

Charge to the MARGINS Decadal Review Committee

In 2004 (into its fifth year of funding) the MARGINS Program went through a major evaluation by an external review committee (Prof. Don Forsyth, chair). Several key recommendations were made by this committee, many of which have been acted upon by the Program and the community in subsequent years (copies of the Forsyth Committee's recommendations are appended). As the MARGINS Program approaches its important tenth-year anniversary in 2009, it is desirable to once again step back and review its progress to date and plans and promise for the future.

Purpose:

- A. To review the MARGINS Program in its entirety and provide comments and recommendations to Assistant Director for Geosciences on the following issues:
 - 1) What are the major accomplishments to date in all four of the MARGINS' initiatives?
 - 2) To what extent have the goals set by the community in the various *Science Plans* been achieved and to what extent have the Forsyth Committee's recommendations been realized?
 - 3) What are the major gaps or research opportunities that remain for each initiative?
 - 4) How significant are the identified future plans for each initiative, and how likely are they to lead to transformative science?

- B. Provide advice to NSF on the future structure of the Program (the provided background material will include only brief outlines of future plans; it is envisaged that these will be fleshed out in community-wide workshops to formulate a new *Science Plan* for the Program):
 - 1) In view of the past accomplishments and future plans/directions should the Program continue with its current suite of initiatives, or should its goals be redirected in some way?
 - 2) If it is to continue, is the Program's current structure still appropriate (e.g., four initiatives, 1-2 focus sites each) to achieve the stated future scientific objectives?
 - 3) Are the needed facilities and technologies in place to realize the stated goals of the Program? What are cost implications?

Science Considerations:

1. The geosciences community identified important scientific goals for each of the MARGINS four initiatives in the *Science Plans*. During the last nine years of funding the community has made considerable efforts in trying to accomplish these objectives. The community has also worked towards filling the gaps identified by the Forsyth Committee. What, in view of the broader geosciences community, are the key accomplishments of the MARGINS

Program? And what are the major remaining gaps? Are some of the remaining gaps high-priority and achievable?

2. The MARGINS community in their early deliberations determined that the Program will direct their attention to active margins where processes of margin evolution can be best investigated. Has the active margin approach been advantageous? Is it still an appropriate focus for the future? Or are there major scientific issues at passive margins that should also become a part of the Program's future focus?
3. In the background material compiled by the MARGINS Steering Committee, for each initiative future scientific directions have also been outlined. Keeping in mind that these are only initial plans and have not yet been fully vetted by the community, are these questions significant, and are they appropriate and achievable with the currently available (and affordable) technologies?
4. The rationale for focused programs such as MARGINS is usually based on either the need for a large facility with high science priority, or the need to undertake one or more compelling experiments that are too large in scope to fit within a normal disciplinary program (i.e., core). A focused program is also envisaged to engender greater multi-disciplinary collaboration, attract new funds, and facilitate execution of larger and better planned experiments with greater lead time that require community input via a steering group. In view of the past accomplishments and future goals should the MARGINS Program continue as a focused program (with fenced funds) or is it more appropriate at this stage to subsume the future objectives and funding in the core programs in the Divisions of Earth and Ocean Sciences?
5. The current structure of the MARGINS Program consists of four separate but interconnected initiatives, each focusing on two chosen sites (and some ancillary sites). This structure was predicated largely by the realization that resources would not be available to carry out the full range of experiments at all potential sites. If MARGINS should continue as a focused program, is this structure still appropriate? If so, should all initiatives continue with specific focus sites or should the structure be modified to reflect evolution of the research program (cost-effectiveness and resource limitations still remain primary constraints)?
6. Has the Program been successful in engendering greater multi-disciplinarity and collaboration, participation of minorities, outreach and educational opportunities and international participation? If it is to continue, what more can the Program do accomplish the broader goals of greater societal relevance, e.g., investigating geologic hazards (other than earthquakes which are already a part of one of its current initiatives).

7. Is the current review process of MARGINS science proposals (via a separate annual review panel) appropriate and effective or can it be improved to engender greater competition and cost effectiveness?

Management Considerations:

1. Has the MARGINS Office been an effective source of communication, management, coordination and dissemination of results for the broader MARGINS and geosciences community? How effective is the MARGINS Newsletter and its Website?
2. Currently MARGINS Office costs ~ 6% of the annual MARGINS budget. Is this cost appropriate considering the services and coordination provided by the Office? If yes, what other services/assistance could the Office provide to be a more effective vehicle of the community's needs? If not, what other means could be used to achieve the same results more cost-effectively?
3. How effective is MARGINS data management currently housed mostly at LDEO? Should the Program consider any modifications/improvements in its data policy and archival systems to streamline its data management and availability to the end users?
4. The MARGINS Steering Committee is tasked with providing continuous advice and focus for the MARGINS Program. Its membership is voluntary and its composition reflects the interests of the four initiative of the Program, with an appropriate geographical/institutional balance. Are the current tasks ascribed to the MSC (as described on the MARGINS website) appropriate? Could they be performing additional duties to enhance their effectiveness?
5. Are five-yearly reviews of a focused program such as MARGINS effective? In view of the fact that the MARGINS community continues to be active in self-evaluation (and remediation, when necessary), should there be more periodic outside (independent) reviews (i.e., every two or three years) for more recurring evaluation and refocusing of the program?

Relevant Documents:

1. MARGINS *Science Plans* (these can be accessed at www.nsf-margins.org/)
2. Copy of *Forsyth Review Committee* recommendations (appended)
3. Background material on *Past Accomplishment/Future Plans* prepared by MARGINS Steering Committee (to be provided in late October 2008)