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RE: Request for Information on National Science Board-National Science Foundation Merit Review Commission Review of NSF's Merit Review Policy and Processes

The American Society for Biochemistry and Molecular Biology (ASBMB) is an international nonprofit scientific and educational organization that represents about 12,000 students, researchers, educators, and industry professionals. The ASBMB strongly advocates for strengthening the science, technology, engineering, and mathematics (STEM) workforce, supporting sustainable funding for the American research enterprise, ensuring diversity, equity, accessibility, and inclusion (DEAI) in STEM, and addressing emerging issues in the scientific enterprise.

The American Society for Biochemistry and Molecular Biology appreciates the opportunity to submit feedback to the National Science Foundation's (NSF) merit review commission. The society has watched closely as the commission has met to discuss updating review criteria and implementation practices in the review process. The ASBMB has input for each topic:

1. Updating Review Criteria

The society commends the NSF for taking steps to re-examine its merit review process. Maintaining upkeep of the review process is important to sustaining a healthy, innovative scientific ecosystem. As NSF updates the merit review process, ASBMB recommends that the agency gather input on the initial draft from the scientific community. The society also recommends that components of the draft include weights for the intellectual merit and broader impacts review criteria. The current process places no weight on the review criteria. The lack of guidance has resulted in [inconsistent evaluations from reviewers and program officers](#).

To align funding priorities with the mission of the agency and emphasize the importance for scientific innovation, ASBMB strongly encourages NSF to lead with intellectual merit when evaluating review criteria. Prioritizing intellectual merit would allow investigators to dedicate more time and funding to their research and to accelerate scientific discoveries.

2. Implementing Review Criteria

To ensure implementation of the proposed review criteria goes smoothly, ASBMB recommends that NSF host listening sessions. These sessions will ensure that the scientific community is

involved in implementing review changes, specifically, as it pertains to broader impacts. Currently, grant proposers do not have clear guidance regarding broader impacts. While NSF does have a [document](#) outlining possible broader impact projects, the agency should consider the resources and time available to commit to broader impacts. For example, an institutional award will allow for more people and resources to be dedicated to broader impacts; however, it would be difficult for a solo investigator to dedicate time to both the scientific responsibilities of the award along with the broader impacts.

The ASBMB strongly recommends that NSF develop specific broader impact expectations that match the scope of the funding mechanisms to reduce unintended burdens on solo investigators or investigators with limited resources.

The society wants investigators to be successful implementing broader impacts, however, there is a perception that review criteria prioritizes novelty with broader impacts over sustaining current projects. Reframing broader impacts to reward sustainability would be a more efficient use of time and resources for investigators.

3. Investigator and Proposer Perspectives

ASBMB appreciates that NSF program officers are proactively engaged with investigators. To improve the perspectives of investigators and proposers, NSF should explore institutional biases that reviewers may have.

Over the years, reviewers have produced [troubling commentary](#) about Graduate Research Fellowship Program (GRFP) applications. To ensure that program officers, chairs and reviewers are equipped to address insensitive remarks, NSF should create and require [bias in review training modules](#) similar to those at the National Institute of Health. Modules should include training on empowering program officers to intervene when biases occur throughout the review process.

Furthermore, to hold reviewers accountable for their actions, NSF should design measures to make the review process transparent, first by publicizing reviewer rosters and second by providing channels for GRFP applicants to report inappropriate feedback.

4. Reviewer Perspectives

Service on NSF review panels is seen as a valuable experience for many investigators. An aspect of the review process that is seen as favorable is the ability to return to previously ranked applications at the end of the review process to re-evaluate application rankings. This option

grants reviewers more time to thoroughly provide feedback to applications and should continue to be a part of the review process.

5. Awardee Support

Awardee support can be significantly improved by the creation of a new user-friendly reporting system for award progress reports.

6. Other Suggestions and Comments

NSF does not have a unified process for soliciting reviewers. It is conducted at the discretion of program directors, giving them more latitude to decide the outcomes of application evaluations instead of the reviewers with specific expertise. NSF should establish a formal application process for interested peer reviewers.