

**Division of Behavioral and Cognitive Sciences
Response to the 2009 COV Report**

Executive Summary

The COV met March 18-20, 2009 and included the chair and sub-chairs and three members representing each of the nine programs: Archaeology/Archaeometry; Physical Anthropology; Cultural Anthropology; Geography and Spatial Sciences; Linguistics/Documenting Endangered Languages; Perception, Action and Cognition; Cognitive Neuroscience; Developmental and Learning Sciences; and Social Psychology. The HOMINID program was handled jointly between Physical Anthropology and Archaeology/Archaeometry and Linguistics/Documenting Endangered Languages had one additional member. The 32 members met in plenary and in program-focused and cross-program sessions and reported out to Dr. David Lightfoot, Assistant Director of the Directorate of Social, Behavioral, and Economic Sciences (SBE), and Dr. Judy Sunley, Deputy Assistant Director of SBE in a closed session. The COV then held an open report out that was attended by the division leadership, program officers, and staff.

The Division of Behavioral and Cognitive Sciences is extremely grateful for the input and insightful suggestions provided by the Committee of Visitors, and especially for the leadership of Dr. Susan Cutter in chairing this process. The following response document considers and addresses each recommendation made by the COV at the division and program level.

Division of Behavioral and Cognitive Sciences

1.2 Context

Recommendation: SBE should routinely monitor the impacts of special initiatives such as HSD in augmenting the funding opportunities available to investigators in its core disciplines, and the subsequent success of their proposals.

The COV is correct in thinking that social and behavioral science is supported through multiple mechanisms within the National Science Foundation. In the past, social and behavioral scientists have successfully competed in large and interdisciplinary competitions such as CNH, HSD, and CDI. The program officers within the SBE Directorate are often quite integral to the creation of these programs, the writing of solicitations, and the expansion of other programs to enhance the funding opportunities for the social and behavioral sciences at NSF (e.g., the Explosives and Related Threats competition out of the Engineering Directorate supported three SBE-related grants).

However, keeping track of the number of social and behavioral scientists who submit to competitions outside the SBE Directorate is not easily accomplished. This reflects both a shortage of staff to devote to this question and limitations in the data available in the

many electronic systems at NSF. This data would be very informative to have, and we will investigate the feasibility of gathering it.

1.2 Progress since 2006

Recommendation: BCS should continue to strive for a minimum of one permanent program officer in each program.

BCS concurs with this recommendation of the COV, as does the Office of the Assistant Director. Since the 2006 COV the Cultural Anthropology PO has been appointed to a permanent position. Currently we are searching for a permanent Perception, Action and Cognition PO. We will continue efforts toward this goal.

Recommendation: BCS should identify programs that are exemplary in their treatment of the broader-impacts criterion, and publicize the approaches used across the Division to panelists, reviewers, and investigators.

The COV expressed concern that there was little improvement in clarifying the meaning of "broader impacts" and its use as a review criterion. The National Science Foundation appreciates this concern, which is why explanatory and illustrative material regarding broader impacts has been posted on the web (e.g. <http://www.nsf.gov/pubs/gpg/broaderimpacts.pdf>) Some COV members appear to assume that NSF policy is to weigh the two merit review criteria equally. Insofar as the broader impacts of a proposed research program may depend on its intellectual merit, the two merit review criteria cannot always be considered separately or equally. In addition, some solicitations have additional review criteria (e.g. HOMINID, CAREER).

The program officers in BCS will continue in their efforts to communicate the importance of both merit review criteria and that both must be present for proposals to be considered highly competitive at NSF. It is important to note that many different activities and implications are relevant to the consideration of "broader impacts." Although this may cause some confusion in the minds of the scientific community, that flexibility is intentional and we will act to mitigate such confusion.

1.3 Quality and integrity of BCS operations

Recommendation: The COV strongly encourages BCS to increase administrative support substantially. This includes increases in staffing (program officers, administration, and technical support), and increased use of panels, site visits to institutions, and reverse site visits at NSF.

BCS agrees with the COV's assessment. To maintain the integrity of NSF's "gold standard" peer review process, to provide timely and constructive feedback to PIs, to facilitate the review process, to reach out to the community and to develop new initiatives, more administrative staff is required. However, we must work within the FTEs allotted to BCS.

Recommendation: The COV suggests that BCS make more use of collaborative technologies for virtual meetings for panel reviews and site visits, in order to accomplish the stated aims while not unduly increasing the Division's carbon footprint.

