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## **RE: National Institutes of Health Office of Extramural Research’s Request for Information on Proposed Revised Simplified Review Framework for NIH Research Project Grant Applications**

The American Society for Biochemistry and Molecular Biology is an international nonprofit scientific and educational organization that represents more than 10,000 students, researchers, educators and industry professionals. The ASBMB strongly advocates for strengthening the science, technology, engineering and mathematics workforce, supporting sustainable funding for the American research enterprise and ensuring diversity, equity and inclusion in STEM.

The National Institutes of Health’s Office of Extramural Research requested public input on its [Proposed Simplified Review Framework for NIH Research Project Grant Applications](#) on Dec. 7. The changes aim to reduce applicant reputational bias as well as reduce reviewer administrative burden during the peer-review process.

The ASBMB recognizes that peer review is [essential to funding the most meritorious research](#). As such, the ASBMB applauds NIH and CSR for taking action on current concerns about bias and excessive administrative burden during peer review as well as providing iterative opportunities for public comment during the process.

The proposed framework presents several improvements on the current grant review process. The society offers nine recommendations for its implementation.

### **Considerations for the proposed framework**

#### ***Recommendation 1: Move forward with consolidating review criteria***

The ASBMB favors the proposed consolidation of the current five scored criteria into three review factors, which reduces the number of scores reviewers need to provide and their administrative burden. In particular, the delineation of significance and innovation from rigor and feasibility is a logical conclusion reflecting the thematic questions of merit: “Should it be done?” and “Can it be done well?”

Ideally, this proposed framework will refocus reviewers on the two most important contributions to meritorious research — “how important the research is” and “how rigorous and feasible the approach is”

— and reduce the tendency of study sections to discuss minor weaknesses that disadvantage otherwise meritorious applications.

***Recommendation 2: Go ahead with elimination of most “Additional Review Considerations”***

The ASBMB applauds the effort to reduce reviewer administrative burden by eliminating their examination of most “additional consideration” documents. Under the proposed framework, reviewers will still evaluate “Authentication of Key Biological and/or Chemical Resources” and “Budget and Period of Support.” The ASBMB agrees that both retained “additional consideration” documents are important for peer reviewers to assess in the context of the research project grant application. Additionally, the society supports using drop-down ratings for these considerations and requiring a written justification only when concerns exist.

***Recommendation 3: Improve the triage process for study section discussion***

The ASBMB is concerned about scientific research proposals that are not discussed in study section meetings due to the weighting of preliminary scores that result in triage. The average score given by three peer reviewers to one proposal determines whether a proposal moves forward to discussion at the study section meeting; however, when the average score is pulled down by an outlier, the proposal is not discussed. It would be more appropriate for such a proposal to be discussed thoroughly by the study section to ensure fairness.

The ASBMB recommends CSR rectify how and when borderline-scoring proposals are brought into the study section discussion. This goal could be accomplished in two ways: First, task the scientific review officer with initiating discussion of borderline-scoring proposals and/or second, automatically include a set time for discussion of these proposals. The ASBMB urges CSR to ensure that quality scientific research projects are not left behind during the triage process.

***Recommendation 4: Validate the framework by conducting a pilot study***

The ASBMB supports the effort to address systemic funding gaps that have [resulted in the top 10% of institutions receiving 70% of NIH’s funding](#), a trend that disadvantages investigators from low-resourced, predominately undergraduate and minority-serving institutions. To reduce reputational bias, the “Investigator” and “Environment” criteria would be consolidated into factor 3, “Expertise and Resources,” which will be unscored but will contribute to the overall impact score. The ASBMB is cautiously optimistic about the change.

Given the complexity of bias and funding disparities that scientists from historically marginalized backgrounds face, the ASBMB urges CSR to consider the impact of the proposed changes on these individuals. Multiple ASBMB members shared concerns that reputational bias could persist in scoring of factor 1, “importance of research,” and factor 2, “rigor and feasibility,” or be excessively applied to the overall impact score. To address these concerns, the ASBMB encourages CSR to further clarify how factor 3 would affect the overall score and how significant discrepancies between individual criteria scoring and overall scoring will be interpreted by CSR scientific review officers.

