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# InterRidge

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**Steering Committee Meeting Report, 2001**

**Kobe, Japan  
1-2 June 2001**

**Chair:  
Kensaku Tamaki**

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**Colin Devey, 1999 (Germany)**  
**Chris Fox 1998 *ad hoc* (USA)**  
**Chris German 1997 (UK)**  
**Ranadhir Mukhopadhyay 2000 (India)**  
**Sang-Mook Lee 2001 (Korea)**

## **Agenda**

Introduction and Welcome	(Tamaki)
General Organization of meeting	(Adamczewska)
Agreement on meeting agenda	
Accept the Minutes of 2000 meeting	
Coordinator's Report	(Adamczewska)
National Updates	
Canada	(Juniper)
DORSALES	(Mével)
India – InRidge – report in absentia	(Adamczewska)
InterRidge-Japan	(Tamaki)
Germany – DeRidge overview	(Lackschewitz)
Norway	(Pedersen)
Russia-Ridge	(Silantyev)
UK – report in absentia	(Adamczewska)
USA - RIDGE	(Christie)
China	(Tamaki/Lin)
Introduction of Kobe	(Seama)
Discussion:	
Future of National projects and consequences for IR	
Next Decade – preliminary discussion	
InterRidge Projects	
Biological Studies – including follow up on Management workshop	(Juniper/Gaill)
Archaean Park Project	(Seama)
Hotspot-Ridge Interactions	(Lin)
SWIR	(Mével)
Development of MOMAR - report in absentia	(Mével/Adamczewska)
Global Digital Database	(Tamaki)
Arctic Ridges - news and views	(Lackschewitz)
Evaluation/discussion of the working group structure	
Future InterRidge Meetings	
InterRidge Theoretical Institute	(Lin)
SWIR workshop	(Mével)
Indian Proposal for IORS workshop and ST COM	(Adamczewska)
Date and location of next Steering Committee Meeting	(Tamaki)
The next decade – plan for the future	(Tamaki)
Next IR office – location and bids	(Tamaki)
InterRidge liaisons with other programs	
ISA	(Juniper)
SEAS – Science of Eastern Asia Seas	(Tamaki)
ILP	(Tamaki)
SCOR/SOPAC	(Adamczewska)
ODP	(Tamaki)
IODP	(Fujioka)
InterRidge Steering Committee members	(Adamczewska)
Summary of Actions for 2001	
Review 2001/2002 Calendar	

## **Introduction**

The Chair of InterRidge, K. Tamaki welcomed all the members to Kobe, Japan, where Dr. N. Seama, the host of the meeting, leads an active ridge research group in the western part of Japan. He said that the InterRidge Office is now fully operational for intensive coordinative business after a year and half from the moving of the office. The Chair stressed that the most important agenda for the meeting is to formulate a route for the Next Decade InterRidge and a rather large amount of time of the meeting should be allocated for the discussion on the formulation of Next Decade InterRidge Working Group and related scheduling.

## **Matters arising**

Ocean Research Institute has now reached the mid point of the duration to host the InterRidge Office. A call for bids to host the next office will need to be distributed and the bids evaluated before the next Steering Committee meeting. The decision about the location of the next office will be made during next years Steering Committee meeting. The new host nation will take over the last year of this IR programme and commence the first term of the “Next Decade” InterRidge Plan.



## National updates

### France - DORSALES (C. Mével)

The Dorsales project was renewed in '98 and is in its last year of funding.

Up till now it has been co-funded by CNRS (2/3) and IFREMER (1/3) for 4 years : 1998-2001

Limited budget for 2001 : 120 000 \$  
- 20 000 \$ (InterRidge)  
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100 000 \$

This budget does not include ship time. After payment of IR membership, the remainder of the budget is used for projects. Based on workshops held recently, a call for proposal was issued and this year the focus is relatively well defined. There are 2 main themes:

- hotspot/ridge interactions workshop - held in January 2001, organized by Marcia Maña and Javier Escartin
- Population genetics and evolutionary sciences in vent taxa workshop - organized by Didier Jollivet

The last Dorsales meeting was attended by 100 people. The meeting was very successful – plans to advertise Dorsales programme to the funding agencies to prepare the follow up of the programme next year were discussed.

#### Dorsales cruises in 2001

SWIFT (PI : E. Humler)  
Mapping and sampling the SWIR between 35 and 49°E  
Tentatively scheduled Jan 2001, *R/V Marion Dufresne*

IRIS (PI : Y. Fouquet)  
ROV *Victor* dives on Rainbow hydrothermal field - joined cruise investigating biology and geosciences.

ATOS (PI : P.M. Sarradin)  
ROV *Victor* dives - biology  
Partly EC funded cruise to the MAR, Lucky strike and Rainbow

#### Cruises in 2002

##### *Scheduled*

- SIRENA :  
P.I. : J. Goslin  
monitoring seismicity of the MAR North of the Azores with autonomous hydrophones. Hydrophones provided by C. Fox

- PHARE  
P.I. : F. Gaill and N. Le Bris  
biology, EPR 9°N and 13°N  
ROV *Victor* cruise

##### *Well evaluated but not yet scheduled*

- TOMSWIR  
P.I. : D. Sauter  
seismic tomography of a very cold portion of the SWIR (Jourdannes mountains). Look at the deep structure of the ridge

- PACANTARCTIC 2  
P.I. : L. Dosso and H. Ondreas  
Mapping and sampling the Pacific-Antarctic ridge in the area of the geochemical boundary (39-52°S)

- Lucky Star

P.I. : J. Escartin and S. Singh

Deep structure of the Jussieu Plateau and of the Lucky Strike segment, M.A.R south of the Azores

Digital database – French site developed by: Christine Depluse together with IFREMER- Eric Moussa.  
Currently there are 7 areas in the databases <http://www.ifremer.fr/sismer/program/dorsale/>

#### **Funding of OBSs –**

A project to acquire 25 OBS has been funded by CNRS

P.I. : Satish Singh (IPGP)

By next year there should be a number of instruments (not all) available – this is very important, as it is the first time that such instruments will be available to the French ridge community. More funds are being sought to increase the number of instruments.

The replacement of the R/V *NADIR* has been approved. The *NADIR* will most likely end operations next year. The new ship will be build and will be the carrier for the submersible *Nautille* and the ROV *VICTOR*. The new ship will be shared with the navy, and so will have constraints, as yet undetermined. Input from the scientific community will be put forward by a group of scientists from the community about their requirements with respect to the new ship. Normally sharing of the ship time would be 55/45, but the hope is that the 45% of the navy will be shared between all IFREMER ships, and that the percentage sharing will not be calculated on an annual basis.

#### **The future of Dorsales**

Dorsales is funded till the end of 2001. The funding agencies (CNRS and IFREMER) have specified that they won't renew the Dorsales programme in its present form.

CNRS will start a new programme on "Geomicrobiology in extreme environments", covering not only the deep seafloor but also environments such as ice, polluted areas, etc... Oceanic hydrothermal fields are one of the possible targets.

Discussions within the Dorsales Committee have identified the need for long term observations and measurements, to address temporal variations at mid-ocean ridges.

A workshop, scheduled for October 29-31– organised by Francoise Gaill and Jerome Dymont - will be aimed to see whether there is a community interested in long term monitoring, including ocean bottom observatories. If so, there will be a push for the MOMAR site and possibly another site on a fast spreading ridge. This meeting will produce a document which will be then evaluated by the funding agencies.

## **GERMANY – DeRIDGE (K. Lackschewitz)**

The De-Ridge community has not been well organised in the past since there was no official national Ridge Programme.

The first step was to organise a National DeRidge meeting 2000 in Bremen which was a great success. Almost 60 German researchers from both geological and biological fields got together to present science and to discuss the future of Ridge research in Germany. It was resolved to start a new funded national programme.

In autumn 2000, successful presentation of a scientific plan to the Geocommission (advice panel of the funding agency) by Colin Devey. The Geocommission encouraged development of the programme proposal.

Another scientific meeting in April 2001 was held at Bremen University with representatives of all disciplines for writing a proposal of interest.

At the beginning of July or end of August, there will be a round table, together with representatives of the German Science Foundation to discuss the details of the programme – 20-30 scientists will be invited.

In the second half of 2001 a full proposal will be prepared for presentation to the Geocommission in November. If successful, there, the programme proposal will be sent out for international review by the German Science Foundation. Funding (including InterRidge contribution) could then start late 2002/early 2003.

Until the new programme is running, Germany will have to downgrade its InterRidge membership to an Associate Member. It is hoped that this will only be for 2001. The German funding agencies are not interested in paying membership fees until a national Ridge programme is in place. In the past, GEOMAR, in Kiel, took the task of InterRidge membership payment but due to a change in research interests and financial constraints they are no longer able to shoulder these membership payments alone.

But, assuming this attempt is successful, Germany will be again a full member and the German community is keen to host the InterRidge office when the present term in Japan ends.

The preliminary title of the proposed German initiative is "From the mantle to the ocean: Energy, Material and Life budgets on a spreading ridge". The programme will focus on a defined area of the ridge, most probably in the equatorial Atlantic, both to take advantage of Germany's previous work in this region and because this is an area which German research vessels transit regularly. The programme will be a closely integrated Geology-Geophysics-Biology study at nested length scales (segment-volcano-lava flow – hydrothermal vent)

The following other projects are planned or will take place in Germany in the near future:

- Sonne cruise – plume-ridge interaction June/July 2001. Sampling of Pacific/Antarctic ridge at 38°S
- Gakkel arctic spreading ridge cruise AMORE with participation of F.S. "Polarstern"
- MEGAPRINT cruise – plume-ridge interaction at the Galapagos spreading centre with Sonne, Kaj Hoernle/Reinhard Werner from GEOMAR will be co-chiefs – They will sample Galapagos spreading axis and islands
- GARIMAG cruise: Galapagos rise, Devey and Karsten Haase geophysics and sampling of extinct Galapagos rise spreading axis to look at what happens to a ridge as it ceases spreading – are small degree melts erupted at the end.

## **India – InRidge (R. Mukhopadhyay)**

### **Report in absentia**

A brief summary of Ridge related activities in India is provided below:

- One cruise along the Carlsberg Ridge was undertaken to study geology and geophysics of southern part of the ridge. Preliminary results have appeared in the InterRidge News, vol 9.
- A cruise to CIR is scheduled for May-June 2001
- Another cruise to Andaman Back-arc basin is planned between August and September, 2001.
- A major initiative has been taken with several national funding agencies are showing keen interest in Ridge research in the country. It is expected that by the middle of the next year strong commitment for funding, ship-time / logistics from the funding agencies would be available for InRidge to strengthen ridge research in the Indian Ocean.
- In this connection, our theme paper arguing in support to form a new InterRidge CR-CIR Working Group appeared in IR News, vol 9,2, as a follow up to recommendation of STCOM 2000.

In view of the above facts, InRidge earnestly requests IR STCOM '01 to discuss the theme paper and explore the feasibility of forming the CR-CIR WG.

As we understand that it would take little more time for the CR-CIR WG to come into being, and for the comprehensive Indian programme on IORS to receive firm commitments for ship time & funding, and that the InterRidge workshop on SWIR is to be held in early next year, we feel it would be ideal to have IORS workshop in May-June 2003 in India . Along with this the STCOM 2003 could also be organised in India.

## **UK – BRIDGE (P. Dando)**

### **Report in Absentia**

Since the BRIDGE Programme concluded there is no nationally integrated UK RIDGE research although research continues through responsive mode funding by NERC and through participation in EU-funded programmes including the VENTOX programme on the mid-Atlantic Ridge this year. The UK community of RIDGE scientists will have to make a case for the UK to continue participation as a full member of InterRidge, since the agreement over the UK subscription concludes this year.