The increased use of technologies to support virtual meetings has been a point of discussion in the past year in BCS. There are certainly important advantages to such meetings, including greater inclusion of participants who cannot easily travel, lower travel costs, and reduced impact on the environment. However, there are also important disadvantages that must be weighed. For example, such practice would exclude participants who are at institutions with few IT resources and support. Many panels are large and holding such a meeting electronically would be cumbersome and ineffectual. And perhaps most importantly, panel discussions are cumulative and require on-going face-to-face interactions. It is essential to demonstrate that the quality of our recommendations would not suffer by this practice and that virtual meetings can uphold the same high standards of peer merit review that are the hallmark of NSF. We have had limited experience conducting panels via teleconference, and POs' initial impression is that the review process suffers when conducted via in this way. It would appear that this would be an appropriate area for social and behavioral science research. The BCS division will investigate the expanded use of virtual technologies for other activities, such as preliminary meetings of COV members to brief them before the on-site COV meeting.

Recommendation: NSF should consider implementing the ideas for increasing return rates of ad hoc reviews that are contained in the program reports.

From Archaeology Program Report: That NSF for ALL its programs install an automated reviewer query mechanism, which includes the following features: (a) potential reviewers are queried about their willingness to review a proposal; (b) if potential reviewers decline to review a proposal, they are prompted to provide names of other potential reviewers; (c) if reviews are not received in 30 days (or whatever time is deemed appropriate), the reviewers receive a reminder of their commitment; and (d) reviewers receive acknowledgment of their reviews and (if allowed), information on the outcome of the decision.

From Cognitive Neuroscience Program Report: The COV recommends that ad hoc reviewers be given an opportunity to view de-identified versions of the reviews of the proposal that they reviewed. This would provide the ad hoc reviewers with some feedback about the review process that would give them a greater sense of participation in the process.

From Social Psychology Program Report: have four suggestions for improving review acceptance rates: (a) cultivate a panel advisory board of experts across topics who commit to review X number of applications each year for 2-3 years, much like a journal editorial board. (b) provide more structured instructions to the reviewers about the level of review that is requested (e.g., apx. 1 page covering major strengths and weaknesses) so they can see that the burden is not great. (c) provide the reviewers with some feedback on how the panel reviewed the proposal (e.g., funding priority) and/or

whether the application was funded. The latter could be implemented as an automated message to reviewers once the final decision about an application has been made. Providing this feedback would allow reviewers to see the influence of their reviews and motivate them to review again. (d) host a reception at SPSP or a similar conference for reviewers to discuss funding issues with one of the program directors, or some other public recognition of their work.

It is not clear that this recommendation is based on accurate data rather than commonly held perceptions, since no data on review response rate was included in COV program reports, except for Social Psychology. In fact, Division-level data suggest the rate at which reviewers declined to review a proposal has gone down from the last COV period (from 51% declining to 43% declining).

Most BCS programs currently follow the recommendations of the Archaeology program's COV. Both the Cognitive Neuroscience and the Social Psychology program COVs suggest providing feedback to the reviewers on the ultimate funding decisions on the proposals they reviewed. This suggested practice raises issues of confidentiality in providing certain documents, as well as the perennial problem of over-burdening program officers.

Program officers in BCS have their own practices in soliciting external reviews for proposals. Some send initial invitations followed by more detailed review instructions, others conflate the two. However the ultimate goal is the same – to ensure a world class peer review of merit, and not necessarily to improve the response rate to review requests. Throughout the process, program officers monitor review response and submissions to ensure that a sufficient number of reviews are secured, often exceeding the NSF requirement of three reviews. Between the ad hoc and the panel reviews, the PIs are provided with excellent and constructive feedback on their work, which is the primary goal.

Recommendation: BCS should work to ensure consistency across programs with respect to resubmissions, guided by the desire to do what is best for science, and should enhance the guidance given, particularly to young scholars.

It is NSF policy that resubmissions will only be considered if they take into account the major concerns raised in the prior reviews and that resubmissions are treated as new proposals, independent of previous submissions. BCS agrees that it is important that program officers clearly communicate that policy to their community in a consistent manner. However, there will be variability between program officers in terms of how much guidance they provide to PIs who are considering resubmitting, determined in part by the needs of the program, the needs of the PI, the substance of the proposal, and competing demands on the time of the program officers.

1.4 Improvements in the COV process

Recommendation: For future COVs, summary information on the entire set of proposals is required. While we asked for and received such summaries during the site visit, having this material ahead of time would enhance the review process.

