OCE Committee of Visitors
Oceans and Marine Geosciences Sections/Division of Ocean Sciences
June 29-30, 2023
Recommendations and OCE Response

Summary Information
Date of COV: June 29 – 30, 2023
Program/Cluster/Section: Ocean and Marine Geoscience Sections
Division: Ocean Sciences
Directorate: Geosciences
Number of actions reviewed: 106 (Lead or Non-collab proposals) Awards: 38 Declinations: 68 Other: 0
Total number of actions within Program/Cluster/Division during period under review: 4,291 Awards: 2,084 Declinations: 2,185 Other: 22
Manner in which reviewed actions were selected: A random selection of competitive actions for the COV to consider was generated by OCE staff through the process described below. A list of competitive actions taken by OS and MGS Programs from FY 2019 – 2022 was downloaded from the NSF Enterprise Reporting System COV Module. Non-lead collaborative proposals that are part of a project were removed because they do not constitute a separate decision (i.e. the decision applied to the lead proposals is generally applied to all non-lead proposals). A random selection of proposals from each Program was made to match the proportions of awards and declines in each Program for each fiscal year. Typically, these random pulls represent 5% of all competitive actions. These projects were evaluated for conflicts of interest with the COV members and were replaced with another random selection if needed. Proposals were also evaluated to ensure the ratio of awards/declines, institutions, and PIs adequately matched that of the total population.

COV Membership

Role	Name	Affiliation
COV Chair or Co-Chairs:	Dr. Carol Arnosti, Chair	University of North Carolina, Chapel Hill
COV Members:	Dr. Amina Schartup Dr. Erika McPhee-Shaw Dr. Mary-Louise Timmermans Dr. Andrew Goodliffe Dr. Peter Raymond Dr. Timothy Herbert Dr. Naomi Levine Dr. Rebecca Vega Thurber	Scripps Institution of Oceanography Western Washington University Yale University University of Alabama Yale University Brown University University of Southern California Oregon State University

OCE OVERALL RESPONSE

The Marine Geosciences and Oceans Sections of the Ocean Sciences (OCE) Division truly appreciate the time, effort, and commitment that the 2023 Committee of Visitors (COV) spent reviewing Fiscal Year 2019 to 2022 activities of the following programs in the Ocean Sciences portfolio: Biological Oceanography, Chemical Oceanography, Marine Geology and Geophysics, and Physical Oceanography.

We commend and thank the COV for the excellent guidance provided in the report resulting from several meetings and acknowledge the significant amount of work the committee undertook while evaluating the complex portfolio of programs. We greatly appreciate the very positive feedback the COV provided about the integrity of the merit review process and the management of programs.

QUALITY AND EFFECTIVENESS OF THE MERIT REVIEW PROCESS

Recommendation 1: Having overworked, overcommitted POs affects the science mission of NSF and the community at large. The COV sees a strong need to hire additional staff – or absent new hires, a close examination of efforts related to task forces or other initiatives should be conducted to identify activities that could be pruned in order to free up time.

Data Source: Enterprise Reporting, COV Dashboard, Question 6

> **OCE Response:**
> OCE, referred to as "we" throughout the document, concur with this COV recommendation, and intend to prioritize it for immediate action. We wish to call out that the workload challenge is also being prioritized by the GEO Directorate, and the NSF, as it was highlighted in the 2022 FEVS (Federal Employee Viewpoint Survey). As the recommendation hints at, OCE predicts that additional hires are unlikely.
>
> **Context:** Workload is always a challenge because responsibilities tend to get added, rather than removed, we face several complicating factors around workload. For example, NSF is intentionally expanding its work under the umbrella of use-inspired research. This expansion requires dedicated, and well-versed staff to execute to the benefit of the science community as well as the broader nation. There has also been an increase in interagency work under the current Office of Science and Technology Policy (OSTP). Thus, increased activities within interagency working groups and new special programs within NSF have contributed to workload challenges. Furthermore, the COVID pandemic has presented challenges over the past three years, as well as a few opportunities. One COVID-triggered challenge is optimizing a hybrid workforce. Both increased intra and interagency work, and a hybrid workforce, have amplified workload challenges for OCE.
>
> **Action:** On-going actions - The prime concern of Recommendation 1 was Program Officer workload. To address this, OCE is already working on internal workflows, with a primary focus on administrative support. OCE is also looking at the number and duration of OCE meetings and assessing how they can be made more efficient (or whether they are needed at all). At the GEO level, OCE is an active member of the FEVS working group and expects there will be some actions addressing workload that arise from the working group this year.

