

**Division of Social and Economic Sciences (SES)**  
**Directorate for Social, Behavioral, and Economic Sciences (SBE)**  
**National Science Foundation**  
**Committee of Visitors**  
**May 24-26, 2021**

## **Introduction**

The Committee of Visitors (COV) for the SES met from May 24-26, 2021 in the Division's first ever virtual meeting of a COV. The charge to the committee was as follows: "NSF relies on the judgment of external experts to maintain high standards of program management, to provide advice for continuous improvement of NSF performance, and to ensure openness in the research and education community served by the Foundation. The Committee of Visitors (COV) report provides NSF with the judgment of external efforts in two primary areas: (A) the integrity and efficiency of the processes related to proposal review; and (B) the quality of the results of NSF's investments in the form of outputs and outcomes that appear over time. The COV also explores the relationships between award decisions and program/NSF-wide goals in order to determine the likelihood that the portfolio will lead to the desired results in the future".

Ten programs were reviewed:

- Cultivating Cultures of Ethical STEM;
- Decision, Risk and Management Sciences;
- Economics;
- Law and Social Sciences;
- Methodology, Measurement, and Statistics;
- Political Science;
- Science of Organizations;
- Science, Technology and Society;
- Sociology; and
- Secure and Trustworthy Cyberspace.

## **Committee of Visitors Summary**

The COV thanks the leadership and staff of the Division of Social and Economic Sciences, and the entire Directorate for the Social, Behavioral, and Economic Sciences for providing a welcoming and well-organized platform from which to assess the merit review process. Throughout the review process the leadership and staff was responsive to our requests and queries about the nature and scope of the merit review process. The COV appreciated the generosity and openness with which the members of SES and SBE received our range of questions. In sum, the COV came to the following four main conclusions about the Division of SES:

1. The SES programs are thoughtfully managed and well-organized. They direct a review process replete with integrity and concern for the public trust. The result is high-quality peer review that in many instances results in innovative and transformative science.

2. The Division of SES continues to provide high value to the SBE and the NSF by championing and supporting scientific research addressing key questions about the world in which we live. The forward-thinking SES programs also facilitate the exploration of new scientific terrains and the expansion of knowledge relevant to the nation's future.
3. The SES programs make judicious use of public funds. The programs productively manage limited public funds in an efficient and honest manner that generates the maximum public benefit.
4. The Division of SES is uniquely positioned to advance the NSF mission of developing science and technology to advance the national health, prosperity, and welfare, as well as secure the national defense. Results from SES-sponsored research help to ensure that the scientific and technological enterprise serves the public good, which includes the engagement of marginalized and underrepresented communities.

The primary charge of the COV was to assess the merit review process based on a selection of project proposals submitted to the Division of Social and Economic Sciences. The members of the COV observed the seriousness with which the SES leadership and staff embrace the responsibility of providing an equally fair and rigorous evaluation for every research proposal submitted. In the end, the COV learned a great deal about the merit review process and the commitment of the SES programs to maintaining its high standards.

It has been widely documented that many of the disciplines and fields covered by the SES programs are not representative of the U.S. population in terms of race, ethnicity, gender, and sexuality. Some of the gaps are very large and some fields have made little or no progress in increasing representation over time. As a result, the COV considered diversity to be a paramount issue when assessing the review process and the performance of the program more broadly. Yet, the COV struggled when it came to understanding, assessing, and evaluating how diversity functions within the merit review process. The COV recognized that, according to the second footnote in this report's provided template, "NSF does not have the legal authority to require principal investigators or reviewers to provide demographic data." However, the COV did not agree with the final statement of the footnote contending that "experience suggests that even with the limited data available, COVs are able to provide a meaningful response to this question for most programs."

Other federal agencies appear to be able to effectively collect and make available richer demographic data, suggesting that the NSF can do better. For instance, the National Institutes of Health makes demographic data about both its workforce and its projects available to outside researchers. The limited demographic data about NSF reviewers, panelists, and both awarded and declined projects, significantly hampered the COV's ability to assess the role of diversity in the merit review process. The COV, some of whom are experts in assessing the ways race, gender, sexuality, and multiple forms of difference influence the integrity of evaluative processes, found it difficult, if not impossible, to provide a meaningful assessment of the relationship between the merit review process and the representation of researchers from underrepresented populations. In order to carry out the NSF's commitment to diversity, these data must be acquired and made available to the COV at minimum, but, ideally, the broader research community.

Based on the review of available documents, the COV makes the following recommendations to ensure that the SES merit review continues to provide high value to the SBE and the NSF, and advances the NSF's goals of diversity, equity, and inclusion.

### **Recommendations:**

1. The SES division should undertake its own internal study to evaluate the application and success rates of underrepresented scholars as well as the demographics of evaluators and panels. Such a study could include attention to the barriers or obstacles that discourage submissions from underrepresented groups, and the characteristics of proposals from researchers in these groups that affect their success rates.
2. The SES should fund a study to investigate the considerable underreporting of demographic information, how to increase response rates, and current and emerging statistical methodologies that can create a more accurate picture given current data gaps. It may also be fruitful to seek out best practices regarding the collection of this data at other institutions such as the NIH.
3. The SES should consider requesting that proposals address how the project will advance the NSF's goals of diversity, equity, and inclusion and that reviewers include this information in their assessment of the proposal. DEI statement could be woven into the proposal narratives, but is likely to be more comprehensive if it stands alone like the Data Management Plan. These goals could be advanced in a variety of ways, including through the substance of the research (e.g., developing a systematic understanding of how racial bias is built into technological design), the broader impacts (e.g., helping scientists consider the needs of marginalized communities in their research), and the participants (e.g., diversity in the PIs, co-PIs, or trainees involved in the project). It could be particularly constructive to have proposals explicitly address how the project will increase the participation of underrepresented groups relative to norms in the respective academic disciplines.
4. The SES should further improve outreach to groups that are underrepresented in the fields covered by its programs. One avenue for doing so would be to continue to develop and broaden formal outreach programs to institutions serving Black, Indigenous, and People of Color (BIPOC). More generally, the SES should provide more time for program officers to directly connect with underrepresented populations in order to introduce their programs and offer guidance for proposal success. The NSF/SBE/SES could also consider establishing regional offices or networks of sponsored-research support to help researchers from underrepresented groups, particularly, those working at institutions that lack well-developed offices of sponsored research, prepare proposals.
5. We urge the NSF to develop a data collection policy that enables researchers to perform rigorous scientific analysis on programmatic diversity performance. We recommend incentives to supplement current awards to include members of underrepresented groups as collaborators in extending the scope of awards. Experienced PIs are more likely to embrace collaboration if such resources are provided. The COV prefers to support scholars making these important steps rather than to penalize them for non-compliance.
6. In order to expand the pipeline of students into research careers, particularly those from underrepresented backgrounds, the NSF could consider low-cost funding

