



National Science Foundation • Office of Inspector General
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MEMORANDUM

DATE: January 20, 2022

TO: Alicia Knoedler
Office Head
Office of Integrative Activities

Wonzie Gardner
Office Head and Chief Human Capital Officer
Office of Information & Resource Management

FROM: Mark Bell 
Assistant Inspector General
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SUBJECT: OIG Report No. 22-6-003, Remote Versus In-Person Merit Review Panels

NSF is planning how it will operate in a post-Coronavirus Disease 2019 (COVID-19) pandemic environment. Accordingly, as a routine activity, we reviewed whether merit review panels (convened to evaluate proposals) that are held remotely are less expensive and provide more opportunities for diversity and inclusion than those held in person. However, we realize these are only two of many factors that NSF has to consider in deciding to what extent it will permit virtual panels to replace face-to-face discussion of award proposals.

In the year following the onset of the pandemic, NSF reviewed 5 percent fewer proposals and issued 2 percent fewer awards, but according to our calculations, it spent 67.5 percent less on compensation and travel for merit review panelists than during the same period the prior year. Specifically, NSF spent approximately \$13.5 million less on merit review panelists' travel and compensation from April 2020 to March 2021, after stopping in-person panels due to the pandemic, than it spent during the same period the prior year (April 2019 to March 2020). In addition, according to NSF, using remote panels supports NSF's efforts to broaden participation by increasing participation opportunities for individuals with small children, individuals with disabilities, and other individuals who cannot travel. However, due to the low rate of panelists' responses to requests for demographic information, NSF cannot easily assess the impact remote panels have on increasing the diversity of panels.

We provided a draft of this memorandum to NSF management for review on December 8, 2021. NSF provided us with comments on January 19, 2022, which we considered and incorporated into the memorandum.

Objectives, Scope, and Methodology

The objectives of this review were to determine if remote — also called virtual — merit review panels¹ (1) are less expensive than in-person panels and (2) provide an opportunity for more diversity and inclusion than in-person merit review panels. In considering diversity and inclusion, we focused on gender, persons with disabilities, and underrepresented racial minority groups.

To accomplish our objectives, we spoke with NSF staff from the Office of Budget, Finance and Award Management and the Office of Integrative Activities. We also reviewed data NSF provided about the costs of panels and reviewed relevant reports, including:

- [Vision 2030](#)
- [Merit Review Process Fiscal Year 2019 Digest](#)
- [Women, Minorities, and Persons with Disabilities in Science and Engineering: 2021](#); and
- NSF's Racial Equity Task Force Report.

At the time of our review, we found NSF did not track or analyze how much it spends specifically on merit review panels to evaluate proposals for NSF funding. Instead, NSF tracked all panel costs — including site visits and operating plan reviews for major facilities — using one accounting code. NSF explained its focus has been on tracking advisory committee costs as required by law, not to determine costs of convening merit review panels to evaluate proposals.

To isolate the costs of convening merit review panels and estimate savings, we used costs of merit review panelists' travel and compensation NSF provided and attempted to exclude major facility and other reviews not connected to proposal reviews by removing those that did not cite a proposal. Because NSF staff also may have entered site visits and reverse site visits connected to proposal review as “site visits” instead of “panels” in the system,² the cost of merit review panels both before and during the pandemic may be greater than our estimate.

Background

Through its merit review process, NSF ensures that grant proposals are reviewed in a fair, competitive, transparent, and in-depth manner. In FY 2020, approximately 29,000 members of the science and engineering community participated in the merit review process. This allowed NSF to evaluate more than 42,000 proposals through a competitive merit review process and make approximately 12,200 new competitive awards.

Most proposal reviews (88 percent in FY 2019) include a panel,³ in which external reviewers meet in-person or virtually to discuss their reviews and provide advice as a group to the program

¹ We consider “merit review panels” to be panels NSF convenes in which external reviewers meet in-person or virtually to discuss their evaluation of proposals for NSF funding.

² For example, we found NSF staff selected “panel” in the Guest System, NSF's web-based application for financial tasks associated with hosting panels and flat-rate meetings, when compensating experts who participated in major facility reviews not connected to a proposal review.

³ *Merit Review Process Fiscal Year 2019 Digest*. 67 percent of proposals were reviewed by a panel only, and 21 percent were reviewed by a combination of panel and supplemental ad hoc reviews.

officer. The program officer then makes funding recommendations, and if the division director concurs, the recommendation is submitted for award processing.

