

# GeoPRISMS Steering and Oversight Committee Highlights, Fall 2010

October 17-18, 2010 – Hotel Monaco – Portland, OR

*Edited by Andrew Goodwillie and Charles Bopp*

Much of the discussion during the inaugural GSOC meeting was focused on the ongoing transition from MARGINS to GeoPRISMS, and detailed planning of the two upcoming implementation workshops for the two GeoPRISMS Initiatives: Rift Initiation and Evolution (RIE), scheduled for November 4-6, 2010, and Subduction Cycles and Deformation (SCD), planned for January 5-7, 2011.

## 1. MARGINS & GeoPRISMS Offices activities

Geoff Abers, the last MARGINS Chair, reported that the MARGINS Office is working very closely with the GeoPRISMS Office to make sure that the program transition is smooth. The MARGINS was also involved in the planning of the Rift Initiation and Evolution (RIE) and the Subduction Cycles and Deformation (SCD) implementation workshops (IW), and would help to run the RIE workshop as the GeoPRISMS Office activities continued to ramp up.

Juli Morgan, new GeoPRISMS Chair, reported that the GeoPRISMS Office at Rice University had received approval from NSF, funding was still pending, and staff were being sought. The new GeoPRISMS website was demonstrated, and all operational files and contact lists were transferred from the MARGINS Office to the GeoPRISMS Office.

## 2. NSF Updates

NSF program officer Rick Carlson provided an update on NSF matters:

- The MARGINS NSF panel did not operate the past two years, and will not operate in FY 2011. Instead, funding decisions were made internally.
- The initial GeoPRISMS Budget is expected to remain stable at ~\$6 million a year.
- Cascadia funding and opportunities were outlined, including \$10 million assigned for upgrading onshore GPS and seismic stations and for OBS deployments.
- NSF outlined its desired outcomes from the implementation workshops (IWs). Each IW should outline study sites, prioritized science questions, and give details of site readiness and the planned sequence of events for achieving program goals.
- The timeline for the next GeoPRISMS Solicitation was detailed to ensure a July 1, 2011 solicitation.

## 3. Facilities and Workshops Update

Challenges and Opportunities in Academic Marine Seismology (March 2010): Donna Shillington provided a summary, noting that the data collected onboard the R/V Marcus Langseth are of very good quality, but a number of issues have caused NSF to review all aspects of the facility. The expense of Langseth operations, the shrinking knowledgeable user base, and operational inefficiencies are all of concern to NSF. Workshop participants discussed the definitions of and opportunities enabled by community

experiments and the prospect of a more rapid and open data access. Operational efficiency issues were also addressed.

OBSIP Workshop (September, 2010): Donna Shillington reviewed the outcome of this workshop focused on developing a strategy for the OBS (ocean bottom seismometer) facility in terms of leveraging and promoting community problems. There was enthusiasm for more community workshops, but questions about funding for data analysis, what data products would be released, and similar issues remain.

Earthscope Fault Slip Workshop (October 2010): Sue Bilek summarized this workshop, held shortly before the GSOC meeting. Discussions at this workshop covered seismic and geodetic observations, as well as lab and geologic fieldwork observations, and theory and modeling. Currently, EarthScope land instrumentation focuses on the down-dip end of the slab, but joint opportunities with GeoPRISMS may allow increased attention on the up-dip portion of the slab.

Cascadia Workshop (October, 2010): Geoff Abers reviewed this 2-day workshop which immediately preceded the GSOC meeting, and was focused on developing a four-year deployment plan for  $\approx 60$  OBS offshore Cascadia. Significant discussion addressed how and where the amphibious array will be used after the Cascadia initiative ends; Alaska and the East Coast possibilities were discussed. A second workshop is planned for 2012 to evaluate the Cascadia Initiative and to decide what happens next. (A more complete record of this workshop is given on page 14 of this issue.)

#### **4. Database and Data Policy**

IEDA (Integrated Earth Data Applications) is now a NSF Facility. A number of additional field programs have been added to the MARGINS database, and total MARGINS data downloaded now stands at  $\approx 1.7$ Tb. The database group will also continue to provide support for GeoPRISMS field programs. In future years, there will be an increasing emphasis on derived data products that support publications. With NSF input, the database group is developing an on-line form for PIs to create data management plans acceptable to NSF. (An update on the database can be found on page 26 of this issue.)

