

## Division of Behavioral and Cognitive Sciences Response to the 2012 COV Report

### Executive Summary

The Division of Behavioral and Cognitive Sciences (BCS) Committee of Visitors (COV) met October 10-12, 2012 and included the chair and sub-chairs and two members representing each of the ten programs: Archaeology/Archaeometry; Biological 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 members of the COV met in plenary and in program-focused and cross-program sessions and reported out to Dr. Myron Gutmann, Assistant Director of the Directorate for Social, Behavioral, and Economic Sciences (SBE), and Dr. Joanne Tornow, Deputy Assistant Director of SBE, in a closed session. The COV then held an open report-out that was attended by the BCS Division leadership, program officers, and staff.

The following response document considers and addresses each recommendation made by the COV at the Division level.

### Quality and Effectiveness of the Merit Review Process

#### Proposal Review Methods

**1. Recommendation:** BCS programs should experiment with new review cycles according to the documented needs of each program. Institution of experimental review cycles should include a mechanism for evaluating the effectiveness of the new cycle compared with the old, and the impact of the new cycle on the community served.

*Response:* The Division agrees. The demands on each program within BCS are idiosyncratic. The proposal load varies greatly, and some programs accept Doctoral Dissertation Research Improvement Grants and others do not. When considering new merit review processes and procedures, the Division will account for the individual circumstances and needs of the programs. We recognize the importance of integrating assessment into any changes that may be instituted. For all cases of new merit review procedures that have already been instituted, mechanisms and plans for evaluation were included.

**2. Recommendation:** New integrative grants across programs within BCS should continue to be developed as a way to stimulate transdisciplinary research in BCS disciplines.

*Response:* The Division agrees. As past behavior indicates, BCS is committed to building bridges that link and even integrate different sciences. BCS is supportive of Interdisciplinary Behavioral and Social Sciences (IBSS) as well as Building Communities and Capacities (BCC), and was perhaps one of the most active divisions in the INSPIRE activities of FY12. These activities are not just limited to BCS but

*include SBE and beyond. The Division seeks to expand windows of opportunity to support creative thinking across the sciences.*

**3. Recommendation:** Efforts to increase publicity for BCS-funded research should continue because they benefit the public and scientific community, and spread awareness within the Foundation of the reach and impact of BCS research.

*Response:* *The Division agrees. We have and will continue to encourage program officers to instruct their PIs to notify NSF of new discoveries and pending significant publications. We have been very successful in showcasing our sciences in the banner on the nsf.gov website. We also have been very responsive to the call for scientific highlights with the help of our science assistants who have taken on this important responsibility.*

**4. Recommendation:** BCS should continue to explore the use and efficacy of virtual conferencing software. Some panels might benefit from the limited participation of *ad hoc* reviewers via virtual conferencing, especially if the area of expertise of the *ad hoc* reviewer could fill a gap in the scholarly expertise of panel members. In FY13, BCS is conducting at least 8 panels that are either completely virtual or included virtual panelists.

*Response:* *Virtual panels are still a work in progress at NSF. The inclusion of virtual panelists may not be an ideal situation on many fronts but there are circumstances where it can be very efficacious. The Division is currently monitoring new developments in technologies and capabilities that will enhance the reliability and effectiveness of video conferencing.*

**5. Recommendation:** Potential applicants for NSF grants and all proposal reviewers need to have a clearer idea of the role and relative importance of the “broader impacts” and “intellectual merit” criteria in the funding decision.

*Response:* *The Division has and will continue to instruct program officers to stress both merit review criteria in their considerations and to communicate the importance of both intellectual merit and broader impacts to their communities that include potential PIs and potential reviewers. The NSF Grant Proposal Guide has been revised to include changes to the merit review principles that went into effect January 13, 2013. It is incumbent upon NSF to ensure that the scientific community is knowledgeable about these changes, so the Division will encourage its program officers to engage the community in this discussion. The Division also will engage the program officers in a discussion of how to solicit substantive input from the reviewers regarding both merit review criteria.*

**6. Recommendation:** All “program guidelines” should contain a link to the description of the “broader impacts” criterion.

*Response:* *The Division agrees that this is an interesting idea. We will consider this and other possible actions that would promote greater understanding of the role that broader impacts and intellectual merit plays in the merit review process.*

**7. Recommendation:** Proposers in BCS (and throughout the Foundation) should be encouraged to use “broader impacts” to frame the description of their research question, in order that the “broader impacts” criterion can become integrated into the design and conceptualization of the scientific argument of the proposal.

