawford, John Chen.

This WG has not formally held its first meeting yet. Nobi Seama, Doug Wiens, and Pascal Tarits met on 26 February 2009 during the Stagnant Slab Project meeting in Japan and drafted a plan for the WG (below). After the meeting, Nobi and colleagues at InterRidge-Japan discussed the possibility of hosting an IR Theoretical Institute (or symposium) with a workshop. Such an event may be feasible in 2011FY (after April 2011). Nobi obtained agreements for help from InterRidge-Japan for organizing the meeting and for some funding from project TAIGA. Assuming the WG agrees to this plan to host an IRTI in 2011FY, Nobi would like to plan the details of the meeting by early 2010. Then, he would write a JSPS (Japan Society for the Promotion of Science) proposal in April 2010 for the majority of funding for the IRTI.

Mantle Imaging WG plan:

(1) Special session in 2010 EGU meeting: The WG will submit a proposal for a special session in 2010 EGU meeting. The topic will be related to mantle dynamics under ridge system.

(2) IR Theoretical Institute (or symposium) with a workshop:

The WG will organize an IRTI (or symposium) with a workshop in Japan in fall 2011. The WG will obtain funds for the meeting, to include at least fees for the place and fees to invite people in minimum number, and possibly support for graduate student travel. The WG will submit a proposal to the IR office for \$2,000 (first meeting of WG) + \$3,000 (support for IRTI). WG members from each country will make an effort to get some national funding for the meeting. Nobi will write a proposal to JSPS that could provide special funding to support an international meeting in Japan (deadline April 2010). JSPS announces awards in August; the maximum money available per proposal is 3.5 Myen, and the success rate for a proposal is 30%. Potential scientists for the meeting include those who work on: Results from large-scale experiments (e.g., MELT, Mariana); Rock laboratory experiments; Petrologists; Numerical modeling.

(3) Web page in IR website to share information on long term OBS and/or OBEM observations:

One realistic way to promote large-scale seismic/EM experiments to image the mantle structure at ridge systems is to enlarge a pre-scheduled single nation seismic/EM experiment by adding instruments with an international team. A first step in enlarging a pre-scheduled experiment is to share the information on long-term OBS and/or OBEM observations planned by individual scientists. *Action item:* the InterRidge Office will post this information under the Mantle Imaging WG page in the InterRidge website, where scientists who could accept additional instruments from other countries can easily put their information. Required items of the information for long term OBS and/or OBEM observations are: (a) Scheduled or Planned, (b) Scientific objectives, (c) Location, (d) Duration, (e) Instruments and their number, (f) Deployment and Recovery Cruises, (g) Availability of additional instruments from other groups, (h) Availability of bunks for graduate students (the WG would like to encourage graduate students to join a cruise of different country, which could result in new connections for the future), and (i) Contact Persons. The procedure would be: (a) Scientist sends new cruise information to IR office, (b) IR office updates the website (www.interridge.org/OBS-OBEM), and (c) IR office provides the cruise information update through IR email news.

7.f Seafloor Mineralization

Chair - Maurice Tivey (USA)

Group Members - Fernando Barriga (Portugal), Georgy Cherkashov (Russia), Yves Fouquet (France), Mark Hannington (Canada), Yasuhiro Kato (Japan), Jonguk Kim (Korea), Lisa Levin (USA), Rachel Mills (UK), K. A. Kamesh Raju (India), Xuefa Shi (China), Ingunn Thorseth (Norway), and Cindy Van Dover (USA).

Highlights for this WG in 2009 include: organizing and meeting at the workshop on Deep-Sea Mining of Seafloor Massive Sulfides in Woods Hole in April 2009, and providing scientific recommendations to the International Seabed Authority to advance the scientific knowledge of SMS deposits

(http://www.interridge.org/files/interridge/SMWG_meeting_report_2009_final_rev.pdf). Note: The agenda sent out prior to the StCOM meeting included as Appendix III a proposed Letter of Agreement between UNEP/GRID-Arendal and InterRidge. We did not have time to discuss this Letter at the StCOM meeting; thus, the materials were sent via email to the StCOM after the meeting.

