

Polar Programs Advisory Committee Meeting Minutes

May 1, 2013

12:30-5:00pm

Stafford II, Room 555

Arlington, VA

Committee members in attendance via electronic (virtual) means: Cecilia Bitz, Paul Bierman, C-H Christina Cheng, David Closs, Mark Fahnestock, Linda Green, Linda Hayden, Orville Huntington, John Isbell, Jeanne Kosch, Dennis McGillicuddy, Christopher Martin, Eric Post, Jordan Powers

National Science Foundation Staff in attendance in Room 555: Kelly Falkner, Roger Wakimoto, Myron Guttman, Scott Borg, Kate DiEmidio, Lisa Clough, Henrietta Edmonds, David Friscic, Pat Haggerty, Alexandra Isern, James Karcher, Anna Kerttula, Mark Kurz, Nature McGinn, Julie Palais, Vladimir Papitashvilli, Winifred Reuning, Simon Stephenson, Brian Stone, Marco Tedesco, Peter West, William Wiseman

Observers in attendance: Barbara Slayton (ASC/LM), Esther Hill (ASC/LM), Laurie Geller (NRC/PRB)

Polar Programs Director's Report (Falkner) (Notes: McGillicuddy)

Remarks by Assistant Director for Geosciences Directorate (GEO), Roger Wakimoto

- Realignment with GEO is going smoothly. Merger of Advisory Committees (ACs) is currently being discussed; logistics to be worked out prior to joint fall meeting.
- A GEO strategic planning document has been requested. Divisions will participate with advisory committees addressing cross-cutting topics. The process will be transparent and open to all for input. The timeline calls for a draft list of priorities from Divisions in time for the fall meeting of the ACs. The National Science Foundation (NSF) is committed to continuing to foster connections across a range of disciplines.

Director's Report (Falkner)

- Realignment
 - The merger of the Office of Polar Programs (OPP) and GEO ACs to initially include all continuing members from both committees. The business systems used by different divisions are under currently being aligned. Program officers are engaged in several activities to help determine future directions.
- Personnel Changes
 - Alex Isern, Antarctic Earth Sciences to Antarctic Research & Logistics Integration
 - Mike Montopoli, Head, Polar Environment, Safety & Health returns from active duty assignment
- Personnel Additions
 - Lisa Clough, Antarctic Systems Science
 - Kate DiEmidio, Polar Program Analyst
 - Max Holmes, Arctic Systems Science
 - Mark Kurz, Antarctic Earth Sciences
 - Ming-yi Sun, Arctic Natural Sciences
 - Marco Tedesco, Polar Cyberinfrastructure
- Personnel Departure

- Tianay Robinson, Arctic Program Assistant (replacement recruitment underway)
- Budget
 - The FY 2013 budget is expected to be finalized within a week. Sequestration amounts have been estimated via the 5% expected reduction for Research and Related Activities (R&RA). NSF intends to honor its existing commitments; the biggest impact is likely to be in a reduced number of new starts. Support for the Antarctic Infrastructure and Logistics budget reflects the Blue Ribbon Panel (BRP) recommendation.

Environmental, Safety and Health (Kosch, Montopoli) (Notes: Isbell)

Medical clearances for Antarctica

- Moving toward risk based adjustments of Physical qualification (PQ) process for deployment.
- The University of Texas Medical Branch (UTMB) Health Center for Polar Medical Operations is the current subcontractor handling medical clearance and determines who does (PQ) or does not (NPQ) physically qualify for deployment. NPQ individuals may apply for a waiver. Dr. Montopoli evaluates waivers and additional information (including support information from employers and institutions) and determines if individuals qualify for a waiver.
- PQ/NPQ guidelines are not all inclusive and deal with the most common problems that may be encountered on the ice during deployment. Guidelines consider that there are limited resources and capabilities on the Ice to deal with certain conditions. Not all unanticipated conditions can be screened for in the PQ process. Currently, the Medical Advisory Panel is reviewing the screening process in order to streamline.
- The Arctic Program has a similar program to that of the Antarctic to qualifying for deployment to Summit, Greenland. The NSF medical director makes the determination for the Arctic Program.