mechanisms that would encourage universities to allow PIs to teach small-enrollment courses on topics related to the areas of NSF supported research. It could also make clear that the broader impacts section of any proposal should include a description of how the research will also make its way into the classroom. Such efforts could provide an introduction to the research and knowledge production function in the classroom setting, demystifying the research process and creating access for a broader range of students.

7. In the interest of creating a broader and more diverse pool of reviewers, the SES should:
  - a. Explore the potential for making more use of successful scholars at non-academic institutions as reviewers. In some SES fields, such as economics, a sizable share of new PhDs take positions at non-academic institutions where research is emphasized—such as government agencies and non-profit research organizations. Evidence suggests that the scholar pools at some of these institutions can be more diverse in certain ways than at their academic counterparts. While many of these scholars may never apply for an NSF grant themselves, some have excellent credentials and are eager to engage with the broader scholarly community. For instance, the NSF has made use of reviewers from the Federal Reserve System, but this vast community, as well as others similar non-academic institutions, could probably be utilized further.
  - b. Explicitly study the lessons learned from going virtual during the pandemic. Recognizing that the background materials were clear that most panelists have a preference for in-person meetings, it would still be useful to consider the available evidence regarding whether the virtual model made it easier to engage some pools of scholars—such as those from rural areas or the West Coast, those with complex family responsibilities, or those who are simply very busy. It would also be worth thinking through what advantages (beyond the reduced cost and burden of travel) the virtual model offers. For example, the SES staff mentioned that virtual meetings could be three days instead of two, which some panelists found easier to manage. Finally, some reflections on how the virtual experience could be improved would be useful—is there a way to enable informal networking virtually?
  - c. Develop processes and procedures to improve communications around reviews. COV members felt that some potential reviewers might be more likely to agree to accept if they better understood the role that reviews play in the final proposal assessment. In addition, some direct signals about the typical time commitment might be helpful as potential reviewers (particularly the more conscientious ones) might turn down reviewing because they assume the work and time commitment is substantially higher than what is actually required.
8. The SES should develop a mechanism that provides more transparency and accurate documentation of collaborative funding activity with the SES, SBE, and larger NSF. Although the balance of awards across disciplines appeared to be appropriate, the COV found it difficult to make a precise assessment because many of the projects supported within SES require theories, methods, and approaches that cross several disciplinary boundaries.

9. The SES should develop new pathways and structures to broaden the types of institutions that receive NSF funding. The COV noted that SES awards continue to be concentrated among a small number of institutions.
10. The SES should continue to work to develop new pathways and structures to enable early-career investigators to effectively compete with seasoned NSF award winners. Although the COV judged the balance of awards conditional on quality of the applications to be appropriate, the COV noted that the lower success rates of early-career researchers might be partly related to less familiarity with the process.
11. In order to better equip the next COV to fulfill its duties, we recommend that the SES provide a more in-depth introduction to the actual practice of participating on the COV committee. The orientation for this COV focused on technical and administrative detail with little discussion of how the COV's time would be spent and the expected output.

## FY 2020 REPORT TEMPLATE FOR NSF COMMITTEES OF VISITORS (COVs)

<b>COV Meeting Information:</b>
Date of COV: May 24-26, 2021
Program/Cluster/Section: All Programs
Division: Social and Economic Sciences (SES)
Directorate: Social, Behavioral, and Economic Sciences (SBE)
Number of actions reviewed: 428 jackets (373 Projects) Awards: 88 jackets (75 projects) Declinations: 330 jackets (288 projects) Other: 10 Return Without Review jackets
Total number of actions within Program/Cluster/Division during period under review: 6790 jackets (5925 projects) competitive actions Awards: 1550 jackets (1346 projects) Declinations: 5240 jackets (4579 projects) Other: 70 Return Without Review jackets
Manner in which reviewed actions were selected:  NSF COV Guidance encourages a sample of approximately 5% of actions for COV review. A complete list of 6790 competitive proposals managed under SES from fiscal years 2016 to 2019 was exported from the NSF COV Dashboard. Data were cleaned by coding variant program elements into the ten "core" program categories or an "Interdisciplinary" category of non-core programs. The list was filtered to display only distinct "projects" (lead or non-collaborative jackets), sorted by program and proposal ID number, and labeled consecutively from 1 to 5925. Random.org was used to generate a list of 360 random integers between 1 and 5925 that comprised the initial selection. Pivot tables in MS Excel were used to check that the sample included at least 5% of projects under each program, and additional random integer lists were generated to ensure sufficient representation of proposals for the DRMS and SaTC programs, and the Interdisciplinary proposal category, yielding a total of 371 projects. The selected actions were then screened for COIs with COV members that would prevent assignment to panel, resulting in removal of 8 projects. No replacements were selected because all programs remained above the 5% threshold. When "non-lead" components are included these 363 projects represent 418 separate jackets.  Because the COV Dashboard excludes "Return without Review" (RWR) jackets, a separate list was generated by search in eJacket, yielding 70 jackets. These were ordered by proposal ID and 10 were selected as the 3 <sup>rd</sup> (randomly generated position) of every 7 proposals in the sequence. This alternate approach was used to minimize duplications in RWR proposal selections due to submitters sending repetitive requests in a narrow time span.

