

2016 Antarctic Sciences COV: Recommendations and PLR/ANT response

General comments from ANT:

The Antarctic Sciences Section (ANT) appreciates the effort expended by the COV members in conducting a thorough and thoughtful review. We are gratified that the COV "...was very impressed with the quality, thoroughness, and integrity of the merit review process in the Antarctic (ANT) Section" and appreciate their recognition of the "...dedication and expertise of the Program Officers and staff". We are pleased that the COV "found that the ANT Section is appropriately responsive to emerging research and education opportunities". We note and appreciate that the COV advanced a number of recommendations aimed at improving a merit review process that is generally working well. Below is a summary of the major recommendations along with the Section's response.

Note relating to recommendations 2, 4, 9, and 10:

These recommendations (addressed individually below) relate to the guidance given by NSF to ad hoc reviewers and to the FastLane ad hoc review interface. These are governed by agency policy and implemented NSF-wide, rather than at the Section level.

Specific recommendations:

Recommendation 1: The COV recommends that the combination of ad hoc and panel review methods be maintained due to the very effective and equitable nature of this process, and that the use of in-person versus virtual panels should be at the Program Officers' discretion.

ANT agrees and intends to maintain the current practice of utilizing ad hoc and panel reviews to the maximum extent practicable.

Recommendation 2: The COV recommends that the Program Officers consider providing a template to both ad hoc reviewers and to panel members with specific questions to be addressed. This may provide more structure and consistency in the level of detail documented in both types of evaluations.

ANT Program Officers do provide panels with a template including the 5 NSF Review Elements. We are reviewing the format of this template with the intent of improving clarity and utility.

Given the time pressure at most panels, we feel it would be challenging to require panel summaries to address all 5 Review Elements in all cases. We wish to retain the flexibility for panels to focus effort on the key issues influencing proposal rankings, and to opt not to address issues that are either thoroughly addressed in ad hoc reviews or that do not factor significantly in the proposal ranking.

Recommendation 3: The COV recommends that NSF provide additional guidance to the scientific community (both proposers and reviewers) as to what constitutes potential activities or aspects of the project that have Broader Impacts. The COV also recommends that more detailed guidance be provided directly to panelists regarding the identification of potential Broader Impacts and their

evaluation as a merit criterion. One approach might be a brief orientation at the start of each panel that illustrates the diversity of potential impacts.

We recognize that evaluation of the Broader Impacts review criterion has challenged both reviewers and panelists, leading to cursory or inconsistent treatment in ad hoc reviews and panel summaries. In the future, we will ensure that all ANT panels are briefed on the NSB report regarding NSF's Merit Review Criteria (NSB/MR-11-22) guidance on the Broader Impacts merit review criteria and the NSF's Broader Impacts FAQ (http://www.nsf.gov/bfa/dias/policy/merit_review/mrfaqs.jsp#9). [item closed]

Recommendation 4: The COV suggests that the Program Officers explore options for 1) restructuring the web review form to solicit comments on each of the five NSF Review Elements; and 2) refining the proposal rating system such that reviewers rank different aspects of the proposal, and then provide a final overall summary rating and a brief justification.

The format and content of the ad hoc review web form is uniform across NSF as a matter of policy, and revisions would require a broader discussion. In general, ANT wants to preserve the flexibility of ad hoc reviewers to provide insight into the issues that they think are most significant in terms of determining the quality of a proposal. We do not wish to give the impression to the review community that all Review Elements apply equally to all proposals or that the final rating is an average of individual ratings.

Recommendation 5: The COV recommends that NSF impress upon panelists the need to clearly document key discussions leading to their final recommendation. This is particularly important for proposals with a broad range of ad hoc review ratings, or for which consensus is difficult to reach.

We agree. This point will receive explicit emphasis in ANT panel briefings.

Recommendation 6: While documenting every communication with Principal Investigators is impractical, the COV suggests that, at a minimum, phone or e-mail discussions that relate to budget, scope of work, or logistics, be followed up by an e-mail that documents the exchange of information and summarizes the final agreement to those changes by both the Principal Investigators and NSF.

We share the committee's view on the importance of documenting program manager-PI communications. It is standard practice for ANT program managers to document communications with PI's relating to budget, scope, and logistics. In some cases, the program manager guidance is captured in the correspondence. In all cases, the final resolution should be captured in the submitted revised scope of work, revised budget justification, or final ops notice. We will work to standardize this documentation across the Section.

Recommendation 7: The COV recommends that the Program Officers provide Principal Investigators with as much of the Review Analysis content as practical, even in those cases where an award is recommended.

We agree that the insight provided in the review analysis is valuable to the PI's in both awards and

declines. It is ANT policy to clearly communicate the basis for funding decisions, and the extent to which specific issues raised in review informed those decisions. While it is not a requirement, the Section has standardized the use of PO Comments for this purpose on all proposals for which it has the lead.

Recommendation 8: Recognizing that the pool of qualified reviewers in Antarctic research is relatively limited, the COV encourages the program to continue to broaden its reviewers to include non-Antarctic researchers addressing similar scientific questions in other geographic areas.

We agree that it is vital to maintain a diverse pool of qualified reviewers. We carried out a search of the NSF database to objectively explore the COV's concern regarding the ANT reviewer pool. For the period from 2006-2015, 72% of the ad hoc reviewer requests were to non-ANT PI's. The review response rate from non-ANT PI's is only slightly lower than that from our PI community (51 vs. 66%), indicating success in obtaining reviews from the broader community. These data indicate that the ANT reviewer base is not narrowly restricted to our PI community

To underscore the efforts made by ANT Program Managers to obtain a diverse range of input, we note that over the COV period 2013-2015, review requests were sent to a total of 2,601 unique reviewers.

