

**GeoPRISMS Steering and Oversight Committee
March 12-13, 2015**

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Introduction

The annual 2015 GeoPRISMS Steering and Oversight Committee provides the GSOC members and NSF the opportunity to give an update on GeoPRISMS activities, research funding and outcomes, and to address programmatic issues. This Spring meeting also addressed questions provided by NSF ahead of the meeting regarding the planned Theoretical and Experimental Institutes (in the 2014-2016 period), the scope of the program, the program review, and the role of the GeoPRISMS Office.

NSF Update

NSF Program Manager Jennifer Wade (EAR) provided updates from NSF. The current state is in flux since Program Manager Bilal Haq has retired from his program manager position and is involved part-time as Expert. Dennis Geist (EAR) is helping out. Donna Blackman (OCE) is rotating off and the OCE Division is looking for a new rotator and a new permanent staff member. NSF welcomed two new division directors Carol Frost (EAR) and Rick Murray (OCE) in late 2014.

The budget is still under sequester which represents about 10% cut to the program. The budget this year may amount to \$4M with some mortgage. The GeoPRISMS solicitation remains open to proposals for Postdoctoral Fellowships with the expectation of one funded postdoc per year.

The Phased Funding Model continues with two-year windows of opportunity for submission of proposal of large data acquisition efforts. This year the program welcomes such large proposal submissions for East African Rift System (second year of the time window) and New Zealand (first year of the time window). Small projects for other sites are still welcome, especially for Alaska-Aleutians considering the move of the TA in Alaska, but projects for Cascadia have to go to Core Program. Funding for further data acquisition at other focus sites may still be obtained through core or other specific funding opportunities. Preparatory work, data analysis and synthesis, and thematic studies are considered for all sites each year.

The logistical support for GeoPRISMS projects in the Aleutians is moving forward with an expected participation of three teams of 12-14 people. They will take advantage of the R/V Maritime Maid ship providing helicopter support and strong USGS collaboration.

The numbers of proposals submitted to GeoPRISMS considerably increased between 2011 and 2012 and remains constant since then (50-60 proposals had been submitted since 2012 every year). There is a 29% success rate in 2014, which is a higher success rate than many other programs in GEO. It was noted that hundreds of projects related to GeoPRISMS Primary Sites are funded in core for both OCE and EAR. More than 60 proposals related to GeoPRISMS Primary Sites and thematic projects had been funded through MGG and more than a hundred in EAR between 2011 and 2014.

Jennifer Wade provided news from relevant programs or efforts that should be of interest to the GeoPRISMS community which included the announcement of PREEVENTS (*Prediction of and Resilience Against Extreme EVENTS; New in FY16*), the SAGE/GAGE recompetition of the Seismic and Geodetic Facility and the GEO-wide document "Dynamic Earth" which discusses imperatives and frontiers for the next five years. The latter document is available online at: http://www.nsf.gov/geo/acgeo/geovision/nsf_ac-geo_dynamic-earth-2015-2020.pdf

Carol Frost (EAR division director) and Rick Murray (OCE division director) both visited with the committee and discussed their perspectives on the near future developments. With Carol Frost the discussion focused on GEO funding (likely to remain flat), the impacts of a letter from the US House of Representatives appropriations committee regarding science funding priorities, and Congressional oversight of funding. Rick Murray specifically discussed the impact of the Decadal Survey of Ocean Sciences (the 'Sea Change' report) that recommended 5-20% cuts to OCE infrastructure to protect core funding.

Partnership updates

Many GeoPRISMS researchers are active in multiple communities and a series of updates on developments in those were provided. The SAGE-GAGE recompetition that is now open is of importance due to the long-term need for geophysical instrumentation. A number of GSOC members were present at the spring 2015 Lansdowne meeting that discussed the needs for foundational facilities as well as new capabilities and grand challenge questions. Maureen Long provided an update on the current status of the EarthScope stations. The Transportable Array network will be moved this summer to Alaska after a residence time of two years on the East Coast. Some stations will remain on the east coast for the foreseeable future. The Earthscope National meeting will be attended by several GSOC members and will be held June 14-17 in Stowe Vermont.