WG assessment from StCOM: the StCOM will await the follow-up to the 2009 Deep-Sea Mining workshop and assess in 2010 whether this WG has completed its charge.

7.g Vent Ecology

Chairs - Charles Fisher (USA) and Stephane Hourdez (France)

Group Members (Austria, Canada, China, Germany, Japan, Korea, Portugal, Russia, UK, USA) - Maria Baker, Monika Bright, Ana Colaço, Nicole Dubilier, Sergey Galkin, Peter Girguis, Jung-Ho Hyun, Crispin Little, Anna Metaxas, Katsu Fujikura, Xiang Xiao.

The first meeting of this WG was held in association with the 4th International Symposium on Chemosynthesis-Based Ecosystems (CBE), 29 June - 3 July 2009, Okinawa, Japan. Yoshihiro (Yoshi) Fujiwara (JAMSTEC) was chosen as a new Co-Chair to serve alongside Co-Chair Stephane Hourdez. The WG discussed four main items:

- Potential maintenance of ChEssbase, database that includes vent-associated species, after the ChEss project of the Census of Marine Life ends in 2010;
- Spreading the word about the high throughput genomic sequencing project list on the InterRidge website (www.interridge.org/highthroughput);
- To enhance the distribution and use of specimens collected at vents (one of the tenets of the InterRidge “Code of Conduct”). *Action items:* Establish a set of guidelines or community policy on use of biological samples and acknowledgements, and post an online list of sample requests; and
- The host for the next CBE Symposium, tentatively planned for summer 2013 in Victoria, Canada.

WG members also were involved in two special sessions at the ASLO meeting (25-30 January 2009, Nice, France). Nadine – also mentioned CAREX (Coordination Action for Research Activities on life in Extreme Environments), a mainly European effort for 2008-2010 to coordinate among biologists working in all sorts of extreme environments. Deep-sea vent scientists are active in this group (including Chris attended one workshop). This program offers a means to connect to expert working in other extreme habitats. WG members also participated in CAREX workshop on model organisms (16-18 June 2009, Sasbachwalden, Germany). As far as hydrothermal vent invertebrates are concerned, the chosen models were: Alvinellids, *Bathymodiolus*, and *Rimicaris*.

8 Workshops and meetings 2009 – Reports

8.a Science and Policy Workshop on Deep-Sea Mining of Seafloor Massive Sulfides

This workshop on 1-2 April 2009 was organized by the Seafloor Mineralization WG, the InterRidge and ChEss offices, and Porter Hoagland from WHOI's Marine Policy Center. The WG received \$5000 USD from IR, approved by IR StCOM in Jan. 2009. The bulk of the funding for this workshop was from the ChEss program (\$50k USD), and the workshop concluded with a public colloquium sponsored by the WHOI Morss Program (\$65k USD). A total of 98 participants from more than 20 nations attended the workshop in Woods Hole, MA, USA. Participants included scientists, lawyers, economists, government representatives, the International Seabed Authority (ISA), mining companies, and NGOs. Students from countries around the globe including Papua New Guinea, Mauritius, and Djibouti, also were among the participants. A number of media representatives also attended, and the Associated Press bulletin was broadcast on over 3000 webpages (news media and blogs) around the globe. For more details, please see: <http://www.who.edu/workshops/deepseamining/>

8.b KOPRI 16th International Symposium on Polar Sciences

The Korea Polar Research Institute (KOPRI) hosted the 16th International Symposium on Polar Sciences: "Polar Exploration with ARAON" in Incheon, Korea, on 10-12 June 2009. The symposium brought together 144 scientists from the broad fields of both ridge and climate research, representing 11 countries around the globe. For a brief meeting report with list of InterRidge contributions including presentations by Jian Lin and Stace Beaulieu, please see: <http://www.interridge.org/node/5811>

8.c 4th International Symposium on Chemosynthesis-Based Ecosystems

The 4th International Symposium on Chemosynthesis-Based Ecosystems was held 29 June - 3 July 2009 in Okinawa, Japan. Sponsorship of \$3000 USD was approved by IR StCOM in July 2008. An additional \$2000 was approved by IR StCOM in July 2008 for the first meeting of the Vent Ecology WG. Stace Beaulieu and Stephane Hourdez judged and handed out two student awards at the Symposium, \$700 each, to Daphne Cuvelier (Univ. Azores) and Dennis Fink (MPI). The Vent Ecology WG held its first meeting at this Symposium (see Agenda Item 7G). Beaulieu also presented the InterRidge "Code of Conduct" for research at deep-sea hydrothermal vents.