Questions and comments (Cheng, Martin, Blitz, Montopoli).

- Who establishes the medical and dental guidelines for deployment? (Cheng) NSF obtains advice on these matters via a Medical Review Panel. (Montopoli)
- It was suggested that the PQ process be transparent to those applying for deployment. (Martin), a timeline for PQ be established (Martin), and guidelines be updated to reflect changing views of medicine and new medical procedures (Cheng). Guidelines are not published so as not to encourage individuals to focus on specific guidelines and ignore other important aspects of overall health as recommended by their physicians (Montopoli). Guidelines are under continual review and adjustment. Examples of recent changes to the PQ process include requiring that cholesterol readings be combined with other risk factors in order to determine PQ status and the extension of validity of blood tests from six months to one year (Montopoli).
- Does the Medical Review Panel have an understanding of the PQ process and deployment to Antarctica? (Blitz) There is an attempt to get all members to go through the process and to deploy to Antarctica. Not all current members have deployed. (Montopoli). It was also suggested that the members need to understand the range of medical facilities on the ice (Martin).

Arctic Science Interagency Arctic Research Policy Committee (IARPC) 5-Year Plan (Green, Stephenson) (Notes: Carr)

Overview

- The plan is not intended to present a comprehensive view of U.S. Government (USG) Arctic

research for the next 5 years. It is focused on areas best advanced through interagency cooperation and it the first effort with that being the express goal. Seven areas were identified. Defining the areas of overlap in those areas is a challenge; there are connections that are not well addressed in the document itself.

Implementation

- Twelve working groups are addressing the seven research themes. These groups facilitate progress on the themes in part by ensuring that program officers (POs) know what other agencies are doing. Activities can result in joint calls for proposals, refining a specific agency's call and adding linkages to other agencies to allow proposers to see the whole landscape.

Examples

- Chukchi Sea
 - An interagency ecosystem group meeting is being organized by the Office of Science and Technology Policy (OSTP) to create a conceptual model to help the research community move efforts forward in a common framework.
- Permafrost and terrestrial ecosystems
 - A decade ago, NSF was dominant in funding, but in the next decade the Department of Energy (DOE) is spearheading a major effort (\$10 million per year for ten years) and the Europeans are funding an activity called PAGES21. The Directorate for Biological Sciences (BIO) has funded a research coordination network to link these efforts.

Next steps

- Renewal of the IARPC 5-year plan is stipulated to occur every two years. There is potential in the next plan for an overall research strategy that would focus on overriding and important cross-cutting themes, analogous to an overall strategy for GEO mentioned by Roger Wakimoto earlier.

Questions and Comments

- Implementation teams members will vary by agency, depending on whether agency priority is management, mission, or pure science. At NSF, it is POs with programs for thematic areas. At some mission agency it is staff scientists. (Stephenson)
- The document provides vision and focus for future research. Will the meeting hosted by the National Research Council (NRC) next week in Alaska on emerging research topics inform the process for IARPC? (Bitz) Yes. Though, it did not inform this plan, it will inform the renewal of the plan. The Academy activity will take eighteen months to two years and will feed into next 5-year plan.
- Do implementation teams involve university scientists? (Bitz) There are two levels of implementation teams, including discussions limited to within the government. New calls are typically done among agencies; it is not customary in consideration of fairness to the community to give a heads up to a subset of those eligible to write proposals; however scientist input is desired to inform what is going on. The community holds multiple workshops funded by different agencies, all of which feeds into discussion among agencies of gaps, what's next, and the priorities. Thus, there are implied discussions with the community via formal or informal venues.
- How is the larger community, including international, involved? World Climate Research Programme (WCRP) is part of the discussion. As the European Union (EU) develops the framework for Horizon 2020, they are interested in sustained discussion with (USG) and IARPC. We have had positive experiences with DAMOCLES and SEARCH and less productive

connections with the Ice 2 Sea EU program in which linkages are not as well known to us. (Stephenson) There are international collaboration discussions underway, through the State Department, for example. The IARPC plan can help to consolidate the specifics of these discussions. (Falkner)