*Response:* The Division will encourage, through discussions with program officers and outreach, the integration of broader impacts into the scientific framework of projects proposed when appropriate. However, this may not always be appropriate, as effective broader impacts may not be integral to the conceptualization of the scientific argument. In addition, although it may be beneficial for PIs to present a more integrative picture, it may still be useful to identify the broader impacts in a way that is accessible and distinct. For example, the revised GPG requires PIs to submit the text of their project summaries into three boxes – one for an overview, one for intellectual merit, and one for broader impacts.

**8. Recommendation:** We recommend that clarification of the nature of the data management plan be included in an upcoming revision of the Grant Proposal Guide, with brief examples provided under FAQs. Following the pattern enunciated in connection with “broader impacts,” we also suggest that the role and relative importance of the data management plan be made clearer to proposers and reviewers.

*Response:* The Division will inform Policy of the COV’s recommendation. The understanding of the role and relative importance of the data management plan continues to evolve. The Division agrees to include discussion of the data management plan in its guidance to panels and to program officers and will encourage program officers to include a discussion of NSF’s data management plan policy in their outreach presentations.

## Questions Concerning the Selection of Reviewers

### Selection of Reviewers

**9. Recommendation:** Program officers should be encouraged to send personalized email messages or make phone calls to potential reviewers, and ask them specifically to agree or decline to review a specific proposal. An agreement to review could then be followed up by an automatically generated reminder message.

*Response:* The COV presents this recommendation within the context of “the issue of achieving adequate numbers of ad hoc reviews for proposals.” At one level, the Division disagrees that this is a significant issue, as reviewer response rates for NSF proposals are approximately 50% in BCS, much higher than the response rates seen in journal requests. Nevertheless, several programs are initiating procedures such as the development of a “College of Reviewers” that will aid in access to a ready pool of reviewers. In line with workload issues, the Division declines to make this action mandatory and rather allows each program officer to use the approach that works the best for him/her and his/her reviewer community.

**10. Recommendation:** BCS should inform ad hoc reviewers when there are positive funding decisions as a means of providing feedback to the reviewers about their work.

*Response: We disagree. The Division finds this recommendation problematic on a number of fronts, the most important being that the current workload of program officers does not allow them the luxury of providing personal feedback to reviewers. Many program officers do provide this information indirectly by publishing lists of awards made through the program in newsletters or listserves associated with professional societies. Thus, reviewers of those awards are informed of the positive funding decision. The Division is also unclear how being informed of the positive funding decision provides feedback to the reviewers about their work.*

**11 Recommendation:** Program officers should consider the institution of a board that would function much like an editorial board of a scholarly journal. This board could be composed of former panel members, active retirees, or other engaged scientists who could support the program by screening uncompetitive proposals before or after *ad hoc* review, providing *ad hoc* reviews, and guiding and mentoring junior proposers with suggestions for improvement of proposals.

*Response: This recommendation is made in the context of addressing the need to “achieve adequate numbers of ad hoc reviews,” which the Division does not consider to be a major problem. Many programs within the Division effectively are doing this informally in that they have a group of reviewers, often former panelists, who can be reliably called upon to provide ad hoc reviews. The new GSS One Plus review cycle has institutionalized this type of arrangement, as the panelists from the Fall panel agree to serve as reviewers in the Spring. The Division is unclear what the COV means by “screening uncompetitive proposals before or after ad hoc review.” The Division disagrees with the idea that NSF should institute a board devoted to mentoring and guiding PIs. Our responsibility at NSF is to judge the quality of proposals. The Division believes that mentoring prospective PIs is best done by universities and professional organizations. Indeed, providing mentorship could result in conflicts of interest as the Foundation’s representatives become invested in particular proposals.*