9 Workshops and meetings proposed for later 2009 and 2010

Meetings with some funding from InterRidge:

- WG meeting(s):

Long-Range Exploration WG: \$2,000 approved by IR StCOM in May 2009 for meeting in Woods Hole, MA, USA, in 14-16 Sep. 2009;

Hydrothermal Energy and Ocean Carbon Cycles WG: At the StCOM meeting, all approved \$2,000 for the first meeting of this WG in Woods Hole, MA, USA, on 23-24 November 2009 (additional \$1,000 required by SCOR for joint funding of this WG will be provided by the IR Office as in-kind support since the meeting will be held in Woods Hole);

- Melting, Magma, Fluids and Life (MMFL): Workshop for Scientific Ocean Drilling

(<http://www.interridge.org/WG/DeepEarthSampling/workshop2009>), 27-29 July 2009, \$3,000 approved by IR StCOM in Mar 2009. Conveners: Damon Teagle (NOC, Southampton, UK), Natsue Abe (IFREE, JAMSTEC, Japan), Wolfgang Bach (University of Bremen, Germany), Donna Blackman (Scripps, La Jolla, USA), Rosalind

- Coggon (Imperial College, London, UK), Henry Dick (WHOI, Woods Hole, USA), Katrina Edwards (USC, Los Angeles, USA), and Benoit Ildefonse (Geosciences Montpellier, CNRS, France);
- ECORD Summer School: Geodynamics of Mid-Ocean Ridges (<http://www.interridge.org/node/5659>), 31 Aug - 11 Sep 2009, Bremen, Germany, \$3000 approved by IR StCOM in July 2008. Conveners: Dierk Hebbeln, Wolfgang Bach, Benoit Ildefonse, and Ursula Rohl.
 - Chapman Conference on “Detachments in Oceanic Lithosphere: Deformation, Magmatism, Fluid Flow, and Ecosystems,” 8-15 May 2010, Cyprus. Conveners: J. Pablo Canales (WHOI, USA) and Javier Escartin (IPGP, France). At the StCOM meeting, all agreed for InterRidge to co-sponsor this workshop with \$3,000 USD. Benoit commented that this meeting may be a “springboard” to form a proposal for a new InterRidge Working Group on detachment faults. *Action items:* The StCOM would like to encourage the participation of Asian scientists at this conference. Also, Stace will inform the conveners of the opportunities through AGU and SCOR for travel grants to scientists from developing countries.

Meetings proposed during, or after, the StCOM meeting for some funding from InterRidge:

- “Design of Marine Protected Areas for Chemosynthetic Ecosystems Potentially Threatened by Human Activities in the Deep Sea,” conveners: Cindy Lee Van Dover and Craig R. Smith, spring 2010, venue to be determined. Proposal sent to IR Office after the StCOM meeting in July 2009.
- International Conference on “Ridges and Hotspots around the Mascarene Islands: present activity, past evolution,” conveners: M. Bhikajee and Jerome Dymont, Oct or Nov 2010, Mauritius. At the StCOM meeting, Jerome presented a draft proposal for InterRidge sponsorship. *Action item:* request revised proposal to submit to StCOM for consideration.
- Potentially a Mantle Imaging WG IRTI in 2011 (see Agenda Item 7e; expect proposal in 2010 for this workshop).
- Potentially a Hydrothermal Energy and Ocean Carbon Cycles WG international workshop in 2011 on the scale of IRTI (see Agenda Item 7c; expect proposal for this workshop after the WG meets in Nov. 2009).