## COV Membership

<b>Title</b>	<b>Name</b>	<b>Affiliation</b>
COV Chair	Fouché, Rayvon	Purdue University
COV Co-Chair	Dynan, Karen	Harvard University
COV Co-Chair	Hutchings, Vincent	University of Michigan
COV Member	Allgood, Sam	University Of Nebraska-Lincoln
COV Member	Baumgartner, Frank R	University of North Carolina at Chapel Hill
COV Member	Blanck, Peter D	Syracuse University
COV Member	Caine, Kelly	Clemson University
COV Member	Carter, Prudence	University Of California Berkeley
COV Member	Chapman, Gretchen B	Carnegie Mellon University
COV Member	Gallant, A. Ronald	Pennsylvania State University
COV Member	Howard, Robert M	Georgia State University
COV Member	Johnson, Deborah G	University of Virginia
COV Member	Kiecolt, Jill	Virginia Polytechnic Institute
COV Member	Kossek, Ellen	Purdue University
COV Member	Levine, Aaron D	Georgia Institute of Technology
COV Member	McNamara, Kathleen	Georgetown University
COV Member	Mora, Marie	University Of Missouri-Saint Louis
COV Member	Nusser, Sarah M	Iowa State University
COV Member	Parthasarathy, Shobita	University of Michigan
COV Member	Phadke, Roopali	Macalester College
COV Member	Polonetsky, Jules	Future of Privacy Forum
COV Member	Reyna, Valerie F	Cornell University
COV Member	Zaccaro, Stephen J	George Mason University

**CORE QUESTIONS and REPORT TEMPLATE**  
**for**  
**FY 2020 NSF COMMITTEE OF VISITOR (COV) REVIEWS**

**Guidance to the COV:**

The COV report should provide a balanced assessment of NSF's performance in the integrity and efficiency of the processes related to proposal review. Discussions leading to answers of the Core Questions will require study of confidential material such as declined proposals and reviewer comments. COV reports should not contain confidential material or specific information about declined proposals. The reports generated by COVs are made available to the public.

We encourage COV members to provide comments to NSF on how to improve in all areas, as well as suggestions for the COV process, format, and questions. For past COV reports, please see the [NSF Committee of Visitors website](#).

**MERIT REVIEW CRITERIA**

An understanding of NSF's merit review criteria is important in order to answer some of the questions on the template. Reproduced below is the information provided to proposers in the Grant Proposal Guide about the merit review criteria and the principles associated with them. Also included is a description of some examples of broader impacts, provided by the National Science Board.

**1. Merit Review Principles**

These principles are to be given due diligence by PIs and organizations when preparing proposals and managing projects, by reviewers when reading and evaluating proposals, and by NSF program staff when determining whether or not to recommend proposals for funding and while overseeing awards. Given that NSF is the primary federal agency charged with nurturing and supporting excellence in basic research and education, the following three principles apply:

- All NSF projects should be of the highest quality and have the potential to advance, if not transform, the frontiers of knowledge.
- NSF projects, in the aggregate, should contribute more broadly to achieving societal goals. These broader impacts may be accomplished through the research itself, through activities that are directly related to specific research projects, or through activities that are supported by, but are complementary to, the project. The project activities may be based on previously established and/or innovative methods and approaches, but in either case must be well justified.
- Meaningful assessment and evaluation of NSF funded projects should be based on appropriate metrics, keeping in mind the likely correlation between the effect of broader impacts and the resources provided to implement projects. If the size of the activity is limited, evaluation of that activity in isolation is not likely to be meaningful. Thus, assessing the effectiveness of these activities may best be done at a higher, more aggregated, level than the individual project.



With respect to the third principle, even if assessment of Broader Impacts outcomes for particular projects is done at an aggregated level, PIs are expected to be accountable for carrying out the activities described in the funded project. Thus, individual projects should include clearly stated goals, specific descriptions of the activities that the PI intends to do, and a plan in place to document the outputs of those activities. These three merit review principles provide the basis for the merit review criteria, as well as a context within which the users of the criteria can better understand their intent.

## 2. Merit Review Criteria

All NSF proposals are evaluated through use of two National Science Board approved merit review criteria. In some instances, however, NSF will employ additional criteria as required to highlight the specific objectives of certain programs and activities.

The two merit review criteria are listed below. Both criteria are to be given full consideration during the review and decision-making processes; each criterion is necessary but neither, by itself, is sufficient. Therefore, proposers must fully address both criteria. ([PAPPG Chapter II.C.2.d.\(i\)](#) contains additional information for use by proposers in development of the Project Description section of the proposal.) Reviewers are strongly encouraged to review the criteria, including PAPPG Chapter II.C.2.d.(i), prior to the review of a proposal.

When evaluating NSF proposals, reviewers will be asked to consider what the proposers want to do, why they want to do it, how they plan to do it, how they will know if they succeed, and what benefits could accrue if the project is successful. These issues apply both to the technical aspects of the proposal and the way in which the project may make broader contributions. To that end, reviewers will be asked to evaluate all proposals against two criteria:

1. **Intellectual Merit:** The Intellectual Merit criterion encompasses the potential to advance knowledge; and
2. **Broader Impacts:** The Broader Impacts criterion encompasses the potential to benefit society and contribute to the achievement of specific, desired societal outcomes.

The following elements should be considered in the review for both criteria:

1. What is the potential for the proposed activity to:
  - a. Advance knowledge and understanding within its own field or across different fields (Intellectual Merit); and
  - b. Benefit society or advance desired societal outcomes (Broader Impacts)?
2. To what extent do the proposed activities suggest and explore creative, original, or potentially transformative concepts?
3. Is the plan for carrying out the proposed activities well-reasoned, well-organized, and based on a sound rationale? Does the plan incorporate a mechanism to assess success?
4. How well qualified is the individual, team, or organization to conduct the proposed activities?

5. Are there adequate resources available to the PI (either at the home organization or through collaborations) to carry out the proposed activities?

