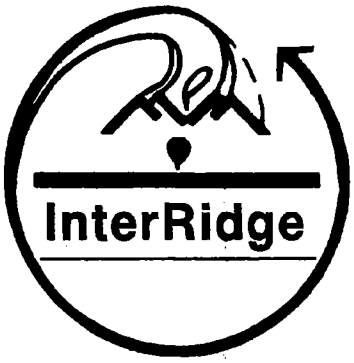

InterRidge Program Plan Addendum 1993

I InterRidge Update Summary 1993

The past year has been a particularly eventful one for the InterRidge Initiative. Throughout the year meetings and workshops have been held, ideas exchanged and information shared as InterRidge evolves towards the completion of its first phase in 1994. The outcome of the workshops has played an important role in shaping both planning and implementation schemes for the upcoming year. Scientific priorities and problems identified by the community in workshop discussions and reports have defined the first steps necessary to translate the general scientific objectives of InterRidge into specific plans and projects. The upcoming year will see the further definition, initiation and implementation of a number of InterRidge Projects and the honing of the InterRidge Program Plan.

The membership of InterRidge continues to grow: Germany has indicated its intention to join the United States, France, the United Kingdom, Japan and Spain as a Principal Member and Iceland, Canada, Portugal and Australia have indicated that they will continue as Associate Members in 1994. The InterRidge Office and the members of the Steering Committee are continuing outreach efforts to other countries carrying out Mid-Ocean Ridge research around the world.

In addition to organizing workshops and meetings, InterRidge has been preparing to rotate host countries. On January 1, 1994 InterRidge will take up official residence at the University of Durham in the UK and Roger Searle will take on the duties of InterRidge Chair. In October of 1993 Trileigh Stroh turned the post of InterRidge Co-Ordinator over to Heather Sloan who will take her place as Acting Co-Ordinator at the University of Washington and transfer to the University of Durham in December.

With the relocation to the UK, InterRidge will begin a shift from the planning stage into an implementation stage, facilitating and organizing projects focusing on specific scientific problems. Efforts will also be made towards maintaining and developing links with other international programs and organizations such as ODP, SCOR and ICSU. In addition to facilitating and co-ordinating international communication and co-operation, InterRidge will begin compiling an electronically accessible information data base of recent and current ridge cruises.

The Working Groups established at the 1992 General InterRidge Meeting in York have continued to develop the three principal themes of the InterRidge program of ridge research: Global, Meso-scale and Active processes. Consideration is being given to forming a fourth Working Group focusing on ridge related biological research.

In April 1993 the Global Project Working Group held a workshop in Paris with the objective of outlining a strategy to characterize the entire Mid-Ocean Ridge System within the next decade [see summary *InterRidge News*, vol. 2, no. 1]. The workshop focused on the least known sections of the Ridge System: the Southwest Indian Ridge, the Southeast Indian Ridge, the Pacific-Antarctic Ridge.

The Meso-scale Working Group organized two workshops this year centered around the themes of ridge segmentation, fluxes associated with accretionary processes and back-arc basins. The Segmentation and Fluxes Symposium held at the University of Durham in the UK on September 22 & 23, drew more than 110 participants from 7 countries. The two-day Workshops following the Symposium identified a number of critical problems related to fluxes and spatial/temporal variation on the segment scale. The Back-arc Basin Workshop was held at the University of Washington, Seattle, USA on October 11-13. Discussion centered around the influence of subduction on accretion in back-arc basins.

One objective of the Global and Meso-scale Workshops was to produce reports documenting problems, approaches and implementation plans aimed at furthering the international ridge research effort. These reports are currently in preparation and will be published as two volumes in early 1994.

The Active Processes Working Group is preparing a similar document intended to serve as a basis for discussion in a workshop to be convened in spring 1994.