UK-DEOS. A bid has been submitted to NERC by the Universities of Wales-Cardiff, Durham and Southampton for funds to build a Re-locatable Multidisciplinary Ocean Observatory for the UK marine science community (for details see: <http://www.deos.org/>). The observatory will consist of a set of seafloor instrumentation platforms and vertical instrument arrays that collectively will provide a three-dimensional distribution of multi-disciplinary sensors through the water column and on the ocean bed. The Observatory would first be deployed on the Reykjanes Ridge covering a 200 km-long transect across the Ridge. A surface buoy will provide the ORBCOMM satellite communications link to land-base. The result of this bid will be known in December. A thematic programme bid to fund the science is being currently prepared and future sites for deploying the array will be discussed during the B-DEOS town meeting in July.

6500 m ROV: - It is hoped to sign the contract for the construction of this vehicle shortly. The first cruise with it is expected in 2002-03.

Indian Ocean: - The RRS Charles Darwin is undertaking 2 cruises this summer on the Indian Ocean Ridge.

## **USA – RIDGE (D. Christie)**

The RIDGE programme will officially cease to exist in September, Ridge 2000 major effort will be focused on integrated experiments – focused on individual localized sites

Relative to RIDGE, the Ridge 2000 programme will have:

- expanded intellectual breadth
- focused scientific priorities
- emphasis on hydrothermal ecosystems
- WITHIN a global volcanic and tectonic context
- explicitly broadly-based, multidisciplinary Integrated Studies:
- pre-selected type areas
- integrated volcanic, tectonic and biological studies

Concept of exploratory studies – the programme will concentrate on various places which may be key in understanding global biogeography.

Exploratory Studies:

- nested mesoscale studies
- focus on biodiversity and biogeography
- IN global geological and tectonic context

[Note: The exploratory part of the science plan will not be incorporated in Ridge 2000]

Time-Critical Studies

- focus on volcanic and other transient events
- rapid response
- timely observation and sampling, from mantle to microbes...

Scope of the programme:

Proposals were received for representative sites in five categories:

- Fast-, slow-, and intermediate-spreading ridges, as well as Back-arc, mantle plume-influenced ridges

No proposals were received in a sixth category - sedimented ridges.

Each Integrated Study Site should ideally have:

- A representative variety of:
  - micro- and macrofauna
  - hydrothermal vent styles
  - rock types
- A significant hydrothermal signature in the water column
- A representative set of ridge offsets
- A variety of morphological expressions
- Significant potential for magmatic or tectonic events
- Complementary analogue, modelling and experimental studies and data management
- Logistic feasibility
- Sufficient background data

RIDGE 2000 will be funded for 12 years, initially with the same budget as the RIDGE Programme (~\$9.5M). Emphasis will be on 2-3 Integrated Study sites initially. The sites will be identified based on a community vote and panel evaluation. Details will be announced in July. A process will be developed for progress review and initiation of new sites as resources allow. Time critical studies will initially focus on event detection and response in the Juan de Fuca region (this is currently the only area where such activities are made possible by real-time monitoring). There will be little or no activity in the Exploratory Studies category.

### **Canada-CANRIDGE (K. Juniper)**

The past year has seen the launching of the first officially funded Canadian mid-ocean ridge research programme. The CanRidge programme, led by Kim Juniper, is funded by the Natural Sciences and Engineering Research Council of Canada. The new programme has enabled expansion of hydrothermal vent research in Canada to 12 laboratories in 8 universities. A planning meeting was held in Montreal in February to organise upcoming cruise activities. The field season began with a ROPOS ROV cruise in May 7-18 on the Canadian Coast Guard Ship John P. Tully to the Endeavour Segment hydrothermal vents on the Juan de Fuca Ridge. Also participating in the cruise were researchers from Texas A&M University and Penn State University. Field work focused on deployment of modules for larval colonisation and sulphide weathering experiments, on mapping of the Clam Bed vent field and on collecting vent organisms for laboratory studies. When bad weather forced an early departure from the vent sites, we had time to stop at the Vancouver Island margin and dive at newly discovered cold seeps.

A second CanRidge ROPOS cruise is scheduled for July 14 to August 1 on the NOAA ship *Ron Brown*. This collaborative cruise with the NOAA Vents programme is the continuation of a long-term study of hydrothermal systems affected by a January 1998 eruption on Axial Volcano, Juan de Fuca Ridge. CanRidge participants will be conducting studies of larval colonisation, particulate organic matter ecology and biogeochemistry, sulphide weathering, food web dynamics and the microbial ecology of the sulphide worm habitat on hydrothermal chimney surfaces.

### **Japan-InterRidge-Japan (K. Tamaki)**

Japan is keeping up a high activity level of ridge research, with a number of intensive seagoing research cruises. Three major groups are active in Japan;

- 1) the university group (Univ. Tokyo, Hokkaido Univ., Chiba Univ., Tohoku Univ., Kobe Univ., Kyushu Univ. and others),
- 2) Archaean Park Project group (national institutes and universities), and
- 3) JAMSTEC group. Especially the Archaean Park project (PI: Dr. Tetsuro Urabe, University of Tokyo), the largest ridge research project ever in Japan, will start the first year of field work in FY2001 with a series of cruises.

JAMSTEC made major changes in the operation system of the submersibles and ROV by introducing fair peer review system of openly submitted proposals by the university and national institute scientists.

**Results of recent cruises:** University groups completed two ridge research cruises in FY2000; the Knipovich-2000 (K2K) cruise at the Knipovich Ridge in the northern Atlantic and the Aden New Century Cruise (ANCC) at the Gulf of Aden. The K2K cruise was done by using *R/V Logachev* with very close cooperation with Russian

scientists. Some preliminary results are presented in InterRidge News 2001 vol. 10.1. ANCC was carried out by *R/V Hakuho-maru* of University of Tokyo. A distinct ridge-hotspot interaction was identified in the Gulf of Aden. Strong signatures of black smokers were detected by CTD tow-yow measurements at the hotspot volcanoes. The JAMSTEC group discovered the first active vent with dense biological communities at the Rodriguez Triple Junction by using ROV *Kaiko* in August, 2000. The results are presented in InterRidge News 2001 vol. 10.1.

**Future cruises:** The Archæan Park project will conduct four or five cruises in FY2001 at a submarine caldera of the Izu-Ogasawara (Bonin) Arc. JAMSTEC will conduct a cruise to the Rodriguez Triple junction using the submersible *Shinkai 6500* in early 2002. Ocean Research Institute, Tokyo will conduct a cruise to the southern Okinawa Trough by the *R/V Hakuho-maru* with deep-tow sidescan sonar system in 2002.

**Related programmes:** A Japanese riser drilling ship is now under construction and will be launched within FY2001. The Institute of Frontier Research for Earth Evolution (IFREE) with planned 120 researchers was founded this April at JAMSTEC to promote IODP. IFREE will not be in charge of ridge research. An AUV focused on ridge research is planned by the group of Institute of Industrial Science, University of Tokyo (PI: Prof. T. Ura). JAMSTEC started the planning of next generation deep sea submersible (whether manned or unmanned is yet to be decided).

## Norway (R. Pedersen)

The Norwegian ridge activity is presently focused on a 5-year research programme at the University of Bergen. The SUBMAR programme (subsurface biosphere, hydrothermal and magmatic activity along the Arctic ridges) is currently in its 3rd year. The arctic ridges represent the primary study area, and the principal research objectives for the programme are:

- Microbial colonisation of submarine lavas and the formation of a deep oceanic biosphere at spreading ridges.
- Crustal accretion along the ultraslow spreading Mohns and Knipovich ridges.
- Plume-ridge interaction north of Iceland
- Hydrothermal activity along the arctic spreading ridges.

Resources for the Norwegian ridge activity include:

- *R/V Håkon Mosby*, the University of Bergen 47, meter long research vessel.
- An ROV with a 2000 m depth range.
- OBSs
- A new 85 meter research vessel is under construction and will be available for ridge-related research from 2003.

Three ridge-related Norwegian cruises were carried out last year:

- OBS-cruise to the Jan Mayen area
- Dredging/ROV cruise to the Mohns and the Knipovich ridges
- Multibeam mapping of the Mohns ridge

The multibeam mapping of the Mohns ridge is followed up this summer, and a complete coverage of this ridge should be finished this year. Continuous monitoring of seismic and volcanic activity along the Mohns ridge were initiated last year using the station on Jan Mayen and an array of land-based stations.

A workshop held in Bergen in February this year proposed a census of Marine Life initiative to promote multidisciplinary research on the mid-oceanic ecosystems of the North Atlantic. The title of the proposed project is: "Patterns and Processes of the Ecosystems of the northern mid-Atlantic". An integrated study of the marine ecosystems at the Mid-Atlantic ridge between Iceland and the Azores is the objective of the proposed programme.

## **Russia-Ridge (S. Silantyev)**

A number of projects and cruises have been funded in Russia and are planned for the future.

The major research areas of Russian scientists include:

- Spreading and Plume Regions: MAR 60°S-60°N; EPR 40°S-50°N; SWIR; Carlsberg Ridge; 90°E Ridge; Australian-Antarctic Discontinuity
- Arctic Basins: Knipovich Ridge; Gakkel Ridge and its Laptev termination (LTGR); De Long Islands; Captain Spiss Ridge; Bransfield Strait
- Hot spots and within-plate plateaus: Bouvet; Rodriguez; Kerguelen; Hawaii;
- Active Continental Margins: Fiji Basin; Tonga Arc; Kuril-Kamchatka Trench; Okhotsk and Bering Basins; Aleutian Arc; Scotia Basin
- Passive Continental Margins: De Long Islands
- Ophiolites: Eastern Mediterranean (Cyprus; Dinarides; Lesser Caucasus; Syria); Accretionary Complexes of Northeastern Russia; Ural Folded Belt

These research areas targeted by Russian scientists correlate well with localities chosen for investigations by working groups of InterRidge.

One of the main objects of investigations by Russian scientists are the processes relating to oceanic lithosphere accretion processes. Some of the latest results include:

- The stable correlation of petrological parameters of basalts, gravity anomalies, geoid surface data on seismic tomography and seismicity was established for zero age MAR axial zone. The propagation of Azores superplume southward from 40° to 30°N during 65 Ma has been detected (Dmitriev *et al.*, 2001).
- New isotope and petrological data allow us to propose the existence of two main groups of residual peridotites in the MAR crest zone: first one relates to generation of spreading and plume magmatic assemblages by melting of mantle sources of DM type; the second one does not have genetic relationships with zero age magmatism in the Rift Valley and does not relate with DM sources (Silantyev *et al.*, 2000; 2001).
- Discovery of Jurassic-Cretaceous argillites at the western slope of the Knipovich Ridge Rift Valley, 77°50'N (Knipovich-2000 Scientific Party).
- The analysis of magnetic axis anomalies, as well as allocations of spreading rate and direction, shows that the Carlsberg Ridge segmentation is not an adaptation of inherited plate boundary geometry to changes in spreading conditions but the effect of the accreting processes focusing magma generation along discrete spots of the slow spreading axis (Merkouriev and Sotchevanova, 2001).
- The magnetization in Mid-Ocean Ridge peridotites is connected not only with their serpentinization but also with their common medium-temperature metamorphic recrystallization, which occurred before serpentine formation. This manifestation caused a necessity to revise the commonly accepted model of the magnetic-active building of the oceanic lithosphere allowing the elevation in thickness of magnetic-active layer to the depth corresponding to the Curie point of magnetite at the areas comprised of the Hess type crust. (Bazylev *et al.*, 2001).
- All of data concerning results of the Russian *R/V* Cruises in Central Atlantic were summarized in an electronic Atlas, which is now available on the following Web site: <http://atlantic.tv-sign.ru> (Mazarovich, Sokolov, 1998-2001).