Participation in the merit review process as a panelist is voluntary. According to NSF, reviewers benefit from serving on panels by gaining firsthand knowledge of the peer review process; learning about common proposal problems; discovering strategies to write strong proposals; and meeting colleagues and NSF program officers managing programs related to their interests.

NSF also compensates merit review panelists for their time and travel expenses. Merit review panelists who participate virtually receive \$200 per day. In-person panelists receive \$280 per day if the meeting location is within their local commuting area and \$480 per day if the panel site is outside their local area. Daily panelist rates remain the same regardless of the number of proposals a panelist reviews each day. NSF also pays for train and air fares to and from the panel site.

Virtual Merit Review Panels Cost Less Than In-Person Merit Review Panels

According to our calculations, NSF spent approximately \$20 million on merit review panelists’ travel and compensation in the year prior to the pandemic (April 2019 – March 2020). After NSF stopped in-person panels in March 2020 due to the COVID-19 pandemic, NSF spent approximately \$6.5 million (April 2020 – March 2021), saving NSF an estimated \$13.5 million in travel and compensation. NSF also incurs additional costs beyond panelists’ travel and compensation when holding in-person panels, such as buying refreshments and occasionally renting conference space. We found that although NSF reviewed 5 percent fewer proposals and issued 2 percent fewer awards, NSF’s cost of merit review panelists’ travel and compensation was 67.5 percent less in that same period using virtual panels, as shown in Table 1.

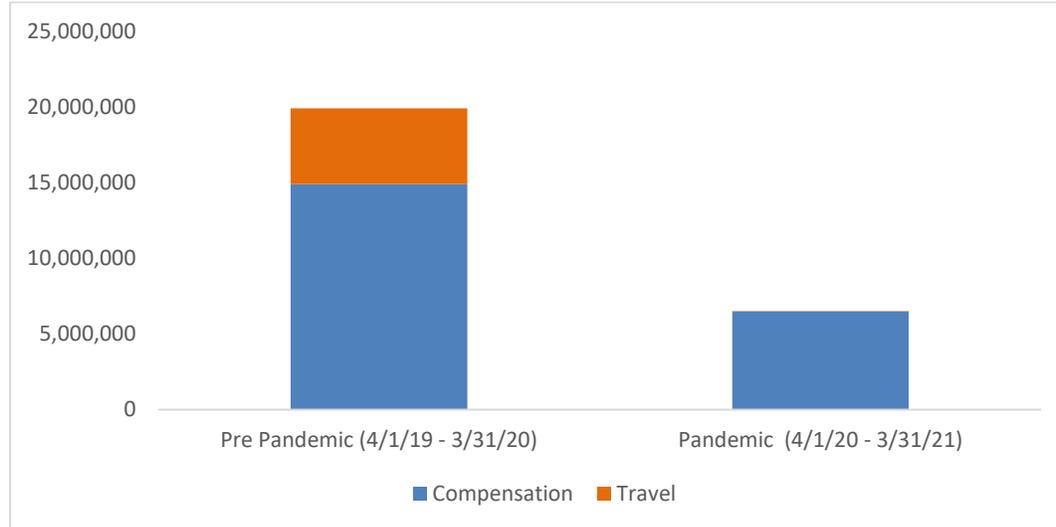
Table 1. Costs of Merit Review Panelists’ Travel and Compensation Pre- and Post-Pandemic Onset

Timeframe	No. of Proposals	Travel & Compensation Costs	Cost per Proposal for Travel & Compensation
Pre-Pandemic Onset (4/1/2019 – 3/31/2020)	44,849	\$20,000,000	\$445.94
Post-Pandemic Onset (4/1/2020 – 3/31/2021)	42,605	\$6,500,000	\$152.56
Difference	(2,244)	\$(13,500,000)	\$(293.38)
Percent Change	-5%	-67.5%	-65.8%

Source: NSF-provided data

As previously discussed, NSF compensates merit review panelists for their time and travel expenses. Figure 1 shows the cost of compensation and travel expenses before and after the onset of the pandemic.

Figure 1. Cost of Merit Review Panelists’ Travel and Compensation Pre- and Post-Pandemic Onset



Source: NSF OIG-created depiction of NSF-provided data

NSF Does Not Have Sufficient Data to Determine If Virtual Panels Support Its Efforts to Broaden Participation

According to NSF, “Use of virtual panels supports NSF’s efforts to improve career-life balance and broaden the participation of highly qualified individuals in the review process.”⁴ Individuals who may benefit from increased opportunities to participate in virtual panels include:

- researchers with young children or who provide elder care;
- researchers with disabilities that make travel difficult or whose home environment provides special assistive technologies; and
- researchers with heavy teaching commitments or other work commitments that would make a 2- or 3-day absence difficult.

