

**To: Office Advisory Committee**  
**From: Division of Arctic Sciences**  
**Date: 7 May, 2007**

**Subject: Initial response to 2006 COV.**

**The Division of Arctic Sciences thanks the COV/ARC for the thorough review of the three main science programs, System, Natural and Social Sciences, for the years 2004 -2006. There were some very useful recommendations. In order to stimulate discussion with the OAC we provide some initial thoughts by ARC that might help the OAC as they consider the report. We begin by responding to the recommendations in the executive summary, which is repeated below to provide context, and follow those with the other main recommendations. The COV comments are in black, ARC's are in blue and indented.**

The 2006 COV met at the National Science Foundation on November 6 and 7. The Committee reviewed 80 proposal jackets and addressed a series of questions put forth in the FY 2007 set of Core Questions and the COV Report Template. The COV found that OPP Arctic Sciences (OPP-AS) is effectively managed, and many things are being done very well. The COV focused discussion on issues where needs were ongoing. The following major recommendations were based on the November 6 and 7 meeting along with follow-up discussion by the COV.

In general, the COV felt that many concerns from the 2003 COV remained in 2006. While some of the issues brought up by the 2003 COV could not be addressed easily, it was not clear what progress had been made in the 3-year interim. It would be useful to future COVs to have the OPP-AS Section Head discuss progress on all recommendations from the previous COV at the start of the meeting.

- ARC agrees that this should be done. We also suggest that if the OAC wish, they may form a subgroup to track how recommendations that are accepted by OPP are being implemented.

There was considerable discussion about the state of the Arctic Natural Science (ANS) program. The COV believes that the ANS program is in need of additional funding. However, the COV did not feel this additional funding should come at the expense of the other programs in OPP-AS, and that further study of ANS funding is warranted as a high priority.

- The ANS program is to receive approximate increase in funding of 20% in the current fiscal year (FY07). This is in part in response to the comments of the COV and OAC, and in part in response to ANS taking on the Bering Sea Ecosystem Study (BEST) ARC wish to ensure the OAC that program balance is always a significant issue in making award recommendations, but ARC recognize this is hard to determine from a statistical sampling of awards when the program's disciplinary coverage is so broad. We recognize that the COV felt that they would have been better able to assess the program balance issue if we had provided a standard "program review" format within the format of the overall COV. ARC agrees. This will be done for the next COV, but ARC also suggests that at the next in-person OAC, perhaps a subcommittee of the OAC

be provided with this review so that the OAC can provide input to ARC on this important issue before the next COV.

Insufficient data was available to address many of the questions presented to the COV, particularly with respect to management of OPP-AS. While some of the needed data may be available, the COV believed that there was a greater need for data collection and management. One mechanism for this was proposed.

- ARC notes that the COV were frustrated that the data needed to answer many of the template questions were not readily available from standard NSF systems, and thus not provided to them. They did not feel that the sampling of proposals provided adequate input. They recommended that ARC reviewers use a relatively simple one-page checklist to assess each proposal (both awards and declines). There are federal regulations on the types of information that the government can collect, making it difficult to capture the data needed to answer several of the questions. This is an NSF-wide issue; however, ARC will monitor the ongoing changes in the NSF-wide data collection system – particularly the new COV module of NSF’s Enterprise Information System, to ensure that we are using those systems to their full capacity. NSF is in the process of rewriting the COV template to better align with the new strategic plan. Where possible, ARC will also participate on internal working groups to ensure that the COV template is appropriate. Where data are not being collected systematically within NSF, ARC will attempt to provide the data using a checklist completed by the PO (rather than reviewers) prior to the next COV.

For future COVs, it would be useful for the committee to better understand the programmatic context in which selected proposal jackets were reviewed. It would be helpful for each program officer to prepare a formal presentation that addresses the elements in the COV template, the overall context and objectives of the program, and the state of the program since the last COV, including what recommendations were adopted and how.

- ARC agrees, and as with the second response above, agrees that use of a more formal “program review” style briefings at the start of the COV would provide additional context.

The decision to decline based on program balance should be conveyed to the PI, particularly if panel or mail reviews rank the proposal uniformly high. OPP-AS should consider sharing examples of exemplary write-ups by program officers across the Office, thereby helping everyone continuously improve the quality, thoroughness, completeness, consistency, and clarity of these documents.

- The COV recommended that proposal jackets are clearer in documenting the rationale for award or decline recommendation, both in the review analysis and in correspondence with the PI. This is particularly important for highly ranked proposals that are declined, or less highly ranked proposals that are awarded. ARC agrees. This

has been communicated to all the ARC POs, who will more carefully document their decisions beginning in the FY07 rounds of proposal.

The committee felt that consistency in panel summaries would be useful and could be achieved by providing the panel with some good examples of panel reviews and the previously mentioned checklist to supplement the review narrative.

- ARC agrees that it can more systematically prepare panelist. The use of short power points presentations is becoming standard throughout the Foundations and we should probably use a more systematic approach to prepare panelists.

OPP-AS should post examples of suitable broader impact activities on its website for PIs and reviewers. Summaries of successful broader impact activities, as well as resources for assisting individual researchers with broader impacts, organized by topic/category may be useful and could be posted on the OPP-AS webpage

- The COV again commented of the variation in handling the *broader impacts* criterion within ARC by both reviewers and by program officers. NSF has provided additional guidance on the interpretation of the broader impacts at: [www.nsf.gov/pubs/gpg/broaderimpacts.pdf](http://www.nsf.gov/pubs/gpg/broaderimpacts.pdf) Reference to this document can be added to ARC solicitations, reviewer requests and provided to panelists. However, ARC expects that this criterion will still be handled in a variable way in proposals, by the reviewers and in making funding decisions. ARC does not think that it is valuable to try to split the fraction of the cost of a proposal between the two criteria.

High priority should be placed on inclusion of underrepresented groups. OPP-AS could improve methods to try to get better data on this subject; maybe encourage PIs and Program Officers to include this information.

- The COV noted a lack of data on the participation of underrepresented groups, and thus no real insight on how and if ARC is succeeding in broadening participation. ARC, and perhaps OPP more widely, should review the successful actions taken elsewhere in the Foundation (e.g. NSF/Chemistry and within the Education directorate) and begin to develop similar strategies and approaches.

In summary, the COV found OPP Arctic Science to be well managed overall, with proposal solicitation and review addressing both major review criteria in place and generally well-implemented by the end of the FY 2004-2006 review period. While the broader impacts criteria continue to be interpreted somewhat differently by different reviewers, progress has been made since the last review. Importantly, the results of OPP-AS's investments are of high quality, and OPP-AS's management of the program is effective and efficient. In particular, the COV wanted to commend Arctic Logistics for allowing logistics to be led by science.