At the recently held Russia-Ridge meeting results of latest studies were presented by Ridge scientists. Current Russian-Ridge research activities in various institutes can be summarised as follows:

### Vernadsky Institute of the Russian Academy of Sciences

- Global correlation of Mid-Ocean Ridge Basalt chemistry and petrology with geophysical and bathymetric parameters of Ridge Crest Zone and distribution of the hydrothermal events along Ridge Axis strike.
- Geochemistry and petrology of Mid-Ocean Ridge residual peridotites and their relationships with magmatism in Rift Valley.
- Metamorphism of the oceanic crust and its relationships with hydrothermal circulation and geodynamic style of accretion of the oceanic lithosphere.

Geological Institute of the Russian Academy of Sciences

Tectonics, magmatism and ore-formation in the key areas of the Atlantic Ocean.

Shirshov Institute of the Russian Academy of Sciences

Hydrothermal processes in Rift Regions of the Ocean Basins.

VNIOceangeologya (Institute of the Ocean Geology)

- Hydrothermalism and ore-formation related with main structures of the Ocean Basins.
- Geology of the Spreading Centres in Arctic Basin.

United Institute of Geology, Geophysics and Mineralogy of the Russian Academy of Sciences

Petrological and geochemical features of magmatism in the Central and South Atlantic.

Institute of Earth Magnetism and Wave Propagation of the Russian Academy of Sciences

Correlation magnetic fields parameters with bathymetric and tectonic features of the Mid-Ocean Ridges

Current Projects funded by RFBR (Russian Foundation for Basic Research)

Vernadsky Institute

- Magmatism of the Mid-Ocean Ridges by different spreading velocity: petrology, geochemistry, geodynamics. PI: L.V. Dmitriev.
- Mantle metasomatizm bellow the Mid-Ocean Ridges and its relationships with Magmatism PI: S.A. Silantiev.
- Conditions of formation of mantle magmas and their sources in different geodynamic settings. PI: A.V. Sobolev.
- Tectonic and magmatic evolution of lithosphere of the Southern Ocean. PI: N.M. Sushevskaya.

Shirshov Institute

Hydrothermal processes in Rift Regions of the Ocean Basins and related ore- formation. PI: Ju.A. Bogdanov.

Cold methane seeps and its role in oceanic carbon cycle. PI: A. Ju. Lein.

Matter influx from deep within the earth in the ocean and its importance for natural environment and climate. PI: A.P. Lisysin.

Petrology and geochemistry of magmatic rocks of the Iceland Plume in Mesozoic time. PI: G.S. Kharin.

Moscow State University

Geodynamic analysis of the evolution of lithosphere at birth, progression and death of Rift Regions of the Mid-Ocean Ridges at the base numerical and experimental simulation. PI: E.P. Dubinin.

VNIOkeangeologia

Peculiarities of crust accretion along axis of super slow Gakkel Ridge, Northern Arctic Basin PI: S.S. Drachev

**Current Projects supported by other Foundations**

Vernadsky Institute

Construction of the Ocean Floor: Deep Processes involving Mantle-Crust Interaction and Surface Exchanges between the Ocean and Deep-Sea Floor. Key examples along the Slow Spreading Mid-Atlantic Ridge (Cooperation between Russian Federation Ministry of Sciences and IFREMER, France. Chief Scientists: L.V. Dmitriev, Russia and H. Bougault, France).

The number of scientific expeditions has dropped sharply in Russia during the last few years due to lack of funding. However, occasional new cruises are being organised with the aid of non-scientific sponsors, or international collaborations. Table 1 shows the planned cruises of Russian vessels.



**Table 1.** Planned cruises of Russian R/Vs related to InterRidge main interests

Ship Owner	Cooperation	Cruise Location	Research Objectives	Ship	Dates
Vernadsky Institute	Germany (A.Wegener Institute), Norway (NRPA)	Kara Sea, Arctic Basin	Ecologic Monitoring	Akadmik Boris Petrov	August'01
Shirshov Institute		Lost City, MAR, 30°N	Hydrothermal fields	Akademik Mstislav Keldysh	June-July'01
Geological Institute		Sierra-Leone FZ	Geophysics, Dredging, Bathymetry	Akademik Nikolai Strakhov	Summer-Fall'01
Vniiokeangeologia and Polar Marine Geological Expedition		MAR, 13° -19°N	Hydrothermal fields	Professor Logachev	September-November'01

One important outcome of the recent R-Ridge meeting was the establishment of an Initiative Group to study the Laptev Termination of the Gakkel Ridge.

**Initiative Group to study Laptev Termination of the Gakkel Ridge (IGLTGR)**

As an end-member of the mid-oceanic ridge system the Gakkel Ridge terminates against a broad Siberian continental margin of the Laptev Sea. Thus, this site is among a few present-day occurrences of a rift to drift transition. These sites are crucial to study the fundamental process, which have been governing the break up of the super-continent and the origins of the Atlantic-type passive continental margins, including large-scale and meso-scale lithospheric deformations, mantle processes and their influence on some components of the natural environment. The Gakkel Ridge itself and its Laptev termination (LTGR) attract an increasing international attention as a less known spreading environment. LTGR differs significantly from the etalon sites of rift to drift transition in the Gulf of California and the Red Sea. A number of studies of LTGR were undertaken in the last 15 years by several Russian and German institutions providing a representative MCS data set and a considerable amount of environmental background. Therefore it was recognized by the Russian Ridge community to be a very timely period to initiate a national effort to study the LTGR. An initiative group (IG) of relevant scientists can be established to work in cooperation with the Arctic Ridges working group to develop this effort in a close international cooperation.

This IG will consists of the following members:

*Drachev S.* - coordinator, MCS data, structural data. Institute of Lithosphere of Marginal and Internal Seas, St. Petersburg's Branch, Russian Academy of Sciences; (e-mail: sdrachev@mail.ru). Field of interest - tectonics and geodynamics of the rift to drift transition.

*Glebovsky V.* - potential fields. All-Russia Research Institute for Geology and Mineral Resources of the World Ocean "VNIIOkeangeologia", Ministry of Natural Resources of the Russian Federation  
*Merkouriev S.* - magnetic field. LO ISMIRAN.

*Silantiev S.* - geochemistry. Vernadsky Institute of Geochemistry and Analytical Chemistry RAS.

*Jokat W.* - MCS data. Alfred Wegener Institute for Polar and Marine Geosciences, Germany. *Kaul N.* - heat flow measurements. University of Bremen, Germany.

**Recent and upcoming meetings**

- RUSSIAN RIDGE, St. Petersburg, Russia 24-26 May 2001
- International Tectonic Symposia, Moscow - St. Petersburg, Russia, 28 Oct. - 3 Nov. 2001
- "Minerals Of The Ocean" - International Conference, St. Petersburg, Russia, 20-25 April, 2002
- Plume Magmatism, Petrozavodsk, September 2002, (NW Russia)

Proposed Objectives:

- ◆ The general problems in mantle plume evolution;
- ◆ Modern and Cenozoic mantle plumes:
  - Continental lithosphere;
  - Oceanic lithosphere;
  - Mantle plume - Mid-Oceanic Ridge Interaction
- ◆ Mantle plume and chemical geodynamics;
- ◆ Reflection of Mantle plumes in geophysical fields.
- ◆ Mantle plumes in Earth History;
- ◆ Mantle plumes and ore-formation.

First Circular will be sent in September 2001

A Geological Excursion to adjacent alkaline magmatic complexes is being planned.

### **China (K. Tamaki)**

Tamaki visited China in October 2000 as a visiting professor of the China Geological University and on that occasion he met several active marine geology/geophysics scientists at Beijing. There are fairly good interests for InterRidge among Chinese scientists. One difficulty faced by China is that there is no intensive coordination system of the Chinese marine geology and geophysics research activities although there are several large institutions of marine sciences at Guangzhou, Qingdao, Hangzhou, and Beijing. InterRidge Office needs to help Chinese scientists to communicate to each other and to make a Chinese Ridge committee. As Tamaki and Jian Lin have strong connection with Chinese scientists, they will try to coordinate among the Chinese scientists to form a corresponding group for InterRidge.

## **InterRidge Projects**

The three InterRidge themes: Global Studies, Meso-Scale Studies and Active Processes are subdivided into ten InterRidge projects. Updates presented during the Steering Committee meeting with the current Chairs and membership are given below.

### **Global Studies**

#### **SWIR Working Group**

**SWIR (Southwest Indian Ridge):** Catherine Mével (France), Chair

*Miquel Canals (Spain)*

*Rajendra K. Drolia (India)*

*Chris German (UK)*

*Nancy Grindlay (USA)*

*Charlie Langmuir (USA)*

*Anton le Roex (South Africa)*

*Chris MacLeod (UK)*

*Jonathan Snow (Germany)*

*Kensaku Tamaki (Japan)*

*Cindy Lee Van Dover (USA)*

10 years ago there was very little knowledge about this ultra slow ridge. Now we have complete bathymetric coverage of the ridge from the RTJ to the BTJ. This is a major achievement which has been facilitated by the InterRidge programme. In parallel to the mapping, a systematic sampling of the ridge axis has been conducted. It is now possible to evaluate the influence of the Marion and Bouvet hotspots on the ridge, both on the morphology and the chemistry. Seismic studies are still required to understand the deep structure of the ridge.

Hydrothermal activity along this ridge is still very poorly known. Several nephelometry signals have been documented with MAPRs mounted on the TOBI cable between 58° and 65°E. Moreover, dead chimneys have been collected at 64°E. Hydrothermal deposits associated with serpentinites have also been documented in the eastern portion of the ridge. However, no active field with associated biology has been observed. Further studies are required to get some idea about the distribution of hydrothermal activity on this ultra slow spreading ridge.

The first hydrothermal vents discovered on the Central Indian Ridge earlier this year have temporarily diverted interest from the search of hydrothermal vents along the SWIR for the biologists.

A workshop to synthesise the current knowledge collected and decide future research on the Indian Ridge has been scheduled. The SWIR working group will be terminated at the workshop to be held in April 17-19, SOC, UK.

At the workshop the WG will produce a summary synthesis document. For example, a review paper and outline the achievements of the WG and its success in meeting its objectives.

#### **Arctic Oceans Working Group**

**Arctic Oceans:** Colin W. Devey (Germany), Chair

*Georgy Cherkashov (Russia)*

*Bernard J. Coakley (USA)*

*Kathleen Crane (USA)*

*Olivier Dauteuil (France)*

*Vladimir Glebowsky (Russia)*

*Karl Gronvold (Iceland)*

*H. Ruth Jackson (Canada)*

*Keun Jin Young (Korea)*

*Wilfried Jokat (Germany)*

*Yngve Kristoffersen (Norway)*

*Peter J. Michael (USA)*

*Hans A. Roseau (Germany)*

*Hideki Shimamura (Japan)*

*Kensaku Tamaki (Japan)*

*Cindy Lee Van Dover (USA)*

#### **The Gakkel ridge expedition is a success story of the Arctic Ridges WG.**

Gakkel Ridge 2001 – an International Arctic Expedition is a two-ship expedition with the American ice-breaker 'HEALY' and the German ice-breaker 'POLARSTERN' to the Gakkel Ridge. Gakkel Ridge stretches 1800 km across the Arctic Ocean; spreading rate varies from 1.3 cm/yr to 0.63 cm/yr (full rate). Within the SCICEX

programme in 1998 and 1999 side scan sonar instruments on a US Navy nuclear submarine produced swath bathymetry and sonar backscatter maps of the Gakkel Ridge which were used to provide the framework for the sampling plan.