Sarah Penniston-Dorland discussed efforts within ExTerra, which is a self-organized group of geoscientists that aims to investigate rocks exhumed from paleo-subduction zones to better understand the materials and processes hidden beneath the surface in active subduction zones. One of the goals of ExTerra is to conduct collective research on exhumed rocks collaboratively sampled during Field Institutes. Collected Research samples are shared, and managed using International Geo Sample Number (IGSN). The first ExTerra Field Institute was held October 11-13, 2014 in the Santa Lucia Mountains of central coastal California. A potential next Field Institute will be conducted in the Western Alps to focus on field observation of a whole fossil plate interface. A PIRE proposal had been submitted to establish a long-term partnership with the ZIP (Zooming in between Plates) Marie Curie Training network. Further potential future Field Institute includes Fiordland, NZ and Sanbagawa, Japan (that could be held in conjunction with Goldschmidt 2016).

Several developments involve ocean bottom seismometers. Harm van Avendonk is co-convening the OBSIP workshop that will be held in Vancouver, WA on October 5-6. This group focuses on the maintenance, deployment and scientific advances made with the ocean bottom seismometer pool. The Amphibious Array Facility is a \$10M ARRA funded project consisting of 60 Ocean Bottom Seismographs (OBSs) managed by 3 oceanographic institutions (SCRIPPS, WHOI, LDEO), 27 broadband onshore seismographs, and upgrades to 232 EarthScope GPS sites. The array is currently deployed offshore Cascadia through 2016, deployment referred as Cascadia Initiative. A workshop report (available from geoprisms.org) followed from the October 2014 meeting at Snowbird, UT, which compiled the recommendations to NSF regarding the future of the facility with a focus on community-oriented science activities.

A potential broad and long term effort that is of great interest to the GeoPRISMS community Subduction Zone Observatory (SZO) which at it most ambitious scale would be to initiate a large-scale, amphibious and international observatory stretching 18000 km along the eastern Pacific Ocean from the Aleutians in the North, to Tierra del Fuego in the South and provide an integrated, multi-disciplinary approach to

better understand the entire subduction zone as a system. The research of such SZO will have important societal relevance given the population centers located all along the coast that are directly subject to earthquake-, volcano-, and tsunami-related hazards. Initial discussions regarding the SZO concept have taken place at AGU townhalls in 2013 and 2014. The SZO will logically build on current efforts by IRIS, UNAVCO, GeoPRISMS and international partnerships. A broad international workshop to discuss logistical details and science goals is tentatively planned for 2016.

Program External Review

The decadal GeoPRISMS program is in its fifth year and will undergo an external review in August, 2015. The review panel will evaluate the accomplishments of the program with a focus on the funded research activities, the impact of the Office, and the success of creating shoreline crossing or amphibious projects. This review will identify strengths and weaknesses to OCE and EAR and provide advice for the funding approach to the next five years of GeoPRISMS.

Talking Points from NSF

Out of budgetary and programmatic concerns the program managers Jennifer Wade, Donna Blackman and Bilal Haq put together a few talking points for discussion with the GSOC. In particular the sequester weighs heavily on the GeoPRISMS budget (which is effectively around \$3.5M/year from the initially expected \$5M/yr) and it is difficult to support. The following is a short summary of the talking points and GSOC recommendations.