### **Additional Division Remarks on the Handling of Conflicts of Interest (COIs)**

*Although not provided as a recommendation specifically, the division would like to address concern raised by one of the programs about the handling of Conflicts of Interest (COIs). COV members reviewing one program indicated that there were at least two instances of a “collaborator ad-hoc reviewer” reviewing a grant. The NSF takes great care to minimize the potential for COIs occurring during the review process. All Program Officers are required to complete annual training in the handling of COIs, which necessitates that due diligence be given to control for potential COIs when selecting reviewers and panelists prior to proposal review. However, on occasion, COIs may be discovered during the course of the review process. On the rare occasions when this occurs, this typically leads to reviewers recusing themselves from the discussion, or ceasing to write their review and notifying the Program Officer. In the instances described by the COV members, they noted that the conflicted ad-hoc reviewers declared COIs at the end of the review, while stating that they did not believe this influenced their impartiality. Further, the COV members noted that the reviews stayed in the jacket that the panel considered. We cannot address the particulars of this criticism without knowing the specific proposals the COV members referred to. These reviews may have been noted as COIs in the review record and, depending on when the COI was noted, the panelists asked not to consider them, or not even having access to view them, during their deliberations. It is possible that the COV members were unaware that reviews marked as COIs remain a part of the internal record*

visible to NSF staff (and to COV members, during the course of their evaluation) in eJacket, but once noted as COIs, these reviews are not visible via the Interactive Panel System, nor released to the PI. It is worth noting that across the whole of the division, the vast majority of the programs were commended for the care taken to minimize COIs, ensuring the fair review of proposals within this COV period.

## Questions Concerning the Management of Programs

### Management of Programs

**12. Recommendation:** We concur with the two previous COV panels that each program needs a permanent program officer.

*Response:* The Division agrees with this recommendation as a general goal, but there are many factors to consider in finding the right balance of permanent and rotating program officers. At a basic level, hiring of permanent program officers is constrained by the number of FTEs available. This requires the Division to be judicious in its selection of permanent program officers. Just as universities would not grant tenure without significant evidence of success, the Division needs ample evidence of a person's ability to perform the duties and functions of a program officer before hiring a person as permanent. Many rotators also serve as IPAs, which prevents them from being hired as permanent employees for one year after their IPA ends. As it is not possible to have every program staffed by a permanent program director, the Division has taken steps to mitigate the impacts of program officer turn-over. When possible, overlapping terms are arranged so that outgoing program officers can orient incoming program officers to the program. Additionally, a weekly round table meeting is offered for new program officers and staff, providing mentorship, camaraderie, and the opportunity to discuss timely issues pertaining to program management. Intensive training courses and program officer "boot camps" on subjects such as Merit Review Basics are offered by the Foundation several times a year to accommodate the needs of incoming program officers across the Foundation.

## Portfolio Review

### CAREER awards

The following recommendations concerning the CAREER program are made to the Foundation, not SBE/BCS, and are beyond the control of the Division.

**13. Recommendation:** The Foundation should make a dedicated pool of funding for CAREER awards available to Directorates in order to help defray the costs of such awards, especially for programs with small core budgets.

*Response:* The Foundation houses the review and funding of CAREER proposals in their intellectual programmatic homes to ensure that those proposals receive expert peer merit review. Funding CAREER awards has always been an issue with SBE, given the smaller program budgets. The Division will participate in ongoing discussions with others in NSF regarding the relative balance of resource investment among a broad range of funding mechanisms.

**14. Recommendation:** The impact of CAREER awards on individual research programs and career trajectories should be evaluated, both during and after the completion of the award across the Foundation so that their merit can be empirically assessed.

*Response:* The CAREER program has its own review by a Committee of Visitors and the CAREER Coordinating Committee has conducted an external review of the effectiveness of the program.

### Doctoral Dissertation Research Improvement Grants (DDRIGs)

**15. Recommendation:** Programs within BCS should consider appointment of an “advisory board” that could assist program officers in the review of DDRIG and the mentoring of proposers. Members of the “advisory board” could be contacted by DDRIG proposers before their submission or after an unsuccessful submission in order to provide advice and mentoring.

*Response:* We disagree. As mentioned earlier, the Division has misgivings as to its roles and responsibilities vis-à-vis mentoring of PIs. Programs may appear to be conflicted if they simultaneously work to assist PIs in the preparation of a proposal and then sit in judgment of that proposal. Professors, universities, and professional societies are in a better position to mentor.

### Portfolio composition, including interdisciplinary and cross-directorate programs

**16. Recommendation:** Programs within BCS, and BCS as a Division, should continue to investigate and promote the creation of new inter- and transdisciplinary programs and initiatives in order to promote integrative science, enhance funding opportunities for BCS scientists, and reduce competition between BCS programs for funding.