The cruise will start in Tromso and conduct a geophysics traverse directly to the ridge to reveal the crustal structure of the Nansen Basin; sampling combined with seismic surveying will proceed westward toward the Lena Trough; ships will then backtrack east along the ridge to about 90°E. Extensive sampling of recently erupted lava fields at 90°C (Müller & Jokat, 2000; Edwards *et al.*, 2001). MARPs and CTDs will be used to detect and pinpoint hydrothermal plumes. If a plume is discovered, several sediment cores will be taken. From 90°E, the ships will complete a geophysical traverse across Amundsen Basin before returning westward along Gakkel Ridge to 30°E.

The major groups of scientific questions that will be addressed during the cruise are:

- Petrology of magmatic and plutonic rocks
  - to study the production, transport and cooling mechanism of the magma
  - to study melting processes occurring deep in the mantle
- Geophysical investigations along the rift valley
  - to get information on the crustal thickness and the composition of the upper mantle
- Magnetotelluric experiments on ice floes
  - to investigate the conductivity of the earth's crust and the mantle below the mid ocean ridge
- Heat flow measurements
  - to detect any asymmetry in crustal temperature decrease across a 20 Myr segment
- Mineralogy and geochemistry of sediments and water samples
  - to detect hydrothermal tracers in the water column
  - to characterize the alteration effects in the sediments
  - to reconstruct the geothermal evolution of the hydrothermal systems along the Gakkel Ridge

Working Group Mail list was updated and appears below. A suggestion was made to invite another biologist to the Arctic Working Group.

Colin W. Devey	cwdevey@uni-bremen.de
Georgiy A. Cherkashev	hydroth@g-ocean.spb.su
Bernard J. Coakley	bcoakle@mailhost.tcs.tulane.edu
Kathleen Crane	kathyc@hp8c.nrl.navy.mil
Olivier Dauteuil	dauteuil@univ-rennes1.fr
Vladimir Glebowski	gleb@vniio.nw.ru
Karl Gronvold	karl@norvol.hi.is
H. Ruth Jackson	jacksonr@agc.bio.ns.ca
Wilfried Jokat	jokat@awi-bremerhaven.de
Yngve Kristoffersen	yngve.kristoffersen@ifjf.uib.no
Peter J. Michael	pjm@utulsa.edu
Hans Albert Roeser	hans.roeser@bgr.de
Hideki Shimamura	shima@eos.hokudai.ac.jp
Kensaku Tamaki	tamaki@ori.u-tokyo.ac.jp
Cindy Lee Van Dover	clvand@facstaff.wm.edu
Young-Keun Jin	ykjin@usgs.gov

Next Working Group targets must be decided in 2001. These will be based on the following points:

- Ice-breaking drill ship
- Unique Arctic questions
- Seismic monitoring system
- AUV under ice and other technological developments

## **Meso-Scale Studies**

### **Ridge-Hotspot Interactions Working Group**

**Ridge-Hotspot Interactions:** Jian Lin (USA), Chair

*R.K. Drolia (India)*

*Jérôme Dymont (France)*

*Javier Escartín (France)*

*J. Freire Luis (Portugal)*

*Eulália Grácia (Spain)*

*David W. Graham (USA)*

*Garrett T. Ito (USA)*

*Lucy M MacGregor*

*Kaj Hoernle (Germany)*

*Nobukazu Seama (Japan)*

Hotspots and mid-ocean ridges are the two primary settings where the heat from inside of Earth transfer into the oceans. When hotspots are very close to a ridge, it impacts significantly the geology of the ridge. Likewise, the thin lithosphere lid near ridges makes a hotspot's effects much more visible on the Earth's surface.

Hotspot-ridge interaction is currently one of the most active research area of marine geoscience community. New cruises were conducted, funded, or proposed by scientists from several InterRidge nations.

After the formation of this WG at last year's Steering Committee meeting, the individuals nominated as potential representatives from various member nations were approached. All of the nominated individuals accepted (Javier Escartin replaced Mathilde Cannat at Mathilde's suggestion so that she can focus on CNRS work. Escartin accepted the invitation)

#### **Workshops:**

The US RIDGE sponsored a successful workshop on "Physical and Chemical Effects of Mantle Plume – Spreading Ridge Interaction" in June 2000 in Oregon. The workshop was organized by Dave Graham, Garrett Ito and John Chen. About 60 geochemists, geophysicists, and hydrothermal vent researchers got together to review the current status of understanding and discuss strategy for further investigation in the next few years. There will also be a symposium on "Icelandic Plume and Crust" in Iceland on September 8-10, 2001. The symposium is organized by Emilie Hooft Toomey, Bryndís Brandsdóttir, and Sean Solomon and is sponsored by NSF, the Iceland Research Council, the US RIDGE office, and the Svartsengi Geothermal Power Plant.

#### **US RIDGE Integrated Study Site:**

As part of US RIDGE 2000 integrated study approach, one of the 5 sites is suggested to be on a hotspot-affected ridge. Two group proposals were put forward, nominating Iceland and Galapagos, respectively. Iceland is the largest hotspot on earth, aside from Hawaii, while Galapagos is an excellent place to study potential "channels" between an off-axis hotspot and the nearby ridge. The US RIDGE programme will select one of these sites by the end of summer 2001.

#### **Recent Cruises:**

A number of cruises have been devoted to the study of hotspot-ridge interaction within the last year and this year. These cruises include those conducted by researchers in US, France, Germany, UK, Japan, Russian, Portugal, etc.

## Active Processes

### **Event Detection and Response and Observatories Working Group**

*Event Detection and Response and Observatories*: Chair: Chris Fox

*Kyohiko Mitsuzawa (Japan)*

Acoustic monitoring of the MAR continues. The hydrophone array was successfully serviced in March 2001 from *R/V Atlantis* (Debbie Smith, Chief Scientist) and the second year of data recovered, with results posted at: [http://www.pmel.noaa.gov/vents/acoustics/seismicity/mar/mar\\_seis.html](http://www.pmel.noaa.gov/vents/acoustics/seismicity/mar/mar_seis.html)

Several manuscripts are in progress describing the results and interested scientists should contact the project PIs if there is an interest in particular areas. A renewal proposal has been submitted to NSF to continue the experiment for four additional years beyond the currently funded three years. The proposed effort will include providing all raw data and derived earthquake source location information over the web as it is processed.

Another hydrophone experiment is being planned between French scientists (Jean Goslin, Sarah Bazin, and others) and the U.S. NOAA Ocean Exploration program (Chris Fox). The planned effort would deploy an array very similar to that currently deployed to the south, around the Mid-Atlantic Ridge between the Azores and Iceland. The ship time has been approved by the French IFREMER and funding to support the hydrophone array and analysis will be proposed to NOAA in October. There is discussion of combining the hydrophone array work with a land seismometer experiment in the Azores.

Progress on MOMAR (Monitoring the Mid-Atlantic Ridge) has been slow and a follow-up workshop to the 1998 Lisbon planning meeting has been postponed indefinitely. Unfortunately, none of the new US-RIDGE2000 Integrated Study Sites include the MOMAR site and will focus effort in other ocean regions. This makes it even more critical for InterRidge to develop a strong research effort here through the international community.

Finally, Chris Fox ends his tenure as Working Group chair with this meeting. Javier Escartin has been approached to take over as new Chair of this working group.

### **MOMAR**

The first MOMAR workshop was held in October 1998, and the workshop report was published by the end of March 1999. Plans for a second MOMAR workshop have been stalled indefinitely. Mathilde Cannat has stepped down as the Chair responsible for the organisation of the second workshop due to other commitments. Plans are underway to revive MOMAR and try and hold the workshop in 2002. MOMAR is to become a part of the mandate of the ED/O WG.

## **Archaen Park Project**

This is a brief summary of the research plan of the Archaen Park Project. It is still flexible and will evolve over time as we proceed with the research. The latest research plan can be found on our home page (<http://www.gsj.go.jp/~marumo/>). Currently, the home page is in Japanese only but the English version is under construction.

Following is a tentative list of individual themes and researchers.

1) Physical processes of hydrothermal circulation system  
(sub-leader: N. Seama; Kobe Univ.)

*Structure and extent of hydrothermal circulation systems*

- Deep-tow high-resolution side-scan sonar survey (H. Tokuyama; ORI, Uni. Tokyo)
- Deep-tow three component magnetic survey (N. Isezaki, Chiba Univ.)
- Deep-tow seismic reflection survey (K. Nishimura, GSJ)
  - Controlled-source electro-magnetic survey (N. Seama; Kobe Univ.)
  - Small-aperture hydrophone array measurements (A. Nishizawa; HDJ)

*Monitoring of time-dependent variation in physical parameters*

- Dense heat-flow and temperature measurements (M. Kinoshita; Tokai Univ.)
- Flow measurement with Medusa at drill holes (A. Tanaka; GSJ)
- Flow measurement with heat-pulse method at recharge zone (M. Taniguchi; Nara Univ. of Ed.)
- Numerical modelling of phase-separated system (S. Yoshida, Nagoya Univ.)

2) Observations of the chemical environment of the Sub-Vent Biosphere  
(sub-leader: J. Ishibashi; Kyushu Univ.)

*Lateral variation in chemistry of low-temperature diffuse flows*

- Time/space variation in sulphur isotopes on Osmo-sampler fluid (J. Ishibashi; Kyushu Univ.)
- Development of gas-tight fluid sampler and isotopic analyses line (T. Gamo; Hokkaido Univ.)

*Chemical sensing and monitoring of hydrothermal plumes*

- *In situ* use of chemical analysers and sensors to monitor plumes (K. Shitashima; CRIEPI)
- Determination of isotopic fractionation of microbial reactions (U. Tsunogai; Hokkaido Univ.)
- Modelling of hydrothermal plumes and propagation of biomass (K. Okamura; Nagoya Univ.)

*Sea-floor monitoring station for chemical parameters*

- Vent-cap monitoring station for oxidation potential and particle size (K. Nakamura; GSJ)
- Potentio-stat measurement of chemical species in fluid (K. Nakamura; GSJ)

3) Microbiology and molecular ecology in the Sub-Vent biosphere  
(sub-leader: A. Maruyama; NIBH)

*Development of microbial sampling and treatment techniques*

- QA/QC of contamination check for microbial sampling (T. Naganuma; Hiroshima Univ.)

*Molecular diversity and ecology of microbial communities*

- Molecular diversity, population analysis and correlation between microbiological and geological variations (A. Maruyama, S. Hanada, H. Yagi; NIBH)
  - Tidal pumping and shift in the redox front in the Sub-Vent biosphere (T. Naganuma; Hiroshima Univ.)
  - Physiology and ecology of gas-utilizing microbes in hydrothermal plumes (K. Nanba; Univ. Tokyo)
  - Population and viability of microbes at cellular levels (K. Kato; Shinsyu Univ.)
  - Microbial methane oxidation processes (M. Utsumi; Univ. Tsukuba)

*In-situ measurement of microbial ecosystem*

- *In situ* measurement of microbial population and diversity (T. Naganuma; Hiroshima, Fujii; U. Tokyo)
- *In situ* incubation of sub-vent microbes at the seafloor (T. Kuwahara; U. Tsukuba)
- *In situ* measurement of microbial population and activities (A. Maruyama; NIBH)

*Bio-/ gene-resources from sub-vent biosphere*

- Special incubator for hyperthermophiles and discovery of primitive life (A. Yamagishi; Tokyo-Pharmaceutical Univ.)
- Hunting of unknown microbes: molecular/cellular detection, isolation, incubation and taxonomy (S. Hanada, A. Maruyama; NIBH)

- Molecular specification and incubation of sulphur reducing microbes (M. Fukui; Tokyo-Metropolitan Univ.)
- Direct gene sequencing and functional prospecting (Y. Kawarabayashi; NIBH)
- Direct protein sequencing and functional prospecting (T. Kurusu; Univ. Ibaraki)
- Viral particle detection and functional prospecting (H. Chiura; Intern. Christ. Univ.)