#### **5. Education and Outreach (E&O)**

Distinguished Lecturer Program (DLP): The 2010-2011 DLP is considered a GeoPRISMS-MARGINS joint effort. It attracted 67 applicant institutions. Seven speakers will tour 25 institutions across the nation.

AGU Activities: GSOC agrees to continue the AGU student prize and the popular Townhall and Student Forum, and to hold a GSOC luncheon meeting at AGU.

GeoPRISMS Education Advisory Committee (GEAC): Don Reed and Jeff Ryan were thanked for their time on the MEAC (MARGINS equivalent to GEAC); Jeff Marshall and Maggie Benoit were welcomed to the GEAC. Maggie Benoit will organize student events at the RIE-IW and Jeff Marshall will organize at the SCD-IW, assisted by Andrew Goodliffe. Discussion about the proposed REU (Research Experience for Undergraduates) component of GeoPRISMS concluded that partner organizations or a core of committed PIs will be needed for its success. GeoPRISMS also will explore how to link its E&O efforts to COSEE, which is presently undergoing a program review by NSF.

## 6. MARGINS Initiative Updates

SEIZE: Recent projects funded combine CRSEIZE Osa/Nicoya seismicity data with German data to improve velocity models and attenuation models of Central America. Long-term instrumentation deployed over Nicoya should capture transient events, while Marshall is using sea-level changes, radiometric dating, and uplift histories to study along-strike heterogeneity. A collaborative study of slow earthquakes may clarify their tsunamigenic potential. New SEIZE Postdoc Christie will model fault processes.

SubFac: IBM arc ash and tephra is being used to study temporal variation in arc volcanism, and the role of O<sub>2</sub> fugacity in mantle processes is under investigations at the Mariana Arc. A collaborative synthesis project will integrate MARGINS geochemical data using the ABS forward-simulating spreadsheet. The SERPENT project will look for serpentinite in the down-going plate offshore Central America. Japanese submersible studies of the Marian forearc region will yield geochemical and geochronological transects. 2D fluid flow modeling should demonstrate water release and magma migration at convergent margins. Ikuko Wada is a new postdoc funded at WHOI, working on integrating geochemical and geophysical observations.

RCL: A synthesis project to compile reconstructions of the Gulf area is underway, along with more detailed studies of Transtension in their area. A RAPID award enabled collection of new LiDAR data over the April 2010 Mexico earthquake. Geophysical studies by Forsyth and Savage are interpreted to show anomalous upwelling in the mantle beneath the Gulf of California (recently published in Nature). Salton Trough activities are ramping up, including geochemical studies, extensional history and a new active-source project, which has finally been permitted and is getting underway.

S2S: Work is continuing offshore New Zealand, along with onshore LiDAR and InSAR studies of Waipaoa. Additional work is underway at Fly River. MARGINS Postdoc Alberto Canestrelli is creating modules for different PI groups and working with CSDMS. A Chatman Conference is also scheduled on S2S for January 2011.

## 7. Initiative Implementation Workshops

The bulk of this GSOC meeting was spent on extended discussion of the upcoming IWs. Discussion started off with important guidelines from NSF:

- GeoPRISMS is not MARGINS, but should build upon its successes.
- Unique and societally-relevant science should be emphasized.
- GeoPRISMS science must stand out from NSF Core Programs.
- Activities that tie OCE and EAR together are strongly encouraged.
- Early-Career scientists should be engaged at high levels.
- The completed science plan must outline prioritized science questions and primary sites.
- The implementation plans must be prioritized by readiness, accessibility, and relevance as well as short-, medium-, and long-range goals.
- The structure and schedules of the SCD and RIE IWs were then outlined (the final schedules of these meetings can be found online). Several issues were considered in more detail, in order to prepare their

outcomes. Discussions of funding strategies highlighted the need to leverage funds available through NSF Core programs, and other special programs, and the opportunities for leveraging other NSF facilities such as EarthScope, that could benefit from the intellectual guidance of GeoPRISMS. The combined approach of themes and primary sites has already been established in the Draft Science Plan (DSP), and therefore is a necessary outcome of the IWs. No major departure from the DSP should be made without an explicit, well-justified reason. Finally, the GSOC agreed that all submitted white papers should be distributed to the workshop attendants.

## **8. GSOC Rotation**

Geoff Abers was thanked for his leadership of MARGINS, and many years of service on the MSC. Sue Bilek, Mark Behn, and Demian Saffer were thanked for their service on the MSC and GSOC. Possible new members of the GSOC were suggested.