CORE QUESTIONS and REPORT TEMPLATE
for
FY 2022 NSF COMMITTEE OF VISITOR (COV) REVIEWS

Guidance to NSF Staff: This document includes the FY 2022 set of Core Questions and the COV Report Template for use by NSF staff when preparing and conducting COVs during FY 2022. Specific guidance for NSF staff describing the COV review process is described in the "COV Reviews" section of NSF's Administrative Policies and Procedures which can be obtained at https://inside.nsf.gov/tools/toolsdocuments/Inside%20NSF%20Documents/Policy,%20Procedures,%20Roles%20and%20Responsibilities%20for%20COV%20Reviews%20and%20Program%20Portfolio%20Reviews.pdfhttps://inside.nsf.gov/tools/toolsdocuments/Inside NSF Documents/COV Policy and Procedures 070915.pdf[1].

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 to the research and education community served by the Foundation. COV reviews provide NSF with external expert judgments in two areas: (1) assessments of the quality and integrity of program operations; and (2) program-level technical and managerial matters pertaining to proposal decisions.

The program(s) under review may include several sub-activities as well as NSF-wide activities. The directorate or division may instruct the COV to provide answers addressing a cluster or group of programs – a portfolio of activities integrated as a whole – or to provide answers specific to the sub-activities of the program, with the latter requiring more time but providing more detailed information.

The Division or Directorate may add questions relevant to the activities under review. Copies of the report template and the charge to the COV should be provided to OIA prior to forwarding to the COV. In order to provide COV members adequate time to read and consider the COV materials, including proposal jackets, COV members should be given access to the materials in the eJacket COV module approximately four weeks before the scheduled face-to-face meeting of the COV members. Before providing access to jackets, the Conflict of Interest and Confidentiality briefing for COV members should be conducted by webinar, during which, NSF staff should also summarize the scope of the program(s) under review and answer COV questions about the template.

Suggested sources of information for COVs to consider are provided for each item. As indicated, resources for NSF staff preparing data for COVs include the COV Dashboard in Enterprise Reporting (https://bi.nsf.gov/analytics/saw.dll?Dashboard&PortalPath=/shared/Enterprise%20Reporting/Pre-Built%20(Canned)%20Reports/COV%20Dashboard/COV%20Dashboard&Page=COV%20Landing%20Page) and Enterprise Information System (EIS) –Web COV module (accessed by NSF staff only at http://budg-eis-01/eisportal/default.aspx). In addition, NSF staff preparing for the COV should consider other sources of information, as appropriate for the programs under review.

For programs using section IV (addressing portfolio balance), the program should provide the COV with a statement of the program's portfolio goals and ask specific questions about the program under review. Some suggestions regarding portfolio dimensions are given on the template. These suggestions will not be appropriate for all programs.

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***

[1] This document has three parts: (1) Policy, (2) Procedures, and (3) Roles & Responsibilities.

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 http://www.nsf.gov/od/oia/activities/cov/.

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

The table below should be completed by program staff.

Table 1 - Summary Information

Summary Information
Date of COV: June 7-8, 2022
Program/Cluster/Section: Integrative Programs Section
Division: OCE
Directorate: GEO
Number of actions reviewed: 66 **Awards: 44** **Declinations: 21** **Other: 1 withdrawn**
Total number of actions within Program/Cluster/Division during period under review: **Awards: 816 (from self-study)** **Declinations: unknown** **Other:**
Manner in which reviewed actions were selected: **Random selection with post hoc adjustments for overall representation.**

COV Membership

Table 2 - COV Membership

Role	Name	Affiliation
COV Chair	**Tammi L. Richardson**	**University of South Carolina**
COV Members:	**Bradford Clement**	**Texas A&M University (retired)**
	Frank Herr	**Office of Naval Research (retired)**
	Joanna York	**University of Delaware**
	Masako Tominaga	**Woods Hole Oceanographic Institution**
	Peter Girguis	**Harvard University**

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 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, 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:

- **Intellectual Merit**: The Intellectual Merit criterion encompasses the potential to advance knowledge; and

- **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.[2] "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."