Additional actions: More actions will be required to improve the workload concerns that the COV (and FEVS) have raised. OCE will prioritize addressing workload concerns and will involve program officers in these efforts.

Recommendation 2: The COV realizes that the instructions associated with the review process are standardized across a broad range of NSF divisions. Nonetheless, we recommend that OS/MGS provide some additional guidance to ad hoc reviewers related to how to evaluate broader impacts. One possibility is that the paragraph from the National Science Board, as listed above in this report, could perhaps be added to PO emails asking for ad hoc reviews; other creative ways to send the message to the community could also be developed.

OCE Response:
We agree that evaluation of the broader impacts criteria is important to the merit review process and will consider ways to improve the guidance that we provide to ad hoc reviewers, especially in on-going activities. We expect there will be significant actions taken by others; as such, OCE will prioritize remaining aware of the external actions and their implications for OCE.

Context: The National Science Board and National Science Foundation recently established a joint NSB-NSF Commission on Merit Review. The NSB-NSF Commission on Merit Review is planning to hold meetings and listening sessions to request feedback about the merit review process from the science and engineering community. This Commission will review the current Merit Review policy and associated criteria. We look forward to reviewing and implementing the Commission's recommendations when they become available.

Action: The current letter that is used by OS/MGS Programs to invite ad hoc reviewers asks them to evaluate all proposals using two criteria (Intellectual Merit and Broader Impacts) and provides links to a more detailed description of each criterion. The invitation letter also provides a link to the five elements that should be considered in the review of both criteria. We will discuss the potential merits of including the paragraph from the National Science Board that was listed in the COV's report in the letters that we use to invite ad hoc reviewers as well as other ways to share this information in our presentations to, and communications with, the community.

Recommendation 3: The COV found the review analyses to be far more thorough than the summaries currently released to PIs. We recommend that most of the review analysis be released to PIs to provide more feedback. Issues with respect to reviewer confidentiality could be addressed, for example, by referring to 'reviewer A' or 'reviewer #1' rather than using names in the review analysis.

OCE Response:
The OS/MGS Programs appreciate the COV's positive assessment of the review analyses and its recommendation that more information from the review analysis (RA) be released to PIs. Although we are not in favor of releasing the entire RA to PIs, we agree with the COV that there could be potential benefits to sharing more of our analyses. Focusing on this topic will be one our priorities for the coming year.

Action: In particular, we see benefits for early career PIs who may be less likely to contact a Program Officer (also relevant to Recommendation 7). In addition to expanding the information that we provide to PIs, we think that it is important to communicate our availability and willingness to speak with PIs. We will emphasize this message in our written feedback, in meetings with the OCE

community, and in our presentations and communications. We will review models for "Program Officer Comments" that are currently used in other programs at NSF and will have internal discussions about how best to modify our current practices to improve the feedback that we provide to PIs.

Recommendation 4: The clear, detailed review analyses are at the heart of the merit review process, and the COV strongly advocates for maintaining this process. Particularly in the case of early-career PIs or PIs from institutions that do not strongly support research, obtaining detailed feedback from POs about proposals is extremely important. Given that the programs include rotating POs, in the absence of these notes, it would be impossible to provide detailed feedback in cases in which a PO is no longer with NSF. As noted in Recommendation 3, we strongly suggest that more of the review analysis text be released to PIs.

