

## GeoPRISMS Steering and Oversight Committee

March 17-18, 2016

Edited by Anaïs Férot, GeoPRISMS Science Coordinator & Peter van Keken, GeoPRISMS Chair

### Introduction

The annual 2016 GeoPRISMS Steering and Oversight Committee Meeting provides the GSOC members and NSF the opportunity to give an update on GeoPRISMS activities, research funding and outcomes, and to address program issues. This Spring meeting especially addressed the Dear Colleague Letter (DCL) issued by NSF encouraging proposals for community-driven shoreline-crossing seismological arrays along the Alaska subduction margin, the transition of the Office that will happen in the Fall 2016, and the upcoming TEI for the RIE initiative planned for 2017. The committee also provided significant updates to scientific outcomes of funded projects in SCD and RIE through information provided by the PIs. This (currently) annual steering committee meeting provides an effective and efficient way for significant information exchange between NSF and the GeoPRISMS community.

### NSF Update

NSF Program Manager Jenn Wade (EAR) provided updates from NSF. Maurice Tivey is now Program Manager for the OCE Division with help for the last round from Debbie Smith, Dennis Geist, and Barbara Ransom. The budget remains under sequestration.

The number of proposals submitted to GeoPRISMS remains at some 50-60 proposals submitted per year since 2012. Success rates are fairly evenly distributed between focus areas and primary sites: EARS (31%), ENAM (33%), Cascadia (38%), Alaska&Aleutians (38%), New Zealand (30%) and thematic studies/synthesis (17%). There is significant internal collaboration and co-funding between programs within NSF such as Earthscope (with overlap in Cascadia, ENAM, and Alaska&Aleutians) and the Polar program (Aleutian logistics). Programs of interest to GeoPRISMS researchers also include EPSCoR, OISE, and PREEVENTS.

The program solicitation was under revision at the time of the GSOC meeting. It has now been finalized with a July 26, 2016 target date. Most important change was the decision to allow large community proposals for seismological data acquisition (including the use of ocean bottom seismometers) for Alaska & Aleutians this year. The solicitation follows with this the Dear Colleague Letter on Onshore-Offshore Seismological Studies of the Aleutian Arc that was released following a 2014 meeting on the future of the amphibious array and the 2015 GeoPRISMS mid-term review. The phased funding model will need to be revised next year, but PIs are reminded that this model only limits the submission of 'large' proposals.

Rick Murray (Division Director of OCE) welcomed the committee and provided an update on NSF's response to the Decadal Survey of Ocean Sciences in which NSF has applied the recommendations of

significant cuts in infrastructure to improve funding success for science proposals. The committee discussed with Rick the budget developments in GEO, organizational changes within OCE, and ongoing conversations within NSF on the reproducibility and robustness of scientific work.

### **2015 GeoPRISMS Mid-term review and the Wiens report**

NSF held a fifth year review of the GeoPRISMS program to evaluate the success of the program thus far and to provide any mid-term recommendations for the directions of the program. An ad-hoc review writing committee was convened to summarize GeoPRISMS research and impact thus far. The committee consisted of former and current GSOC members John Jaeger, Maureen Long, Julia Morgan, Sarah Penniston-Dorland, Peter van Keken, and Paul Wallace. Andrew Goodwillie provided significant reference support and provided a summary of the GeoPRISMS database effort. The Writing Committee met at University of Oregon in Eugene in July 2015. The GeoPRISMS Office finalized the report with editorial control by Anaïs Férot and Peter van Keken.

The Review Panel led by Doug Wiens with members Jay Ague, Tobias Fisher, Monica Kohler, Anne Meltzer, and Hans Thybo met in August 2015. Peter van Keken, Juli Morgan, and Maureen Long presented the report to the committee at NSF in September 2015. The panel meeting resulted in a detailed recommendation. The Wiens report provides an overview of the appreciation of the review panel and direct recommendations to NSF regarding the future of the program. The report recommended, among others, that the Alaska&Aleutian Primary Site should remain open for large proposals for one more year, that a strong effort should be made to increase the funding level available to GeoPRISMS researchers, that all primary sites should be retained in the second half of the program, and that the GeoPRISMS Office is essential to the success of the program.

### **Partner organizations update**

Many GeoPRISMS researchers are active in multiple communities and a series of updates on developments in those were provided. Jeff Freymueller is now the new Chair of the EarthScope National Office in Fairbanks, Alaska, and he provided an update on the scope and goals of Office Activities in the next 3-4 years as the EarthScope is winding down. Of particular interest is the support of synthesis activities.

Many of the GSOC members are active in the discussions regarding the subduction zone observatory (SZO) which envisions to build a multidisciplinary facility stretching along a significant portion of one or more of the circum-Pacific subduction zones. GeoPRISMS has been involved with IRIS, UNAVCO and EarthScope in the discussions leading up to the September 2016 logistics meeting in Boise, ID.