To validate that the proposed framework reduces reputational bias and ensure that the proposed changes are data-driven, the ASBMB asks CSR to conduct a thorough pilot study of the proposed framework across all research project grants.

***Recommendation 5: Define innovation as holistic and context-independent***

The ASBMB suggests using a broad definition for innovation in factor 1 that can encompass the novelty of the entire project, including methods development, approach and conceptual frameworks for research. Some members of the ASBMB community are concerned with limiting the use of “innovation” to just factor 1 and cite cases in which innovation is intertwined with rigor (*e.g.*, methods development projects). While the ASBMB recognizes that innovation as a concept can be a strong score-driving component for both factors 1 and 2, it agrees that the proposed framework is the best path forward, whereby innovation is considered only as part of factor 1 to prevent overweighting.

**Considerations for future implementation**

***Recommendation 6: Educate grant review stakeholders on new peer-review framework***

During the eventual rollout of a new peer-review framework, the scientific community will need to be informed and educated on the changes. The ASBMB asks that CSR consider developing toolkits for applicants, reviewers and study section chairs to facilitate implementation. The society encourages CSR to use diverse methods of outreach to disseminate information through [NIH general notices](#), [video casting](#), [CSR Review Matters](#) blog posts and [social media outlets](#). To help prevent confusion and potential delays in peer review during the transition period, reviewers, chairs and scientific review officers should be required to complete training modules on the new framework. The training should also include updated “Bias Awareness and Mitigation Training” material in alignment with the ASBMB’s [previous recommendation](#) to make bias training a mandatory requirement for participating in peer review.

***Recommendation 7: Exercise caution when using artificial intelligence to reduce administrative burden***

As CSR takes on more of the administrative burden of the “additional consideration” documents, the society recommends that any development of artificial intelligence to assist in these tasks be done carefully to prevent [bias](#) in those systems. Therefore, the ASBMB points to its [previous recommendations](#) suggesting NIH consult with stakeholders and chairs of technology diversity initiatives such as [AIM-AHEAD](#) to ensure that the technology is not biased against scientists from historically marginalized groups or other underrepresented groups in science.

***Recommendation 8: Continue conducting outreach to MSIs and IDeA institutions to diversify reviewers and working group members***

The [CSR’s strategic plan](#) outlines efforts to diversify study sections as well as conduct outreach to low-resourced institutions. The ASBMB strongly supports these endeavors to engage diverse audiences and recruit peer reviewers who vary in attributes and demographics. This diversity helps balance peer-review scores and would increase the efficacy of the proposed framework.

As stated in past recommendations, the ASBMB asks that CSR include experts from all institution types on review panels, including those in [Institutional Development Award-eligible states](#) and those at minority-serving institutions, such as historically Black colleges and universities, tribal colleges and universities, Asian American Native American Pacific Islander-serving institutions and Hispanic-serving institutions. The ASBMB also previously recommended targeted outreach to professional societies such

as the [Asian and Pacific Islander American Scholars](#), [American Indian Science and Engineering Society](#) and [The Society for Advancement of Chicanos/Hispanics and Native Americans in Science](#).

***Recommendation 9: Reconsider using the proposed framework for R15 awards***

The ASBMB recommends that CSR reevaluate the inclusion of R15s in the proposed framework. Eliminating scoring for expertise and resources will conflict with one of the three R15 goals to “strengthen the research environment of the institution.”

Although R15s are similar to other research grants that fund meritorious research projects, the scope and feasibility can vary depending on the capacity of the institution. With the shift in focus toward factors 1 and 2, the smaller scope of work that is feasible at primarily undergraduate institutions may be disadvantaged under the new framework in comparison with larger labs that host undergraduate research. The ASBMB encourages CSR to clarify how R15 awards will be fairly evaluated under the proposed framework.

Additionally, moving forward, the ASBMB strongly suggests that CSR review R15 applications separately from R01 and other research project grants.