According to NSF staff, the flexibility virtual panels offer has helped remove a barrier to participation. For example, in July 2020, NSF’s Division of Environmental Biology staff noted “[they have] seen virtual panels expand our community to include those who previously found the travel required for in-person panels too onerous.” However, due to the low rate of panelists’ responses to requests for demographic information, NSF has very limited data to use in assessing the impact remote panels have on increasing the diversity of panels.

NSF attempts to measure diversity in merit review panels via an optional question that asks panelists to indicate their gender, race, ethnicity, and if they have a disability. However, NSF told us it has not reported on panelists’ gender since 2016 because the response rate has been too low to draw accurate statistical inferences. In FY 2016, when 79.3 percent of panelists reported their gender, 31.5 percent of panelists participating in-person and 33.3 percent of panelists participating virtually were women. Among panelists who reviewed proposals awarded in

⁴ Report to the National Science Board on the National Science Foundation’s Merit Review Process Fiscal Year 2016, NSB-2017-26, August 2017

FY 2020, NSF told us that 75 percent reported their gender. However, NSF did not provide a specific rate when we asked what response rate is needed to be able to draw accurate statistical inferences.

NSF also told us it has not reported about the race, ethnicity, and disability status of merit review panelists due to the high level of non-response rates. For example, in FY 2020, only 44 percent of merit review panelists designated a race and 42 percent designated an ethnicity. NSF told us it is currently identifying solutions to improve the quantity of self-reported demographic data.

NSF Is Considering Ways to Improve Data on Merit Review Costs and Efforts to Broaden Participation

In August 2021, NSF's Office of Integrative Activities updated the NSB on its vision to continually modernize the merit review process to promote fairness, transparency, effectiveness, and efficiency in decision-making. Strategies to help it achieve its vision and mission include developing a common understanding of the current state of merit review and increasing the accessibility and usefulness of merit review data. According to NSF, having easily accessible merit review cost data could help support oversight of merit review modernization and help accelerate broad adoption of proven process improvements.

Perceptions on Value of Virtual Panels Changing

Prior to COVID-19, criticism of virtual panels, as compared to in-person panels, included a perceived loss of social interaction and engaged discussion. Based on conversations with panelists over the years, NSF stated that panelists appreciate the ability to interact with program officers and fellow panelists over meals and breaks. Further, according to NSF's *Proposal and Award Manual*, "Virtual panelists complement, but do not replace, the face-to-face reviews that NSF currently employs. This mechanism should only be used as a way to augment the selection of reviewers ... taking into account programmatic requirements and goals."⁵

Although NSF was forced by the pandemic to use only virtual panels since April 2020, NSF has continued its mission. In addition, some employees' perceptions on the need to conduct merit review panels in person are changing. Only 17 percent of NSF staff responding to a remote work survey said in-person panels were needed, whereas 47 percent said they did not see a need for any in-person meetings. In addition, while not the same as in person, virtual panelists can attend informal break-out sessions to interact with program officers and fellow panelists.

According to NSF, it must balance multiple factors when determining the right mix between in-person and virtual panels, including cost, use of space, diversity of panelists, its ability to use panels for training, and its ability to recruit qualified panelists.

⁵ NSF *Proposal and Award Manual*, June 2020

Recommendations

We recommend the Head, Office of Integrative Activities:

1. Develop a methodology to track the cost of convening merit review panels to evaluate proposals for NSF funding.
2. Identify and implement solutions to improve merit review panelist demographic data.
3. Study multiple factors, including cost of merit review panelists' travel and compensation, to inform a decision on how to conduct future merit review panels to evaluate proposals and modify guidance accordingly.

Agency Response

Alicia J. Knoedler, Ph.D., Head, Office of Integrative Activities, and Wonzie Gardner, Head, Office of Information Resource Management, responded as follows: "NSF agrees with the OIG's recommendations. We extend our appreciation to the OIG for its interest in the important and complex topic of in-person vs. remote merit review panels for proposals, including issues related to diversity and inclusion and cost."

We thank your staff for the assistance that was extended to OIG. If you have any questions, please contact Elizabeth Kearns, Director, Audit Execution, at 703.292.7100.

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