Division of Behavioral and Cognitive Sciences (BCS)
Response to the 2019 Committee of Visitors (COV) Report

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The COV convened at the National Science Foundation (NSF) Headquarters from September 11 to 13, 2019. It was led by a chair (Dr. Nilanjana Dasgupta) and two co-chairs (Dr. Aina Puce and Dr. Agustin Fuentes) with 22 additional members who evaluated the 11 BCS programs (2 reviewers per program): Archaeology, Biological Anthropology, Cognitive Neuroscience, Cultural Anthropology, Developmental Sciences, Documenting Endangered Languages, Geography and Spatial Sciences, Linguistics, Perception Action and Cognition, Science of Learning, and Social Psychology.

The members of the COV met in plenary and in program-focused sessions and reported out to Dr. Arthur Lupia, Assistant Director of the Directorate for Social, Behavioral, and Economic Sciences (SBE), and Dr. Kellina Craig-Henderson, Deputy Assistant Director of SBE, in a closed session. The COV then held an open session that was attended by the BCS Division leadership, Program Officers, and staff. The Division thanks the COV for its suggestions and recommendations.

Key Findings of the COV

- (1) The COV finds the activities across all 11 programs to be robust and effective. Management of the programs, structure of the assessment processes, and stewardship of available funds have been undertaken in an effective and professional manner. The BCS Division is poised to contribute substantially to ongoing activities of other Directorates at the NSF including SBE, by continuing its trajectory and also by incorporating suggested modifications and improvements summarized in this review.

  BCS Response: *We appreciate the COV's overarching findings and will continue with our management strategy while also working to incorporate the suggested modifications and improvements where and when possible.*

- (2) With respect to the merit review process, we suggest that each BCS program develop and optimize internally consistent guidelines and exemplars for the Broader Impacts criterion.

  BCS Response: *The National Science Board (NSB) has provided guidance on Broader Impacts, and BCS leadership will continue to work with programs to provide guidance to investigators and reviewers to ensure that program outreach and representation addresses Broader Impacts adequately. Exemplars are avoided as the NSB encourages PIs to consider a wide range of Broader Impacts.*

- (3) Each program should assess whether there is any association between the number of reviews and funding rate for proposals.

  BCS Response: *Many variables result in the number of reviews a proposal receives, and likewise many variables are considered regarding whether a proposal is funded or not. Given the*

assessment of the COV, BCS will investigate ways to assess the potential relationship between number of reviews and funding rate.

- (4) We recommend recording and reporting aggregated data on panel characteristics (e.g., geographic location of reviewers, institution type (public/private), academic rank, sub-discipline, gender, and race/ethnicity) for review by the division, directorate, and next COV.

  BCS Response: *BCS is actively engaged in evaluating processes to encourage panelists to submit their demographic data. Starting during the fall of 2019, BCS programs have been asked to provide more information about their proposed panelists and these are reviewed as part of the panel slate approval process to ensure both breadth of diversity within the panel in terms of expertise and other characteristics.*

- (5) With respect to equity in funding support and representation across the programs and investigators, we suggest that BCS assess the ratio of total proposals submitted to each program relative to the program's total annual budget, as well as the cost of doing that type of research, to redress any imbalances.

  BCS Response: *Addressing issues of proposal load and equitable distribution of resources is an on-going process in the Division and throughout NSF. In addition to relative numbers of proposals, national priorities and emerging areas of transformative science are also considered.*

- (6) We recommend that BCS more effectively collect demographic data on all applicants (PI and co-PI) and compare these data to earned doctorates in their respective fields to ensure that BCS is providing equitable access to funding support.

  BCS Response: *Self-reported demographic data is collected by NSF, though its utility is constrained by its validity. BCS will work internally to see whether a consideration of information about earned doctorates (as collected by NCSES) is a useful comparison given that doctoral fields and the science represented by BCS do not always align. It is also important to recognize the limited utility of an earned doctorate measure, since not all those with doctorates take positions that are eligible to compete for BCS funds.*

- (7) We encourage all programs in BCS to develop outreach and engagement projects, a few of which already have been funded by SBE programs (e.g., IDEAS program funded by Biological Anthropology and SPARK Society funded by Perception, Action, Cognition) in order to develop and secure more robust participation by underrepresented groups in the NSF funding process.

