

Report of the PNSC Committee. July 5, 2015

The PNSC met in Fort Collins on June 28-29 (full and half days, respectively).

Members Present: Richard Aster (CSU), Leigh Stearns (KU), Jennifer Haase (Scripps), Jake Walter (UT), Erik Ivins (JPL), Paul Winberry (C. Wash U.)

Members Absent: Sam Hansen (U. Alabama), Matt Lazzara (U. Wisc.).

Observers Present: Joe Pettit (UNAVCO), Meghan Miller (UNAVCO), Kent Anderson (IRIS), Bruce Beaudoin (IRIS) Jason Hebert (IRIS).

Call ins: Bob Detrick (IRIS), John Taber (IRIS).

Narrative: The PNSC is a joint committee of IRIS and UNAVCO that grew out of MRI and other facility associated efforts of the polar geophysical community. The committee has (most recently) met annually. The chair position rotates between IRIS and UNAVCO members, and the committee reports jointly to the IRIS and UNAVCO boards.

The committee wishes to emphasize a number of key issues and observations, which are also reflected in the action items contained in the minutes. We recognize that many of these issues revolve around budget levels, are facility-wide, and are not necessarily restricted to Polar activities (and are thus already familiar to the UNAVCO and IRIS boards).

R&D activities. The committee was impressed with the continuing level of exciting R&D activity within the facilities, related to power (e.g., lithium-iron-phosphate batteries; next generation solar panels), telemetry (IRIDIUM high-bandwidth and state-of-health modem/modem system development), and sensors (low-temperature seismometers; next generation low-power GPS receivers). The facility engineers continue to be highly effective at leveraging academic and facility resources in close collaborations with vendors to the great advancement of science capabilities for polar science. These developments also migrate into more general geophysical facility capabilities as well.

R&D miscellaneous budget for POLAR (and general) facility activities. With highly constrained facility and general NSF budgets, the polar facilities are increasingly restrained by quite small (e.g., 10s of \$k/year) general materiel budgets for facilitating field support as well as basic R&D. While major projects have been successful in obtaining NSF supplements and other special resources, this is a bottleneck in general operations. We recommend that these budgets be at least modestly increased based on continuing demand for basic supplies.

The NSF Arctic and Antarctic funding models continue to differ strongly due to the substantial differences in NSF evolution and present policy. This creates discrepancies and difficulties for the facilities in the effective support of Arctic projects, especially. We realize that this is largely a manifestation of NSF budget constraints.

Improved and timely facility awareness of funded proposals. We request that NSF be sure to alert facilities at the earliest possible time when project funding decisions are made. Lags can result in inefficient and unnecessarily rushed on the part of the facilities, and can complicate the accurate assessment of NSF supplements for some projects.

IRIDIUM costing. Given evolving new capabilities and growing motivations for enhanced IRIDIUM connectivity in future experiments, the true costs, and NSF mechanisms/funding sources for covering them, need to be clearly articulated to the facility and P.I. communities to effect appropriate facilities and proposal planning.

Recapitalization. Although much of the Polar instrumentation pool is of relatively recent vintage, the committee emphasizes that core data logger and other aspects of the equipment face the same recapitalization challenges as the rest of the portable equipment pool.

Workforce. The committee wishes to emphasize the highly specialized skills that have been accrued within the facilities polar workforce, and expresses concern that flat NSF budgets now imply wage or promotion stagnation within the facilities staff.

Long-term instrumentation. As polar instrumentation continues to become more robust and broadly capable, it is possible to envision longer-term (e.g., five or more years at low-accumulation sites without requiring a visit) telemetered GPS and seismic instrumentation. This presents an opportunity to greatly reduce field logistical costs in Antarctica and elsewhere. The committee suggests that the community help ensure that such savings are properly accounted for in the larger NSF budget picture, and that overall lower-cost proposals for analyzing data from in situ unattended sites can be supported once such equipment is in place. Recent facilities power and telemetry development also advance the potential for geophysical observatory sites that might support clusters of longer-duration geophysical observations.

Fate of the committee under upcoming NCEO proposed structures. The PNSC has been an effective example of collaborative committee structure between UNAVCO and IRIS. The present members expect at this point that the committee in its present form will persist for an additional year (with Leigh Stearns [UNAVCO]) as the next chair. After 2017, we expect that PNSC functionality may be proposed to take on a new form or be incorporated otherwise within a new NCEO committee structure. All committee members present expressed a willingness to serve for an additional year.