4) Interaction between microbial and geological processes

(sub-leader: K. Marumo; GSJ)

*Traces of microbial activity recorded in minerals and fluids*

- Micro-analyses of sulphur isotopes, fractionation of sulphide minerals (T. Kakegawa; Tohoku Univ.)
- New sampling technique of micro-organisms using fluid inclusion (T. Sawaki; GSJ)
- Isotopic analyses on organic materials of microbial origin (H. Naraoka; Tokyo-Metropol. Univ.)

*Bio-mineralization in sub-vent biosphere*

- Microorganism/mineral interaction (T. Murakami; Univ. of Tokyo)
- Trace element and isotopic fractionation between cells and minerals (K. Marumo; GSJ)

*Stability and synthesis of organic matter in water-rock reactions*

- Composition of amino-acids in hydrothermal fluids (H. Kawahata; GSJ)
- Synthesis of amino-acid on the surface of sulphides (T. Kakegawa; Tohoku Univ.)

**Table 2.** Tentative Cruise Schedule of the Archaean Park Project and related cruises to the Suiyo Seamount, Izu-Bonin Arc in 2001. The Principal Investigators are tentative.

1. (June 18 – June 27) : BMS Drilling, *R/V Hakurei-Maru #2*  
P.I.s: K. Marumo and T. Urabe  
Mission: Drilling, Coring, Hydrosweep mapping
2. (July 27 - August 10) : ROV Hakuyo 2000 / *R/V Shinsei-Maru*  
P.I.s: K. Nakamura and T. Urabe  
Mission: Instrument deployment, fluid sampling, etc  
(16 days ca end of July) \ ROV Hakuyo 2000 /*R/V Sjomseo-Maru*  
P.I.s: K. Nakamura and T. Urabe  
Mission: Instrument deployment, fluid sampling, etc
3. (August 21 – September 18): DSV “Shinkai 2000” / *R/V Natsushim*  
P.I.: Masataka Kinoshita  
Mission: Instrument deployment / recovery, measurement
4. (October 4 – October 26) : DSV “Shinkai 2000” / *R/V Natsushima*  
P.I.: A. Maruyama  
Mission: Fluid sampling, filtering, in situ incubation
5. (December 8 – December 28) *R/V Kairei*  
P.I.s: J. Ishibashi and N. Seama  
Mission: Side-scan sonar, water column, electromagnetic survey



## **Actions List**

The Steering Committee has identified the following key issues that need to be addressed

### Biology WG

- come up with a mandate before the Brest Symposium (October 8-12, France) about the main direction of biology research in the next decade
- Discontinue the 'International Sample Exchange' database due to lack of success of this initiative
- Officially announce the closing of the sample exchange database at the Brest Biology Symposium and introduce the Wish List and that it will be distributed to cruise PI's by the InterRidge office.
- K. Juniper to get a recipe for biobox from V. Tunnicliffe – provide PI's with a "recipe for biobox".
- Suggestion to publish pictures on the IR website of things collected on cruises.

### IR Office

- Wish List – should be distributed to the PI's of cruises.
- send the BioBox recipe to PIs of cruises
- BAB
- IR office to approach Sang Mook Lee as a potential Co-Chair of the BAB working group.
- Ask Jean-Marie if he wants to continue to co-chair the BAB WG
- Reshape the membership of the BAB WG.
- Approach Fernando Barriga about membership on the BAB WG.
- membership of ST COM. Another nomination from JAMSTEC for the ST COM

### SWIR WG

- Catherine Mevel due to rotate off as the Chair of the SWIR work group
- Approach a journal for a special issue of SWIR results from the SWIR workshop
- Proposal that the SWIR WG will produce a summary synthesis document for IR. For example a review paper and outline the achievements of the WG and its success in meeting its objectives
- The SWIR WG should meet at the SWIR Workshop. People who are actively working in the Indian Ridge who might be invited/encouraged to attend the SWIR workshop next year

### Events Detection and response & Observatories WG

- Jim Cowen from Uni of Hawaii to be consider as member of working group
- Name of the WG changed to: Monitoring and Observation systems
- New chair to be finalised; J. Escartin and possibly R. Santos as Co-chair
- Aims: Promote collaboration and development of infrastructure for monitoring and observations of active volcanic, tectonic and hydrothermal systems, including transient events
- Objective: to revive the MOMAR project
- The chairs of the two groups (EDR/O and UT) should begin their activities by a mutual meeting to decide on their mutual mandate – possibly at the AGU San Francisco, 10-14 December 2001.

### Arctic Ridges WG

- Add a biologist to the arctic ridges WG
- Yoshifumi Nogi to replace Kensaku as a WG member

### GDD WG

- push for progress in compilation of national databases
- IR Office to enquire if P. Blondel wants to continue to chair this WG, if not approach Susan Carbotte (Lamont).
- IR office and the Chair will request national submissions of sites and individual contact people to create links to MB data internationally via the portal page.

### GDHA WG

- this group needs to develop a mandate:
- possibly dismember this WG after the IRTI activities taken up by new Indian WG and the Arctic WG

### Hotspots-ridge interactions WG

- Jian Lin and Jerome Dymant will propose a special session on "Hotspot-Ridge Interactions" for the 2001 Fall AGU meeting
- Promote activities and cruises
- The Steering Committee approved the nomination of Freysteinn Sigmundsson of Iceland as a new member of the Hotspot-Ridge Interactions WG because a lot of work has already been done in Iceland. David Kadko will visit Iceland and approach Frey Stein Sigmund about becoming a member of the WG.
- D. Kadko to speak to Iceland about becoming an associate member of InterRidge.

### Underwater Technologies WG

- A. Chave due to rotate as the Chair of this WG. New chair needs to be nominated and selected.
- D. Christie to talk to Meg and Seyfried about taking over the chairmanship and other people for possible membership. Possible Pierre Marie Sarradin (chemist –sensor development)
- reshape this group with an objective to have a broad view of operations, a focus on hardware, making sure that equipment is compatible, down to plugs fitting into cables etc

### Next decade WG plan:

- Co-chairs: C. Devey and K. Juniper; and liaison K. Tamaki, will organise a workshop to produce a white paper for the next decade of IR activities.
- Time line:
  - IR office will finalise WG membership by September
  - K. Tamaki, K. Juniper and C. Devey will meet at Brest in October 2001
  - Meeting of WG members at AGU, December 2001, San Francisco
  - The workshop will be held May/June 2002 in Bremen, Germany

## **Coordinator Update**

### **InterRidge Membership**

Korea has upgraded its membership to an Associate Member of InterRidge in 2001. Kensaku Tamaki (IR Chair) visited China twice in an attempt to encourage China to join IR as an active member. However, China needs to first create a national Ridge-programme to provide a unifying organisation for Chinese Ridge scientists before they will be able to justify allocating fees to join an international programme.

Germany was not able to raise sufficient funds to contribute the fees for a Principal member Nation in 2000/2001 but hopes to be able to regain Principal member status for 2002.

Italy did not pay its annual Associate Membership contribution in 2000. Persistent attempts on behalf of the coordinator at contacting the national correspondents and the administrative personnel about the status of Italy's outstanding payment and plans for future association with InterRidge have finally resulted in one payment (at associate member level) – the payment for this year is still outstanding.

The current status of InterRidge member nations is a total of 26 countries: 4 principal members (France, Japan, UK and USA ), 7 associate members (Canada, Germany, India, Italy, Korea, Portugal and Norway) and 15 corresponding members (Australia, Brazil, China, Denmark, Iceland, Mexico, Morocco, New Zealand, Russia, Spain, South Africa, Sweden, Switzerland and SOPAC).

### **InterRidge Meetings and Workshops**

#### **Recent and Upcoming meetings**

- InterRidge Workshop: Management and Conservation of Hydrothermal Vent Ecosystems  
*Institute of Ocean Sciences, Victoria, B.C., Canada, 28 - 30 September, 2000*
- InterRidge Steering Committee Meeting,  
*Kobe, Japan, 1-2 June, 2001*
- The 2nd International Symposium on Deep-sea Hydrothermal Vent Biology  
*Le Quartz, Brest, France, 8-12 October 2001*
- Biology Working group Meeting,  
*Brest, France, October 2001 -*
- InterRidge Theoretical Institute: Thermal Regime of Ocean Ridges and the Dynamics of Hydrothermal Circulation.  
*University of Pavia, Italy, 9-13 September, 2002*

#### **Future meetings (requiring additional discussion)**

- InterRidge – The Next Decade Workshop,  
*June 2002*
- SWIR Workshop  
*17-19 April, 2002 SOC, UK*
- Indian Ocean Ridge System (IORS) Workshop  
*30-31 May 2002, Goa, India*
- InterRidge MOMAR Workshop  
*Azores, Portugal /2002*

## InterRidge WWW Pages

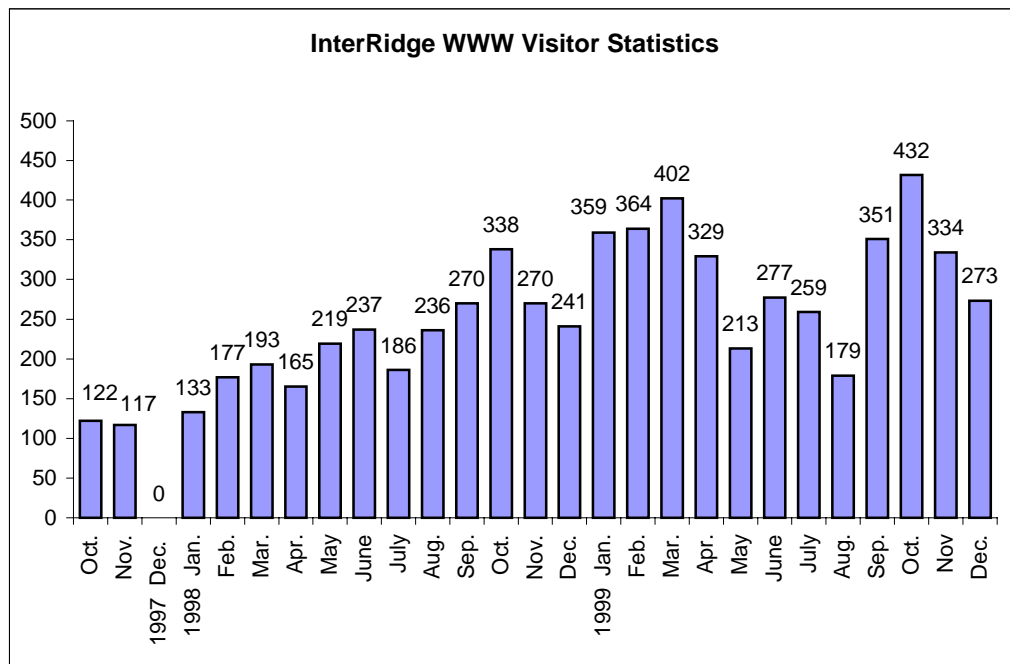
The maintenance of the InterRidge website continues to take a substantial amount of labour and our website is steadily growing. The updates and changes in the structure of the website that we continue to implement are aimed at improving access to the latest information and various other information items that are available.

To make the InterRidge homepage more interactive and flexible we have recently divided it into frames, with the left hand side providing direct access to the latest information on ridge related news and highlights. At the moment direct links are present to upcoming InterRidge meetings, the “Wish List” with requests for samples, as well as direct links to various news items such as the Gorda ridge eruption and the daily updates from the Knorr and the RRS Charles Darwin cruises.