BCS tracked the requests that the COV made during its meeting and will endeavor to have that information available to the next COV ahead of the meeting. We will also share this information along with other "lessons learned" with the Social and Economic Sciences Division, which will be hosting its COV next spring. If the BCS COV has further recommendations about types of information that should be provided, we would welcome them.

Recommendation: Improved guidance to COV members on what to look for in their preparatory review (such as annual reports for measuring outcomes, panel reviews for monitoring merit process) would be helpful.

Such guidance was provided in the Frequently Asked Questions that was emailed to COV members and uploaded to the COV module. BCS will strive to make this information even more salient in the future. We have begun to compile a set of lessons-learned and suggestions for the 2012 COV in order to provide the members in advance with such materials.

Recommendation: COV members should be able to access the full set of proposals, and not be limited to a sample, subject of course to COI restrictions.

It is necessary to strike a balance between providing the COV members with full access to information and overwhelming them with the sheer volume of material. Given the comments the COV made about the heavy workload, it seems that a random sample helps to strike that balance as it is designed to be representative of the population of proposals from which it was drawn.

BCS is considering alternative ways of presenting the proposals and documentation that would provide more information while reducing confusion, such as constructing COV modules for each program separately rather than having one for the entire division. This would allow COV members to access their program's specific information more easily and neatly. We will consider such alternatives in the future.

Recommendation: The COV would be better able to answer the questions in Section B if it had access to the annual and final reports of projects that had been started in earlier years.

This is a consistent concern raised by COVs at NSF. The three year time period assigned to the COV can rarely capture the bigger picture needed to answer long-view questions. This helpful suggestion has been passed along to the Office of Integrative Activities, which is responsible for setting NSF COV policies.

Recommendation: BCS should provide a realistic assessment of expectations for COV members and the amount of time commitment for the review process. The initial invitation should be clear about the time demands and about the rewards for undertaking such service.

The invitation process will be standardized with explicit descriptions of the workload and compensation. It will be followed by more frequent reminders and updates to keep COV members informed and on-track with regard to their workload. In addition, the division will enhance its use of virtual meeting technologies to bring program officers and program COV members together prior to the meeting to discuss issues, answer questions, and monitor progress.

Recommendation: BCS should consider compensating COV members (and merit review panels) for preparation time in advance of Ballston meetings.

The compensation rates for COV panels and review panels are not set by the BCS division. However, we will be sure to share this recommendation with those who are involved in the policy regarding compensation.

1.5 Program support

Recommendation: Steps should be taken to address the perception that BCS programs are starved for funding.

This recommendation was offered in the context of the concern that insufficient funds have the effect of steering cutting edge and large proposals to other agencies and of reducing proposals' budgets to the point of compromising the science. As such the response to this recommendation is two-fold. To address the perception that BCS programs are underfunded, many programs publicly publish information on budget levels and funding rates to address this misconception. The other response is to increase the budgets of BCS programs, an outcome that the division is consistently working toward.

When HSD funds became available at the culmination of that priority area, the SBE Office of the Assistant Director provided BCS programs with significant increases in their base budgets. In addition, between ARRA and fy09 and fy10 funds, BCS looks forward to enhanced budget levels. We recognize, however, that there will always be a gap between what is available and what is needed.

Recommendation: The COV suggests that a strategic planning document for BCS and SBE be completed in time for the COV.

BCS concurs with this excellent suggestion. The new division leadership had already made this a priority for BCS even before the COV met.

1.6 Diversity

Recommendation: NSF should revise the forms that collect data on diversity to provide clear explanations of the reasons for requesting such data, and the benefits to science from doing so.

This is a common concern raised by COVs at NSF. The Broadening Participation Working Group at NSF specifically recommended that reviewer demographics be obtained more reliably, and this issue is being addressed at the IT level. The hope is to make it an automatic feature in the system whereby a person would have to "opt out" in order to not have this information included. Research suggests that this feature would enhance response rates substantially.

Recommendation: BCS/SBE should undertake a systematic investigation of the degree to which social science disciplines benefit from Foundation-wide programs to broaden participation.

It is difficult to assess the amount of social and behavioral science that is being considered and supported by programs outside the SBE directorate. A number of these foundation wide programs are interdisciplinary and it is difficult to extract the degree to which social and behavioral sciences are involved. This is an interesting idea and will be considered further, if information technology and staffing will support the proposed investigation.

Recommendation: NSF staff should make every effort to extract and organize the available information on these important matters of participant diversity for future COVs.