The Global and Meso-scale workshops held in 1993 were oriented towards encouraging communication and exchange within the international ridge sciences community with the objective of better identifying the principal scientific questions concerning current ridge research, and of translating the general ideas into draft outlines of an implementation plan. With the achievement of this first, workshop stage, it is appropriate that the Steering Committee uses the results of the workshops to re-align, if necessary, the direction and approach of InterRidge concerning the organization of the scientific

program in the near future. After debate of the issues, the following decisions were taken:

- Symposia and Workshops: InterRidge will continue to act as a facilitator of international communication and exchange of ideas, plans and information through the organization of symposia and workshops. Such meetings, with well-defined aims (general or highly focused) and constructed as a complement to various international meetings (e.g. AGU) have already demonstrated their usefulness, and appear to have wide support in the community.
- InterRidge Stamp: While InterRidge will aid in the coordination of multi-national and bi-lateral projects initiated by individual groups or nations, it will not at this time proceed further with the idea of issuing a formal InterRidge endorsement to specific funding proposals. The InterRidge Program Plan, together with other documents such as workshop reports, will serve to define the broad objectives of InterRidge and, coupled with a rolling addendum, may be used by investigators, reviewers and funding agencies to evaluate the "InterRidge relevancy" of a research proposal.
- Initiation and coordination of an InterRidge Project: InterRidge will seek to define, initiate and eventually co-ordinate actions within the Global, Meso-scale and Active Processes projects. The priority will be to develop strategies to address problems which are too complex or too large to be effectively undertaken using the resources of any one nation. In this regard, coordinated, "non-directed" science projects with a written science plan of the Fara type can help the ridge sciences community and appear to be well viewed by funding agencies. InterRidge projects would be based on compelling scientific questions identified as being of international interest in workshops and meetings, and in consultation with InterRidge countries. To advance this kind of "non-directed" science, InterRidge will need to play a proactive/reactive role. Action along the following lines should begin in 1994:
  1. Send to National Correspondents (for circulation among national institutions and groups, and for discussion by the scientific committees of national programs) a list of proposed project themes and possible geographic foci drawn from InterRidge Global and Meso-scale Workshops. InterRidge countries would be asked what they see as appropriate targets for a collaborative InterRidge effort, and whether and how they would be interested in participating.
  2. Adjust the project(s) according to responses received from InterRidge nations.
  3. Publicize the resulting InterRidge project or projects and organize the necessary workshops to develop strategies and concrete implementation plans. These would be a reference for proposals submitted to various national funding agencies. Project co-ordinators and convenors for the workshops would be chosen by discussion between the Steering Committee and the InterRidge working group concerned. InterRidge should aim to be able to include in its budget a travel fund to help bring participants to meetings and workshops or to bring investigators from different nations together to collaborate on specific actions.

  Possible themes/geographic foci for InterRidge Project(s) coming out of the Global and Meso-scale Workshops include:
  - -Fluxes on a segment scale
  - -4-D architecture of the lithosphere
  - -Mapping/sampling in the Indian Ocean: Southwest Indian Ridge, Southeast Indian Ridge and the Australian-Antarctic Discordance.
  - -Tomography experiment in the Lau Basin
  - -Compilation of a comprehensive Global Mid-Ocean Ridge Atlas.
- Information Data Base: Following well received initial publication of track lines of recent and funded mid-oceanic ridge projects at sea (see InterRidge News), the InterRidge Office will compile an information data base consisting of a geographical index of surveys, sample locations and other data. Information would be solicited from principal investigators and it would be accessible, for example, by anonymous ftp or gopher. (This catalog would serve as the first phase of a three phase project if the decision is taken at some later date to expand the information data base into a data archive.) The second step would be to integrate and archive data bases collected as part of the InterRidge research effort. This work would be "science-driven" rather than purely archival; a possible InterRidge role would be to help to prepare proposals which focus on integration of data sets from a particular geographical area specified in an InterRidge project. The third phase would concern the compilation of historical data sets dating from the '80s onward, starting with the most recent and working

backwards. Important unpublished data bases exist (in Germany and Russia for example). This would be the most time consuming and costly of the three phases. However, a number of data base archives already exist, for example at LDGO, and would not need to be duplicated but merely referenced through the information/index system. To encourage investigators to contribute their data sets, InterRidge could help in the coordination of cooperative projects or publications, thereby providing "feedback" to contributors. Through the organization of meetings where investigators present their data bases, InterRidge could provide incentive and opportunity to publish or make available these data. Germany is suggested as a possible venue for a first such meeting.