Other meetings listed as Upcoming Events on InterRidge website:

- Asia Oceania Geosciences Society (AOGS) 2009, 11-15 August 2009, Singapore;
- Workshop: Scientific Ocean Drilling of Mid-Ocean Ridge and Ridge-Flank Settings, August 27-28, 2009, Austin, Texas, USA;
- OceanObs'09 Conference, September 21-25, 2009, Venice, Italy;
- IODP New Ventures in Exploring Scientific Targets (INVEST), 23-25 September 2009, Bremen, Germany;
- Alpine Ophiolites and Modern Analogues Workshop, September 30 to October 2, 2009 in Parma, Italy;
- Ridge 2000 Integration and Synthesis Workshop, St. Louis, Missouri, USA, October 1-3, 2009;
- AGU Fall Meeting, San Francisco, California, USA, 14–18 December 2009;
- 2010 Ocean Sciences Meeting, 22-26 February 2010, Portland, Oregon (USA);
- EGU General Assembly, Vienna, Austria, 2-7 May 2010;
- Joint "Minerals of the Ocean - 5" and "Deep-Sea Minerals and Mining -2 (DSMM-2)" International Conferences, 21-25 June 2010, St. Petersburg, Russia;
- Underwater Mining Institute, 4-11 October 2010, Gelendzhik, Russia.

10 InterRidge Student and Postdoctoral Fellowship Program - Discussion

In Nov. 2008 IR received a grant from the International Seabed Authority (ISA) Endowment Fund for \$30,000 USD to be distributed as \$5,000 fellowships (2 per year for 3 years, 2009-2011). We released the call for proposals for 2009 Fellows in Jan 2009. We received very few applications, despite significantly more advertisement of the program this year. Similar to last year, it was difficult to obtain the two reviews for each proposal (one from a native and the other non-native English speaker). The 2009 awards were given in May 2009 to Susan Lang, a postdoctoral researcher at Scripps Institution of Oceanography (SIO), USA, to work at a laboratory in Switzerland, and to Surya Prakash, a Ph.D. candidate at the National Institute of Oceanography (NIO), India, to conduct research in the USA. Prakash is our first recipient of an ISA-funded fellowship.

Advertisement this year included the InterRidge e-mailing list and website, as well as all ISA members and through the ISA website. Stace sent an announcement to the following societies and organizations: AGU, Asia Oceania Geosciences Society, Brazilian Geophysical Society, CenSeam, ChEss, EGU, Indian Geophysical Union, InterRidge, IODP, Ridge 2000, SCOR, Society of Exploration Geophysicists, and South African Geophysical Association. Stace also emailed directly all InterRidge members in developing and emerging economy countries, contacted the 3 applicants from last year who did not receive an award, and directly responded to 7 people who contacted the IR office to ask about the fellowship program. *Action items:* to improve the response to the call for proposals in 2010: (a) continued advertising of the program at international conferences, (b) sending a flier PDF when emailing IR and ISA representatives, and (c) sending a flier hard-copy to oceanography and geoscience graduate departments in emerging economy nations. Other ideas mentioned included: (a) sending a flier to national embassies, and (b) more effort in personal contacts from IR StCOM members (e.g., Jerome – advertised the fellowship in France).

Two other means of increasing the number of applications were suggested: (a) streamlining the application form, and (b) increasing the number of IR-supported fellowships to 2. For the former suggestion, Jian – asked Kamesh about his student’s experience in filling out the form. Kamesh – replied that the form was easy. *Action item:* the new IR office should revise the application form and the fellowship website for clarity in Jan 2010. This will be important especially if there are also applications being accepted for a cruise berth program. For the latter, Hide/Jian – perception is important; a student or postdoc might not apply to the program if there is only 1 fellowship that they are eligible for (i.e., student from a developed country, applying to work in a developed country).

11 InterRidge website, e-mail lists, and databases - Details

11.a Website and email lists

There are generally 100-150 guests viewing the website when Stace is working on it (“Who’s online”). Daily activities at the IR office include posting events, news, and jobs to the website. Between 17 Sept. 2008 and 29 June 2009, we posted 21 emails with IR bi-weekly news to the interridge-mail emailing list. As of June 2009, there were 1,620 members on this list (gain of 12 from last year), of which most were also registered online in the IR Member Database. In addition, the IR bi-weekly news e-mails are transmitted to the InterRidge-Japan e-mail list. Between 17 Sept. 2008 and 19 June 2009, we posted 27 emails with job advertisements to the interridge-classifieds emailing list. As of June 2009, there were 149 members on this list (31 more than last year).