Andrew Goodwillie provided an update of the GeoPRISMS Data Portal and improvements in capabilities made since the last GSOC Meeting held in Spring 2015. The GeoPRISMS Data Portal is now linked to the GeoPRISMS list of awards. Many recent data products including bathymetric, multi-channel seismics, geochemical data, and experimental data have been included. The mid-term review also helped in the discovery of many more MARGINS/GeoPRISMS-funded and –related references which are now included in the bibliographical databases. Sarah Penniston-Dorland discussed developments in ExTerra (a

GeoPRISMS initiative that focuses on the rock record from exhumed terranes). Significant funding was obtained from NSF Partnerships in International Research and Education to start the ExTerra Field Institute and Research Endeavor (E-FIRE) which will focus on the rock record from the Western Alps in partnership with the European Marie Curie Training network on Zooming In between Plates (ZIP). The funding will support 8 PhD students and 2 postdocs at 9 US institutions. The project will focus on geochemical cycling in subduction zones, the rates and conditions of processes at depth, and the rheology of subduction zone materials.

### **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. SCD updates this year included studies of the Aleutian megathrust, the thermal structure of the Cascadia subduction zone, the iMUSH project imaging Mt St Helens, the initiation and evolution of the Aleutian Arc, and a combined seismic and MT study of Okmok Volcano. RIE updates included studies of Eocene volcanism in Virginia, active seismic experiments and data processing workshops in ENAM, experimental stratigraphy studies of the geomorphological evolution of passive margins, the seismic record following an earthquake swarm in Malawi, the lithospheric structure and topographic evolution of the southeastern US continental margin, and the development of a community velocity model for East Africa.

### **Planning for Theoretical and Experimental Institute for the RIE Initiative**

Demian Saffer, incoming Chair of the GeoPRISMS Program, discussed the early planning for the TEI for the RIE Initiative. With pre-spending approved it is urgent to think about a timeframe for the organization of the meeting. Organizing the meeting in February 2017 would allow to discuss the meeting outcomes at the next GSOC meeting in March 2017 and to get NSF feedback for the GeoPRISMS solicitation deadline in July 2017. The meeting organization is now well underway and once the dates, location, and main goals have been finalized an announcement will go out on the GeoPRISMS website and listserv.

### **Education & Outreach Update**

#### *MARGINS Mini-Lesson Project*

Sarah Penniston-Dorland gave an update on the MARGINS Mini-Lessons. The project is managed by Juli Morgan (Rice University) and was funded in 2012. It aims at synthesizing and incorporating cutting edge scientific results from the MARGINS-GeoPRISMS Program into the undergraduate geoscience curriculum. The development teams created two weeks of course materials showcasing MARGINS

research within each of the four MARGINS Initiatives. Fifteen data-rich class exercises (mini-lessons) are now available. These explore tectonic, structural, geochemical, and sedimentary processes along continental margins.

#### *AGU Student Prize*

As in previous years, GeoPRISMS awarded two \$500 prizes for the Outstanding Student Oral and Poster Presentations on GeoPRISMS or MARGINS-related science at AGU Fall Meeting. The Office received this year 54 applications (with near equality in gender applications), 38 for poster and 16 for oral presentations. The SCD initiative is as usual much more represented than the RIE or the MARGINS initiatives. The numbers of applications has increased compared to 2014 – the number of applications last year was low because the student prize announcement was combined with the Townhall Meeting which brought too much confusion.

Zach Eilon (Columbia University) and Allison Rubin (UC Davis) received the poster and oral awards respectively. Joel Edwards (UC Santa Cruz), Helen Janiszewski (Columbia University), Dylan Meyer (UT at Austin) and Maureen Walton (UT at Austin) were rewarded for their work with an honorable mention.

#### *Distinguished Lectureship Program*

The DLP continues to be popular with 56 applications received for the 2015-2016 season. Of these, 19 institutions had been scheduled to receive speakers for the 2015-2016 academic year. These include four first-time applicants. The DLP was reviewed in summer 2015 as part of the mid-term review. Nearly 170 lectures have reached a combined audience of more than 9,000 people. Lectures are now also archived on the GeoPRISMS Youtube channel. Due to budgetary constraints the number of lectures has been reduced to four. Next year Beatrice Magnani, Brandon Schmandt, Esteban Gazel and Heather Savage will tour the US to expose audiences at universities and museums to GeoPRISMS science.

#### **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 the new Alaska Amphibious Community Experiment webpage set up to engage community members and communicate strategies). GeoPRISMS NSF awards compiled on the GeoPRISMS website are now directly linked to the GeoPRISMS data portal and to the science “nuggets” provided by the PIs for the mid-term review, when available. Recordings of lectures delivered by the DLP Speakers over the years of MARGINS and GeoPRISMS are archived on new GeoPRISMS Youtube channel.

Many projects to develop the website are in progress, like creating an interactive map locating the past, ongoing, and upcoming field work for each focus sites, funded by and related to GeoPRISMS. The Office continues to produce a newsletter twice a year with the Spring issue distributed in both electronic and print issue.

#### **GSOC Rotations**

Peter van Keken thanked all members for their service on the GSOC. This year there are a number of members rotating off. Harold Tobin, Maureen Long, Gene Yogodzinski are rotating off due to the three-year limitation on membership. Jeff Freymueller is now head of the ESNO so will rotate off after agreeing to participate to one more GSOC meeting this year. Peter van Keken will rotate off his position of GeoPRISMS Chair in the Fall 2016. Demian Saffer (Penn State) will take over the position of GeoPRISMS Chair in the Fall 2016. Because of institutional conflict reason Liz Hajek will also rotate off.