II InterRidge Structure and Constitution 1993

1 THE STEERING COMMITTEE :

J.R. Delaney	(U.S.; Co-chair)
H.D. Needham	(France; Co-chair)
D. Désbruyères	(France)
R. Detrick	(U.S.)
P.J. Fox	(U.S.)
J. Francheteau	(France)
C.H. Langmuir	(U.S.)
M. Sinha	(U.K.)
K. Tamaki	(Japan)

Note: R. Searle (UK) will take over the InterRidge Chair in January 1994.

2 NATIONAL CORRESPONDENTS :

+ Australia :	T. Crawford
+ Canada :	J. Malpas (replacing M. Keen)
* France :	J. Francheteau (replacing H.D. Needham)
✣ Germany :	H. Schmincke
+ Iceland :	K. Gronvold
Italy :	E. Bonatti
* Japan :	K. Tamaki (replacing H. Fujimoto)
Korea :	Sang-Joon Han, Bong Choo Suk
Mexico :	J.E. Aguayo-Camargo
Norway :	E. Sundvor
+ Portugal :	J.Miguel A. Miranda
Russia :	L.V. Dmitriev
* Spain :	J. Acosta, M. Canals
Sweden :	N. Holm
* U.K. :	J.R. Cann
* U.S.A. :	J. Delaney

* countries which have agreed to join InterRidge as Principal Members in 1993.
\+ countries which have confirmed or indicated their intention to become Associate Members of InterRidge in 1993 or 1994.
✣ country which has indicated intention to join as Principal Member.

3. WORKING GROUPS :

3.3 Global Working Group

C.H. Langmuir	(U.S. ; chair)
H. Bougault	(France)
J. Lupton	(US)
J.C. Sempéré	(U.S.)
K. Tamaki	(Japan)
V. Tunnicliffe	(Canada)

3.2 Meso-scale Working Group

M. Sinha	(U.K., chair)
R. Detrick	(U.S.)
H. Elderfield	(U.K.)
T. Matsumoto	(Japan)
C. Mével	(France)
R. Searle	(U.K.)
B. Taylor	(U.S.)

3.3 Active Processes Working Group

J.R. Cann	(U.K., chair)
E. Baker	(U.S.; EDR*)
P. Dando	(U.K.; observatories)
J. Delaney	(U.S.; observatories)
D. Désbruyères	(France; observatories)
P. Einarsson	(Iceland; EDR)
D. Fornari	(U.S.; EDR)
J. Honnorez	(France; observatories)
H. Hotta	(Japan; observatories)
J.M.A. Miranda	(Portugal; EDR)

* Event Detection & Response.

4 LIAISONS WITH OTHER PROJECTS AND ORGANIZATIONS

Ocean Drilling Program (ODP): J. Bender
Int. Lithosphere Panel (ILP): J. Mutter
SCOR: M. Sinha

III InterRidge Publications 1993:

InterRidge Aims and Organisation
InterRidge Steering Committee Meeting Report 1993
InterRidge News, 1993, 2, 1, pp. 32.*
InterRidge News, 1993, 2, 2, pp. 4 (bulletin)
*InterRidge News presently has a circulation of 1600.

IV Meetings and Workshops 1993:

Global Working Group:
Investigation of the Global System of Mid-Ocean Ridges,
Paris, France, 9 7 10 April, 1993.
Meso-scale Working Group:
Segmentation and Fluxes at Mid-Ocean Ridges: A Symposium & Workshops,
Durham, UK, 22 - 25 September, 1993.
Back-Arc Basin Studies Workshop,
Seattle, USA, 11-13 October, 1993.
Administrative Meetings:
Steering Committee Meeting 1993,
Seattle, USA, 26 & 27 October, 1993.