### 3. Examples of Broader Impacts

The National Science Board described some examples of broader impacts of research, beyond the intrinsic importance of advancing knowledge.<sup>1</sup> “These outcomes include (but are not limited to) increased participation of women, persons with disabilities, and underrepresented minorities in science, technology, engineering, and mathematics (STEM); improved STEM education at all levels; increased public scientific literacy and public engagement with science and technology; improved well-being of individuals in society; development of a globally competitive STEM workforce; increased partnerships between academia, industry, and others; increased national security; increased economic competitiveness of the United States; and enhanced infrastructure for research and education. These examples of societally relevant outcomes should not be considered either comprehensive or prescriptive. Investigators may include appropriate outcomes not covered by these examples.”

**INTEGRITY AND EFFICIENCY OF THE PROGRAM'S PROCESSES  
AND MANAGEMENT**

Briefly discuss and provide comments for *each* relevant aspect of the program's review process and management. Comments should be based on a review of proposal actions (awards, declinations, returns without review, and withdrawals) that were *completed within the past four fiscal years*. Provide comments for *each* program being reviewed and for those questions that are relevant to the program(s) under review. Quantitative information may be required for some questions. Constructive comments noting areas in need of improvement are encouraged.

**I. Questions about the quality and effectiveness of the program's use of merit review process. Please answer the following questions about the effectiveness of the merit review process and provide comments or concerns in the space below the question.**

<b>QUALITY AND EFFECTIVENESS OF MERIT REVIEW PROCESS</b>	<b>YES, NO, DATA NOT AVAILABLE, or NOT APPLICABLE</b>
<p>1. Are the review methods (for example, panel, ad hoc, site visits) appropriate?</p> <p>The COV committee reviewed 363 of 5925 projects submitted to SES programs during the period under review. Overall, the COV assessed the merit review process positively. There was a general sense that the reviewed SES programs made favorable strides to bring together relevant experts to participate on panels and perform ad hoc reviews. Similarly, the COV felt strongly that the relationship between panel assessments and ad hoc reviews created high quality project evaluations. In this regard, the COV found the number of expert evaluations to be excellent. In most cases, the COV felt that the current review methods effectively shared the reviewing load and produced substantive ad hoc reviews and panelist assessments. Due to the size and breadth of some fields, the COV understands that it can be challenging for programs to find individuals with relevant knowledge and expertise to be strong panelist and ad hoc reviewers. Moving forward, it will be interesting to see what impact increased virtual panels will have on the review process. It could make it easier for some to attend, but possibly changes the dynamics during the panel review for good and ill. The COV was mildly concerned with "triage pressure" and the need to keep panels moving, which could make it sometimes difficult to bring projects back into the evaluation conversation. Nevertheless, the COV viewed triage as a useful and necessary part of the merit review process. The COV found the program-level data incomplete regarding proposals submitted, awarded, declined, and resubmitted by members of underrepresented populations, which made</p>	<p>Yes</p>

QUALITY AND EFFECTIVENESS OF MERIT REVIEW PROCESS	YES, NO, DATA NOT AVAILABLE, or NOT APPLICABLE
it difficult to assess if the review methods were appropriate for those historically marginalized within the review process.	
<p>2. Are both merit review criteria addressed in most proposals?</p> <p>Both merit review criteria received attention although some members of the COV noted a tendency to devote less attention to the broader impact of the proposal. The COV noted the proposals that most comprehensively addressed intellectual merit and broader impact appeared to fair better in the review process.</p> <p>a) In individual reviews? Overall, in the project proposals submitted for COV review, the reviews addressed both merit review criteria. However, it was unclear how specifically a reviewer's assessment of both merit review criteria ultimately impacted the reviewer's overall assessment of the project. Reviewers tended to spend the majority of the review assessing the quality, feasibility, relevance, contribution to the field, and other hard and soft metrics that contribute to the reviewers final ranking, which may not necessarily connect directly to the merit review criteria.</p> <p>b) In panel summaries? Generally, the panel summaries address both merit review criteria. However, due to the brevity of the summaries, they also lacked in potentially useful details for projects, specifically for those denied funding. The COV recognizes that panelists write summaries under specific time constraints that do not necessarily lead to the most clear and meaningful summations of the panel conversations.</p> <p>c) In Program Officer review analyses? The Program Officer review analyses were strong overall. These analyses tended to fill in the meaningful gaps regarding a project's deficiencies around both merit review criteria that may not have been explicitly detailed within the other summaries of the panel assessment.</p>	Yes
<p>3. Do the individual reviewers giving written reviews provide substantive comments to explain their assessment of the proposals?</p> <p>Substantive comments backing the assessments were generally provided, but it was difficult for the COV to make broad statements about their adequacy given that reviewer engagement varied fairly widely. Arguably, different individual panelists, reviewers, proposers, and COV participants may have decidedly different interpretations of what is adequate. What the COV participants did agree on was that the projects declined would benefit from thorough and detailed commentary on why the project did not receive a funding award.</p>	Yes

QUALITY AND EFFECTIVENESS OF MERIT REVIEW PROCESS	YES, NO, DATA NOT AVAILABLE, or NOT APPLICABLE
<p>4. Do the individual reviewers giving written reviews provide substantive comments to explain their assessment of the proposals?</p> <p>Substantive comments backing the assessments were generally provided, but it was difficult for the COV to make broad statements about their adequacy given that reviewer engagement varied fairly widely. Arguably, different individual panelists, reviewers, proposers, and COV participants may have decidedly different interpretations of what is adequate. What the COV participants did agree on was that the projects declined would benefit from thorough and detailed commentary on why the project did not receive a funding award.</p>	Yes
<p>5. Do the panel summaries provide the rationale for the panel consensus (or reasons consensus was not reached)?</p> <p>In general, the rationale for consensus was strongest when a panel fully supported or "declined" a project. The rationales for consensus became less apparent when a panel did not apparently reach consensus. Overall, the panel summaries did a sufficient to excellent job explaining the reasons for the panel's assessments.</p>	Yes
<p>6. Does the documentation in the jacket provide the rationale for the award/decline decision?</p> <p>The general consensus from the COV was that it was possible to discern the reasons for awarding and declining proposals. In the best cases, the jackets supplied detailed review analyses that provided excellent documentation of the rationales for the award or decline decisions. In specific cases, information from reviewer ratings that summarized the key strengths and weaknesses of the proposals as well as recommendations for program officers were clear and useful. In programs with large volumes of proposals to review, the use of a standard template for declines enabled the review process to move forward quickly.</p>	Yes
<p>7. Does the documentation to the PI provide the rationale for the award/decline decision?</p> <p>The general consensus from the COV was that the documentation provided to PIs regarding award and decline decisions ranged from sufficient to exceptional. The documentation to PIs usually included context statements, individual reviews, panel summaries (if applicable), site visit reports (if applicable), statistical data regarding the likelihood of receiving an award, and, if not otherwise provided in the panel summary, an explanation from the program officer. The only aspect of</p>	Yes