- I congratulate the production of this plan and vision. Cross-linkages in the plan may not be explicit enough. (Carr) The intent is for the community to feel more transparency, which comes at the cost of increased workload of POs' who need to create that transparency. Currently, there are plans to provide access to activities on a website maintained by IARPC. This is a heavy lift, but we are motivated because linkages are important; this should help avoid duplication. There is a contractor identified to begin site design development with the agency and this could be completed by the end of the year. Comments should be directed to Stephenson via email. (Stephenson)
- The importance of the plan's theme of sustaining communities and human health was noted. The involvement is critical to improve our understanding how environmental and ecological changes will impact indigenous communities. (Green)

NSF's Response to U.S. Antarctic Program Blue Ribbon Panel (BRP) Report

(Cheng, Closs, Borg, Stone) (Notes: by Chris Martin)

Synopsis of response development (Stone)

- The NSF Director charged a Tiger Team headed by Falkner to develop a point-by-point and summary response to each of the BRP implementing actions and summary recommendations respectively. Because some implementing actions are sensitive or proprietary, not all detail is given in the public summary document that was released in March. The Tiger Team briefed the National Science Board (NSB) twice and in March, NSB concurred as noted in the letter included in the summary response. The release of this summary response closed out the Tiger Team's charge.

Recommendations (Stone)

- Among the most important things, the BRP recommendations cited the need to reduce personnel on ice and fuel usage and identified the need for a long range capital plan.
- In the near term, NSF is addressing issues identified by the BRP, including exploring a hard surface runway at South Pole and other airlift issues with the Department of Defense (DoD). NSF is exploring further opportunities to cooperate on logistics with international partners making use of the Council of Managers of National Antarctic Programs (COMNAP) among other venues.
- The President's Budget Request for 2014 includes addressing recommendations regarding Palmer pier improvements critical to safety and resupply (\$8M), and the highest net present value investment (augmenting and automating the South Pole heavy traverse \$6M,=\$4 in tractors plus \$2 in vehicle following robotics). Also included are funding for inflatable boats at Palmer and for moving from concept to design as part of the McMurdo long range station improvement plan.
- In response to the BRP's recommendation that a portion of the science budget be redirected to help address BRP recommendations, NSF is investing in scientific instrumentation that will help improve observations and will help reduce the program's footprint. Pay-off will come in several years. (Borg)

Questions and comments:

- What about communications and staffing? (Closs) Launching our own satellite is not a plausible solution for economic reasons; BRP recommended that the program continue to use satellites in the manner we have been doing and Polar staff is active in pursuing a number of options. Rather, staffing was identified as a single point weakness. Related to supply chain and inventory management, the program is transitioning to MAXIMO with a target of early season 2014 and also working on personnel tracking system. The BRP placed importance on exposing costs to researchers (i.e. pre-deployment testing rather than beta testing in the field) and in discussing supply chain support to get synergies across projects or input on better methods. Personnel reductions were put in place as part of the transition to the new prime contractor.
- To stay in a leadership position within the community, Polar Programs has been tasked to become a leaner and meaner machine. Front-end investment is needed to increase efficiency. Is there support from USG to provide those resources? (Cheng) FY 2014 has a sizeable plus up to address BRP items. We hope to jump start the process with additional funding over the next 4 or so years, but then sustain investment with savings elsewhere. We can no longer put off deferred maintenance. (Stone) BRP was cognizant that efficiency efforts should not erode student training on the science side. (Borg) Alex Isern, newly appointed to the Antarctic Research and Logistics Integration (ARLI) position, is helping to lead the effort to involve the research community in the NRC report recommendations. (Borg, Falkner)
- How do scientists communicate their input for the long-range plan? (Cheng?) There are multiple avenues for communication through the planning process. (Borg) Isern will help prioritize so that things get addressed in the right order. (Stone) She may be reached via email or phone.
- Tracking action items from the BRP will be an ongoing process, underscored by the need to protect proprietary information (Stone, Falkner).