Recommendation 9: The COV recommends that additional information be provided in the "review request" email that would allow a reviewer to readily identify potential conflicts of interest. The limited-disclosure information in the email request should include names of all co-PIs and their institutions, as well as authors/affiliations of any letters of support.

We appreciate the panel's efforts to consider ways to streamline identification of COI's. This suggestion will be passed to agency groups working on NSF wide practices.

Recommendation 10: The COV recommends adding a checkbox to the Conflict of Interest section of the ad hoc review form in FastLane where reviewers identify the type of conflict they have. This checkbox would be picked up automatically by the jacket system and require clearance by a Program Officer prior to release. This may streamline the process of identifying and processing conflicts of interest in ad hoc reviews.

This is a useful suggestion which we will forward to agency groups working on NSF wide practices for consideration.

Recommendation 11: The COV recommends that the ANT Section continue to be proactive in recruiting new investigators and early career researchers into the programs, in particular by reinstating the Antarctic new investigator workshop that has been held in the past.

ANT strongly agrees that recruiting new investigators is critical to maintaining a healthy research community. Over the ten-year time period from 2006 to 2015, an average of 12% of awards were to early career researchers (within seven years of degree) and 7% of awards were to new investigators.

The statistics were similar for the 2013-2015 period examined by the COV (13% and 9%). We view this as a sustainable rate of entrainment of new PI's into ANT programs.

ANT is committed to encouraging and investing in early career researchers through support of workshops and meetings. The Antarctic new investigator workshop was held a few times, most recently in 2006. As an alternative to those rather costly dedicated meetings, ANT will discuss other options to provide mentoring for potential new investigators such as town hall events at national meetings or webinars.

Recommendation 12: The COV recommends that the Antarctic Integrated System Science program relax informal and formal geographic constraints on proposals to better facilitate studies that explore the margins of the polar region and teleconnections between the Antarctic and lower latitudes.

The full COV report also states that "Proposals that seek to compare Antarctic regions to lower latitudes and those that investigate the margins of the polar region appear to have less funding success....the inclusion of an Antarctic component may be prohibitively expensive for disciplinary programs or pose organizational barriers. This structural "blind spot" limits critical studies of teleconnections and important differences between polar and non-polar domains."

We agree that it is important to support research that bridges Antarctic and extra-polar regions. We consider it to be part of the ANT mission and a shared responsibility across NSF. There are numerous examples of funded projects of this type, such as studies of atmospheric teleconnections, oceanography of subpolar waters, bi-polar ice core analyses, Earth system modeling and space weather research. The Palmer and Dry Valleys LTERs are nodes of the global LTER network explicitly designed to compare and contrast ecosystem function in polar and non-polar domains. ANT also responds to the challenge of funding polar/extra-polar work through participation in the Paleo Perspectives on Climate Change (P2C2) program. ANT does not view this issue as the exclusive responsibility of AISS.

With regard to AISS, the ANT Solicitation states: "...Proposals submitted to the Antarctic Integrated System Science (AISS) Program will focus on critical elements of i) an Antarctic system ... or ii) the Antarctic system as a whole, or iii) the Antarctic system's interactions with the broader Earth system." The Solicitation therefore welcomes AISS proposals ranging beyond Antarctica itself. Such projects must also meet the overall ANT requirement that research relies on the unique characteristics of the Antarctic region as a platform from which to support research.

Recommendation 13: The COV sees the infusion of rotators as positive for keeping new perspectives incorporated in the ANT Section, but recommends that the balance of rotators versus permanent program staff be continually reviewed in order to keep budgetary and programmatic continuity intact.

We agree and intend to maintain a balance between permanent and rotating program management staff that can evolve in the future as circumstances warrant.

Additional issues noted in Portfolio Review:**ANT-specific issues:**

“The COV commends the obviously collegial cooperation among the various ANT disciplines regarding co-funding of interdisciplinary projects. While the incorporation of the ANT program into GEO appears to have facilitated co-funding and co-review of GEO-relevant proposals among GEO programs, it appears to have somewhat hindered such cooperation between ANT and programs outside of GEO, particularly with MPS/AST. The COV encourages the ongoing pursuit of opportunities for co-funding outside of GEO as they arise.”

ANT continues to have active and productive partnerships with the Astronomy and Astrophysics programs in MPS. We continue to co-review and co-fund Antarctic research projects in these areas. ANT is also actively involved in strategic planning of future research in Astronomy and Astrophysics with partners across NSF, DOE, and NASA.

...“The program’s portfolio balance with regards to early career researchers is not fully provided in the summary tables available to the COV. For example, the total number of CAREER applications is not summarized as a fraction of existing awards, nor is there any indication as to their submission rate and success.”

CAREER projects are a very small part of the ANT portfolio. From 2013-2015, 8 CAREER proposals were submitted to ANT programs, with a success rate of 50%.

AIL-specific issues:

“Logistical plans appear to be developed in a timely manner, incorporating effective interactions among Program Officers, Principal Investigators, and operational staff. This development process and the final operations plans are well documented in the jackets for awarded proposals. However, documentation of logistical assessment contributing to decisions on declined proposals is not available in the jackets. The COV feels that more transparency in logistics assessment of declined proposals is warranted.”

The majority of proposals are declined on the basis of scientific, rather than logistical considerations. Logistical assessments are labor-intensive and it is not feasible to provide logistical assessments for all such proposals. In rare cases where a proposal is declined primarily for logistical reasons, the basis for the decision is recorded in the jacket and communicated to the PI’s.