<b>QUALITY AND EFFECTIVENESS OF MERIT REVIEW PROCESS</b>	<b>YES, NO, DATA NOT AVAILABLE, or NOT APPLICABLE</b>
<p>the documentation that the COV found unclear related to advice and commentary regarding revise and resubmit suggestions. It was not obvious to the COV why some proposals received encouraging reviews, but no formal recommendation of “revise and resubmit,” whereas other similarly ranked proposals received formal “revise and resubmit” recommendations.</p>	
<p>8. Additional comments on the quality and effectiveness of the program’s use of merit review process:</p> <p>The COV found the review process to be high quality and determined that the merit review process effectively and efficiently assessed a variety of proposals, in scale and scope, across a broad-range of disciplinary and multidisciplinary programs. Outside of the review process, the COV felt that opportunities exist for continued development. The COV concluded the following: Continue expanding the merit review process to include more members of underrepresented populations. Continue developing opportunities to help scholars in the preparation of proposals—particularly for those from underrepresented populations and institutions without large well-developed offices of sponsored programs. Continue to refine the instructions to reviewers and potentially supply field-specific review exemplars or instructive rubrics of how to author meaningful and substantive reviews. Continue to conduct some panels virtually, as they can provide opportunities for panelists who are unable to travel to the NSF.</p>	
<p>9. Does the documentation to the PI provide the rationale for the award/decline decision?</p> <p>The general consensus from the COV was that the documentation provided to PIs regarding award and decline decisions ranged from sufficient to exceptional. The documentation to PIs usually included context statements, individual reviews, panel summaries (if applicable), site visit reports (if applicable), statistical data regarding the likelihood of receiving an award, and, if not otherwise provided in the panel summary, an explanation from the program officer. The only aspect of the documentation that the COV found unclear related to advice and commentary regarding revise and resubmit suggestions. It was not obvious to the COV why some proposals received encouraging reviews, but no formal recommendation of “revise and resubmit,” whereas other similarly ranked proposals received formal “revise and resubmit” recommendations.</p>	Yes

QUALITY AND EFFECTIVENESS OF MERIT REVIEW PROCESS	YES, NO, DATA NOT AVAILABLE, or NOT APPLICABLE
<p>10. Additional comments on the quality and effectiveness of the program's use of merit review process:</p> <p>The COV found the review process to be high quality and determined that the merit review process effectively and efficiently assessed a variety of proposals, in scale and scope, across a broad-range of disciplinary and multidisciplinary programs. Outside of the review process, the COV felt that opportunities exist for continued development. The COV concluded the following: Continue expanding the merit review process to include more members of underrepresented populations. Continue developing opportunities to help scholars in the preparation of proposals—particularly for those from underrepresented populations and institutions without large well-developed offices of sponsored programs. Continue to refine the instructions to reviewers and potentially supply field-specific review exemplars or instructive rubrics of how to author meaningful and substantive reviews. Continue to conduct some panels virtually, as they can provide opportunities for panelists who are unable to travel to the NSF.</p>	

**II. Questions concerning the selection of reviewers. Please answer the following questions about the selection of reviewers and provide comments or concerns in the space below the question.**

<b>Selection of Reviewers</b>	<b>YES, NO, DATA NOT AVAILABLE, or NOT APPLICABLE</b>
<p>1. Did the program make use of reviewers having appropriate expertise and/or qualifications?</p> <p>Reviewers, while some provided more helpful feedback than others, appeared to have appropriate expertise and backgrounds. One strength of the current model is that both senior members of the field and early career scholars participate in the review process. This practice is not only likely to improve the quality of decisions, but also, in the panel review context, may have the spillover benefit of providing important mentoring and establishing connections for early-stage scholars. COV members recognize that the program officers have been attempting to diversify their pool of ad hoc reviewers and panelists. They are highly supportive of these efforts and urge the SES staff to continue working hard at this issue. More generally, the COV raised concerns about the disproportionate use of reviewers from a small number of institutions and would like to see a more diversified spectrum of institutions. COV members also noted that the wide range of topics in some cross-disciplinary subfields made it difficult to consistently find panel reviewers with appropriate depth and breadth to provide the necessary assessments.</p>	Yes
<p>2. Did the program recognize and resolve conflicts of interest when appropriate?</p> <p>The NSF's approach to avoiding conflicts of interest, including steps taken since 2016 to strengthen the system, seems sound, and the SES staff appears to carefully adhere to these rules. The COV found the use of mandatory submissions of Collaborators and Other Affiliations (COA) documents as an important step forward. Though the COV noted the limitations of relying on self-reporting, it did not have substantive suggestions for further improving the current procedures.</p>	Yes
<p>3. Additional comments on reviewer selection:</p> <p>COV members recognized the challenges associated with identifying and recruiting a sizable pool of appropriate reviewers. The high rates of refusal surprise some COV members. The COV makes the following set of recommendations to increase the size of the reviewer pool and its diversity.</p>	



**Recommendation:** Explore the potential for making more use of successful scholars at non-academic institutions as reviewers. In some SES fields, such as economics, a sizable share of new PhDs take positions at non-academic institutions where research is emphasized—such as government agencies and non-profit research organizations. Evidence suggests that the scholar pools at some of these institutions can be more diverse in certain ways than at their academic counterparts. While many of these scholars may never apply for an NSF grant themselves, some have excellent credentials and are eager to engage with the broader scholarly community. For instance, the NSF has made use of reviewers from the Federal Reserve System, but this vast community, as well as others similar non-academic institutions, could probably be utilized further.

