

## Global Working Group Meeting Summary

### Investigation of the Global System of Mid-Ocean Ridges

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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 ensuing 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 coordinating and facilitating the scientific efforts is contained in the following section of this summary.

#### **Cooperative 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 coordinated 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 coordination 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 coordination 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.