1. WORKSHOP REPORT SUMMARIES

1.1 Global Working Group Report 1993

1.1.1 Investigation of the Global System of Mid-Ocean Ridges

April, 1993, Paris, France
Convenor: Charles H. Langmuir

After identification of global studies as a priority objective for InterRidge, there was a request for letters of interest from the global community of earth scientists, to identify those interested in participating and to identify the ocean basins where there would be a critical mass of interest and resources to mount a co-ordinated program. This report stems from a planning meeting to which all those who submitted such letters were invited. The meeting was attended by 47 participants from six nations. The main body of this report represents the outcome of working groups who met to state the problems of scientific interest for each region in more detail, and to consider how to make progress in sea-going operations on three mega-segments of ridge of the Pacific Antarctic Ridge, the Southwest Indian Ridge, and the Southeast Indian Ridge. There was also a critical mass of interest in letters of response for the Arctic Ridges, but it was decided that further planning for this region would take place at a subsequent meeting to be held in the fall of 1994.

An ultimate aim of the global program is to obtain sufficient data of high quality to allow the creation of a truly global data base for ridges, accessible by computer, and also published as a global atlas of the ridge system. This requires careful attention to existing data, as well as mechanisms to have data be contributed in common format, and managed successfully. A global ridge atlas based on international co-operative investigation of the ocean ridge system would be an historic document that would also provide the basis for intelligent selection and planning of subsequent generations of investigations of the earth's submarine frontier.

The principal foci of this report are the deliberations of the three working groups on the Southeast Indian Ridge, the Southwest Indian Ridge, and the Pacific Antarctic Ridge. In addition to the general issues presented briefly above, it is clear in these discussions that many specific questions of both regional and broader scientific interest come to the surface when actual programs are considered for specific regions. These regional issues then become an important aspect of each area of study, and supplement the broader questions that come from consideration of the ocean ridge system as a whole. In the course of the first day, participants presented submitted and funded projects for study in the Indian Ocean. During the inssuing discussions, working groups defined inventoried existing data sets, identified data gaps and outlined approaches to completing data coverage in the regions mentioned above. More specific discussion of the role of InterRidge in co-ordinating and facilitating the scientific efforts is contained in the following section of this summary.

Co-operative Strategies to Accomplish InterRidge Global Objectives. Much effort was spent at this workshop and the subsequent Steering Committee Meeting trying to devise an effective and fair mechanism for achieving global co-ordination. Global studies of the ocean ridge system are by their nature diverse in geographical location and tools deployed. Furthermore, each nation has its own priorities, funding styles, deadlines, etc. Proposals are driven by individual investigators, and the review process makes it difficult to fashion co-ordinated programs that need to take place in

sequence with fixed time tables. Several ways of involving InterRidge in the process were explored, but no generally acceptable mechanism was found. Furthermore, a high level of co-ordination in this context can often lead to long delays, due to the difficulties of interfacing the funding and logistics of expeditions from different nations. Despite these difficulties, the benefits of international collaboration and organisation are obvious. No nation has the resources to undertake the global project on its own. And no one nation has all the requisite tools for global studies. Even where there is overlap in logistical capability, there are significant constraints for each nation on the tools that can be deployed in the diverse ocean basins over a five year time scale. These considerations identify a clear planning challenge to enable a co-operative global investigation of ocean ridges while preserving the initiative and creativity of individual investigators and the independence and priorities of the various InterRidge nations.

Although a high level of directed co-ordination is not feasible or desirable in the current organisation and resources of InterRidge, there are nonetheless several actions that can aid the accomplishment of global objectives. The objectives listed below reflect both discussions at the Paris meeting and subsequent input from the InterRidge Steering Committee.