- Scheduling TEIs: The Michigan Office had planned to hold a Theoretical and Experimental Institute for each of the SCD and RIE initiatives. The budget for these meetings was dependent on supplements to the office grant after it suffered in the sequester, but these supplements are now unlikely to be available. The GSOC recommended that the Michigan Office combines the funds to offer a single SCD TEI in 2015, in addition to a 'mini-TEI' the Sunday before AGU 2015. The next Office will then host the full RIE TEI.
- Program Scope: GeoPRISMS is a strong program but has ambitious science plans with five primary sites, including ones in logistically difficult and/or expensive locations. The phased funding that has taken effect has allowed for the focusing of the funding for large acquisition projects in stages. While the GSOC recognized that the budget cuts affect the success rate of proposals it strongly recommend to maintain the five primary sites and the phase funding, with the potential for opening up past sites after all sites have had their initial two year period.
- Program Office: NSF asked the GSOC to evaluate the role of the Office and whether the impact of Office activities is sufficient to warrant the expenditures (currently around \$400k/yr). The GSOC found unanimously that the Office is essential to keep GeoPRISMS as a vibrant and growing program. For example, nearly 1000 unique individuals have attended GeoPRISMS meeting; some 9000 students have been exposed to lectures on GeoPRISMS topics through the Distinguished Lecturers Program; many new junior scientists have been entrained through workshops and AGU activities that include the Townhall and Student Forum and Student Prize. While the cost of the Office may appear high when compared to just the GeoPRISMS budget it is clear the community activities reach well beyond those sponsored projects. The intrinsic value of the Office is therefore considered to be high compared to the cost.

Initiatives Update

With input from the community several GSOC members spent significant time in discussion of progress in activities that are either funded by GeoPRISMS or are closely related to the goals of GeoPRISMS. Updates were provided from both the RIE and SCD initiatives and demonstrated the significant advances made in the primary and ancillary sites as well as in thematic studies. The annual update provides an important milestone as the GeoPRISMS Office compiles the research efforts and provides an ideal avenue to demonstrate the impact of the funded science to NSF program managers in EAR and OCE. It also creates an opportunity for interdisciplinary education within the broadly diverse GSOC membership. Updates this year included projects in the Aleutians, Baja California, Mt St Helens, Oregon Cascades, offshore Cascadia, the Eastern North American margin, Botswana, and Malawi, as well as postdoctoral fellowship activities and thematic studies deploying theoretical and experimental techniques. Andrew Goodwillie also provided an update to the GeoPRISMS Data Portal which is detailed elsewhere in this newsletter.

Education & Outreach Update

Distinguished Lectureship Program

The DLP continues to be popular with 59 applications received in 2014. Lectures have been scheduled at 28 institutions. Due to budgetary constraints the number of speakers will be reduced from eight to six, but each will still deliver 3-4 talks that can be either broadly scientific or technical. Deadline for applications to the DLP is August 1, 2015.

AGU Student Prize

Kristina Walowski (U. of Oregon) and Andrew Parsons (U. of Leeds) received the oral and poster awards (valued each at \$500) respectively. Yelebe Birhanu (U. of Montana), Lucile Bruhat (Stanford U), James Farrell (U of Connecticut) and William Hutchinson (U of Oxford) were rewarded for their work with an honorable mention. In 2014 we saw a drop in applications compared to previous years. We invite all students who have mature research topics that are relevant to the GeoPRISMS science objectives to consider applying to this program.

MARGINS Mini-Lesson Project

Sarah Penniston-Dorland gave an update on the MARGINS Mini-lessons. The project managed by Juli Morgan from Rice University was funded in 2012 and aim to synthesize and incorporate MARGINS research of the last decade into upper level undergraduate geoscience curricula. The objective is to create up to two weeks of course materials developed for each of the four MARGINS Initiatives, previously tested and assessed in the classroom. This effort marries the educational practices from On the Cutting Edge to the scientific expertise from MARGINS. The mini-lessons are almost complete with descriptions at http://serc.carleton.edu/margins/lesson_descript.html.

Website, social media and newsletter

GeoPRISMS continues to be active on Facebook and Twitter with posts regarding student and early career opportunities, AGU and other meeting activities, and GeoPRISMS-related science posts. The Office maintains a Listserv and provides support to various initiatives for registration and dissemination of reports (see ExTerra newly developed webpage). The transition to the new website is finally complete

with all content from the old website being transferred. The Office continues to distribute the newsletter twice a year with the Spring newsletter online and in print and the Fall newsletter distributed only electronically.