  BCS Response: *Developing and recruiting the best individuals from all backgrounds to our sciences is of utmost importance. We will assess the functioning of previously funded engagement projects and explore opportunities for additional outreach and engagement to develop more robust participation by underrepresented groups.*

- (8) Finally, given the impending move of the Documenting Endangered Languages (DEL) program under the Linguistics umbrella, we urge the creation of a dedicated Program Officer (PO) position within Linguistics to ensure the continued specialized process of nurturing and maintaining relationships with diverse institutions and Indigenous scholars and communities.

BCS Response: *The repositioning of Documenting Endangered Languages within Linguistics is designed to strengthen that program's core scientific enterprise while being responsive to overall Division needs. We recognize the importance of NSF's special relationship with indigenous scholars and communities, and we are working to support and enhance it on a foundation-wide basis.*

Part I: Quality and Effectiveness of the Merit Review Process

RECOMMENDATION 1: Use panel procedures that best balance the pros and cons and are appropriate for each BCS program. If virtual meetings are used, keep them small and ensure that program officers play an active facilitation role to work through conflicting reviews.

BCS Response: *The Division is dedicated to learning about the pros and cons of virtual and in-person panels and will work with Program Officers to utilize the best panel format for each situation.*

RECOMMENDATION 2: We suggest that each BCS program develop an outline of what it considers the most important dimensions of broader impacts and a set of prompts associated with these dimensions (e.g., public outreach, education of trainees, application of research findings, etc.). Include this information in future solicitations and draw prospective principal investigators and reviewers' attention to it. A single proposal may not address all types of broader impact, but it should be clear from the writing and evaluation which types of broader impacts are covered.

BCS Response: *The National Science Board guidance on Broader Impacts is comprehensive. Programs can use this material to inform and discuss Broader Impacts with their reviewers and panelists. Focused conversations about the role of Broader Impacts in funding decisions are on-going during regular division staff meetings and post-panel debriefs between BCS leadership and program officers.*

RECOMMENDATION 3: Nudge reviewers to respond to all online review questions/prompts.
We found the number of reviews to be quite variable (3 -7) both within or across programs. We understand that proposals that span disciplines and programs might have more reviews, and that these are often responding to program announcements that span sub-disciplines of BCS or cut across directorates. That said, however, for a couple of programs, the COV wondered if there might be an association between the number of reviews and funding decisions. Specifically, COV members reviewing some programs noted that it appeared that if a proposal had a small number of reviews, it had a higher chance of being funded. Conversely, another COV team thought the opposite: for proposals that had a smaller number of reviews, one bad review could eliminate its chances of securing funding.

BCS Response: *Program officers encourage reviewers to complete all aspects of the review. This is easier with panelists than ad-hoc reviewers, and is an issue recognized by NSF. The numbers of reviews are variable due to co-reviewing, as noted by the COV, as well as the vagaries of ad-hoc review responses. The Division will review possible association between number of reviews and funding decisions. Program officers are keenly aware of the challenges of a bad review having undue influence and mitigate against this challenge as best as possible.*

RECOMMENDATION 4: Look for inadvertent associations between the number of reviews and funding rate. Is a small (or large) number of reviews associated with a lower probability of funding? This information should be reviewed by program officers and be made available to future Committees of Visitors.

BCS Response: *There are multiple reasons for differential numbers of reviews. The division will continue to review relationships between numbers of reviews, other factors and funding outcomes.*

RECOMMENDATION 5: To ensure the future success of Documenting Endangered Languages (DEL), in light of its new home within the Linguistics program, we recommend that the NSF have a dedicated program officer whose job is to maintain and expand the previous DEL program officer's practices of outreach and relationship building to continue to attract principal investigators from tribal colleges and other diverse institutions. This program officer needs to have relevant disciplinary expertise, which may be different from that of program officers in the main Linguistics program.

BCS Response: *All program officers are expected to engage in outreach, not only for their program but for the Division, Directorate, and NSF, in addition to their program management duties. The Division encourages outreach and relationship-building to increase diversity. The Division is working with NSF as a whole to support and encourage proposals from tribal colleges and other diverse institutions.*

RECOMMENDATION 6: Make the program officer's analysis available to principal investigators. When there are conflicting opinions in reviews, program officers should encourage review panels to provide guidance to principal investigators explaining what they should prioritize to strengthen resubmissions.