[2] NSB-MR-11-22

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**.**

Table 3 - Quality and Effectiveness of the Merit Review Process

QUALITY AND EFFECTIVENESS OF MERIT REVIEW PROCESS	YES, NO, DATA NOT AVAILABLE, or NOT APPLICABLE
1. Are the review methods (for example, panel, ad hoc, site visits) appropriate? Comments: Review methods are generally appropriate but vary among programs within IPS. The Review Analyses were especially useful for providing feedback to the proposers. That said, it was not always apparent whether the absence of a panel summary, for example, meant that no panel was convened, but we assume this to be the case. **Data Source: Enterprise Reporting, COV Dashboard, Question 6**	Yes

2. Are both merit review criteria addressed a) In individual reviews? b) In panel summaries? c) In Program Officer review analyses?	a)Yes and No b)Yes, but… c)Yes

Comments:

a) This varied among individual reviews. All reviews contained a section for Intellectual Merit and Broader Impacts (perhaps required before the review could be submitted), but the extent to which reviews addressed the specific criteria varied widely. Variation in the reviewers' assessments of Broader Impacts was greatest in Ship Ops and OI/SSSE reviews. This points to a broader issue as to whether IPS or NSF expects facilities proposals, which inherently fulfill Broader Impacts by "providing enhanced research infrastructure for the nation", to go beyond this basic provision. Some reviewers of facility proposals expected more, whereas others did not.

b) Panel Summaries do contain both merit review criteria – but they echo the ambiguity around what is expected for Broader Impacts for facility proposals. Some panel summaries indicate that the reviewers' expectation was to go beyond "providing enhanced research infrastructure".

Related to both a) and b):
-with the exception of proposals to EDU, it was not clear how IPS weights the relative importance of Intellectual Merit vs. Broader Impacts in award decisions.
- the concept of Broader Impacts was clearly not developed with a facilities proposal in mind, but instead for individual, research-driven proposal. Therefore…

Recommendation 1: IPS should be more specific about what is expected for Broader Impacts, especially with regards to Facilities and Ocean Instrumentation proposals. These expectations should be communicated to both the proponents and reviewers. This should yield more consistent reviews for these particular programs.

Recommendation 2 : IPS should reach out to other Facilities-based Directorates, Sections, and/or Programs to see how they handle the Broader Impacts requirement.

c) PO Review Analyses – These addressed both merit criteria very well, indicating excellent training of POs by the NSF.

Data Source: Jackets

QUALITY AND EFFECTIVENESS OF MERIT REVIEW PROCESS	YES, NO, DATA NOT AVAILABLE, or NOT APPLICABLE
3. Do the individual reviewers giving written reviews provide substantive comments to explain their assessment of the proposals? Comments: As above, individual reviews varied in how substantive they were with respect to both merit criteria. The postdoctoral fellowship proposal reviews were especially appropriate and substantive. Comments were specific to the subject, which reflects wise reviewer choices by EDU. Reviews were also constructive and supportive– very appropriate for early career scientists. This was true even for the proposals that were declined: reviews were very clear about what the problematic or unresolved issues were. Among OTIC proposals, almost all chose a problematic element and reviewers sometimes conflicted with respect to how far developed the instrument proposed for development needed to be. **Data Source: Jackets**	Yes
4. Do the panel summaries provide the rationale for the panel consensus (or reasons consensus was not reached)? Comments: Panel summaries don't always exist. Those that do exist are mixed in quality in terms of how clearly they explain the rationale behind the comments. **Data Source: Jackets**	Yes and No

QUALITY AND EFFECTIVENESS OF MERIT REVIEW PROCESS	YES, NO, DATA NOT AVAILABLE, or NOT APPLICABLE
5. Does the documentation in the jacket provide the rationale for the award/decline decision? Comments: There are multiple checks and balances – even if a panel was not supportive, the PO often explained why, and there was very good documentation about how/why decisions are made. In one case, where the panel supported the proposal, but proper guidelines were not followed, NSF helped navigate upper administrative layers so that the proposal was eventually funded. **Data Source: Jackets**	Yes
6. Does the documentation to the PI provide the rationale for the award/decline decision? Comments: Yes, if all documentation has been provided. Context statement is key, as is the Panel Summary. Ambiguous panel summaries are not useful; but subtleties are often cleared up by a telephone call to the PO. The willingness of the POs to speak directly to PIs was appreciated **Data Source: Jackets**	Yes and No

QUALITY AND EFFECTIVENESS OF MERIT REVIEW PROCESS	YES, NO, DATA NOT AVAILABLE, or NOT APPLICABLE
7. Additional comments on the quality and effectiveness of the program's use of merit review process: OTIC provides enough feedback to allow iterative 'better" submissions which sometimes leads to eventual success For OI proposals and SSSE proposals there is a real attention to technological risk, but a balanced approach to investing in new technology for the sake of community needs/providing a service to the oceanographic community.	