11.b Member Database

As of June 2009, the Member Database contained 2,549 registered members (gain of 57 from last year), from 62 different nations and regions (no change from last year; gain of 1 = Myanmar; loss of 1 = French West Indies). The ten countries with greatest numbers of members in rank order are: USA (958; gain of 11 from last year), France (287; gain of 11 from last year), Japan (197; gain of 1 from last year), Germany (189; gain of 1 from last year), UK (183; gain of 2 from last year), Russia (114; gain of 5 from last year), China (81; gain of 14 from last year, now surpasses Canada), Canada (70; loss of 2 from last year), Portugal (67; gain of 2 from last year), and India (50; gain of 3 from last year). Stace occasionally goes through the database to remove members who are deceased or no longer active in research. Fifty-eight members have signed onto the IR Statement of Responsible Research Practices at Deep-Sea Vents.

11.c Cruise and Vents Databases

Between Sept. 2008 and June 2009, Stace added 63 cruises to the IR cruise database (<http://www.interridge.org/IRcruise>), bringing the overall total to 623 cruises (range in years now 1976 - 2009). Although anyone can add a cruise to the database without password (<http://www.interridge.org/node/add/cruise>), no one has entered his/her own cruise into the database yet.

Stace continues to revise the InterRidge Global Hydrothermal Vents Database. The Vents Database continues to be requested by a wide range of parties (e.g., within the past several months: scientists and students in Argentina, China, Korea, Portugal, and USA). Stace expects to publish the database revision by the end of 2009. The plan is to transfer the database to the IR website, format the data for visualization in Google Earth, and publish the revised database in G-cubed with co-authors Ed Baker and Chris German (authors of the 2004 paper “On the global distribution of hydrothermal vent fields”). The database will serve as a subset of Mark Hannington’s more comprehensive database that includes inactive vent deposits.

12 InterRidge liaisons with other programs

Interactions with IODP were discussed during the Deep Earth Sampling WG update (Agenda Item 7b). We invited Jim Mori and Bill Ussler to this year’s StCOM meeting, but neither was able to attend. Interactions with SCOR were discussed during the update from the new Hydrothermal Energy and Ocean Carbon Cycles WG (Item 7c).

13 Action List for 2009

(Due to time constraints, the list below was sent over email following the meeting.)

2	Accept 2008 meeting report, accept 2009 meeting agenda, and confirm Steering Committee Members	Dan - With the office leaving the USA at the end of 2009, USA will need to appoint a new StCOM member. We discussed the possibility of choosing someone with a scientific discipline and geographic location different than Dan Fornari.
3	InterRidge Office	
B	Education and Outreach – Update	Stace - Planned E&O activities for later in 2009: Vents Database on Google Earth and InterRidge on Wikipedia.

