

GeoPRISMS Steering and Oversight Committee Meeting Highlights, Spring 2011

March 7-8, 2011, NSF Headquarters, Arlington, VA

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Introduction

Much of the second GeoPRISMS Steering and Oversight Committee Meeting focused on reviewing progress on the GeoPRISMS Science and Implementation Plans, outlining future planning activities, and developing strategies for future GeoPRISMS science funding consistent with available resources.

NSF Update

Fiscal Year 2011 saw ≈\$2 million spent on GeoPRISMS proposals, plus continuing awards: 14 proposals were reviewed, 6 funded, and 3 proposals went to core, one of which was funded. EAR reports generally good budget news, and expects its GeoPRISMS investment to climb from \$400,000 to \$2 million over next 1-2 years. David Conover (Director of OCE) spoke about the National Ocean Council and National Ocean Policy (see <http://www.whitehouse.gov/administration/eop/oceans/objectives>). GeoPRISMS was urged to make connections with these objectives in future broader impacts. SEES and National Ocean Policy also have strong education and outreach components, suitable for broader impacts sections of proposals. Such E&O programs must have good metrics for success. It was also noted that NSF is undergoing a sea change in broader impacts, with new and strong emphasis on societal impacts and relevance of NSF research, and is thus looking for this in proposals. The INSPIRE Program and the “One NSF” initiative (uniting the NSF message across all directorates) emphasize this as well. USGS is a good candidate for interdisciplinary efforts.

IODP is currently going through the renewal process, with a decision due in 2013. NSF is cautiously optimistic that the program will be renewed. However, IODP faces severe budget challenges because of high operational budgets for the drilling vessels, and the desire to maintain ship operations for 8 mo. per year as promised. NSF ODP is still committed to contributing their third to support the GeoPRISMS Office, but science funding is limited.

Cooperation between EarthScope and GeoPRISMS was emphasized as very important: it is harder to find areas where EarthScope and GeoPRISMS do not overlap than to find places where they do, particularly as EarthScope moves towards continental margins. Engagement with EarthScope in site planning workshops is encouraged.

RIE and SCD Workshop Updates

NSF personnel were generally pleased with the outcomes of the recent GeoPRISMS Implementation workshops, and recognize the need for several additional site-planning workshops to finalize the Implementation Plan (IP). NSF accepted the IP as presented to them on March 4, 2011, after a week of public comment. The GSOC also heard summaries on the RIE and SCD planning workshops. These summaries were similar in content to the Workshop Report presented in the GeoPRISMS Newsletter #26, Spring 2011, The new GeoPRISMS Implementation Plan can be found at <http://www.geoprisms.org/science-plan.html>.

Proposal Funding Structure

The GSOC was reminded that GeoPRISMS Program funds are limited, and thus boundaries should be placed on the types of projects that could be supported. GeoPRISMS should also diversify its funding portfolio, leveraging FESD, SEES, Core, and other funding sources where possible. A strong case was made for continuing the MARGINS model of using sequestered GeoPRISMS funds to support a mix of projects, both community- and PI-driven proposals, as the best way to entrain new investigators throughout the life of the program. To focus the research that would be funded by GeoPRISMS, it was agreed that primary sites studies should be emphasized, and also thematic studies (in particular, theoretical and experimental work) justified in the context of primary sites problems and deemed integral to the success of GeoPRISMS. It was also noted that GeoPRISMS-relevant proposals can still be sent to Core, backed by a strong community science plan.

Future Planning Workshops and Science Meetings

Future Site Planning Workshops were deemed necessary to update and finalize the Implementation Plan for specific primary sites. Planned workshops [see summaries herein] included (1) an EarthScope Alaska Workshop before May 2011 EarthScope National Meeting in Austin, TX, to design the deployment plan for USArray in Alaska; (2) a GeoPRISMS/EarthScope Alaska Planning meeting in Fall 2011, to narrow the scope of the science proposed for the Alaska primary site; (3) an ENAM meeting with similar objectives as for the Alaska meeting; (4) A science planning workshop for Cascadia, to discuss what will happen with all the data resulting from the Cascadia Initiative.