BCS Response: *The review analysis is an internal document and may not be shared in toto with investigators. However, division leadership encourages program officers to include PO Comments that contain essential feedback to the PIs (derived from the RA) when they process declined proposal jackets. It is important to note that following NSF policy, resubmissions are treated as new proposals.*

RECOMMENDATION 7: The Committee of Visitors would like to see better documentation of phone and email conversations with principal investigators logged in diary notes in e-Jackets, especially conversations before proposal submission and after decline notifications.

BCS Response: *We encourage post-decline communication and POs are encouraged to add this documentation to the proposal jackets. However, it is very difficult to document all communication between investigators and Program Officers that takes place before proposal submission. There is, for example, no place in the referenced workflow to archive ahead-of-submission communication. Attempts to integrate pre-submission conversations into e-Jackets after-the-fact will increase PO workloads while having limited effects on funding outcomes.*

RECOMMENDATION 8: We ask that each program (via the program officers) articulate their triage system and make that explicit to future Committees of Visitors through their individual program reports.

BCS Response: *We will ask programs to provide more information about triage process in future COV program reports. Flexibility is provided in the Proposal and Award Policies and Procedures Guide (PAPPG).*

RECOMMENDATION 9: We ask that program officers clarify how programs guard against this moving target problem for resubmissions.

BCS Response: *The review process at NSF is not the same as the review process for journal publications since each proposal is treated as a new submission. Officially, there are no resubmissions as per official NSF guidance provided in the Proposal and Award Policies and Procedures Guide (PAPPG).*

RECOMMENDATION 10: We also recommend that each program have at least one permanent program officer to provide continuity in the review process and program stability.

BCS Response: *Staffing decisions are made with many considerations, many of which lie beyond the control of the Division. Although permanent program officers provide stability, rotators bring fresh ideas and new networks and connections to a program that help it stay up to date. For programs with more than one program officer, having one as permanent is a priority.*

Part II. Selection of Reviewers

RECOMMENDATION 11: We request that programs collect and report to future COVs, aggregated data on panel characteristics – e.g., geographic location of reviewers, institution type (public/privates), principal investigator rank, sub-discipline, gender, and race/ethnicity. For self-reported demographics where there tends to be missing data, we believe response rates will improve if, before asking for self-reports, prospective reviewers are offered a rationale for why NSF requests demographic information from potential reviewers, and how this information is utilized to ensure equity in reviewer selection on multiple dimensions.

BCS Response: *BCS is actively engaged in evaluating processes that can improve the collection of valid data on panel characteristics. Starting during the fall of 2019 BCS programs have been asked to provide more information about their proposed panelists as panel slates are approved. Leadership is providing panelists with the rationale for demographic data collection, and options to improve response rates are being assessed. The Division also needs to work within the framework that NSF uses overall.*

RECOMMENDATION 12: Ensure a more open process of reviewer selection by creating and maintaining a pool of scientists who have volunteered to review. Collect data on volunteers' expertise via access to their CV, institution, rank, geographic location, institution type, rank, sub-discipline, gender, and race/ethnicity, explaining in advance why these data are important and how they will be used. Report this bottom-up process and summary information annually to future Committees of Visitors.

BCS Response: *The Division is exploring a mechanism for collecting more systematic "bottom-up" reviewer information (via a portal on program landing pages), building on the experiences of the PAC program and others at the agency.*

RECOMMENDATION 13: We encourage each program to invite individuals onto review panels (perhaps for 1 year) who represent various underrepresented groups, to increase their exposure to the NSF review process, successful proposals, and further encourage them to submit proposals as PIs in the future (e.g., scientists from states, institutions, and demographic groups underrepresented in the BCS portfolio, including early career faculty). At least one program in BCS uses this strategy; we suggest that this be considered by other BCS programs.

BCS Response: *All programs are actively doing this already whenever possible. The pool of scientists from underrepresented groups in the sciences represented by BCS is variable. In some fields, this pool can be quite small, and over-taxed with service work. Program officers are sensitive to both cultivating this pool but also not over-taxing it.*

RECOMMENDATION 14: Describe the process of resolving conflicts of interest used by each program for future Committees of Visitors.

BCS Response: *BCS programs all adhere to the consistent COI mitigation and resolution guidance as provided by NSF's Office of General Counsel. This process will be made clearer in future COVs.*

RECOMMENDATION 15: The Committee of Visitors encourages BCS to aggregate data across grant proposals and assess the extent to which ratings of "outlier" reviewers impact funding recommendations. We also recommend that BCS assess whether the gender of reviewers, gender of principal investigators, and their interaction have any systematic effects on funding recommendations.

