



InterRidge Program Plan Addendum 1995

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1.0 InterRidge Update Summary 1995

1.1 Membership

InterRidge Membership continues to expand. The InterRidge Chair and Steering Committee welcomed Germany, India, Portugal, Spain and Switzerland as new or upgrading members of InterRidge. Germany joined InterRidge as an Associate Member in late 1994 and Spain joined as a Principal Member for 1995. India and Switzerland joined as Corresponding Members. In 1995, InterRidge counted 5 Principal Members (France, Japan, Spain, UK, USA), 2 Associate Members (Germany, Portugal) and 11 Corresponding Members (Australia, Canada, Iceland, India, Italy, Korea, Mexico, Norway, Russia, Sweden, Switzerland). The InterRidge Office is continuing in its efforts to increase membership by contacting nations with active ridge crest research communities such as Chile, China and New Zealand.

1.2 InterRidge Phase 2 Projects

InterRidge has entered Phase 2 of its Program Plan which is designated to last from 1995 through 1997. Phase 2 involves in-depth studies in the form of major interdisciplinary field efforts conceived and co-ordinated by InterRidge, and development of a database information catalogue accessible to the international ridge sciences community via the Internet.

As the Phase 2 projects develop, InterRidge structure is changing from large working groups associated with the three principal program themes to smaller working groups formed around each project. The principal themes of InterRidge will remain in place and the projects will be grouped within them. There are currently 8 projects, each with a project leader who will act as rapporteur to the Steering Committee. The project working groups will be made up of investigators directly concerned with each of the projects. The current projects are:

Global Studies:

- *Global Digital Atlas*: the establishment of a global multibeam bathymetric database by linking distributed databases via the World Wide Web. Chair: K. Tamaki.
- *SWIR (Southwest Indian Ridge)*: co-ordinated reconnaissance mapping and sampling of a complete super-segment, the Southwest Indian Ridge from the Bouvet Triple Junction to the Rodrigues Triple Junction including integrated Ocean Drilling experiments. Chair: C.H. Langmuir.
- *Arctic Oceans*: co-ordination of planning efforts for mapping and sampling of the Arctic Ridges. Chair: R. Rihm.

Meso-Scale Studies:

- *4-D Architecture of the Oceanic Lithosphere*: an integrated study of a fast spreading segment (Hess Deep) in parallel with an integrated study of a slow spreading segment on the Mid-Atlantic Ridge both including important components of scientific drilling. Chair: L. Parson.
- *Quantitative Fluxes Experiment*: segment-scale experiment to measure integrated magmatic, thermal, chemical and biological fluxes at Mid-Atlantic Ridge. Chair: TBA.
- *Back-Arc Basin Database*: petrological database of Back-Arc Basins on the World Wide Web. Chair: K. Tamaki.

Active Processes:

- *Event Detection and Response*: detection of transient ridge-crest seismic, volcanic and hydrothermal events, and logistical response to them through a strategy of international collaboration. Chair: K.L. Von Damm.
- *Biological Studies*: promotion of integration of biological studies into ridge crest geosciences and advancement of this rapidly expanding field. Chairs: L.S. Mullineaux and D. Desbruyères.

It is envisaged that these projects will move forward through concerted international actions at sea and elsewhere, co-ordinated by InterRidge over a period of several years. This activity will bring the ships and technology of different nations together in major multi-disciplinary experiments focused on InterRidge thematic goals. Detailed science plans and calls to participate will be issued by the InterRidge Office. *InterRidge News* will reflect the project structure with the initiation of feature columns dedicated to reporting each project's progress.

It should be emphasised that the projects outlined above represent a focusing of InterRidge efforts in the near-term; however, broader long-term goals still remain. For example, it is the long-term aim of the Global Studies program to complete reconnaissance mapping of all the world ridges, and the current emphasis on SWIR and the Arctic is simply a step on the way.