- To arrange workshops to explore and define critical scientific problems. This often leads to the planning of joint programs.
- 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.
- 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.
- To aid, and eventually to fund, the inclusion of individual investigators from one nation on another nation's cruises. Often for a small amount of money, an additional tool can be deployed or person's skill made use of which otherwise would never be able to be applied in a particular area.
- To identify and encourage the theoretical and modelling studies that will interpret and help to guide the extensive field programs.

These activities require an active role for the InterRidge office. In fact, the success of these actions will depend in large part on the energy and initiative of a civic-minded individual or office. To help to create this level of energy, a global working group with representatives from the major nations to aid in the dissemination of information and the development of opportunities would be useful. Ultimately these activities will require a modest but significant level of funding to hold planning meetings, maintain an electronic bulletin board, mail information, and partially fund add-on programs that would add efficiency to the global experiment.

We also note that one of the main benefits of the global program would be to have the data in a standardised format, available to all scientists. Such data syntheses are difficult to fund for an individual investigator, and often do not have the immediate scientific pay-off that is necessary to be competitive in the peer review system. Furthermore, data syntheses must have longevity and maintenance, and to be useful must have careful attention to data quality. Such a synthesis, in published form, would ultimately form a global atlas of the ocean ridge system, and could be one of the major long term benefits of global studies. It seems unlikely to take place within the current framework of investigator-driven research. InterRidge could play an important role in setting standards and creating and sustaining this important product.

1.2 Meso-Scale Working Group Reports 1993

1.2.1. Introduction

The summary presented here is taken from reports produced by participants in the Meso-scale Working Group's meetings entitled "Segmentation and Fluxes at Mid-Ocean Ridges: A Symposium and Workshops" and "The Back-arc Basin Studies Workshop". The chapters of this volume have been devoted to the Symposium: Segmentation and Fluxes at Mid-Ocean Ridges; and to the three workshops: Segmentation at Mid-Ocean Ridges; Quantification of Fluxes at Mid-Ocean Ridges; and Back-Arc Basin Studies.

1.2.2 Segmentation and Fluxes at Mid-Ocean Ridges: A Symposium and Workshops

22-25 September, Durham, UK

Co-Convenors:

Segmentation: Jian Lin, Roger Searle, and John Sinton;

Fluxes: Henry Elderfield, Catherine Mével and Martin Sinha

The objectives set out by the Meso-Scale Working Group for this meeting were to define the major scientific questions types of projects and experiments, geographic areas, international collaboration, and the role of the InterRidge Initiative in promoting rapid progress in understanding ridge segmentation and fluxes. The first two days were devoted to the Symposium which consisted of a series of invited keynote presentations aimed at summarising the recent progress and current research. Divided into the broad categories of tectonics, petrology and theory, keynote presentations focused on morphological and tectonic segmentation at slow-, intermediate- and fast-spreading ridges; large-scale segmentation; mantle dynamics; crustal melt transport; time scales of magmatic processes; petrological, geochemical, gravity and seismic constraints on segmentation; interaction between magmatism and tectonic segmentation; and modelling of the structure of the upper mantle. Each keynote presentation was followed by a half hour discussion led by appointed participants. Participants numbered more than 110 with 70 plus posters and contributed presentations providing a representative overview of current ridge segmentation investigations.

Following the symposium, the Segmentation and Quantification of Fluxes Workshops were convened. Subdivided into three smaller groups, the Segmentation Workshop tackled the questions of dimensionality of mantle flow and melt delivery, 4-D architecture of the lithosphere, and temporal variability. The Quantification of Fluxes Workshop concentrated on methods to quantify all fluxes and their spatial and temporal variability occurring within a volume of the ridge modelled by a box extending from the mantle to the water column and appropriate distances along and across strike of the ridge.

During the InterRidge Segmentation and Fluxes Workshops participants were asked to identify a number of important scientific questions on which ridge sciences should focus during the next 5 years. These questions form the basis of research in the diverse yet interrelated fields of 4-dimensional architecture of the oceanic lithosphere, mantle structure beneath the mid-ocean ridge, temporal variability of ridge processes, and magmatic, chemical, and hydrothermal fluxes.