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.

Table 4 - Selection of Reviewers

SELECTION OF REVIEWERS	YES, NO, DATA NOT AVAILABLE, or NOT APPLICABLE
1. Did the program make use of reviewers having appropriate expertise and/or qualifications? Comments: The expertise of every reviewer was not investigated in great detail but appeared to be sufficient. No red flags were seen. **Data Source: Jackets**	Yes

SELECTION OF REVIEWERS	YES, NO, DATA NOT AVAILABLE, or NOT APPLICABLE
2. Did the program recognize and resolve conflicts of interest when appropriate? Comments: All were handled appropriately to our knowledge. We did see one case of a review from someone in conflict; one other case where a request was made to someone at the same institution, but in both cases these issues were handled appropriately. The COV noted that we did not receive information about appeals of any decisions, but subsequent conversations with the POs revealed that there were none during the review period. **Data Source: Jackets**	Yes
3. Additional comments on reviewer selection: We appreciate the efforts of NSF to find multiple reviewers for as many proposals as possible. There was some concern about the predominance of male reviewers in OI, but the understanding that this does reflect the demographics of the oceanographic community. EDU proposals showed an especially nice balance of gender, expertise, etc. There was also a good distribution of institution types and a good geographical balance. We hope that this will eventually result in higher diversity (in all respects) in the senior scientist ranks. For ship-related proposals, the expertise of panelists was noted to be excellent, with a good balance of military (Navy, Coast Guard) vs. civilian input, and a good cross section of the marine community.	

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

Table 5 - Management of the Program Under Review

MANAGEMENT OF THE PROGRAM UNDER REVIEW
1. Management of the program. Comments: Based on our interactions prior to and during the CoV meeting, the data available in the self-study, and the insights we gained from the e-jackets, management of the IPS program is excellent. It is apparent that Midson, Holik, and DuFour work nicely as a team. It was equally apparent that Rom and Castillo also work well as a team and provide one another with support. Houtman's skilled leadership was also noted. Broadly speaking, IPS staff communicate well, and are as integrated as the programs they manage. We commend them for their hard work and commitment to achieving program goals. The response of IPS to the Covid pandemic best illustrates the efficacy of the program officers. They demonstrated effective communication and responsiveness throughout this disaster. IPS support of the scientific community during Covid, and of the PIs, facility operators and staff in particular, was exceptional. IPS POs also coordinate well with other programs in OCE (as shown by the presence of, for example, Ship Ops POs at other OCE panels for proposals where ship time is requested). Relationships with other Facilities directorates are also solid due to historical working relationships, e.g., Hawkins in the Large Facilities Office, formerly was in IPS, and a senior Facilities Advisor in the GEO main office. Succession planning remains a concern of the committee. The extent to which there is cross training between Midson/DuFour/Holik, Houtman, and other IPS programs (e.g., OOI and ODP) is not clear. We recognize there may be legal and logistical impediments to some aspects of succession planning, but we encourage the POs to consider what practical measures they can take to ensure smooth transitions between any planned and/or unforeseen changes in personnel. The CoV also discussed the possible effects of changing goal posts post-solicitation for proposals and renewals, especially for the major facilities that the section oversees. While changes by Congress or OMB are beyond NSF's control, others reflect badly on NSF's ability to manage large facilities. We were disturbed to hear of two cases, one in which requirements were changed by the Large Facilities Office two weeks before the proposal deadline, and another where the section implemented new requirements retroactively. **Recommendation 3:** We recommend that the NSF add to its risk register the reputational damage that might result from a failure of an NSF supported facility due to mismanagement of internal requirements.