Data Source: Jackets

> **OCE Response:**
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> As with our response to recommendation #3, OCE agrees and will prioritize developing ways to provide more detailed feedback to PIs consistent with new NSF policy.
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> **Context:** NSF is studying and implementing new policies to reduce workload and streamline processes around merit review. Such actions include focusing PD work on feedback that the PIs receive in PO comments and on developing alternate methods to document information that is currently contained in the Review Analysis.
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> **Action:** OCE is beginning discussions about what works best for the OCE community considering the new NSF policy, and COV Recommendations 1 and 3. We will address the PO comments as explained in our response to Recommendation 3. While there is space to continue with a Review Analysis for all proposals under the new Policy, it is apparent from the new NSF policy that RAs will be discouraged for some types of proposal actions. We will keep the GEO Advisory Committee apprised of OCE's response to this new change in NSF Policy.

Recommendation 5: Despite the overall effectiveness of the process, aspects of the panel review process are an unknown for a fraction of the community. In response to this observation, the COV believes that some additional training could be offered, which may be particularly helpful for early-career scientists. To help all PIs better understand the review process, the COV suggests that the programs make available a zoom recording of a mock panel review (using an imaginary proposal, if necessary) to de-mystify the process, provide training for new panel members, and help PIs understand the process by which their proposals will be evaluated.

> **OCE Response:**
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> We agree that growing the OCE community is a continuous goal and increased understanding of the panel review process will contribute to this effort. We appreciate the COV's attention to this topic and will develop new ways to share this information with the community.
>
> **Context:** The OS/MGS Programs use many opportunities/venues to explain the merit review process to early career scientists and new panel members. For example, Program Officers give presentations on proposal writing and the merit review process at early career events such as the DISCO/PODS meeting, Eco-DAS, and the OOI Summer School. We also hold pre-panel meetings with panelists and distribute materials to panelists in advance of panels to help them understand the process.

Action: As an experiment, the MGG program is preparing a mock panel review that will be shared with new panel members. Based on how this mock panel review is received, other programs will discuss best practices and creative approaches for communicating the panel process to their communities.

MANAGEMENT OF THE PROGRAM UNDER REVIEW

Recommendation 1 (repeated): The COV identified the primary issue for program management as understaffing and excessive workload faced by the current staff. To address this issue, we strongly encouraged investment in future hiring, as well as a thorough examination of workload distribution. By adequately staffing the program and ensuring an appropriate balance of responsibilities, POs and program assistants will be in a position to carry out some of the recommendations (e.g., greater outreach to early career PIs and PIs at under-resourced institutions) in this report.

> **OCE Response (repeated):**
> OCE, referred to as "we" throughout the document, concur with this COV recommendation, and intend to prioritize it for immediate action. We wish to call out that the workload challenge is also being prioritized by the GEO Directorate, and the NSF, as it was highlighted in the 2022 FEVS (Federal Employee Viewpoint Survey). As the recommendation hints at, OCE predicts that additional hires are unlikely.
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>
> **Additional actions**: More actions will be required to improve the workload concerns that the COV (and FEVS) have raised. OCE will prioritize addressing workload concerns and will involve program officers in these efforts.

RESULTING PORTFOLIO OF AWARDS

Recommendation 6: The COV recognizes that data collection of this type is determined by NSF policy at a higher administrative level. We nonetheless strongly recommend that proposals and awards be tracked by NSF at a much more granular level by institution type (R1, R2, MSI, HBCU, etc.).

Data Source: Enterprise Reporting, COV Dashboard, Question 3

> **OCE Response:**
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> We appreciate this suggestion and note that it is made at the NSF level. In OCE, we are reviewing our use of internal proposal coding elements and will work on improving tracking by institution type within OCE even though these data will not be made public per NSF policy.

Recommendation 7: To the extent possible, the COV suggests that POs continue and expand their efforts to proactively reach out to early career PIs and PIs at institutions that do not have a strong record of research support to help ensure that these individuals can build funded research programs. However, we recognize that such a recommendation would add considerably to PO workload; it could only be carried out if Recommendation 1 can be acted upon.