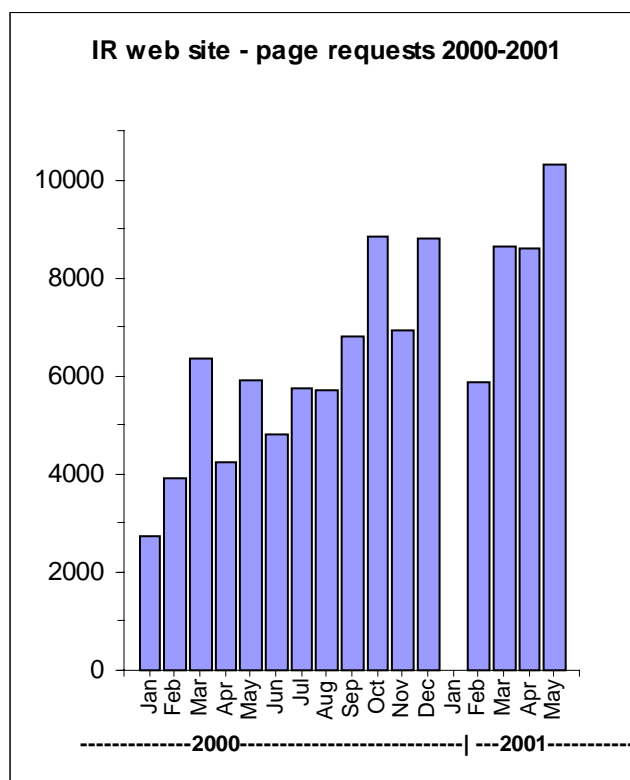
After many attempts a “site map” of our web site has finally been created. This is an important feature as it provides a structured list of sub headings of the pages that are linked to one another on our website. Essentially it allows you to browse through the website in a linear fashion and find the information based on the heading of the individual pages.

The latest features on our website include:

- Home page has been split into frames to allow flexibility in providing a direct link to the latest items from the front page
- an interactive map for the hydrothermal database, which allows a point and click search
- The “Wish list” with requests for samples from the ridge community
- Site map of the IR website
- a new link to a Petrological Database of the Ocean Floor (An NSF founded research project, carried by LDEO (Lamont-Doherty Earth Observatory) of Columbia University)
- Table of contents from the IR news posted on the website is now linked to PDF files for individual research articles for the latest issue of IR news, Spring 2001, vol 10.1.



**Figure 1a.** InterRidge WWW home page Visitor Statistics, October 1997- Dec. 1999 – May 2001



**Figure 1b.** InterRidge website Visitor Statistics, total number of requested pages January 2000

Plans for the future:

- Portal page to world MB data, a prototype of the portal page has been created and should go live sometime in the next few months. The prototype is accessible at <http://www.intridge.org/sbsite.html>
- Make the past IR publications, e.g. workshop/meeting reports, available as downloadable PDF files from our website.

A brief summary of the features found on the InterRidge website can be found in the 'News' section, accessible from the InterRidge homepage.

The statistics for the monthly visitation to the InterRidge web site are shown in Figures 1a & b and from the graphs. Public access of our Website continues to grow steadily.

As usual, the National, Working Group and IR Office updates published in *InterRidge News* have been posted on the web site, as are all the InterRidge reports. Additionally, all of the IR news issues published by the Tokyo Office are available as downloadable PDF files using Acrobat Reader 4.0 or later versions.

## InterRidge Publications

### Summary of 2000 Publications

- Reprints of Arctic report (200 copies) Mapping and Sampling the Arctic Ridges: A project Plan, Dec. 1998
- *InterRidge News*, vol. 9, no. 1, pp. 56, April, 2000
- InterRidge pamphlets, in colour
- Biannual report of InterRidge activity, for SCOR
- InterRidge Steering Committee report, October 2000
- *InterRidge News*, vol. 9, no.2, pp 68, November, 2000

### Summary of 2001 Publications to date

- *InterRidge News*, vol. 10, no.1 pp 72, April 2001
- Workshop report: "Management and Conservation of Hydrothermal Vent Ecosystems", pp. 34, May 2001

## InterRidge Budget

Income from member nations in the Fiscal Year 2000 was \$130 000 US, (see table below), which is lower than in 1999. The actual budget for expenses of the IR office in the 2000FY is also presented below. The “% change” column (Fig. 2b) shows the relative change of costs compared to the expenses for 1999. The most pronounced difference from the 1999 expenses occurred in salaries. In Tokyo, during the 2000FY, the salaries for the Coordinator, assistant and IR post doc were 34% lower than in 1999. This was largely due to the low assistants’ salary, as a result of the limited amount of time that an assistant was employed. As a consequence, the percentage of the IR budget devoted to the annual salaries decreased from 68% in 1999 to only 60%. This decrease occurred despite the decrease in the overall annual IR budget.

General office running costs were also 13% lower. These could be attributed to the fact that telecommunications and postage costs were covered by other funds, and not by the IR office.

The combined travel expenses, for the Chair and Coordinator went up by 39% from last year. This increase is accountable by the fact that there were 2 more trips in 2000, compared to 1999. The average cost per trip from Tokyo was approximately the same as those from Paris.

Expenses associated with publishing and postage of the InterRidge News are very comparable to the costs in Paris.

The overall spending during the 2000FY was 25% lower than the previous year but this decrease was largely accounted for by the reduction in salaries and reduced expenses for office maintenance.

### InterRidge Income : National Contributions 2000

	Yen	Dollars *	Date received
<b>PRINCIPAL MEMBERS</b>			
Japan	4,535,850	40,000	17-Dec-99;29-Dec-00
France	2,140,000	20,000	18-Oct-00
UK	2,442,160	20,000	21-May-01
USA	2,110,000	20,000	21-Mar-00
<b>ASSOCIATE MEMBERS</b>			
Canada	491,602	5,000	2-Apr-01
Germany	510,852	5,000	28-Nov-99;4-Jan-00
Italy	600,500	5,000	7-May-01
Norway	533,750	5,000	1-May-00
Portugal	529,741	5,000	12-Jun-00
India	557,189	5,000	18-Dec-00
<b>Total</b>	<b>14,451,644</b>	<b>130,000</b>	

**Figure 2a.** IR Office income - contributions from the Principal and Associate member Nations.

**InterRidge Costs 2000FY**

	EXPENDITURE (Yen)	EXPENDITURE (Dollars)*	%	NOTES
			change	
<b>Salaries</b>				
Coordinator	4,526,999	37,725		
Assistants	667,380	5,562		Start April
Post-Doc	2,137,500	17,813		
Subtotal	<b>7,331,879</b>	<b>61,099</b>	-34%	
<b>Travel &amp; Expenses</b>				
Chair (Woods Hole)				Air fare supported
Travel	0	0		by InterRidge Japan
Expenses	53,600	447		
Coordinator (Canada, Woods Hole, Germany, Canada, San Francisco)				
Travel	529,320	4,411		
Expenses	288,193	2,402		
Subtotal	<b>871,113</b>	<b>7,259</b>	39%	
<b>Meeting</b>				
Vent Workshop	0	0		
Subtotal	<b>0</b>	<b>0</b>		
<b>Reports</b>				
IR Pamphlet	157,290	1,311		1500 color prints
Vent Workshop Report	0	0		Printed in 2001FY
St. Committee Report	2,000	17		
Subtotal	<b>159,290</b>	<b>1,327</b>	46%	
<b>Office Costs</b>				
Telecommunications	0	0		
Printing IR News (2 issues)	832,755	6,940		3500/issue
Postage IR News (2 issues)	1,056,285	8,802		2700/issue
Postage non IR News	4,000	33		
Supplies	77,146	643		
Software	39,700	331		
Equipment	337,575	2,813		Notebook PC, HD
Bank transfer charges	41,457	345		
Overhead	1,445,164	12,043		
Subtotal	<b>3,834,082</b>	<b>31,951</b>	-13%	

**Figure 2b.** InterRidge Office expenses for the 2000 Fiscal Year.

## **“To Do” items from the 2000 Steering Committee Meeting**

### **USA-DEOS**

- Chave will assist in enhancing the WG homepage with the updated information for ROVs and AUVs under development.
- Chave will provide info to the “Vessel and Vehicle” database with the links to relevant projects (NEPTUNE, DEOS, etc.)

### **Global Digital Database WG**

- The IR Office will design and construct a ‘portal’ page for the GDD WG to provide links to the MB data from different countries, through consultation with the WG Chair

### **Back Arc Basins WG**

- IR Chair will invite Masataka Kinoshita from the Tokai University, Japan to become the new co-chair for the BAB WG
- Fujimoto will help to coordinate restructuring of the membership of the WG with the Chairmen (M. Kinoshita and J–M Auzende).
- Continue to improve the “Hotspot-Ridge Interactions” web page, making it a user-friendly information centre through links to meetings, cruise schedules, cruise reports, submitted and published papers etc.

### **Biology WG**

- K. Juniper and F. Gaill, will write a draft document for expectations of the new WG
- IR office will continue to encourage submissions to the international sample exchange data base

### **Undersea Technology WG**

- IR Office will provides assistance in updating the homepage
- Increase the membership of the working group to include a representative from IFRAMER

### **Event Detection and Response/Observatories WG**

- M. Cannat and C. Fox will jointly organise EDR/Observatory WG and MOMAR committee, and organize the 2<sup>nd</sup> MOMAR Workshop (2<sup>nd</sup> half of 2001, Azores, Portugal)
- Increase the membership of the working group to include representatives from *e.g.* France, India, Portugal and UK

### **MOMAR**

- Encourage lobbying by European scientists from different countries, particularly Portugal to increase awareness about the importance of MOMAR.
- Obtain support for MOMAR from outside of Europe (C. Fox)
- Organize the 2<sup>nd</sup> MOMAR Workshop (Autumn of 2001 Azores, Portugal)



## **InterRidge contacts with other programs**

### **ILP (International Lithosphere Program)**

Harry Elderfield is the liaison between ILP and InterRidge. A report from the two-day workshop on the *Hydrogeology of the Oceanic Lithosphere, held in December 1998* is now available from the IR office on request.

H. Elderfield has supplied the following Annual report for the year 2000;

This was the third year of the project and was one of consolidation. Members participated in various research cruises to study the hydrology of the oceanic lithosphere. One cruise was a characterisation of the nature and pattern of hydrothermal circulation in a mid ocean flank over crustal ages of 0-8Ma as part of an international expedition in Dec. 1999-Feb. 2000 (EXCO II cruise of the German vessel *R/V Sonne*). The objective was to sample crustal fluids as sediment porewaters which upwell at sites above basement highs as guided by GPS navigated seismic and heat flow survey. Estimates would be made of vertical velocities of porefluid flow so as to evaluate recharge through sediments compared with basement fluid fluxes deduced from fluid chemistry. At some sites evidence was obtained of fluid of near sea water composition is being advected through the sediment column, though without supporting chemical data it is impossible to determine the direction of pore fluid movement. Laboratory based studies using Sr isotopes showed that although there is upwelling and thermal anomalies at these sites, the temperatures at these sites are too cool for chemical exchange to occur at observable rates. A second cruise TTN116 of the R/V Thompson was made to the "Retroflux" study area on the eastern flank of the Juan de Fuca Ridge at about 48°N. Gravity and piston cores were collected at several sites linked with heat flow data. The sites are areas of basement outcrop or basement high, suggestive of overpressured systems. Thirty cores were collected at the First Ridge sites (near ODP 1030 and 1031). Sixteen showed chemical gradients suggestive of upwelling. Nineteen cores were collected at Wuzza Bare. All showed curvature indicating rapid upwelling. Basement fluids upwelled were highly altered (Ca ~ 62 mmol/kg < 3 mmol/kg Mg, Cl ~ 554 mmol/kg). At Zona Bare Highly altered porewater sampled with low chlorinity (525 mmol/kg) was a suggestion of gas hydrates nearby. Nearly all of 7 cores at Papa Bare show upwelling induced curvature and 9 cores at Grizzly Bare showed equivocal evidence of vertical flow. (vii) 16 cores at Grinnin' Bare showed evidence of upwelling. The basement water appears much less reacted than that at other sites (Mg ~ 33 mmol/kg and Ca ~ 30 mmol/kg).