1.3 WWW

The InterRidge World Wide Web home page is now on line. The home page address is: <http://www.dur.ac.uk/~dgl0zz1/> The InterRidge home page provides links to the InterRidge Researcher Electronic Directory, information concerning InterRidge program structure and events calendar, workshop announcements and various national and international program home pages.

1.4 Piggy-back Projects

The Fall/Winter 1995 issue of *InterRidge News* contained the first call for piggy-back and host projects as the InterRidge Office offers its services as a 'broker' matching investigators with smaller scale experiments with those who have funded ship time available. The provisional InterRidge calendar of upcoming events reflects the program's continuing interaction with a broad range of international organisations in working towards common aims and objectives.

1.5 InterRidge Office Transfer

With the end of the UK term as host country in 1996, the InterRidge Office will transfer to another of its principal member nations. The call for bids will be opened in January 1996 with a closing date in March. Bids received will be reviewed by the Steering Committee and a new host country chosen by the end of the Summer.

1.6 Recent InterRidge Workshops

On August 28 and 29, an actual/virtual meeting of the SWIR Working Group was held at Woods Hole Oceanographic Institution, MA, USA to draft a Project Plan. The result is an integrated 3-5 year science plan involving six to eight legs of ship time aimed at multi-disciplinary investigation of the super-slow-spreading Southwest Indian Ridge. The SWIR Project Plan is currently undergoing a last round of revision and will soon be available on the World Wide Web and for distribution in hard copy.

An InterRidge Meso-scale Studies Workshop, "Quantification of Fluxes at Mid-Ocean Ridges: Design for a segment scale box experiment" was held on 26-27 June 1995 in Cambridge, UK. Its principal objective was to design an experiment to quantify mass, energy and chemical fluxes occurring at mid-ocean ridges at the axial segment length scale and extending from the mantle up into the water column. Site selection as well as integration with other InterRidge projects were discussed.

The Biological Studies *Ad Hoc* Committee of InterRidge met on April 24 & 25 at Rutgers University, NJ, USA, to discuss integration of biological studies in the three principal InterRidge themes, draft an international agreement for sample exchange and maximise the effectiveness of biological sampling during 'geological' cruises. In addition to accomplishing these objectives, a number of other initiatives were recommended and undertaken by the ridge crest biologists. These include a Ridge Crest Biologist Directory on the WWW, an on-line sample database, and compilation and publication of a Faunal Identification Manual.

The Active Processes Workshop "Event Detection and Response & A Ridge Crest Observatory" was held on January 16 - 18 in Paris, France. The principal objectives of the workshop were: 1) to discuss and design techniques, instrumentation and methods relevant to the implementation of an event detection and response program and the development and deployment of a ridge crest observatory; and 2) to produce a white paper discussing the relevant issues and detailing specific project implementation plans.

1.7 Actions taken by the InterRidge Office

The principal activity of the final stages of Phase 1 was a series of workshops. Organisation and facilitation of a second generation of workshops has continued throughout 1995. In addition to the development of science and implementation plans, these workshops produced a number of recommendations for action to be taken by the InterRidge Office. The recommendations are summarised below and each is followed by the action taken in association with it.

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1.7.1 Global Studies Workshop 1993

- To arrange workshops to explore and define critical scientific problems. This often leads to the planning of joint programs.

Three InterRidge workshops were held in 1994 including one on Global Studies: Arctic Ridges: Results and Planning; four in 1995 including one on Global Studies: SWIR Science Plan Meeting; and four are provisionally planned for 1996.

- To keep the community informed of funded and proposed programs, since this knowledge often of itself leads to the next natural step in the global exploration process, and helps to avoid duplication of effort.

Information concerning funded (and usually only scheduled) cruises has been made available to the community in InterRidge News since it was first published. More recently, details concerning proposed but as yet unfunded or unscheduled projects have been published in the Indian Ocean Column of InterRidge News. This information is now also available via the InterRidge home page in the form of a link to the 'Oceanic' site as well as a European mirror of the Oceanic information concerning vessels surveying the Mid-Ocean Ridge.