InterRidge 2009 Steering Committee Report

D	Status of payment of billed nations	Stace - Send 2009 invoices to Japan in July (<i>completed</i>) and to Portugal in Sept.; send 2010 invoices to China, France, and Germany in early Aug. 2009 (<i>completed</i>) and USA in Nov. 2009.
4	Review 2008 meeting Action List	Stace - Complete the couple of remaining items on the 2008 Action List (e.g., national correspondents).
5	Discuss UK proposal for next InterRidge Office 2010 – 2012	Stace – Provide list of recommendations from the StCOM to Bram/Jon for revision of the bid to host the next office. <i>Completed 17 July 2009.</i> Bram/Jon - provide revised bid by early August. <i>Received 5 Aug.</i> StCOM - final decision by the end of August. <i>Completed mid-Aug.</i>
6	National Updates	
B	Associate and corresponding members	Jian/Dan - discuss the option of helping to find a replacement vehicle for the upcoming Carlsberg Ridge cruise. <i>Chris helped, too, by sending suggestions in email Aug. 2009.</i>
C	Status of potential membership upgrades / additions	Stace - Try to get in contact with SOPAC through ISA or UNEP/GRID-Arendal.
7	Working Groups – Updates	
A	Monitoring and observatories	Javier – The WG is disbanded; however, either Javier or an appointed person will serve as InterRidge liaison to MoMAR observatory; please send final WG report to Stace for IR News and website by Sept. 2009. Stace - Add recently released IODP Thematic Review to InterRidge website. <i>Completed July 2009.</i> Send email to Jim Mori, SPC Chair, to restate the wish of InterRidge to maintain a liaison with IODP. Invite IODP representatives to 2010 StCOM meeting.
B	Deep Earth sampling	Benoit – Please send report of July 2009 MMFL workshop for 2009 IR News; please wait to send 2009 WG update until after Sept. 2009 INVEST workshop. Stace – Coordinate the \$2,000 USD approved for 1 st meeting of this WG in November 2009.
C	Hydrothermal energy and ocean carbon cycles	Chris - Talk with conveners of 2010 Chapman Conference re: affiliated member for expertise with detachment fault tectonics.
E	Mantle imaging beneath mid-ocean ridges	Jerome – Aid Nobi and Pascal in proposing a special session at EGU for 2010 – <i>Completed July 2009.</i> Stace – Help WG set up webpage to list the OBS and OBEM experiments at ridges. <i>Drafted Aug. 2009.</i>
F	Seafloor mineralization	Stace – Send StCOM the draft LoA from GRID-Arendal with deadline for comments over email. <i>Completed July 2009.</i> Stace – Contact ChEss Coordinators re: future of ChEssBase.
G	Vent ecology	Stace - Establish a set of guidelines or community policy on use of biological samples and acknowledgements, and post an online list of sample requests.
9	Workshops and Meetings Proposed for later this year and 2010	Stace – Contact conveners of May 2010 Chapman conference to report that StCOM agreed to \$3,000 USD support. Encourage participation from Asian countries, and inform conference conveners of travel funding opportunities from AGU and SCOR for scientists from lesser

		developed countries. <i>Completed July 2009.</i> Stace - Request revised proposal from Jerome for conference in Mauritius fall 2010. <i>Completed August 2009.</i>
10	InterRidge Student and Postdoctoral Fellowship Program - Details	New IR office - revise the application form and the fellowship website for clarity in Jan 2010, continue advertising the fellowships at international conferences, send flier PDF when emailing IR and ISA representatives, and send flier hard-copy to oceanography and geoscience graduate departments in emerging economy nations
11 C	InterRidge Website, E-mail lists, and Databases - Details Cruise and Vents Databases	 Stace - publish the vents database revision by the end of 2009.

14 Next StCOM meeting location

The consensus was that the next meeting should be held in UK. Dan - this would be a good way “to get to know NOCS” if their bid to host the next IR office is accepted; however, this location is not strategic in terms of attracting a new Associate Member. Other suggestions included: Chile, Ecuador (Galapagos), Mauritius, New Zealand, South Africa. Current Chair, Jian Lin, will attend next year’s meeting, as a non-voting *ad hoc* member (according to policy established in 2004 StCOM meeting for previous Chair), along with two members from USA (Dan Fornari and second person to be decided). Recent StCOM meetings: 2009 France, 2008 USA, 2007 Brazil, 2006 Russia, 2005 Germany, 2004 Korea, 2003 Japan, 2002 Italy, 2001 Japan.