**Recommendation:** Explicitly study the lessons learned from going virtual during the pandemic. The background materials were clear that most panelists have a preference for in-person meetings. Yet, in the interest of expanding and diversifying the reviewer pool, it would be useful to consider the available evidence regarding whether the virtual model made it easier to engage some pools of scholars—such as those from rural areas, from the West Coast, complex family responsibilities, or who are simply very busy. It would also be worth thinking through what advantages (beyond the reduced cost and burden of travel) the virtual model offers. For example, the SES staff mentioned that virtual meetings could be three days instead of two, which some panelists found easier to manage. Finally, some reflections on how the virtual experience could be improved would be useful—is there a way to enable informal networking virtually? For the next COV, would it be possible to provide a more in-depth introduction to the actual practice of participating on the COV committee?

**Recommendation:** Develop processes and procedures to improve communications around reviews. COV members felt that some potential reviewers might be more likely to agree to accept if they better understood the role that reviews play in the final proposal assessment. In addition, some direct signals about the typical time commitment might be helpful as potential reviewers (particularly the more conscientious ones) might turn down reviewing because they assume the work and time commitment is substantially higher than what is actually required.

**III. Questions concerning the management of the program under review. Please comment on the following:**

**MANAGEMENT OF THE PROGRAM UNDER REVIEW**

1. Management of the program.

The COV found that all of the programs in SES are superbly run by diligent staff members invested in carrying out the important mission of NSF. The respective scholarly communities hold the SES programs in high regard. The research community embraced the 2019 repositioning that brought new programmatic orientations exhibited by the programs in Security and Preparedness (SAP), Accountable Institutions and Behavior (AIB), Law and Science (LS), Ethical and Responsible Research (ER2), and Science and Technology Studies (STS). The COV understands the need for certain programs to end their stand-alone Dissertation Grant (DDRIG) competitions, but some COV members were concerned about moving this process outside of the NSF. In the programs that still review DDRIG submissions, the COV appreciated the continued commitment to fund and support the next generation of scholars with NSF support. Some COV members discussed the reliance solely on panelists for final project assessments rather than a mix of panel and ad hoc reviewers. However, the COV response was mostly positive, because it enabled panelists to more effectively calibrate their ratings than ad hoc reviewers even when the latter had greater expertise in particular areas. Finally, the COV noted that all the SES programs demonstrate good stewardship of their individual budgets.

2. Responsiveness of the program to emerging research and education opportunities.

The NSF created many of the programs within the SES to address the emerging research needs within a host of subject areas. The COV found that SES programs made concerted efforts to speak and respond to the evolutions within current and emerging research pathways. The COV noted the work that the SES programs put into building and participating in agency-wide research endeavors and it sees "Convergence Research", "Future of Work", and "Harnessing the Data Revolution" as examples of their collaborative commitments. From traditional research awards to more exploratory and forward-thinking workshop and incubation grants the COV appreciated the efforts made by SES that will not only support transformative research but also help build community over time. Nevertheless, as the nature, context, and meaning of social science evolves, the COV strongly urges the SES programs to champion emergent scholarship that better grapples with the diverse range of identities and power dynamics structuring social and political life, rather than replicating existing knowledge. Continuing to expand the efforts to make the collective SES portfolio more inclusive as a practice will allow the NSF to better capture, evaluate, and assess the transformative power of diversity in all its forms.

3. Program planning and prioritization process (internal and external) that guided the development of the portfolio.

The programs within the Division of SES have done an admirable job laying out a consistent plan to effectively use available funds to support the best peer-reviewed science. Though more excellent project proposals are submitted than can be funded, SES programs have proven to be resourceful co-funding collaborators and judicious distributors of awards. The COV appreciated the great sense of commitment Program Directors made to prioritizing

## MANAGEMENT OF THE PROGRAM UNDER REVIEW

consistent contact with active researchers about emerging research themes. This direct connection with the leading edges of research seem to drive SES efforts that prioritize the critical importance of the interconnectedness of transformative science and its broader impacts on society. The COV recognized the efforts made with SES programs to broaden the methodological, topical, geographic and institutional diversity represented by the funded proposals. Nevertheless, at times, it seemed as if the review process produced a material share of projects where the intellectual merits overshadowed the social, political, or economic impact to the broader world.

**Recommendation:** The COV would like to see efforts made to clearly understand and articulate what it means to have funded projects that consistently interweave the field-building elements of intellectual merits with the socially transformative aspects of broader impacts.

### 4. Responsiveness of program to previous COV comments and recommendations.

The COV felt that the SES programs proactively addressed the comments and recommendations from the 2016 COV review. The COV clearly saw the positive impacts of the increased usage of triage during proposal review, rethinking the configurations of panels to lessen the reviewing labor, balancing in-person versus at-a-distance panel participation, reaching out to a broader selection of institutions for reviewers and panelists, and following through with a series of recommendations around program officer labor, data accessibility, data privacy, and the production of robust and reliable science. The COV also read and heard a great deal about efforts to broaden participation by those underrepresented in every part of the review process, but unfortunately, the COV documents did not contain the relevant data to determine how the SES programs actions actually translated into measurable outcomes. The COV recognized that this is not necessarily the fault of the programs, but a reality of government data collection policies. Nevertheless, the COV felt this missing data made it extremely hard to evaluate the success or failure of diversity efforts.

**Recommendation:** We urge the NSF to develop a data collection policy that enables researchers to perform rigorous scientific analysis on programmatic diversity performance. We also recommend incentives to supplement current awards to include members of underrepresented groups as collaborators in extending the scope of awards. Experienced PIs are more likely to embrace collaboration if such resources are provided. The COV prefers to support scholars making these important steps rather than to penalize them for non-compliance. That is, we believe carrots are more effective than sticks.