- When a logistical opportunity presents itself, to bring together diverse investigators from the different nations to share strategies, which leads to the optimisation of individual programs, and the planning of joint and co-ordinated programs.

Starting with an announcement in the Fall/Winter issue of InterRidge News, the InterRidge Office will offer a 'brokerage' service to those investigators who are planning a project which might be 'piggy-backed' or who are willing to offer time/space on a funded cruise. This will include a call for open proposals from both.

1.7.2 Segmentation and Fluxes at Mid-Ocean Ridges Symposium and Workshops 1993

- Facilitate international communication, discussion, exchange of data, exchange of cruise plans, and organise symposia, workshops, etc.

See section 1.7.1 above.

- Establish an Internet accessible catalogue of recent and pending surveys to aid in the co-ordination and planning of international collaborative projects.

See section 1.7.1 above.

- Act as a 'broker' by facilitating contact between individuals, groups or nations wishing to work on similar themes or in the same locations.

See section 1.7.1 above.

- Develop links with ODP with an aim towards encouraging development of various ridge crest drilling capabilities.

Planning for a joint InterRidge/ODP Conference to be convened by Henry Dick and Catherine Mével is now in progress. The provisional venue and date are WHOI on 1-4 April, 1996.

- Co-ordination of a science plan and site selection for an experiment to quantify fluxes at the segment scale.

An experiment design workshop was held in Cambridge, UK in June of this year resulting in the draft of a science plan and the selection of the 29°N segment as the primary target for this experiment. TAG and Snake Pit were named as secondary targets.

1.7.3 Back-arc Basin Studies Workshop 1993

- Establish and maintain a geographical index of existing geophysical and geochemical datasets and funded proposals in back-arc basins as well as both geochemical and geophysical database archives.

A series of home pages have been established for all three databases and are accessible via the InterRidge home page. Positive responses have been received but so far contributions have been limited. Following announcements on the e-mail and in InterRidge News, a better response is anticipated.

- Develop links between back-arc basin studies and ODP.

The issue of drilling in back-arc basins will be raised with the convenors of the joint InterRidge/ODP symposium.

1.7.4 4-D Architecture of the Oceanic Lithosphere Workshop 1994

- Facilitate rapid response to detected events through the development and maintenance of a list of platform capabilities and scheduling.

See 'Event Detection and Response...' section 1.7.5 below.

- Co-ordinate a GIS database for the selected experiment site(s).

Currently awaiting site selection in the Atlantic. A database already exists for Pacific data at Lamont.

- Co-ordinate drafting of experiment science plans.

Provisional working group leaders were appointed and the InterRidge Office is currently arranging for discussion between their selected working group members. Further action awaiting confirmation of site selection.

1.7.5 Event Detection and Response & A Ridge Crest Observatory 1995

Actions awaiting report completion

- Develop an Internet communications network to facilitate information exchange and collaboration between observatory scientists. It is envisioned that the scope of this work will require additional personnel in the InterRidge office.

It will be possible to initiate and maintain electronic bulletin boards which will cater to ridge crest researchers involved in 1) event detection and response and 2) ridge crest observatories. They will allow open communication across the community of bulletin board members as well as provide information on events and technical development to the InterRidge Office which can then be posted on the WWW. A call for subscribers will be sent out to all participants and anyone involved in the Active Processes Workshop and an announcement made over the InterRidge e-mail list. After the initial work is completed, this list and the accompanying WWW home page will require minimal maintenance which can be accomplished without additional personnel in the Office.

- Actively promote the implementation and use of World Wide Web home pages that permit observatory system developers and scientists to easily and effectively communicate. An important aspect of this is to provide investigators with simple, easy-to-use (i.e. cookbook style) instructions for setting up World Wide Web home pages. InterRidge should provide a versatile standard home page that could easily be downloaded and modified by individuals to suit their needs. The InterRidge home page should contain a directory with links to available information on specific categories of observatory activity, i.e. sites, tools, planned experiments, news of recent events. Pertinent information should be linked to other science networks (Volcano Net, Smithsonian Events...)