15 Meeting Adjourns

**InterRidge Steering Committee Meeting 2009
Appendices**

APPENDIX I

InterRidge Chairs and Coordinators – Past and Present

InterRidge Chairs

Jian Lin, chair (USA)	2007 - present
Chris German, co-chair (USA)	2007 - present
Colin Devey (Germany)	2004 - 2006
Kensaku Tamaki (Japan)	2000 - 2003
Mathilde Cannat (France)	1997 - 1999
Roger Searle (UK)	1994 - 1996
John Delaney, co-chair (USA)	1991 - 1993
H. David Needham, co-chair (France)	1991 - 1993

InterRidge Coordinators

Stace Beaulieu	Oct. 2007 - present
Rhian Waller	Jan. - Oct. 2007
Sabine Lange	July -Dec. 2006
Valérie Epplé	May - July 2006
Kristen Kusek (Education & Outreach)	March 2004 - Dec. 2007
Katja Freitag	March 2004 - May 2006
Agnieszka M. Adamczewska	Nov. 1999 - March 2004
Cara Wilson	March 1997 - Nov. 1999
Ruth Williams (acting)	Oct. 1996 - March 1997
Heather Sloan	Oct. 1993 - Oct. 1996
Trileigh Stroh	1991 - Oct. 1993

InterRidge Steering Committee Members - Past and Present

Canada

Steve Scott	2004 - 2006
S. Kim Juniper	1998 - 2003

K. A. Kamesh Raju	2005 - present
Abhay V Mudholkar	2002 - 2004
Ranadhir Mukhopadhyay	2000 - 2001

China

Jiabiao Li	Oct. 2007 - present
John Chen	2004 - present

Italy

Enrico Bonatti	1998 - 2002
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France

Nadine Le Bris	2009 - present
Jérôme Dymont	2001 - present
Françoise Gaill	2004 - 2008
<i>ad hoc</i>	1998 - 2003
Javier Escartin, <i>ad hoc</i>	2002 - 2003
Mathilde Cannat	1997 - 2000
Catherine Mével	1999 - 2003
<i>ad hoc</i>	1997 - 1998
Daniel Desbruyères, <i>ad hoc</i>	1997
	1991 - 1996
Jean Francheteau	1991 - 1998
H. David Needham, <i>ad hoc</i>	1995 - 1996
	1991 - 1994

Japan

Hidenori Kumagai	2009 - present
Jun-ichiro Ishibashi	2006 - present
Nobukazu Seama	2005 - 2008
Masataka Kinoshita	2002 - 2004
Toshitaka Gamo	2001 - 2004
Kantaro Fujioka	1999 - 2001
Hiromi Fujimoto	1997 - 2000
Tetsuro Urabe	1994 - 1998
Kensaku Tamaki	2000 - 2004
	1992 - 1997

Korea

Sung-Hyun Park	2007 - present
Sang-Mook Lee	2001 - 2006

Germany

Nicole Dubilier	2005 - present
Colin Devey	1999 - present
Peter M. Herzig	1996 - 2000
Roland Rihm	1995 - 1998

Norway

Rolf Pedersen	2001 - present
Eirik Sundvor	1996 - 2000

India

Portugal

Pedro Ferreira	2009 - present
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Fernando Barriga 2001 - 2008
 Ricardo Santos, *ad hoc* 2002 - 2003
 Miguel Miranda 1996 - 2000

Spain

Rosario Lunar 2005 - 2008
 Juan José Dañoibeita 1995 - 1998
 Miquel Canals 1995 - 1998

UK

Alex Rogers 2007 - present
 Tim Henstock 2004 - present
 Paul Dando 1999 - 2006
 Damon Teagle 2002 - 2003
 Christopher R. German, *ad hoc* 2002
 1997 - 2001
 Philippe Blondel, *ad hoc* 1997 - 2002
 Lindsay Parson, *ad hoc* 1996 - 1998
 Roger C. Searle 1994 - 1998
 Martin Sinha 1991 - 1996

USA

Daniel Fornari 2009 - present
 Jian Lin, chair 2007 - present
ad hoc 1999 - 2003
 Chris German, co-chair 2007 - present
 Donna Blackman 2005 - 2008
 Charles Fisher 2002 - 2005
 Deborah Smith 2003 - 2004
 Spahr C. Webb, *ad hoc* 2002 - 2003
 Christopher G. Fox, *ad hoc* 1998 - 2001
 David Kadko 1999 - 2001
 Alan Chave, *ad hoc* 1997 - 2001
 Dave Christie 1997 - 2002
 Karen Von Damm 1996 - 1998
 Lauren Mullineaux, *ad hoc* 1996 - 2000
 Robert S. Detrick 1992 - 1995
 John Delaney 1991 - 1994
 P. Jeff Fox 1991 - 1995
 Charles H. Langmuir 1991 - 1996