BCS Response: *These are interesting suggestions that will be considered for review where possible given the data available.*

Part III. Management of the Program Under Review

RECOMMENDATION 16: Provide subsequent Committees of Visitors with information regarding the participation of various BCS PIs in the NSF's Big Ideas mechanisms and other large cross-directorate initiatives.

BCS Response: *It is difficult to have a full picture of BCS PIs engagement with all other cross-directorate awards. There is a substantial range of PIs who fit within the potential designation of a BCS scientist, so it is not a simple demarcation within the awards system. In contrast, both the Division and the Directorate keep track of PO participation in these cross-directorate initiatives. All POs are engaged at some level, some more than others, in "extra-programmatic" activities across the agency, and frequently provide updates to other division/ directorate staff.*

RECOMMENDATION 17: We request that all BCS programs document program officers' outreach activities in program reports, the frequency with which they occurred during each Committee of Visitors period, their objectives, and some measured outcomes. This information would have been very useful to the current 2019 Committee of Visitors, and no doubt will be useful for future Committees of Visitors.

BCS Response: *Program officers and division leadership are engaged in regular outreach both for individual programs and for the broader NSF mission. We will ensure that program outreach and representation activities are better documented in the future.*

Comments specific to some programs:

RECOMMENDATION 18: Change the current rotator program officer (PO) for the Cognitive Neuroscience program to that of a [permanent] PO. Our recommendation is consistent with those of the 2015 and 2012 Committee of Visitors.

BCS Response: *We appreciate the recommendation's focus on more stability for the Cognitive Neuroscience program management. The decision to hire a permanent PO vs. a rotator depends on many factors, some beyond the Division's control.*

RECOMMENDATION 19: We encourage SBE to ensure that the intensive pattern of outreach required for the success of the program on Documenting Endangered Languages (DEL) continues via the creation of a dedicated program officer position in Linguistics (the new home for DEL) charged with maintaining and expanding the previous DEL program officer's practices. This involves engaging with scholars of color, especially indigenous scholars, and creating links with a diverse array of institutions.

BCS Response: *The repositioning of Documenting Endangered Languages within Linguistics is designed to foster an improved scientific profile and impact of that program while being responsive to overall Division needs. All program officers engage in outreach not only for their own programs but for the Division as a whole. We are cognizant of the need for additional outreach to current and potential scholars engaged in this area of research. The Division is working to support foundation-wide outreach efforts to diverse communities.*

Part IV Portfolio Review

RECOMMENDATION 20: We request that BCS calculate and assess if the above-mentioned metrics per state (and potentially other metrics) are associated with the number of applications and/or the number of awards to clarify possible reasons for geographical variations in funding rates at BCS.

BCS Response: *We will consider how the suggested metrics can be best calculated and assessed. Many variables go into determining which investigators apply to NSF and why.*

RECOMMENDATION 21: We recommend that BCS Division determine whether there is alignment (or not) between the proportional demographics of PhDs in BCS disciplines and the demographics of the applicant pool and award pool in BCS programs. One way to assess this is to leverage NSF's own data—

use the NCSES survey data on earned doctorates which provides demographics for PhDs earned in disciplines and sub-disciplines that correspond nicely to most, if not all, BCS programs.

BCS Response: *We appreciate the potential benefit of this recommendation and will explore the possibility of this type of analysis with our colleagues in NCSES.*

RECOMMENDATION 22: Prior to collecting self-reported demographics from principal investigators (PIs) we recommend that NSF explain the rationale for asking PIs to provide their demographics, and how these analytics will be used to make equitable reviewing and funding decisions. For the gender question, we suggest adding a non-binary checkbox, a write-in response option for gender identity, and a personal pronoun option, to be more inclusive.

BCS Response: *The Division and individual programs are more explicitly encouraging self-reporting by panelists by providing the rationale to do so. Although there is a federal agency-wide set of demographics used, we will pass on the suggestion to provide a non-binary checkbox for gender reporting.*

RECOMMENDATION 23: We strongly recommend that the demographics of students participating as Co-Principal Investigators on DDRIG grants be tracked, allowing data on future young investigators in BCS to be available for strategic planning of future NSF initiatives.

