



FASEB

Federation of American Societies
for Experimental Biology

Representing Over 115,000 Researchers

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May 4, 2022

Center for Scientific Review Advisory Council
c/o Bruce Reed, PhD
Deputy Director, Center for Scientific Review
National Institutes of Health
6701 Rockledge Drive, Bethesda, MD 20892

Submitted electronically via email: reedbr@mail.nih.gov

Dear Center for Scientific Review Advisory Council members,

The Federation of American Societies for Experimental Biology (FASEB), representing 28 scientific societies and over 115,000 scientists, is deeply committed to promoting opportunities for early career scientists to train the next generation of a highly skilled scientific workforce. We are excited to see the [Fellowship Review Working Group](#) undertaking important evaluation of the current fellowship review criteria, and appreciate the [update presented](#) during the National Institutes of Health (NIH) Center for Scientific Review (CSR) Advisory Council meeting in March 2022. As the Working Group continues its deliberations, FASEB commends many proposed changes to review criteria and offers points of reflection on areas still being discussed.

During the Advisory Council meeting there was broad support for eliminating grades as an indicator of qualifications. FASEB [strongly agrees](#) and looks forward to the scholastic performance section being removed. Reducing emphasis on institutional environment by eliminating this as a separate criterion is another positive proposal. Weaving in aspects of the institutional environment as appropriate in the science and scientific resources and training plan and training resources criteria centers the trainee instead of pedigree of the university. FASEB is eager to see these modifications implemented.

Additionally, the Working Group proposed removing the sponsors, collaborators, and consultants section as an individual scored criterion—instead incorporating how the sponsor(s) provide support such as teaching, mentorship, and scientific knowledge for the trainee in the newly proposed science and scientific resources and training plan and training resources criteria. FASEB was unable to reach consensus on whether the sponsor section should remain an individual scored criterion or not. However, data presented on sponsor academic rank seemingly affecting application scores are concerning—particularly for single assistant professor sponsors and teams of assistant professors. As deliberations continue, FASEB urges the Working Group to emphasize [traits of a quality mentor](#) in the criterion. Length of time as an academic scientist and number of trainees previously in the laboratory are not necessarily indicators of inclusive excellence. Requiring demonstration of continuous pedagogy and implementation of evidence-based culturally aware mentoring practices may help alleviate bias against junior investigator sponsors. The ability to provide meaningful training is more important than the number of past trainees, and junior investigator sponsors should not be disadvantaged simply for being new investigators.

Full members: The American Physiological Society • American Society for Biochemistry and Molecular Biology • American Society for Pharmacology and Experimental Therapeutics • American Society for Investigative Pathology • American Society for Nutrition • The American Association of Immunologists • American Association for Anatomy • Society for Developmental Biology • Association of Biomolecular Resource Facilities • The American Society for Bone and Mineral Research • American Society for Clinical Investigation • Society for the Study of Reproduction • The Endocrine Society • American College of Sports Medicine • Genetics Society of America • The Histochemical Society • Society for Glycobiology • Association for Molecular Pathology • Society for Redox Biology and Medicine • Society For Experimental Biology and Medicine • American Aging Association • Society of Toxicology • Society for Leukocyte Biology • American Federation for Medical Research • Environmental Mutagenesis and Genomics Society • Shock Society • **Associate members:** The American Society of Human Genetics • The Society for Birth Defects Research & Prevention

FASEB also applauds the suggested career goals section in the NIH Biosketch personal statement for trainees. Careers outside of academic research must be unequivocally stated as valuable in the Funding Opportunity Announcement to enact this philosophical shift. Likewise, reviewers must be trained to accept a variety of careers, including those outside of direct scientific research, as important and worthwhile. Crucially, career exploration must also be emphasized. This section cannot expect trainees to have a single career path identified. Few trainees are certain of their career goals until late stages, and desired careers also frequently change over time. Applicants need to be assured that this career goals section does not need to be a definite path, and reviewers must honor that. Instead of only focusing on the individuals' career goals, review of NIH-funded fellowships should consider promoting inclusion of career exploration support such as mentor networks, transferrable skills development, and institutional resources.