**IV. Questions about Portfolio. Please answer the following about the portfolio of awards made by the program under review.**

RESULTING PORTFOLIO OF AWARDS	APPROPRIATE, NOT APPROPRIATE, OR DATA NOT AVAILABLE
<p>1. Does the program portfolio have an appropriate balance of awards across disciplines and sub-disciplines of the activity? The 10 program portfolios reviewed by the COV contained an appropriate diversity of disciplinary, inter-disciplinary, multi-disciplinary, trans-disciplinary, and sub-disciplinary awards. However, the COV felt the specific balances between each category could be difficult to discern, as many of the projects supported within SES require theories, methods, and approaches that cross several disciplinary boundaries. Similarly, many programs have several projects co-funded by other programs and divisions within the NSF. These collaborative efforts are not easily tracked due to the structure of the program element codes. Unfortunately, the small sample size of proposals reviewed made it difficult to affirm portfolio balance with significant confidence at a program-specific level. However, as a collective, the research projects reviewed by the COV represents innovative and creative science, and therefore presents a compelling portfolio.</p> <p><b>Recommendation:</b> Develop mechanisms that provide more transparency and accurate documentation of collaborative funding activity with the SES, SBE, and larger NSF.</p>	Yes
<p>2. Are awards appropriate in size and duration for the scope of the projects?</p> <p>During the period reviewed, SES projects received awards from less than \$10,000 to more than \$5,000,000 in funding with an average duration of 2.28 years. The smaller awards supported activities such as travel and small workshops, while the largest awards funded the GSS, ANES, and PSID, all of which represent sizable and long-running surveys of members of the public and vital infrastructure for social science researchers. The COV found the research support for SES projects adequate, but the COV did observe that no program had a shortage of high impact projects that would benefit from a program's access to more funding resources. In addition, the COV did think it may be worthy to consider how smaller research infrastructure grants, new proposal budgetary realignments and emphasis, or rethinking indirect costing agreements could yield positive research outcomes.</p>	Yes
<p>3. Does the program portfolio include awards for projects that are innovative or potentially transformative?</p>	Yes

<b>RESULTING PORTFOLIO OF AWARDS</b>	<b>APPROPRIATE, NOT APPROPRIATE, OR DATA NOT AVAILABLE</b>
<p>The COV collectively agreed that SES programs supported innovative projects that transform the world in which we live. As we learn more about the relationships between humanity and the social, political, economic, environmental, and legal conditions that bring us together and divide us, as well as how emerging technological formations and scientific knowledge undergird our society's material infrastructure, the COV sees SES as uniquely placed to address the pressing questions of our past, present, and future. The COV garnered a clear understanding of how the transformational innovations represented in SES research projects displayed the critical relevancy of SES funded research to our national well-being.</p>	
<p>4. Does the program portfolio include inter- and multi-disciplinary projects?</p> <p>Many of the questions investigated by researchers funded by SES demand inter-disciplinary and multi-disciplinary methods, techniques, and perspectives. Though SES continues to champion and support disciplinary inquiry, the COV found that SES possessed an equal interest and focus on inter-disciplinary, multi-disciplinary, and trans-disciplinary research. Moreover, the COV appreciated the efforts to which SES Program Directors engaged in the co-management of programs and funding opportunities that target research that transcends disciplines, such as the NSF Big Ideas. Similarly, the SES programs have proven to be excellent collaborators within the larger SBE community.</p>	Yes
<p>5. Does the program portfolio have an appropriate geographical distribution of Principal Investigators?</p> <p>The COV found it difficult to assess and determine what is an appropriate geographical distribution of Principal Investigators. Nevertheless, the COV found that the distribution of proposals received and awards made by SES roughly corresponded to the distribution of NSF proposals and awards at-large.</p>	
<p>6. Does the program portfolio have an appropriate balance of awards to different types of institutions?</p> <p>The COV recognizes and appreciates the substantive efforts SES programs have made in working with a spectrum of different institutions ranging from minority serving institutions and liberal arts colleges, to some of the largest public and private universities in the world. However, the distribution of funding support to some of the wealthiest and best resourced institutions (not just endowments, but</p>	

RESULTING PORTFOLIO OF AWARDS	APPROPRIATE, NOT APPROPRIATE, OR DATA NOT AVAILABLE
<p>well-staffed offices of sponsored programs) is a cause for dismay. The COV does realize that this is not just a SES issue, but a larger NSF issue. Nevertheless, the COV is replete with members whose work at some level studies inequality, inequity, and disparity with the aim of understanding and ameliorating their impacts. Thus, when the COV sees the list of the top 25 institutions receiving support from SES programs it is a cause for concern because they are mostly the same "type" of institution.</p> <p><b>Recommendation:</b> Develop new pathways and structures to broaden the types of institutions that receive NSF funding.</p>	
<p>7. Does the program portfolio have an appropriate balance of awards to new and early-career investigators?</p> <p>The balance appears to be appropriate, although some COV members felt that the samples available to them in e-Jacket for their areas were too small to draw firm conclusions. Some noted the lower rate of acceptance for new investigators, but commented that this lower rate was to be expected given that experienced investigators are often able to write better proposals.</p> <p><b>Recommendation:</b> Develop new pathways and structures to enable early-career investigators to effectively compete with seasoned NSF award winners.</p>	Yes
<p>8. Does the program portfolio include projects that integrate research and education?</p> <p>The portfolio includes projects that integrate research and education. COV members noted that the share of proposals mentioning education was relatively low, but a major shift in the portfolio toward education does not seem warranted. That said, COV members believe that some relatively low-cost options for integrating NSF-supported research into the undergraduate classroom could make research careers more attractive and accessible to a broader range of students. The COV members were familiar with initiatives funded by SES supporting educational experiences for undergraduates and graduate students such as CAREER awards and REUs, but these projects were not well-represented in the portfolio.</p> <p><b>Recommendation:</b> In the interest of expanding the pipeline of students into research careers, particularly those from underrepresented backgrounds, the NSF could consider low-cost funding mechanisms that would encourage universities to allow PIs to</p>	Yes