BCS Response: *The Division will explore how best to track demographic information for graduate student co-PIs on DDRIGs.*

RECOMMENDATION 24: We recommend that that funds be made available to encourage all BCS programs to invite proposals for multi-year workshops and programs aimed at training, mentoring, and supporting URM scientists to write competitive NSF proposals.

BCS Response: *The Division will discuss the possibility and importance of allocating funds toward training, mentoring, and supporting URM scientists. The Division is also engaged with the directorate as a whole in strategies for increasing support for minority serving institutions, which could help with this initiative.*

RECOMMENDATION 25: We ask that BCS assess the ratio of the total number of proposals submitted to each program relative to its total annual budget, as well as the cost of doing that type of research. We ask that BCS use these criteria to rank all programs accordingly and redress any imbalances.

BCS Response: *Addressing issues of proposal load and distribution of resources is an on-going process in the Division, and this will continue in the future, within the constraints that are beyond the Division's control. The absence of real budget increases for the SBE directorate over the last decade makes increasing resources for any program difficult without a compensatory decrease elsewhere. We will assess how best to articulate the cost of different types of research that are funded, which can vary substantially even within a program.*

RECOMMENDATION 26: The Cognitive Neuroscience program might consider refocusing its portfolio, making it more multidisciplinary, focusing on mechanistic studies and analyses of secondary datasets that include very large samples (e.g. Human Connectome Project, Adolescent Brain Cognitive Development, Oxford Brain Biobank).

BCS Response: *We will consider these portfolio options as part of ongoing discussions about the future of the CN program.*

RECOMMENDATION 27: We ask the Developmental Science program to fund infrastructure projects such as the creation of a large shared database of prescreened infants from diverse backgrounds whose parents are willing to participate in research studies. Such a database should be accessible by many investigators for many studies. Smaller infrastructure projects might involve making financial supplements available for PIs to recruit diverse samples by setting up research labs in the community. Science of Learning is a young program that is currently receiving few proposals. This is likely to be an artifact of the transition from large Science of Learning Centers to individual investigator grants.

BCS Response: *We will take under consideration the proposed strategies for expanding the diversity of participants in developmental science studies and incorporate them into discussions about the future of the Developmental Sciences (DS) program. We will encourage the DS Program Officer to point investigators to existing databases and similar resources.*

RECOMMENDATION 28: Science of Learning should conduct a portfolio analysis to assess the boundaries of the program. In parallel, we also recommend evaluating the impacts of former Science of Learning Centers. Both analyses can be used to help define and brand the Science of Learning program, encouraging more proposal submissions.

BCS Response: *The Program Officer for Science of Learning has written an extensive report on the Centers that will help in reviewing progress and opportunities. The program is undergoing portfolio analysis as part of its repositioning as Science of Learning and Augmented Intelligence.*

Part V: Emerging Questions, Open Science, and Communication

1. In the next 10 years, what are the likely emerging areas of inquiry or issues across BCS disciplines that we should pay attention to or prioritize? What infrastructure investments would be needed to support the future of BCS?

The following emerging topics were suggested by COV members from multiple BCS programs and that we believe have significant promise. We have grouped these into thematic areas below:

Topics that touch on societal change

- Climate change and human behavior, including migration, across time and scale, with a focus on coastlines.
- Changes in scientific literacy and science communication as it relates to cognition, behavior, persuasion, and social norms.

- National and global demographic shifts, including aging trends, identity, intergroup processes, community structures, and their impact on human variations in behavior and cognitive processes.
- Social media and its impact on social influence, cognition, behavior, and social mobilization; also the language of social media.
- The societal impacts of big data and artificial intelligence on human cognition and behavior.
- How big data are constructed, for whom, and for what purpose.
- Ancestral languages as indicators of how humans interface with the environment and ecologies.

Topics related to big data and artificial intelligence

- Harnessing and using existing large datasets in neuroscience, genomics and microbiomics to answer social science questions.
- Comparing human intelligence and artificial intelligence. Applying principles of human learning and development to AI.
- Funding the creation and maintenance of very large data sharing, or data access, infrastructure for disciplines in BCS programs (this would require new funding streams, not the re-direction of existing funds for awards).
- Advancing knowledge about the actual mechanisms and processes that convert dynamic information patterns in the brain to actual behavior e.g. “Putting the brain back into the body.”