*Response:* The Division agrees and will continue to promote opportunities to encourage and support interdisciplinary and integrative science. BCS continues to be active in INSPIRE and IBSS. Furthermore, the Division is actively rethinking staffing needs. For example, the Division is currently recruiting a program officer in Environmental Behavioral and Social Science who would have primary responsibility over programs related to sustainability.

**17. Recommendation:** Evaluation of “transformational” research initiatives is important. Toward this end, exploration of methods of evaluation should be pursued, including, possibly, comparison of citation rates associated with publications from a limited number of core and transformational programs.

*Response:* The Division agrees with the COV in the importance of evaluating research initiatives, however, the scope of this question is beyond the Division. The Foundation is aware of the need for evaluation and is pursuing new means to accomplish the task of monitoring progress and results of transformational research initiatives.

**18. Recommendation:** Variation in program size should be acknowledged and respected as a product of deliberate decisions. Programs should be staffed according to size and complexity and larger programs should be supported with program officers and support staff commensurate with their needs.

*Response:* The Division, as outlined in the BCS Strategic Plan, considers internal factors such as proposal load and external factors such as the structure of the scientific field in decisions regarding staff. To the degree that we have flexibility (e.g., FTEs available), larger programs are supported by more staff. For example, in the years covered by this COV, the Division added a program officer to the Cultural Anthropology program in response to the increased proposal load on that program. Since the years covered by this COV, the Division has assumed responsibility for the Science of Learning Centers program, a highly complex and large program, which has added to the demands on staffing resources.

### **Additional Division Remarks on Portfolio Composition**

In addition to the above specific recommendations, the Division would like to respond to an additional concern raised by some COV members during the review process about the potential for subdisciplinary bias within the portfolio of awards. For one program, it was noted that the award profile did not accurately reflect the relative size of some subareas within the field. It was suggested that this potential bias in the award portfolio was based on the Program Officers' partiality towards his/her own area of interest. Another program's members suggested the possibility that "impression bias" may serve to limit submissions to the program based on the reputation of the program's historical funding trends. The division has looked at where biases may be thought to exist and it has been determined that the portfolio reflects the proposal submissions, not any bias in the review/award process. However, concerted efforts continue to be made by all programs to enhance outreach to those areas that are currently underrepresented in the portfolio.

### **Diversity**

**19. Recommendation:** In light of the many challenges involved in increasing diversity in the NSF workforce, and among NSF grantees and panelists, BCS should continue to contribute to and benefit from the Science of Broadening Participation. These efforts should include BCS involvement in crossdirectorate programs aimed at increasing diversity in the STEM pipeline through formal and informal education programs at all educational levels.

*Response:* The Division agrees and is proud to have played a significant role in the initiative of the Science of Broadening Participation. The intellectual home of this activity is within BCS and the Division provides more support than other units in SBE each fiscal year. The Division is committed to promoting diversity and inclusion. For example, the Division Director is participating in a planning workshop on the development of a minority STEM curriculum development program called "Genetics and Genealogy: Teaching Evolution and Human Diversity to Middle School Students."

## **Questions for Division-Level Discussion**

**20. Recommendation:** We ask that these ideas and proposals be discussed among BCS and SBE staff, and that they be used to catalyze discussion about new inter- and transdisciplinary programs involving the Division.

- 1.7.1. Idea 1: Human-environment interactions through time:
- 1.7.2. Idea 2: Human movements, mobility, and interactions through time:
- 1.7.3. Idea 3: Long-term study of human development through the lifespan:
- 1.7.4. Idea 4: Human Interaction with Technology:
- 1.7.5. The Role of Institutes and Conferences:
- 1.7.6. New Transformative Methods for the BCS Sciences:
- 1.7.7. New Transformative Databases for the BCS Sciences:

*Response: These ideas will be discussed at a series of BCS All-Hands meetings.*

## Other Topics

### Other Issues: Improvements to the COV Process

**21. Recommendation:** Future COVs should be able to access easily the titles and abstracts of all submitted proposals, and have the ability to retrieve the full text of all submitted proposals. In order for this recommendation to be effective within the time frame of a COV, improvements in proposal indexing and retrieval at the Foundation (FastLane) level are needed.

*Response: Unfortunately, the system limits the Division to 1000 proposals for all of BCS. It may be possible to provide COV members with a list of proposals submitted during those years if we can ensure that COI rules are upheld. The Division will send the COV's recommendation with regard to FastLane to the appropriate parties within the Foundation. More generally, please note that the COV process is currently being reviewed.*