Open Access to Publication & Data (Holdren's Memo) (Powers, Gutmann) (Notes: Bitz)

Interagency Working Groups

- Two interagency groups have been formed. Gutmann is co-chairing the steering committee with Dr. Clifford Gabriel, Senior Advisor in the Office of the Director (OD). Jane Silverthorne (BIO/IOS) will chair the data working group and Amy Friedlander (SBE/OAD) will chair the publications working group. Draft plans are intended to be produced in June 2013 and to be finalized by August. The current expectation is that new requirements for publications will be spelled out in the Grant Proposal Guide with new rules for 2015. Rules for the more complex subject of data access will take longer to be enacted. There will be an open mike discussion at the National Academy of Sciences (NAS) auditorium to discuss the memo.
- Action item: Bitz will collect Open Access related thoughts and recommendations from the committee in the form of a letter that she will forward to Falkner to convey to NSF leadership on this issue.

Committee of Visitors (COV) Report: Antarctic Summary and Highlights (Bitz, Cassano)

(Notes: Cheng)

Summary

- The COV was very impressed with the quality and effectiveness of the review process. The COV's recommendations are meant to be suggestions, not criticisms.

Recommendations

- In order to streamline the assembly of adequate number of proposal reviewers, the COV recommended implementing an online system patterned after scientific journals to request reviewers and track declinations and submissions of reviews. Division of Polar Programs (DPP) and AC members concur.
- Many panel summaries are quite brief, and in these cases evaluations of the Broader Impact criteria are often missing. AC members suggest the usage of a template where all required criteria are laid out, and the finished summary to be vetted by the program officer to ensure inclusiveness before becoming final. There were issues of failing to disclose COI (conflict of interests) appropriately.
- One main concern of the COV was PO workload. The NSF metric for PO work load is the number of proposals handled. Antarctic POs also deal with additional field logistics issues, which are particularly demanding for large, complex field projects, and thus the standard NSF metric does not adequately apply. Though Polar Programs recognizes this, providing personnel help is unlikely. Falkner noted that PO work load is very much in the Agency's consciousness. Borg noted that there has been a suggestion to revise the review process to use either ad hoc or panel reviews. It was noted that NSF review process in its current form is the gold standard and should not be changed. (Post, Cheng concurs)
- The COV noted recent changes associated with logistics readiness, including moving the proposal deadline to April 15 starting in 2013 to allow more time for logistics review and preparation. The AC concurs. The one size fits all Operational Requirements Worksheet (ORW) is replaced by a project-specific narrative of field support plan and request, which is more useful for assessment by the ARLI officer. The COV also noted that the logistic resources are used very close to limit. All recognize that resources should not stand idle; however, the tradeoff is there is no wiggle room. In the event that a major scientific scenario occurs, there would be limited capabilities to support investigations.
- The COV noted that travel restrictions on Program Officers and other NSF staff, including inability to attend conferences, limits POs' reach of the broader scientific community, particularly affects younger and aspiring polar scientists.
- Linda Hayden inquired about the gender and ethnic diversity of panelists. Because data depends on generally low self-reporting, the COV review did not have adequate data to evaluate. POs are made aware that balanced demographics in panelist selections is a priority. Travel restrictions of NSF staff and POs might also contribute to the diversity problem. (Borg)
- The COV noted that funding opportunities for new investigators were taken seriously. Bitz noted that the Polar Postdoc program, an important funding resource for new PhDs, was discontinued this year. Although there is no overhead on polar postdoc fellowship, postdoc fellowships put burden on the postdoc to account for expenditures. (Borg) Postdocs should be included in a Principal Investigator's (PI's) proposal.

Summary Action Items

- Bitz will collect Open Access related thoughts and recommendations from the committee in the form of a letter that she will forward to Falkner to convey to NSF leadership on this issue.
- Bitz will send consolidated formal response in the form of a cover letter in conveying the COV report to Falkner. Polar will develop response.
- Falkner will send information on NAS Public Comment Meeting concerning Public Access to Federally Supported R&D data. (*Occurred May 16 & 17, information sent to the committee.*)
- Stephenson will ensure IARPC implementation website under development by the Arctic Research Consortium of the United States (ARCUS) is he sent to the committee once it goes live.

- GEO AC Meeting Dates: October 9-10, 2013

These meeting minutes were prepared by Kate DiEmidio based on notes recorded during the meeting by Polar Programs David Friscic and Advisory Committee members.