MANAGEMENT OF THE PROGRAM UNDER REVIEW

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

Comments:
IPS is generally responsive to emerging research and education opportunities. This is especially true of the EDU program. An example is the strong support provided to the Geo REU PI network, headed by Val Sloane and Bec Batchelor at NCAR. REU PIs benefit greatly from interactions with the GEO REU community, and this relationship turned out to be critical to maintaining active REU programs (both in person and virtual) during the Covid pandemic.

The strong relationship between IPS and UNOLS also provides a direct link to end users, and helps NSF respond to needs within the community (e.g., StemSEAS, Early Career Scientist cruises, etc.)

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

Comments:

We did not have sufficient information to address this issue and believe it is more appropriate for larger sections with many proposals than it is for IPS.

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

Comments:

Here we focus on responses to the 2018 COV comments and recommendations. Overall, the IPS responses were mixed, and several key issues were inadequately addressed. Some recommendations were followed (e.g., allowing more time for the COV to review, adding stop signs on the spreadsheet, making all documents available on the e-jacket web site). Others were cursorily addressed (the phrase “we will try” was used without any substantive commitment) or not at all. For example, the 2018 COV asked that all proposals be viewable. This was not done as the section determined that the entire portfolio was too large to be reviewed practically (i.e., the workload was deemed too high). Access to all proposals, however, would have allowed us to better understand the breadth of the OTIC portfolio.

The 2018 COV also asked for more guidance from the IPS staff regarding the review process. IPS did provide an Orientation and the Self-Study, both of which were very helpful. However, the Orientation focused on e-jackets and COIs, not on the review process itself. As such, some members of the CoV spent an inordinate amount of time on the e-jackets under the incorrect assumption that individual assessments were required for each e-jacket.

As a result, we (the current COV) recommend the following:

Recommendation 4: Now that the IPS Self-Study exists, we recommend that IPS provide an updated version as the first step in the COV review process, followed by previous COV reviews and responses. This gives the next COV an idea of what to be looking for when the e-jackets are assigned. Focusing on the e-jackets first is very confusing because the committee does not understand what they should be assessing in those jackets. Further, even though IPS allowed more time for the COV to do their review, much of that time was wasted reading detail in the e-jackets that was not needed for the overall review. The orientation could provide an overview of what is available in the e-jackets and what can be learned from each. Editing the Orientation documents to reflect the priorities of the COV would make the process more efficient and of greater value to NSF.

For the EDU section, we noted that some recommendations were followed (like including data on minority participation, gender balance) but the data are sparse, and it is not clear what is being done to improve data collection efforts.

For the OI/SSSE section, the previous COV recommended that OI/SSSE should review and rate proposals with respect to sound scientific justification. The Programs responded (in general) by noting that both SSSE and OI proposals are based on funded science and are requests to acquire gear to carry out the funded work. Our assessment of OI/SSSE is consistent with the Program’s perspective: We noted that the proposals are for equipment and instruments that enable funded science. We also noted that, when proposals are rejected, the POs provided a sound rationale as to why (e.g., the instrument already exists on another vessel, and its infrequent use means it can be borrowed with ease). The COV also suggested that OI/SSSE provide feedback on both evaluation criteria. Our assessment finds that the overwhelming majority of OI/SSSE proposals meet criterion 2 (Broader Impacts) by default as they are requesting support for vessel infrastructure that supports NSF-funded projects. The COV also recommended that the PO continue to work with the marine technicians to improve the quality of their proposals. We discussed this at length among ourselves and with ISP POs who made the case that the proposals -though less polished than others in OCE- are technically accurate. They also noted that the many proponents have an excellent track record in marine operations, which

is of far greater value to the community than is the quality of their proposals. We, the current COV, broadly agree with the ISP's response to the recommendations above. However, we encourage IPS to continue working with ship operators to improve proposal submissions by providing specific guidance (e.g., a template).

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

Programs should provide materials to the COV regarding portfolio goals and can insert specific targeted questions about their portfolios. *(Some dimensions of portfolio balance to consider include: balance across disciplines and sub-disciplines, award size and duration, awards to new and early-career investigators, geographical distribution of awards, awards to different types of institutions, innovative/potentially transformative projects, projects with elements of risk, inter- and multi-disciplinary projects, projects that integrate research and education, participation of groups that are under-represented in science and engineering, and projects that are relevant to agency mission or national priorities).*

OTHER TOPICS

1. Please comment on any program areas in need of improvement or gaps (if any) within program areas.

None were noted.