The idea of tracking the degree to which BCS programs support research that includes participants from underrepresented groups is intriguing. Unfortunately, it isn't clear that this information is readily available, particularly in the proposals.

Recommendation: SBE should proceed with plans to develop a program of support for research on ways of increasing diversity in the scientific community, and should draw on published research in disciplines such as Social Psychology in its own efforts at increasing diversity.

The SBE Directorate is currently considering creation of such a program, contingent on funding and other matters. Efforts are underway to identify the extent to which SBE programs are actively supporting research in the science of broadening participation through an analysis of program portfolios over the past three years. This information will illustrate the degree to which there is an existing community of scientists already engaged in research on this topic and help to inform us as to future directions.

Recommendation: BCS could take the lead in rethinking the categorization of diversity groups based on self-reported identity following the changes in race, ethnicity, gender, and disability classifications by the US Census Bureau.

The categorizations used to collect demographic data reflect NSF policy decisions. BCS will inform that policy where appropriate. BCS has supported scientific efforts to clarify issues of race, such as the American Anthropological Association's RACE: Are we so Different? Project, <http://www.understandingrace.org/about/index.html>.

Recommendation: NSF should increase efforts to diversify its population of program officers.

Agreed, and BCS is active in its recruiting of program officers from groups traditionally underrepresented in science. We will continue to request the assistance of individuals and organizations, including the SBE Advisory Committee, as we attempt to identify members of underrepresented populations who might serve as program officers.

1.7 Stewardship of Science

Recommendation: BCS/SBE should distribute the NSTC report "Social, Behavioral, and Economic Research in the Federal Context" (digital and hard copy) widely among Congress and congressional staff, university presidents, and the federal agencies.

Agreed. Arrangements are currently being developed to distribute the NSTC report "Social, Behavioral and Economic Research in the Federal Context" to the groups listed above, as well as others (e.g. professional organizations).

Recommendation: The NSTC report provides excellent information for understanding the broader impacts criterion. We recommend its use as a resource for PIs as they develop their proposals.

Agreed. When we notify our communities about the availability of this report, we will highlight its relevance for understanding broader impacts.

In addition to the above recommendations, the COV also put forth many helpful suggestions. Although these were not presented as formal recommendations, the division would like to offer its comments.

In the current economic downturn, the COV raised concerns about losing a generation of scientists. They suggested that enhanced support for post-docs might be one approach to keeping new PhDs in the system.

The BCS division agrees that this would indeed be one avenue to pursue in some scientific disciplines. The SBE directorate is continuing its support of the Minority Post-

doctoral Fellowship program. We expect that at least for the short term ARRA dollars will help to support an increased number of post-docs.

In consideration of ways to improve the COV process, the COV notes that the user interface of the COV module is far from ideal.

The EJ interface falls outside the purview of the BCS division; however, we have communicated these concerns, among others that were highlighted during the COV, to the Office of Integrative Activities, which oversees the COV process at NSF. It may be possible to establish COV modules for each program rather than the division as a whole for the next COV. This would reduce the number of documents that each member sees when they open the module. BCS division leadership will keep these concerns in mind for future COVs.

The COV held a short discussion of BCS infrastructure needs. There appeared to be interest in speeding the diffusion of novel technologies, tools and data sources across the social and behavioral sciences perhaps through established centers. The COV recognizes the importance of a community dialog on the collective needs of the BCS disciplines.

The BCS division appreciates the input of the COV in the discussion of the infrastructure needs of our sciences. Indeed the division has started community-based discussion of the infrastructure needs of BCS communities. The first in a series of workshops on infrastructure was held on April 10, and it is hoped that an initial report will be available at the May, 2009 Advisory Committee meeting. This is only the start of an ongoing dialog with our communities.

On a final note, in their discussion of diversity, the COV notes that the level of involvement of women, minorities and new PIs in proposals submitted to BCS was disappointingly below that of NSF as a whole. The COV leaders requested this information on the last day of the meeting and it was hastily gathered. Unfortunately, in that haste, the data provided to the COV was incorrect. The COV reports that " in BCS the participation of women is 17% compared to a Foundation average of 27%; participation of minorities is 3.7% compared to 8.0%; and participation of new-to-NSF PIs and co-PIs is 25% compared to 45%. " In actuality, women were involved in 44% of proposals submitted to BCS during FY06-FY08, minorities were involved in 9.3%, and new investigators were involved in 63%. We apologize for the error and appreciate the opportunity to correct the erroneous perception that the division is underperforming the foundation as a whole in encouraging diversity in its submissions.