The intent behind the statement of fellowship qualifications in the revised F applicant NIH Biosketch is laudable, but guidance for junior graduate students, or modification or elimination of this section, may be necessary. Scientific accomplishments such as research papers, review articles, accepted abstracts for presentation at conferences, and similar will seemingly be in the contributions to science section of the Biosketch; therefore, it is unclear what should be included in this fellowship qualifications section if the Working Group wishes to promote content other than courses, grades, and similar. Students simply may not have anything beyond their science relevant to their fellowship qualifications to convey. During undergraduate education, students from disadvantaged backgrounds may have had to work instead of volunteer in laboratories or at other non-profit organizations. Similarly for graduate students, many, if not most, opportunities for career growth outside of direct research experience are unpaid; paid opportunities, such as internships in industry, are often prohibited until later in the PhD process. Thus, sometimes only trainees with familial financial support are able to dedicate time to these volunteer activities. Furthermore, the first couple of years in graduate school usually demand full immersion into the science, on top of taking courses and occasionally teaching assistantships, simply not leaving time for other pursuits. The goal of this proposed NIH Biosketch section is logical on the surface, but FASEB is wary this section may function to further dismiss trainees from historically excluded backgrounds. Rather than being its own section, the intent of the fellowship qualifications could be incorporated into the career goals section of the F applicant Biosketch to demonstrate activities already undertaken to enhance professional growth.

Individual fellowships can act as catalysts for early career scientists, and the Working Group appears interested in exploring “the delta”—how much of a difference the fellowship would make for an awardee—as part of scored criteria. FASEB supports reviewers evaluating not only accomplishments of applicants, but also aptitude. However, this criterion will need to be better defined for clarity to both applicants and reviewers on what will be scored. “The delta” is currently quite amorphous and will be difficult to communicate and measure. Clear metrics need to be developed for trainees to understand what should be addressed and for reviewers to cognize what should be evaluated. For example, “the delta” could be positioned as how the applicant will gain the skills and knowledge needed during this training period to become more competitive for a wide range of careers. While there is always a subjective component to fellowship review, making “the delta” as well-defined as possible may help alleviate bias.

Additionally, it is vital that any changes to incorporate “the delta” into the application and review process do not result in unintended consequences. FASEB is concerned that applicants who raise legitimate considerations for why the fellowship would be meaningful for their career trajectory, such as attending a less well-resourced institution, may backfire in the minds of reviewers who could then see the reason for needing the fellowship to

be a red flag. Institutional reputation, which the Working Group aims to deemphasize, may inadvertently become problematic once again in evaluation of “the delta.” FASEB supports the ethos of “the delta” and recognizes this was an interim update from the Working Group; significant time needs to be spent developing details of how “the delta” will be defined and measured for applicants and reviewers prior to final Working Group recommendations.

Implementing new fellowship review criteria will be a major shift in academic norms, and great care will need to be taken to ensure reviewers, trainees, and their advisors fully understand the changes. For example, removing the scholastic performance section may lead to trainees discussing grades and/or standardized test scores in their NIH Biosketch personal statement, either through their own accord or from encouragement from their advisor to include the outdated metric(s). Similarly, without clear instructions, there may be principal investigators who suggest that paragraphs from the standard language used in institutional environment section be a focal point in the new science and scientific resources and training plan and training resources criteria. FASEB ardently supports training for reviewers to become oriented to the new criteria and how to fairly review fellowship applications as opposed to standard research project grant applications. Similarly, trainees and research advisors, engrained in the old criteria, may also require training to understand the purpose of the proposed new criteria. Regardless of whether CSR develops training modules to explain the purpose of each new criteria, the Funding Opportunity Announcement must include detailed expectations to be addressed, and potentially to be omitted, in each section. For example, if the Working Group no longer wishes reviewers to factor in grades, applicants need to be clearly instructed not to include grades in the Biosketch. Transparency of what will be evaluated in the new scored criteria is vital, both for applicants and for reviewers.

Finally, the Working Group is considering revising the review process to cluster applications by a yet to be determined factor to allow appropriate framing of criteria for applicants who have been traditionally disadvantaged, such as early career sponsors and those at less resourced institutions. FASEB did not reach strong consensus on the best path forward but has a slight preference for clustering review and funding by early stage investigator status of the sponsors. Further insights from the Working Group on key considerations for clustering review would be valuable for additional stakeholder input.

FASEB thanks the Working Group for their efforts to reevaluate fellowship review criteria. Examining barriers to trainee success is a vital step towards fostering a healthy scientific workforce ecosystem, and FASEB is available as a resource to the Working Group as recommendations continue to be refined. We look forward to the next Working Group update.

Sincerely,

A handwritten signature in black ink, reading "Patricia L. Morris". The signature is written in a cursive, flowing style.

Patricia L. Morris, MS, PhD
FASEB President

Cc: Noni Byrnes, PhD, Director of the Center for Scientific Review, and Elizabeth Villa, PhD, Chair of the Fellowship Review Working Group