A WWW home page dedicated to Event Detection has been posted including links to the Co-Axial home page, Volcano Net, Smithsonian Events, etc. An investigators event home page template will also be made available with downloading and publication instructions. These facilities will be advertised to all participants and anyone involved in the Active Processes Workshop and an announcement made over the InterRidge e-mail list and in InterRidge News.

- Disseminate event information and observatory activities to the broader geosciences community.

An Event Detection and Ridge Crest Observatory Column could be published in InterRidge News.

- Devise a mechanism to allow scientists to rapidly respond to an event. In this regard, an up to date database of ship schedules, available equipment, interested PIs should be maintained to expedite a response.

The electronic bulletin board mentioned above would serve to notify concerned investigators of an event. Efforts are already being made towards posting an up to date ship schedule and platform specification listing accessible via the InterRidge WWW home page.

• There is an identified need to encourage compatibility between instrumentation developed by various national ridge crest research programmes. The evolving nature of observatory technology precludes *a priori* specification of unique technologies, however, the following broad classes of compatibility should be reviewed.

- Mechanical (e.g. sub/ROV manipulator related)
- Electronic (e.g. connector/power related)
- Communications (e.g. data formats, baud rates, acoustic frequencies)
- Positioning (e.g. navigation)

Encourage the respective agencies in each country to arrive at a uniform asset scheduling/sharing protocol to facilitate international collaboration and facilities utilisation.

If investigators involved provide the Office with a list of names and addresses, a letter will be circulated to all those currently working on instrumentation development detailing the points outlined above as well as to those responsible for deployment of existing instruments. The circulation list will be included and recipients encouraged to communicate with the object of specification compatibility and the development of a scheduling/sharing protocol.

1.7.6 Biological Studies at the Ridge Crest 1995

• International Sample Exchange Agreement

Open exchange of preserved and frozen samples from mid-ocean ridge hydrothermal vent sites is seen by the ridge crest biological studies community as imperative to the facilitation of collaborative research. Such an exchange program will also help to avoid duplicate sampling which is costly both in monetary and ecological terms. The opportunity exists under the auspices of InterRidge to draft and ratify an international agreement for the open exchange of samples for scientific purposes (non-commercial) in line with InterRidge objectives.

This international agreement would call for the establishment of a curatory clearing house in each InterRidge nation. These clearing houses would not function as sample repositories or archives but merely handle the formalities of sample exchange. Each national clearing house would be supervised by a national corresponding curator. The following people were suggested as national corresponding curators:

Miguel Biscoito	Portugal
Daniel Desbruyères	IFREMER, France
David Dixon	PML, UK
Hitoshi Hotta (?)	JAMSTEC, Japan
Sergei Sagalevitch (?)	Russia
Verena Tunnicliffe (?)	Victoria University, Canada
Robert Vrijenhock	Rutgers University, USA
K.O. Stetter	Germany

A letter was sent to the National Correspondent for each InterRidge Member asking for their thoughts and comments on this project and their evaluation of the level of interest for it in their country. No response was received. Invitations to serve as national corresponding curator were sent to the nominees by the InterRidge Office.

• Ridge Crest Biologist Directory

The InterRidge Office should compile and make available on the WWW a catalogue of ridge crest biology workers and summaries of their current research. This information will be passed to national corresponding curators.

This directory is now posted and advertised in the InterRidge News beginning with the Fall/Winter 1995 issue.

• Bio-Box

A working Bio-box currently exists (funded by US RIDGE and developed by Craig Cary and Jeff Stein) which has been deployed with notable success. The US ridge crest biology community's current recommendation to RIDGE is that samples collected by non-biologists using the Bio-box be sent to Verena Tunnicliffe for inventory and archiving. US RIDGE would like to encourage