The American Geophysical Union has accepted a proposal to publish a Monograph entitled "Hydrogeology of the Oceanic Lithosphere" and plans for 2001 include members writing chapters for this volume.

### **SOPAC (South Pacific Geosciences Applied Commission)**

The SOPAC representative, Russell Howarth, hasn't provided any information about SOPAC activities. However, SOPAC has recently convened a regional Workshop on the Issues and Challenges of Marine Scientific Research [MSR] in the Pacific Region, Port Moresby, Papua New Guinea, 27<sup>th</sup> Feb. to 1<sup>st</sup> March 2001. This workshop was relevant to the issues raised during the IR Vent Management Workshop, IOS, Canada 28-30 Sept, 2000.

The objectives of the workshop were to increase Pacific Island Nationals awareness of the value of marine scientific research and the legal and technical issues relating to marine scientific research within their exclusive economic zone [EEZ] through:

- Dialogue with key MSR stakeholders
- Developing broad guidelines for MSR in the SOPAC Region
- Empowering PIC personnel dealing with Marine Scientific Research
- Resolving issues identified during the workshop

An electronic version of the SOPAC report is available from the IR office on request.

### **SCOR (Scientific Committee on Oceanic Research)**

SCOR held its 25<sup>th</sup> General Meeting in Washington DC, on the 10-13 Oct., 2000. Unfortunately no one from InterRidge was able to attend the meeting, however, IR coordinator was able to complete and submit a biannual report of InterRidge activities. The report outlined the major scientific highlights of the past two years, plans for the next year, major milestones in the programme, and the benefits of affiliation to SCOR.

InterRidge is an affiliated Programme to SCOR which means that InterRidge can request co-sponsorship from SCOR. While previous attempts to get financial support from SCOR have been unsuccessful, by maintaining the status of an affiliated programme, InterRidge will be eligible to request financial support from SCOR in the future. Programmes affiliated to SCOR are reviewed during the biannual General meetings.

### **ODP (Ocean Drilling Program)**

Tamaki attended the ODP Science Committee meeting at Shanghai on March 21-22, 2001 and presented an activity report of InterRidge. The activity of InterRidge was well received by the committee members and positive discussion on the possibility of cooperation between InterRidge and ODP followed. ODP will end in October 2003 and the scheduling of FY2003 ODP drilling cruise will be done in August 2003. With respect to ridge related programs; a drilling proposal for Mid-Atlantic Ridge by P. Kelemen, J. Casey, and M. Cannat has a high possibility of being scheduled.

### **IODP (International Ocean Drilling Program)**

K. Fujioka presented the situation of the IODP structure and the general arrangement of new ship and schedule of building the ship. He also talked about the IFREE, JAMSTEC frontier of the solid earth science as to five programs and objectives of each program and structure.

### **ISA (International Seabed Authority)**

The International Seabed Authority convened a workshop on mineral resources, other than polymetallic nodules of the Area, from 26-30 June 2000, Jamaica. This workshop was the third in a series of workshops convened by the Authority, and sequel to the workshop on environmental guidelines for the exploration for deep seabed polymetallic nodules in the Area. Kim Juniper and Chris German participated in this workshop and delivered presentations about the logistics involved in the discovery of hydrothermal vents as well as the impacts of the development of polymetallic massive sulphides on the vent ecosystems.

A copy of the report from the "Management and Conservation of Hydrothermal Vent Ecosystem" InterRidge workshop, 28-30 Sept 2000 will be sent to the ISA.

## Meetings Calendar

12 - 16 January, 2001	<b>International Conference on the Geology of Oman.</b> Muscat, Sultanate of Oman.
26 - 30 March, 2001	<b>26th General Assembly of the EGS.</b> Nice, France.
8 - 12 April, 2001	<b>EUG (European Union of Geosciences) XI meeting.</b> Strasbourg, France
24 - 26 May, 2001	<b>RUSSIAN RIDGE.</b> St. Petersburg, Russia
1 - 2 June, 2001	<b>InterRidge Steering Committee Meeting.</b> Kobe, Japan.
10 - 15 June, 2001	<b>10th Water-Rock Interaction Symposium.</b> Sardinia, Italy.
25-26 July, 2001	<b>B-DEOS Town Meeting</b> Cardiff University, UK
18 - 24 August, 2001	<b>Second International Conference of Comparative Physiology &amp; Biochemistry in Africa.</b> Chobe National Park, Botswana.
25 - 27 August, 2001	<b>Joint Geosciences Assembly (JGA).</b> International Convention Center, Taipei, Taiwan
8 - 10 September, 2001	<b>Symposium on the Icelandic Plume and Crust.</b> Reykjanes Peninsula, Iceland
Fall 2001/spring/2002	<b>MORMAR Workshop</b>
8 - 13 October, 2001	<b>Second International Symposium on Deep-Sea Hydrothermal Vent Biology.</b> Brest, France
10 - 14 December, 2001	<b>AGU 2001 Fall Meeting.</b> San Francisco, CA, USA.
17-18 April, 2002	<b>SWIR Workshop.</b> SOC, UK
20 - 25 April, 2002	<b>"Minerals Of The Ocean" - International Conference.</b> St. Petersburg, Russian Federation
9 - 13 September, 2002	<b>InterRidge Theoretical Institute (IRTI) Thermal Regime of Ocean Ridges and Dynamics of Hydrothermal Circulation.</b> University of Pavia, Italy.

## **InterRidge Steering Committee 2001**

- |                       |  |                           |                                |
|-----------------------|--|---------------------------|--------------------------------|
| 1. Fernando Barriga   | (Portugal, 2001)                         | 11. Françoise Gail        | (France, <i>ad hoc</i> , 1998) |
| 2. Philippe Blondel   | (UK, <i>ad hoc</i> , 1997)               | 12. Toshitaka Gamo        | (Japan, 2001)                  |
| 3. Enrico Bonatti     | (Italy, NC, 1998)                        | 13. Chris German          | (UK, 1997)                     |
| 4. Jérôme Dymont      | (France, 2001)                           | 14. S. Kim Juniper        | (Canada, 1998)                 |
| 5. Alan Chave         | (USA, <i>ad hoc</i> , 1997)              | 15. David Kadko           | (USA, 1999)                    |
| 6. Dave Christie      | (USA, 1997)                              | 16. Sang-Mook Lee         | (Korea, 2001)                  |
| 7. Paul Dando         | (UK, 1999)                               | 17. Jian Lin              | (USA, <i>ad hoc</i> , 1999)    |
| 8. Colin Devey        | (Germany, 1999)                          | 18. Catherine Mével       | (France, 1997)                 |
|                       | (Klas Lackschewitz, German rep. in 2001) | 19. Ranadhir Mukhopadhyay | (India, 2000)                  |
| 9. Christopher G. Fox | (USA, <i>ad hoc</i> , 1998)              | 20. Rolf Pedersen         | (Norway, 1996)                 |
| 10. Kantaro Fujioka   | (Japan, 1999)                            | 21. Kensaku Tamaki        | (Japan; Chair 2000)            |

## **InterRidge National Correspondents**

### ***Principal Members:***

1. France - Dorsales - Catherine Mével
2. Japan - InterRidge Japan - Nobuhiro Isezaki
3. UK - BRIDGE - Chris German
4. USA - RIDGE - Dave Christie

### ***Associate Members:***

1. Canada - CanRidge - S. Kim Juniper, Kathryn M. Gillis
2. Germany - DeRidge - Colin Devey
3. Korea - Sang-Mook Lee
4. India - Sridhar D. Iyer, Abhay V. Mudholkar
5. Italy - Enrico Bonatti, Paola Tartarotti
6. Norway – Rolf Pedersen
7. Portugal - Fernando Barriga

### ***Corresponding Members:***

1. Australia - Trevor J. Falloon
2. Brazil - Suzanna Sichel
3. China - Wang Zhihong
4. Denmark - John R. Hopper
5. Iceland - Karl Grönvold
6. Mexico - J. Eduardo Aguayo-Camargo
7. Morocco - Jamal Auajjar
8. New Zealand - Ian Wright
9. Philippines - Graciano P. Yumul, Jr.
10. Russia - Sergei Silantsev
11. South Africa - Anton le Roex
12. Spain - Juan José Dañobeita
13. Sweden - Nils G. Holm
14. Switzerland - Gretchen Früh-Green
15. SOPAC - Russell Howort

## InterRidge People, Past and Present

### Steering Committee Members

<b>Canada</b>			
S. Kim Juniper	1998-	<b>Norway</b>	
		Rolf Pedersen	2001-
		Eirik Sundvor	1996-2000
<b>France</b>			
Jérôme Dymont	2001 -	<b>Portugal</b>	
Françoise Gaill, <i>ad hoc</i>	1998-	Fernando Barriga	2001 -
Mathilde Cannat	1997-2000	Miguel Miranda	1996-2000
Catherine Mével	1997-		
Daniel Desbruyères, <i>ad hoc</i>	1991-1997	<b>Spain</b>	
Jean Francheteau	1991-1998	Miquel Canals	1995-1998
H. David Needham	1991-1994	Juan José Dañoibeita	1995-1998
<b>Germany</b>			
Colin Devey	1999-	<b>UK</b>	
Peter M. Herzig	1996-2000	Paul Dando	1999-
Roland Rihm	1995-1998	Christopher R. German	1997-
		Philippe Blondel, <i>ad hoc</i>	1997-
		Lindsay Parson, <i>ad hoc</i>	1996-1998
		Roger C. Searle	1994-1998
		Martin Sinha	1991-1996
<b>India</b>			
Ranadhir Mukhopadhyay	2000-	<b>USA</b>	
		Jian Lin, <i>ad hoc</i>	1999-
		Christopher G. Fox, <i>ad hoc</i>	1998-
		David Kadko	1998-
		Alan Chave, <i>ad hoc</i>	1997-
		Dave Christie	1997-
		Karen Von Damm	1996-1998
		Lauren Mullineaux, <i>ad hoc</i>	1996-2000
		Robert S. Detrick	1992-1995
		John Delaney	1991-1994
		P. Jeff Fox	1991-1994
		Charles H. Langmuir	1991-1996
<b>Italy</b>			
Enrico Bonatti	1998-		
<b>Japan</b>			
Toshitaka Gamo	2001-		
Kantaro Fujioka	1999-		
Hiromi Fujimoto	1997-2000		
Tetsuro Urabe	1995-1998		
Kensaku Tamaki	1992-1997		
Kensaku Tamaki	2000 -		
<b>Korea</b>			
Sang-Mook Lee	2001-		