InterRidge National Correspondents - current

Principal Members:

China – J. Chen (2004 - confirmed in 2008)
 France – Jérôme Dymont (2004 - confirmed in 2008)
 Germany - Colin Devey (1998 - confirmed in 2008)
 Japan – Kyoko Okino (2005 - confirmed in 2009)
 UK – Tim Henstock (2004 - confirmed in 2008)
 USA – Dan Fornari (2009 -)

Associate Members:

India – K. A. Kamesh Raju (2002 - confirmed in 2009)
 Korea – Sung-Hyun Park (2007 - confirmed in 2009)
 Norway - Rolf Pedersen (2001 - confirmed in 2008)
 Portugal - Pedro Ferreira (2009 -)

Corresponding Members:

Australia – Dietmar Müller (2003 - replied to email 2008)
 Austria - Monika Bright (2001 - replied to email 2009)
 Brazil - Suzanna Sichel (1997 - confirmed in 2008)
 Bulgaria – Vesselin Dekov (2009 -)
 Canada – NO correspondent
 Chile – Juan Diaz-Naveas and Luis Lara (2007 - confirmed in 2008)
 Chinese Taipei – Saulwood Lin (2008 -)
 Denmark – NO correspondent
 Iceland - Karl Grönvold (1992 - NOT confirmed in 2008)
 Italy – Paola Tartarotti (1997 - confirmed in 2006)
 Mauritius - Daniel P. E. Marie (2002 - NOT confirmed in 2008)
 Mexico - NO correspondent
 Morocco - Jamal Auajjar (1998 - confirmed in 2006)
 New Zealand - NO correspondent
 Philippines - Graciano P. Yumul, Jr. (2000 - confirmed in 2008)
 Russia - Sergei A. Silantyev (1998 - confirmed in 2008)
 South Africa - Petrus Le Roux (2006 - NOT confirmed in 2008)
 Spain – Rosario Lunar (2006 - replied to email 2007)
 Sweden - Nils G. Holm (1993 - confirmed in 2006)
 Switzerland - Gretchen Früh-Green (1995 - confirmed in 2006)
 SOPAC - NO correspondent

APPENDIX II

InterRidge Estimated Budget for 2009

Funding (US \$)		Expenditure (US \$)	
• 2009 IR Principal Membership (China, France, Germany, Japan, UK, US, WHOI)	\$175 k	• IR Coordinator Salary with overhead (half time plus additional hours for IR Coordinator to work on IR Education & Outreach activities)	-\$147 k
• 2009 IR Associate Membership (Korea, India, Norway, Portugal)	\$20 k	• 2009 Annual Newsletter (printing & mailing); mailing of additional copies of 2008 Annual Newsletter, Oceanography magazines, and other IR documents	-\$7 k
• ISA Endowment Fund for two IR/ISA Student/Postdoc Fellowships/yr for 2009-2011	\$30 k *	• Web technical assistance, graphic support for design of annual newsletters, office supplies & communications	-\$10 k
Total Expected Funding	\$225 k	• One IR/ISA Student/Postdoc Fellowship for 2009	-\$5 k
		• One IR-funded Student/Post-doc Fellowship for 2009	-\$5 k
		• IR Best Student Paper Awards at 2009 Vent/Seep Bio Symposium	-\$1.4 k
		• Workshops/Meetings/Travel (2009 Vent/Seep Bio Symposium; 2009 Summer School on MOR Geodynamics; Seafloor Mineralization; Vent Biology, Long-Range Exploration, and Hydrothermal Energy and Ocean Carbon Cycles WG mtgs; Workshop for scientific ocean drilling; 2009 IR StCOM mtg; etc.)	-\$24.6 k
		• Keep \$25 k of the ISA fund for IR/ISA Student/Post-doc Fellowships for 2010-2012	-\$25 k
		Total Expected Expenditure	-\$225 k

* Note: This is the first funding obtained for InterRidge outside of member nation payments.