Capacity building

- Developing, testing, and scaling interventions that increase the participation of URM and first-generation scientists, in addition to scientists from institutions underrepresented in the BCS programs.

2. Issues related to open access to data from NSF-funded research have been the focus of agency and community discussion. What steps should BCS take, if any, to support this part of the open science agenda?

The COV had an animated and lengthy discussion about issues in open science during which many perspectives and concerns were expressed. We defined open science in terms of open access to data, meta-data, research materials, and publications/products.

We ask that NSF facilitate ways to have the behavioral and cognitive science community connect with, and learn from, other organizations and disciplines that have already been engaging this topic so that we do not reinvent the wheel. There are existing NSF-initiatives that might be drawn on as examples, to further elucidate concerns and also identify solutions to various open science problems. (For example, the NSF-funded LIGO Gravitational Wave Open Science Center, which also has arrangements with scientific funding organizations in France, Italy, Netherlands and other EU countries might be a source of some ideas. See: https://www.gw-openscience.org).

In addition, below are some concrete ideas about open science from members of this COV:

- Develop infrastructure for shared access to human subjects for research, outside of WEIRD populations (Western Educated Industrialized Rich Democratic) and university adjacent populations.
- Fund investigators who will formalize data structure, metadata, and workflow so that it is easy to analyze by different investigators in the science community.

- Host workshops at the divisional level or program level to assist PIs to develop systems of storage and data sharing that include virtual and/or material data in compliance with their data management plans. Lots of open questions remain about what parameters of open access make sense, and how to ensure that PIs who made their data publicly available get recognition for their work. One strategy might be to create guidelines asking secondary users to explicitly cite curated databases as valid intellectual contributions.
- Consider a "Dear Colleague Letter" aimed at funding an initiative to archive complex research material (e.g., virtual reality materials). There is also a need to consider how to best deal with licensing concerns related to archiving stimulus materials coming from online sources.
- NSF (BCS) might ensure that in the final report of grants, PIs are prompted to indicate whether they fulfilled their original data management plans. Are their study materials and data organized with metadata and archived in an easily accessible place? It is suggested that PIs be asked to provide a URL and instructions as to how to access those archived materials.
- NSF (BCS) might assist in developing a comprehensive data archive to facilitate re-analysis and meta-analyses.
- We believe that more outreach is needed to make our BCS community aware of MIDSCALE I and II as funding mechanisms for large infrastructure projects that could support some of the above-mentioned ideas.

3. There are various ways that programs communicate about funding opportunities and awards to prospective PIs and the public. Are there ways that BCS can better facilitate these efforts?

Communication with the public

1. Expand information dissemination of deliverables from BCS research on social media platforms (Twitter, Facebook) to engage larger public involvement and provide access to scientific facts in a form that is understood by the general public and school children, to foster science literacy. The BCS community of scientists using social media could act as influencers and help the general public access scientific information in ways that are understandable to them.
2. Create informative science-application "nuggets" curated and disseminated through SBE and amplified by the BCS community. The "nuggets" could be written so as to be understandable by the general public.
3. Coordinate communication efforts between institutional news offices and SBE news office, so that institutional news offices also act as amplifiers for scientific findings.

Communication with the scientific community at large

4. Share information with scientific community through social media, with particular attention to scientists at smaller institutions that are underrepresented in the NSF funding profile.
5. Cultivate a group of scientists who can serve as "NSF ambassadors" and also informal mentors to scientists at underrepresented institutions. We already have examples some of which were funded by NSF (e.g. IDEAS, SPARK, SING), and discussed earlier in this report.
6. Start NSF (and BCS) sanctioned blogs or e-newsletters from programs sharing new funding opportunities and common grant-writing questions (What are good broader impacts? What constitutes a good data management plan? What are the most important issues related to open science in a particular research sub-field? etc.)
7. Can POs be available via virtual "NSF office hours"? This could be limited to one hour/week.
8. Provide more guidance at the preproposal stage to prospective early career PIs and other new PIs from institutions that do not have a funding history. Normalize feedback seeking from prospective PIs through social media posts and other communications.

9. Offer more online programming involving POs to promote and disseminate best practices related to successful grant writing.

BCS Response: *We thank the COV19 for their thoughtful recommendations in response to these three wide-ranging questions. We will consider the options and opportunities for furthering these ideas.*