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.

-The ISP did not share specifics about how they will deal with the relatively flat budget, except to note that they will still try to keep the 50:50 balance for research and infrastructure. More information on how the budget will be balanced, especially in light of rising fuel costs and other issues that disproportionately affect IPS (for Ship Operations, for example), would be helpful.

-We also discussed DEI issues extensively within the committee and found that ISP is doing excellent work in this regard.

Recommendation 5: We recommend that NSF empower IPS with additional financial and managerial resources to improve DEI in ocean sciences and support their efforts to develop programs that recruit and maintain a diverse community of scientists in our discipline.

Recommendation 6: We further recommend that IPS attempt to better track the efficacy of their DEI efforts. We recognize that many of these outcomes are more qualitative in nature (e.g., the success of each individual is hard to quantify), but we feel that even qualitative representations of how their programs have improved DEI is a worthy contribution.

- The self-study was a very useful document, but it is missing policy explanations that underpin the actions of Section personnel as they carry out their duties and experience external forces that affect the section and its actions.

Recommendation 7: We recommend that the self-study be expanded to include more information on how managerial actions have been altered (if the case) to deal with disruptive forces like Covid, project cost increases, and inflation of facilities' operating costs.

-NSF is growing programs which are characterized by increased systems engineering designed to operate in demanding environments. IPS is well prepared to contribute to this additional technology emphasis since ocean engineering is a core competency of ocean science.

Recommendation 8: We recommend that NSF provide training for IPS POs in risk analysis, large effort project management, and systems engineering trade space analysisffer Section engineering expertise to other NSF divisions and institute seminar program across NSF to exchange ideas about these issues from colleagues from NASA, ONR, DoD, and NIH.

-Long serving crew have been a hallmark of the academic fleet, but COVID, supply chain disruptions, and workplace changes have put this benefit to science at risk. While providing people is a fundamental role for the IPS, the health of the community requires the Section to anticipate the trajectory of such disruptive trends and take community action with partners such as ONR and NOAA to mitigate effects.

Recommendation 9: We recommend that the NSF enlist other ocean science agencies (ONR, NOAA) and institutions (UNOLS, COL) to assist with a method for ensuring appropriately well-trained ship operators, engineers, and other seagoing technicians.

3. Please identify agency-wide issues that should be addressed by NSF to help improve the program's performance.

-See discussion of issues of clarity of expectations for Broader Impacts.

-Program officer succession is critical for the Section. Each major program should have a PO "in training" and outright program vacancies represent a material risk for larger efforts like OOI. Excellence in governmental management results from a culture of succession training, lessons learned, and corporate knowledge.

Recommendation 10: We recommend to the NSF senior leadership that filling vacancies should be elevated to high priority.

4. Please provide comments **on any other issues the COV feels are relevant.**

-Re: misconduct at sea, and related issues. We acknowledge that Title IX issues are legally complex, but these issues impact both operations and funding.

Recommendation 11: We encourage IPS to continue ensuring that activities using federal funds follow appropriate laws. This is especially relevant to cooperative agreements, where NSF has more jurisdiction over the activities. We are especially concerned about misconduct at sea, as many open positions are being filled by mariners with limited or no experience on board research vessels, working with scientists, etc.

Recommendation 12: NSF should provide to IPS the clearest possible guidance on how Title IX issues should be dealt with respect to cooperative agreements.

5. NSF would appreciate your comments on how to improve the COV review process, format, and report template.

Recommendation 13: We suggest that IPS include at least one person from previous year's CoV to serve in the current year. Having this historical knowledge about procedures and other nuances of the CoV process should save time for the new committee.

The Committee of Visitors is part of a Federal advisory committee. The function of Federal advisory committees is advisory only. Any opinions, findings, conclusions, or recommendations expressed in this material are those of the Advisory Committee, and do not necessarily reflect the views of the National Science Foundation.

SIGNATURE BLOCK:

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For the 2022 IPS Committee of Visitors

Tammi L. Richardson,
Chair