FASEB
Federation of American Societies for Experimental Biology

Representing Over 110,000 Researchers

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FASEB Comments in Response to Request for Information (RFI) on CHIPS and Science Act Section 10343. Research Ethics
Federal Register Notice: FR Doc. 2024-19245 (Published August 27, 2024)
Transmitted via RFI Submission Form on November 14, 2024

1. Describe ethical, social, safety, and/or security risks from current or emerging research activities that you believe might be of concern to the community, profession, or organization with which you are connected.

No response submitted.

2. Which products, technologies, and/or other outcomes from research do you think could cause significant harm to the public in the foreseeable future?

No response submitted.

3. Describe one or more approaches for identifying ethical, social, safety, and/or security risks from research activities and balancing such risks against potential benefits.

No response submitted.

4. Describe one or more strategies for encouraging research teams to incorporate ethical, social, safety, and/or security considerations into the design of their research approach. Also, how might the strategy vary depending on research type (for example, basic vs. applied) or setting (for example, academia or industry)?

FASEB recommends that NSF refer to strategies adopted by other science agencies to ensure consideration of ethical, social, safety, and/or security considerations in research design. As a federation of 22 scientific societies focused on the biological and biomedical sciences, FASEB is most familiar with policies implemented by the National Institutes of Health (NIH). One key example is NIH's approach to addressing concerns pertaining to the rigor and reproducibility of preclinical research findings in translational settings. In response, NIH engaged a range of stakeholders, including scientists, journal editors, and policy experts, to develop principles and guidelines for reporting preclinical research findings. These guidelines provided expectations for experimental design, statistical analysis, and data and material sharing as well as guidance for considering sex as a biological variable. A key component of the NIH policy on rigor and transparency is a structure that is flexible enough to adapt to a wide range of research protocols and models.

Similarly, as an agency steeped in science education and training the next generation of scientists, FASEB recommends that NSF consider developing a standardized training course or update existing Responsible Conduct of Research (RCR) training to incorporate and/or expand ethical, social, safety, and security components. Completion of this training and subsequent renewal modules could be a requirement for trainees supported by training fellowships and key personnel on research grants. Science agencies within the Department of Health and Human Services (e.g., NIH, AHRQ, and HRSA) utilized standardized guidance for developing RCR training that could be adapted to meet NSF's needs.

FASEB also recommends that this training include modules devoted specifically to ethical and social considerations when conducting research on or near sacred spaces or involving data/sample collection from indigenous populations to ensure respectful partnerships that prioritize the needs and privacy preferences of the community. Anthropological studies in which non-consented human remains or human remains from a for-profit body broker company are used present comparable ethical risks that should also be addressed in updated training modules.

5. How might NSF work with stakeholders to promote best practices for governance of research in emerging technologies at every stage of research?

With regards to the use of Generative Artificial Intelligence (GenAI), FASEB encourages NSF to cross-reference and utilize existing resources when considering the use of GenAI in the NSF merit review process, from proposal development and panel review to the use of GenAI within proposed research activities. Specifically, FASEB recommends NSF utilize two reports – "Blueprint for an AI Bill of Rights: Making Automated Systems Work for the American People," issued by the White House Office of Science and Technology Policy in October 2022, and "Recommendations on Ethics of Artificial Intelligence" developed by the United Nations Educational, Scientific and Cultural Organization (UNESCO) and adopted by all 194 UNESCO member states in 2021.

These two reports as well as other resources have informed FASEB's own Task Force on GenAI in its deliberations regarding best practices for adoption and use of GenAI tools over the past year. The final report – which is in the process of being finalized and likely to be released in January 2025 – includes recommendations for stakeholders spanning the research ecosystem, including federal science agencies. FASEB will share this resource as soon as it is available with NSF leadership to support efforts in this area.

6. How could ethical, social, safety, and/or security considerations be incorporated into the instructions for proposers or into NSF's merit review process? Also, what challenges could arise if the merit review process is modified to include such considerations?

As noted in our response to Question 4, FASEB recommends that NSF refer to strategies adopted by other research agencies to ensure consideration of ethical, social, safety, and/or security considerations with experimental design of grant applications. However, we strongly discourage use of the merit review process to assess these considerations. First and foremost, the focus of the merit review process is to determine the quality of the proposed science. While volunteer reviewers bring scientific expertise to the review process, many may lack the expertise necessary to assess the ethical, social, safety, and security considerations of the proposed research. Therefore, FASEB recommends that NSF adopt a process that utilizes agency employees to conduct this administrative review, preferably via a just-in-time manner for proposals prioritized for funding.

NSF could also explore a strategy similar to that adopted by NIH as part of the agency's Lacks-Family Agreement regarding access to HeLa cell whole genome sequence data. In short, requests for access to HeLa cell data in the NIH database of Genotypes and Phenotypes are evaluated by the HeLa Genome Data Access Working Group of the NIH Advisory Committee to the Director, which includes experts charged with assessing whether the request aligns with the terms of use in the HeLa Genome Data Use Agreement. An analogous working group could be established by the National Science Board.

7. What other measures could NSF consider as it seeks to identify and mitigate ethical, social, safety, and/or security risks from research projects or other activities that the agency supports?

No response submitted.