RESULTING PORTFOLIO OF AWARDS	APPROPRIATE, NOT APPROPRIATE, OR DATA NOT AVAILABLE
<p>teach small-enrollment courses on topics related to the areas of NSF supported research. It could also make clear that the broader impacts section of any proposal should include a description of how the research will also make its way into the classroom. Such efforts could provide an introduction to the research and knowledge production function in the classroom setting, demystifying the research process and creating access for a broader range of students.</p>	
<p>9. Does the program portfolio have appropriate participation of underrepresented groups<sup>2</sup>?</p> <p>The COV lacked the necessary data needed to assess the performance of the SES in this regard given the enormous data gaps in the demographic information of applicants and reviewers. Nearly every COV member expressed frustration about being asked to address questions that could not be answered with the information provided. We understand that the NSF simply did not have the requisite data because so many applicants and reviewers do not respond to this voluntary request. The COV was puzzled as to why the response rate for demographic data was so low compared to similar requests in other contexts, including SES-sponsored surveys such as the General Social Survey and the American National Election Survey. The COV believes that the Directorate for the SES should prioritize engaging more members of underrepresented groups. These activities should include steps to expand the pipeline of new researchers given that the limited representation in the areas covered by the SES appeared to be a major constraint on recruiting new applicants and reviewers. They should also include improving measurement of the gaps through stepping up data collection and deploying other methodologies to better understand the diversity problem and fund pathways to ameliorate it.</p> <p>To help meet these goals, the COV has the following recommendations:</p> <p><b>Recommendation:</b> The SES division should undertake its own internal study to evaluate the application and success rates of</p>	<p>Data not available</p>

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<sup>2</sup> NSF does not have the legal authority to require principal investigators or reviewers to provide demographic data. Since provision of such data is voluntary, the demographic data available are incomplete. This may make it difficult to answer this question for small programs. However, experience suggests that even with the limited data available, COVs are able to provide a meaningful response to this question for most programs.

RESULTING PORTFOLIO OF AWARDS	APPROPRIATE, NOT APPROPRIATE, OR DATA NOT AVAILABLE
<p>underrepresented scholars as well as the demographics of evaluators and panels. Such a study could include attention to the barriers or obstacles that discourage submissions from underrepresented groups, or characteristics of these proposals that affect their success rates. Furthermore, the SES, SBE, and NSF should consider substantively funding studies investigating the appreciable differences in scientific advance in fields that are more diverse compared with those that are less diverse.</p> <p><b>Recommendation:</b> The SES should fund a study to investigate why there is considerable underreporting of demographic information, what can be done to increase response rates, and what statistical methodologies might create a more accurate picture given current data gaps.</p> <p><b>Recommendation:</b> The SES should further improve outreach to under-represented groups. One avenue for doing so would be to continue to develop and broaden formal outreach programs to institutions serving Black, Indigenous, and People of Color (BIPOC). This could be done by providing more time for program officers to directly connect with underrepresented populations in order to introduce their programs and guidance for proposal success. The NSF/SBE/SES could also consider establishing regional offices or networks of sponsored-research support to help in proposal preparation from underrepresented groups and investigators working at institutions that lack well-developed offices of sponsored research.</p> <p><b>Recommendation:</b> The SES should develop incentivized mechanisms for encouraging investigators to increase the participation of underrepresented groups in their projects beyond merely hiring a BIPOC, female, or LGBTQA+ post-doc or research assistant. For example, in the budget justifications, the SES might include a section asking the investigators to indicate the steps they plan to take to ensure the participation of individuals from groups that have been traditionally underrepresented in their academic discipline. In the bio sketch and synergistic activities sections, the application might ask the investigators to indicate the concrete steps they have taken in their careers to ensure the participation of individuals from groups that have been traditionally underrepresented in their research disciplines or fields. It might also ask reviewers to evaluate proposals based on whether the project promotes training and learning (beyond usual faculty expectations) and encourages participation of underrepresented groups.</p>	



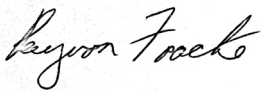
RESULTING PORTFOLIO OF AWARDS	APPROPRIATE, NOT APPROPRIATE, OR DATA NOT AVAILABLE
<p>10. Is the program relevant to national priorities, agency mission, relevant fields and other constituent needs? Include citations of relevant external reports.</p> <p>The COV confirmed that the Division for SES advances science that is critical to research demands, national priorities, agency mission, and constituent needs. The following citations are a sample of the need and value of the science supported by the Division of SES. Hearing on “Coping with Compound Crises: Extreme Weather, Social Injustice, and a Global Pandemic” particularly see this congressional testimony about Roxanne Cohen Silver's SES-funded Research, <a href="#">link to the testimony on science.house.gov</a> Don Grant, Andrew Jorgenson, and Wesley Longhofer, Super Polluters Tackling the World’s Largest Sites of Climate-Disrupting Emissions (Columbia University Press, 2020). "Law Enforcement and the Educational Performance of Youth", <a href="#">Negative 'Impact' on learning (The Harvard Gazette)</a> "The Generalizability and Replicability of Twitter Data for Population Research", <a href="#">#SocialScience: Mining Twitter for Social and Behavioural Research article (Research Outreach)</a> "Extreme Weather Disasters, Economic Losses via Migration, and Widening Spatial Inequality in the U.S.", <a href="#">Hurricanes and other extreme weather disasters prompt some people to move and trap others in place (Phys Org)</a> Decadal Survey of the Social and Behavioral Sciences, link to <a href="#">Decadal survey publication (National Academies of Science and Engineering and Medicine)</a> Kara L. Hall, Amanda Vogel, Robert T. Croyle: Strategies for Team Science Success: Handbook of Evidence-Based Principles for Cross-Disciplinary Science and Practical Lessons Learned from Health Researchers (Springer, 2019).</p>	<p>Yes</p>
<p>11. Additional comments on the quality of the projects or the balance of the portfolio: Overall, the COV found the projects reviewed provided a snapshot into the meaningful science that the Division of SES supports.</p>	

## OTHER TOPICS

1. Please comment on any program areas in need of improvement or gaps (if any) within program areas.
2. Please provide comments as appropriate on the program's performance in meeting program-specific goals and objectives that are not covered by the above questions.
3. Please identify agency-wide issues that should be addressed by NSF to help improve the program's performance.
4. Please provide comments on any other issues the COV feels are relevant.
5. NSF would appreciate your comments on how to improve the COV review process, format, and report template.

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### SIGNATURE BLOCK:



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For the SBE/SES Committee of Visitors (2020)  
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Chair