Additional meetings relevant to GeoPRISMS objectives provide opportunities for GeoPRISMS to build partnerships and become informed about related research programs. These include (1) an IODP workshop on slow slip in subduction zones in New Zealand in August 2011; and (2) The European AFAR consortium conference in Addis Ababa in January 2012, which is an opportunity for GeoPRISMS researchers to engage with European and African collaborators.

Morgan would attend the USGS Volcano Hazards (VHP) Council meeting in Vancouver, WA in April on behalf of GeoPRISMS. The VHP Council wants to engage multi-institutional programs, such as GeoPRISMS. GeoPRISMS is interested in coordinating research efforts with the USGS, while the USGS can provide advice and guidance about permitting and access issues. There are also concerns about coordinating event response. It was broadly accepted that USGS scientists should be represented at upcoming GeoPRISMS planning workshops, and engaged as collaborators wherever possible.

NSF Data Policy

In May, 2010, the National Science Board (NSB) decided there should be a new data policy to cope with the large volumes of data being produced. NSB dictated a new requirement that all proposals must include a data management plan (2 pages max), which was implemented by NSF in January 2011. Annual reports must also review progress of the data management plan, and proposals without data plans will be automatically blocked in Fastlane. The MARGINS data policy is generally stricter than the past and present NSF requirements, thus GeoPRISMS's policies should meet the guidelines with minimal revision (See the NSF Data Policy: <http://www.nsf.gov/bfa/dias/policy/dmp.jsp>)

Data Management

Suzanne Carbotte introduced the database maintained for MARGINS and GeoPRISMS by IEDA at Columbia University. This effort has four goals: (1) to develop a resource to support

active research, (2) to grow the community in a research area, (3) to create a legacy of the GeoPRISMS program, and (4) to comply with NSF (and possible future publication) requirements. The current policy requires that PIs report basic documentation within 60 days, environmental data within 6 months, and the rest of their data within 1-2 years.

Past experience provides lessons learned: (1) Active use of database provides quality control. (2) The most useful items are derived and interpretive data products. (3) Both MARGINS and Ridge 2000 showed strong growth in database participation throughout the lives of the programs, with highest usage during the final integrative phases of the programs. (4) Compliance is enhanced by peer-pressure, and by contact with PIs. Requirements for derived data products and datasets remain unclear, and are something that should be considered thoughtfully as the new GeoPRISMS data policy is developed. A GeoPRISMS Data Policy Working Group was established to consider these issues further, and to make recommendations to GSOC. (Members of the GeoPRISMS Data Policy Working Group include: Schwartz, Arrowsmith, Evans, Kelley, Pritchard, Shillington)

Data Portal Report

MGDS and EarthChem are now encompassed within IEDA. Several new tools are available: (1) an online template to help with preparation of a data management plan to submit with proposals, and (2) a data compliance tool to tag datasets and related products, to demonstrate compliance to NSF. The data portal now offers a bibliography tool, and includes related links, reference databases, and the ability to view data by primary site. GeoMapApp is now in version 3.0.1, and includes links to datasets, as well as high-resolution base map – at least 30 m resolution everywhere, 10 m resolution in the US. GeoMapApp is also available for iPhone, iPad, and other smartphones for a small fee. (More information can be found on page 20 of this newsletter.)

Education and Outreach

The main efforts of GEAC have been focused on running the graduate student portions of the implementation workshops. Students worked quite hard throughout the workshops, taking time from meals and breaks to develop their own implementation plans. Feedbacks was favorable, with recommendations for future student and postdoc activities, urging that future workshops offer dedicated times for student activities, e.g., student symposia. (students symposia were organized and well-attended at the most recent GeoPRISMS primary site workshops.) There is also a strong need to collect feedback on the impact of the student programs at the workshops, both to show NSF and for future planning.