4-D Architecture of the oceanic lithosphere:

- What is the nature of the 3-D magma plumbing system beneath a ridge segment?
- What are the hydrothermal controls on the 4-D architecture of the oceanic lithosphere?
- How is extension accommodated in 3 dimensions by brittle/ductile and/or magmatic mechanisms and what controls the geometry?
- How is mantle upwelling coupled to lithospheric extension and accretion?
- What are the origins and temporal variability of ridge segmentation?

Mantle structure beneath the mid-ocean ridge:

- Is there a spreading rate dependence? Is mantle flow restricted to 2-dimensions beneath slow-spreading ridges and 3-dimensions beneath fast-spreading ridges?
- Is the near-uniformity of along-strike structure at fast-spreading ridges due to uniform mantle flow such that non-uniformity of along-strike structure is indicative of lateral magma transport in the crust?
- How does mantle flow beneath ridge axes evolve with time and is there a relationship between along-strike mantle structure and observations of off-axis structure similar to those seen in the gravity lineations of the South Central Pacific?
- Temporal variability of ridge processes: What are the nature and variability of 'zero-age' processes?

Magmatic fluxes:

- What is the first order, time-integrated magmatic flux at the segment scale?
- What is the horizontal flux of melt within the lithosphere beneath ridges?
- What are the fine scale characteristics of the magma plumbing system in the lower crust beneath fast-spreading ridges and throughout the crust at slow-spreading ridges?
- How do geophysical models of crustal structure agree with observed geological structure?

Chemical fluxes:

- What is the permeability structure of the oceanic crust?
- What is the spatial distribution of hydrothermal activity in relation to volcanic and tectonic processes?
- What is the spatial and temporal extent of low-temperature weathering?
- What is the extent of fluid-rock equilibrium in alteration and weathering processes?

Hydrothermal fluxes:

- How are chemical and thermal exchange from seawater to the crust accomplished?

- What are the dynamics of plume evolution in the water column?
- How is the distribution and style of venting associated with the morphological, geological and geophysical structure of the segment?
- How long do elements reside in the buoyant and non-buoyant plume and how important is entrainment and recycling?
- What is the history of venting over varying time scales? Is this history recorded in the sediments and hydrothermal deposits?
- What is the relationship between heat and mass loss through hydrothermal venting and spreading rate?
- What is the relationship between hydrothermal activity and the life cycle of the segment?
- What is the role of micro-biota in modifying fluxes in the plume and sediments?

Approaches enumerated to this project may be roughly grouped into three categories:

1. Extensive sampling and geophysical surveying.
2. Long term ocean bottom monitoring
3. Modelling, and comparative studies of subaerial rifts

Each of the workshop's working groups came to the conclusion that in order to form a comprehensive idea of the nature of a ridge segment and the ongoing processes which govern and affect its evolution, it is necessary ultimately to establish a geochemical/geophysical seafloor observatory at one characteristic ridge segment or two or three contrasting ridge segments, possibly including parts of the adjacent segments.

It was generally agreed that implementation of these approaches could best be achieved in a series of stages. The first phase would involve selection of a site or sites which would require an exhaustive search and compilation of existing data and reconnaissance surveying to characterise and locate a "typical" ridge segment. Such surveying would be carried out using the full range of geophysical tools presently at our disposal. Extensive sampling of potential sites would also be necessary.

Once sites are selected the second phase of the program could be put into effect starting with extensive and exhaustive fine-scale geophysical surveying and sampling along- and off-axis to constrain spatial and temporal (1 to 10 Ma) variability. Since higher resolution usually means less coverage, positions of such high-resolution surveys and transects would need careful consideration to fully integrate the work to be carried out. Further development of deep-towed instrumentation packages designed to collect gravity data and map segment morphology will also be required. These deep-towed instrument packages would provide higher resolution surveys than are currently available which will be essential to detailed investigations of a spreading segment. In addition to established methods of coring and dredging it will be necessary to develop oriented coring and ROV sample collection capabilities.