### InterRidge Chairs

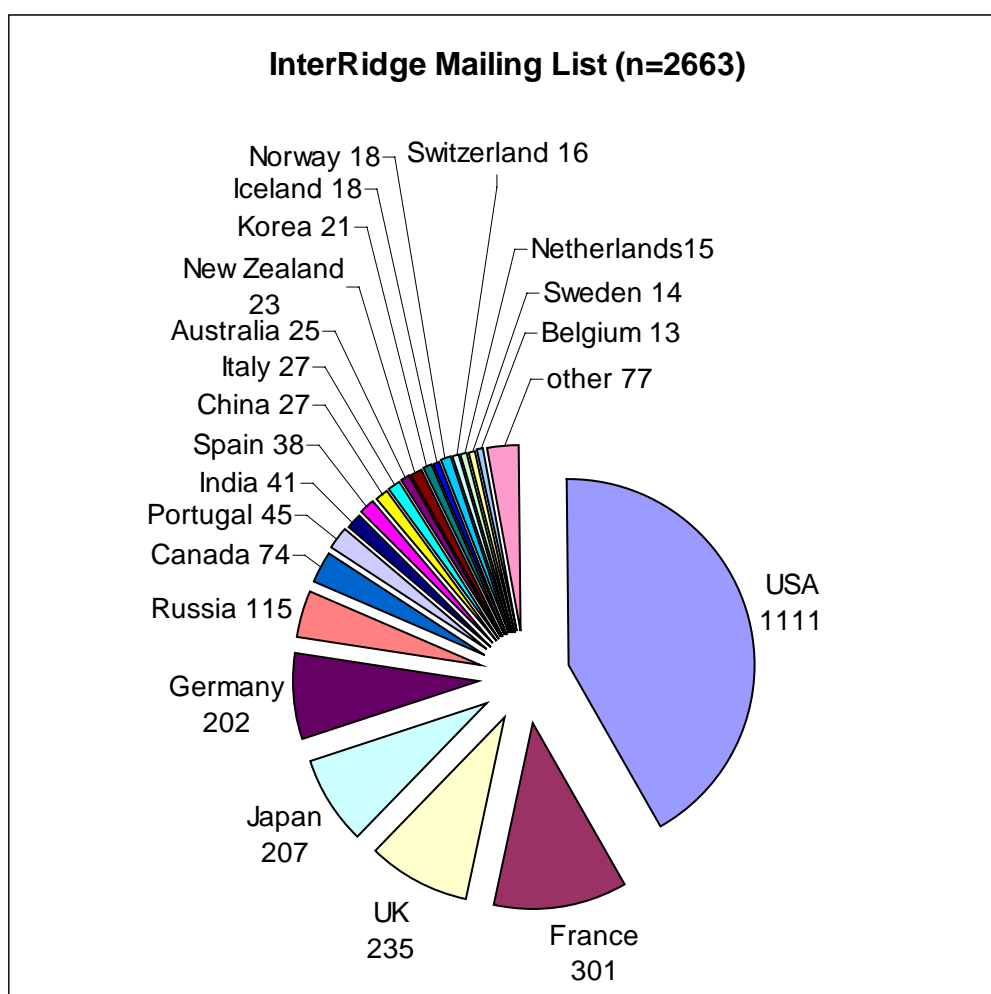
Kensaku Tamaki (Japan)	2000 -
Mathilde Cannat (France)	1997-1999
Roger Searle (UK)	1994-1996
John Delaney, co-chair (USA)	1991-1993
H. David Needham, co-chair (France)	1991-1993

### InterRidge Coordinators

Agnieszka M. Adamczewska	December 1999 -
Cara Wilson	March 1997 – Nov. 1999
Ruth Williams (acting)	Oct. 1996 - March 1997
Heather Sloan	Oct. 1993 - Oct. 1996
Trileigh Stroh	1989 - Oct. 1993

## InterRidge Mailing List, May 2001

The InterRidge mailing list continues to grow. There are now over 2660 individuals and organisations world wide that receive IR news twice a year. Over 69% of the mailings go to the Principal member nations. Individuals from Associate member nations make up another 16% of the total list. The remainder (~15%) are distributed amongst 35 different nations. The most pronounced deviation from the relationship between the number of individuals on the mailing list and national affiliation with InterRidge is shown by Russia, which is the 6<sup>th</sup> largest nation on the mailing list but is a corresponding member. A pie chart showing the number of individuals on the IR mailing list from different countries is shown below (Fig. 3).



**Figure 3.** Breakdown of the InterRidge mailing list by nationality.

## Appendices

### Appendix A: Articles and updates published in *InterRidge News*

#### InterRidge News

A breakdown of the of the articles that have appeared in *InterRidge News* is given in the figure below (Fig. 4). Classified by nation according to affiliation of the first author

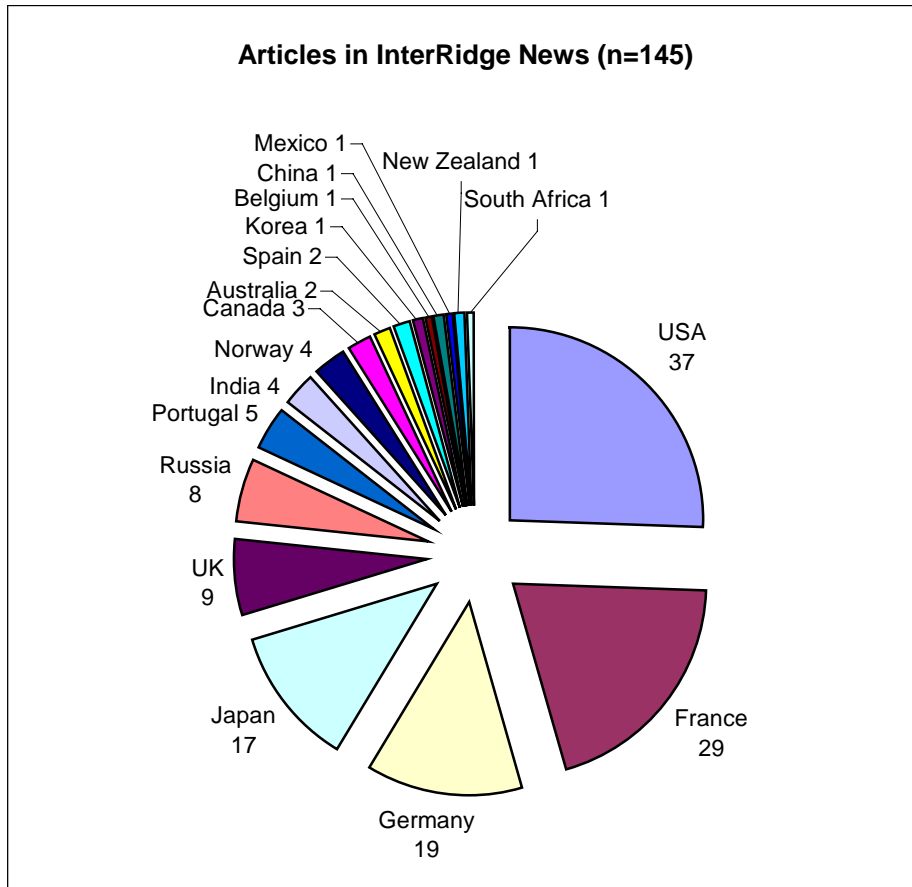


Figure 4. National contribution of articles that have appeared in InterRidge news

Updates published in *InterRidge News*

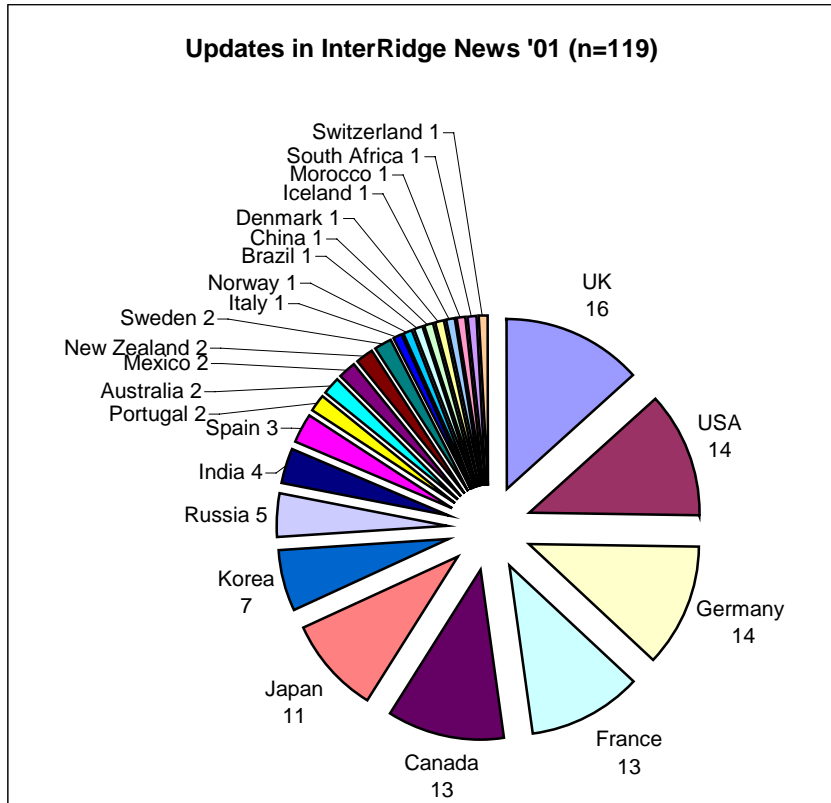


Figure 5. Classification, by nationality, of all the updates published to-date in *InterRidge News*.



**Appendix B: InterRidge Mailing List statistics**

**Table 3.** The nationality of the InterRidge mailing list, classified first by membership (principal, associate, corresponding) and then alphabetically. Data compiled in May 2001

Black: Principal Member, Dark Gray: Associate Member; Pale: Corresponding Member.

	Country	Mailing List		E-mail Addresses		% with E-mail
		Number	% of Total	Number	% of total	
1	France	301	11.3%	208	11.1%	69%
2	Japan	207	7.8%	123	6.6%	59%
3	UK	235	8.8%	183	9.8%	78%
4	USA	1111	41.7%	867	46.2%	78%
5	Canada	74	2.8%	20	1.1%	27%
6	Germany	202	7.6%	128	6.8%	63%
7	India	41	1.5%	34	1.8%	83%
8	Italy	27	1.0%	23	1.2%	85%
9	Korea	21	0.8%	17	0.9%	81%
10	Norway	18	0.7%	13	0.7%	72%
11	Portugal	45	1.7%	32	1.7%	71%
12	Argentina	2	0.1%	1	0.1%	50%
13	Australia	25	0.9%	21	1.1%	84%
14	Austria	2	0.1%	2	0.1%	100%
15	Belgium	13	0.5%	8	0.4%	62%
16	Brazil	4	0.2%	4	0.2%	100%
17	Chile	2	0.1%	0	0.0%	0%
18	China	27	1.0%	17	0.9%	63%
19	Czech Republic	1	0.0%	0	0.0%	0%
20	Denmark	7	0.3%	5	0.3%	71%
21	Ecuador	1	0.0%	0	0.0%	0%
22	Fiji	5	0.2%	4	0.2%	80%
23	French Polynesia	1	0.0%	1	0.1%	100%
24	Greece	2	0.1%	0	0.0%	0%
25	Iceland	18	0.7%	14	0.7%	78%
26	Iran	3	0.1%	0	0.0%	0%
27	Ireland	9	0.3%	7	0.4%	78%
28	Israel	2	0.1%	1	0.1%	50%
29	Mexico	6	0.2%	2	0.1%	33%
30	Monaco	2	0.1%	1	0.1%	50%
31	Morocco	1	0.0%	1	0.1%	100%
32	Netherlands	15	0.6%	8	0.4%	53%
33	New Caledonia	1	0.0%	0	0.0%	0%
34	New Zealand	23	0.9%	11	0.6%	48%
35	Papua New Guinea	2	0.1%	0	0.0%	0%
36	Philippines	4	0.2%	3	0.2%	75%
37	Poland	1	0.0%	1	0.1%	100%
38	Puerto Rico	1	0.0%	1	0.1%	100%
39	Russia	115	4.3%	56	3.0%	49%
40	Slovenia	1	0.0%	1	0.1%	100%
41	South Africa	5	0.2%	3	0.2%	60%
42	Spain	38	1.4%	24	1.3%	63%
43	Sweden	14	0.5%	9	0.5%	64%
44	Switzerland	16	0.6%	12	0.6%	75%
45	Taiwan	7	0.3%	7	0.4%	100%
46	Turkey	3	0.1%	2	0.1%	67%
47	Venezuela	2	0.1%	0	0.0%	0%
	Total	2663		1875		70%