Data Source: Information on new PIs available via Enterprise Reporting, COV Dashboard, Question 6

> **OCE Response:**
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> We agree with the COV about the importance of proactive outreach to early career PIs and PIs at institutions that do not have a strong record of receiving support from NSF. The OS/MGS programs have identified this recommendation as a priority for action during the upcoming year.
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> **Context and Action:** Program Officers in the OS/MGS sections meet regularly with early career PIs, e.g., DISCO/PODS, Eco-DAS, OOI Summer School, OCB Annual Workshop, NAGT Early Career Workshop visit to NSF, "Meet Your Program Officer" breakfast meetings at the Ocean Sciences Meeting, "Navigating NSF" session sponsored by the Earth Science Women's Network, Biological Oceanography quarterly office hours, etc. We will continue these activities and expand them where and when possible. For example, we will consider ways to increase our outreach (formal and informal) to early career scientists at the upcoming in-person Ocean Sciences Meeting in February 2024. We will also improve our tracking of these activities so that they are better documented for the next COV.
>
> We also agree with the recommendation about increasing our engagement with institutions that do not typically receive support from NSF. Our commitment to outreach is expressed in one of the goals identified in the draft *Ocean Sciences Vision Statement for Diversity, Equity, and Inclusion*:
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> > *Conduct outreach to encourage increased proposal submissions, including for use of facilities, from members of underrepresented groups and underserved institutions.*
>
> The OS/MGS programs will discuss and identify appropriate and feasible outreach activities over the next year.

Recommendation 8: The initial work of the BAJEDI working group should be continued, and expanded. The POs and programs should continue to work to enhance training, mentoring, and funding of PIs who come from underserved communities, institutions, and fields of study.

An additional suggestion is for NSF/GEO/OCE/OS/MGG to exercise caution when introducing additional required documentation, even with good intentions. As exemplified by programs like EMBRACE, GRANTED, and EiR, an excessive number of administrative requirements can create barriers for institutions and PIs with limited resources, many of whom are URMs (or URM serving). These programs aim to facilitate capacity development and transition towards core programs and standard grants. However, increasing requirements simultaneously would hinder progress towards this goal. It is important to strike a balance by minimizing unnecessary administrative burdens, thereby ensuring equitable access and opportunity for all institutions and PIs, particularly those with limited resources and from underrepresented backgrounds.

Data Source: Enterprise Reporting, COV Dashboard, Question 5

> **OCE Response:**
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> We thank the COV for affirming our on-going work while recognizing how much work there is to do in all fields of science when it comes to belonging, accessibility, justice, equity, diversity, and inclusion. We remain committed to prioritizing this effort and note the COV's call for expansion.
>
> **Context:** The OCE BAJEDI has been in place for four years now. Also, a GEO-wide BAJEDI group was established in the past year and NSF has also begun an imperative on the "Missing Millions."
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> **Action:** OCE is finalizing a DEI Vision for the Division. As mentioned in our response to Recommendation 7, the Vision includes a series of goals. The next step will be to prioritize two to three goals from the vision for priority actions in Fiscal Year 2024, and to develop specific actions in a DEI Implementation Plan. The OCE BAJEDI group will also track metrics of progress and impact, by developing a logic model for the prioritized actions.

Recommendation 9: We suggest that in the future, members of the COV are informed that there will be biweekly to monthly (self-organized) meeting for approximately 3 months prior to the 2-day COV meeting, and that individual reviews of eJackets will need to take place during this time period. A three-month time period would be helpful in order for the COV to progress from procedural issues (how to actually access the information; reporting additional conflicts of interest to NSF) to beginning to discuss the fundamental issues associated with the review (e.g., observations and discussions of specific issues relevant to various aspects of the review process.)

> **OCE Response:**
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> We thank the COV for succinctly suggesting an optimal time frame for the OCE COV process and agree that this year's process was rushed.
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> **Action:** The internal NSF COV team is committed to producing a "lessons learned" document and is also committed to following the COV's suggested timelines for our next COV in 3-4 years. This will be particularly useful given that we anticipate that we will be consolidating to a single OCE COV moving forward and that we will be moving toward a common directorate-wide timing for all of the division COVs.