Discussion turned to a GeoPRISMS REU program. Issues of cohort building in a distributed model where students work with individual PIs were discussed, with COSEE mentioned as a model to consider. (A proposal for a GeoPRISMS REU Site was submitted in August 2011). A K-12 area for the website was suggested.

Distinguished Lectureship Program

The MARGINS/GeoPRISMS Distinguished Lectureship Program continues to elicit strong interest: between 2005 and 2010, 398 institutions applied and 194 received speakers. Expanding the DLP to include informal science venues was discussed as a way to increase public visibility, as would posting more lectures on the website. Prospective DLP speakers for the 2011-2012 season were suggested.

Newsletter

The GSOC discussed if the newsletter should be PDF only or in print. The cost of newsletter printing is ~\$4200; at present there's a sense that keeping the hardcopy is important. The PDF version of newsletter will continue to be available on the website and announced by listserv notice.

Initiative Reports

- **SCD:** New SCD projects include integration of P- and S-wave data from 5 amphibious passive source experiments in Costa Rica and elsewhere for double-difference velocity modeling and attenuation tomography (DeShon et al.), experimental studies of dynamic weakening of serpentine relevant to understanding slip behavior on megathrust faults (Hirth and Goldsby), seismic study of hydration of the downgoing Central American slab, correlated to along-strike geochemical changes (Syracuse and Thurber), studies of slow slip and shallow seismic tremor along the Nicoya Peninsula in Costa Rica (Schwartz, Dixon and others), and looking at redox conditions in arc magmas and the mantle (Kelley and Cottrell). GeoPRISMS postdoctoral fellow Naliboff (with Billen) will run rheologically constrained 2D and 3D models to study the generation of outer-rise faulting. The Subduction Factory Synthesis and Integration Project (Stern, van Keken and members of LDEO Geoinformatics group) are synthesizing MARGINS geochemical data collected for an EarthChem database.
- **RIE:** Ongoing work in the Gulf of California is documenting large amounts of pre-rift extension prior to the opening of the Gulf of California (Bennett), and yielding tectonic reconstructions spanning the last 14My at a resolution of 1-2 My (Umhoefer, Dorsey and Oskin). The Salton Seismic Imaging Project (Hole and Stock), designed to address the rupture of continental crust through a seismic reflection and refraction survey is underway. Seismometers (including lake-bottom in the Salton Sea) have been deployed across the Salton Trough. Gaherty, Shillington, Nooner, and Pritchard have a new project along the East Africa Rift examining the origin of a cluster of deep earthquakes in the hanging wall of a boundary fault in Malawi.
- **S2S.** Research in MARGINS S2S include projects in numerical modeling and high-resolution sampling on the Waipaoa River shelf in New Zealand (Walsh, Corbett, Harris et al.), InSAR, LiDAR, air photo, and Be-10 studies to constrain temporal and spatial variability on sediment production in the Waipaoa River (Roering and Schmidt), and a study of geomorphodynamic modulation of biogeochemical fluxes and basin stratigraphy of the Fly River (Goni, Aalto, Lauer, Dietrich, and Aufdenkampe). Tara Kniskern, a MARGINS postdoctoral fellow, is investigating sediment dynamics on the Waipaoa River shelf, NZ to better predict sediment preservation on continental margins.

Conference Reports

- **Chapman Conference "Recent Advances in Understanding Production, Transfer, and Burial of Terrestrial and Marine Materials on the Earth Surface":** This S2S conference took place in Oxnard, California, January 24-27, 2011, with 140 attendees (including 20 students). The goals of the workshop were to develop a global perspective with studies from around the world, and to facilitate synthesis and integration of S2S research as part of a digital text, and classroom materials. (http://www.csdms.colorado.edu/wiki/Chapman_Source_to_Sink)
- **USGS Marine GeoHazards Conference:** The conference was held in Menlo Park, California, March 1-3, 2011, with 56 attendees. The USGS-wide effort was in part a

response to the BP Macondo Well event, but also addressed a variety of other hazards: submarine earthquakes, volcanoes, slope failures. Overall, there is a need for quantitative assessment for risk evaluation.