In parallel with and employing knowledge gained in the first two phases, an ocean bottom observatory would be established. 'Observatory' here does not mean a single instrument package but a wide range of packages possibly deployed independently, but integrated into a common programme and focused in the chosen area. Long-term monitoring of processes which vary on a "short" time scale (days to 10s of years) such as hydrothermal and chemical (rock-water) fluxes, the state of stress and strain within the oceanic lithosphere, and seismic and volcanic activity, would complete a comprehensive observational program.

Not all of the capabilities that are required to carry out this program are currently available. Existing capabilities include:

- SOSUS array
- teleseismic arrays
- rapid response OBS array deployment

A number of methods and instruments will require further technological development:

- extensive OBS arrays
- ocean bottom geodetic networks
- ocean bottom tiltmeters
- heat flow instruments for areas with and without sediment
- storage and transmission capabilities for remotely collected data
- ocean bottom gravimeter
- sensitive in situ current meters

In parallel with the observational approaches listed above, comparative studies should be carried out at ophiolites and sites of continental rifting to utilise insights available there, and theoretical and experimental work should continue. It is considered important that all these different activities should be as far as possible integrated and should continually inform one another.

Several suggestions were made concerning the function of InterRidge in its promotion of ridge crest studies:

- Continued co-ordination and organisation of international symposia and workshops

which encourage the exchange of ideas and information. Interest was expressed in the following specific themes: a comparison between continental and oceanic rifting, planning co-operative projects on quantification of fluxes, planning workshop on the 4-D architecture of the oceanic lithosphere.

- Creating links with other international programs carrying out research on the mid-ocean ridges, ODP in particular.
- Helping individual investigators to co-ordinate sharing of ship time and instrumentation by making available information on ship scheduling and upcoming research cruises.
- Aid in the co-ordination and planning of co-operative projects perhaps acting as a 'broker' by facilitating contact between individuals, groups or nations wishing to work on similar themes or locations.
- Establishment of an Internet accessible data inventory of completed and pending surveys to provide potential investigators with information about existing data sets.
- Establishment of an Internet accessible bibliography to provide researchers with a catalogue of the results of previous work.

1.2.3. Back-Arc Basin Studies Workshop

11-13 October - Seattle, USA

Co-Convenors:

Julian Pearce and Kensaku Tamaki

The objectives of this workshop were to define the critical scientific problems currently posed by the study of spreading in back-arc basins, to exchange information concerning recent and planned surveys, to formulate funding proposals for multi-national co-operative study of crustal accretion in back-arc basins, and to produce a white paper specifying the research targets of this InterRidge project. The convenors and invited speakers summarised the current state of knowledge of back-arc basins and 22 workshop participants presented reports on recent and planned research.

Two aspects of crustal accretion in back-arc basins were identified by InterRidge as being of particular importance. The first is the effect of subduction on the processes of crustal accretion. The second is the fact that ophiolites and their associated ore bodies of economic importance are more closely related to ridges in back-arc basins than to mid-ocean ridges.

Choosing to focus on the first aspect, the workshop participants defined three sub-topics:

- melt generation
- spreading processes
- energy, biological and mass fluxes.

The proposed multi-disciplinary approach to the study of these three topics includes seismic tomography, high-resolution bathymetry and swath mapping, geochemistry and petrology, long-term monitoring of mass and energy fluxes, and comparison with mid-ocean ridge spreading systems.

The participants also recommended that InterRidge:

- establish links with the Ocean Drilling Program
- co-ordinate a geographic index of existing geophysical and geochemical data sets as well as proposed/funded projects.

Steps were taken towards the compilation of a geochemical and geophysical data base archive for back-arc basins which would be compiled by individual investigators and administrated by InterRidge.