Dear Senators Gardner and Peters:

As an organization representing 27 professional societies and over 125,000 researchers in the biological sciences, the Federation of American Societies for Experimental Biology (FASEB) is delighted that you are seeking feedback from the scientific community as you work on reauthorization legislation for several of our nation’s key research funding agencies. To respond to your specific questions (enumerated below), we strongly recommend that this legislation: (1) robustly support basic research; (2) provide predictable, sustainable funding growth at our nation’s research agencies; (3) reduce regulatory burden; and (4) continue to support merit-based peer review.

1. **What functions should the federal government, academia, and the private sector be encouraged to perform in driving the U.S. “innovation ecosystem” and how can they strengthen their partnerships to ensure the U.S. position as a global innovation leader?**

Funding for basic, discovery-oriented research is the most important contribution the federal government can make to the “innovation ecosystem.” Federal investments in basic research produce discoveries that lead to innovation. Forensic DNA analysis, the artificial retina, and wearable medical monitors are just a few examples of technologies that emerged from a broad portfolio of fundamental, publicly-supported research projects. Because the outcomes of this sort of discovery-generating research are unpredictable and may require decades to come to fruition, it is unattractive to profit-oriented firms. Thus, due to its scale and scope, there is no substitute for federal support.

A second important contribution of the federal government to enhancing the innovation ecosystem is workforce training. Participation in research is an important part of advanced education in science and engineering, and NSF research grants provide this opportunity to thousands of students. In addition, the NSF Graduate Research Fellowship Program annually awards approximately 2,000 three-year fellowships to outstanding graduate students pursuing advanced degrees in science, technology, engineering, or mathematics. These fellowships support the education and training of the next generation of researchers, ensuring a robust and competitive workforce. NSF graduate research fellows have become leaders in the scientific community, and this program needs to be sustained.

2. **How can the federal government best structure, coordinate, and/or prioritize its R&D investment portfolio to provide predictability for research initiatives, facilitate the discovery of new knowledge, drive lasting economic growth, and address critical emerging challenges?**

In order to maximize discovery from research and promote the robust growth of scientific investigation that leads to innovation, we strongly recommend that you make a five-year commitment to increases in federal R&D investment of at least five percent annually at the National Science Foundation (NSF). Predictable, sustainable increases in the NSF budget will result in more investigator-initiated research.
across disciplines that will lead to the growth of knowledge that will allow our nation to tackle many of its greatest challenges. A consistent, five-year funding increase at our nation’s research agencies would continue the vision of growth proposed in the America COMPETES Act of 2010 and eliminate the spending constraints that have threatened the preeminence of the United States in science and technology.

3. What steps can the federal government take to maximize the research obtained for each dollar of federal investment?

Excessive and sometimes redundant regulation is a major impediment to the maximization of the return on the federal research investment. Over the past several years, scientists have spent an increasing amount of time on regulatory compliance and reporting, reducing time for research. Simultaneously, research institutions are devoting more resources to regulatory activities, expanding administrative staff, and developing new monitoring systems. All of these regulatory activities require financial resources that could be better spent on research activities directly. We therefore urge that there be continued efforts to simplify and harmonize federal regulations that would enable scientists and engineers to spend more effort on research and lessen the financial burden on research institutions responsible for monitoring regulatory compliance.

4 What principles should guide federal agencies in ensuring adequate transparency, oversight, and rigor in the process of funding, conducting, reviewing, and reproducing research?

Our nation’s scientists make transformative discoveries when they have both sufficient resources at their disposal and the freedom to use their intelligence and creativity to pursue the most interesting scientific questions. The gold standard for reviewing and funding research proposals continues to be merit-based peer review, as conducted by NSF and other agencies. To this end, FASEB therefore urges the committee to provide maximum flexibility to scientists, and avoid unnecessary directives that could limit the availability of federal support for all areas of basic research in the legislation reauthorizing federal science agencies.

We live in a time of unprecedented scientific opportunity. A thriving scientific enterprise will allow our nation to tackle some of our most vexing challenges and ensure our prosperity in an increasingly competitive global economy. Toward that end, as you draft legislation to reauthorize our science agencies, we specifically recommend: (1) robust support for basic research; (2) predictable, sustainable funding growth at our nation’s research agencies; (3) reduction of regulatory burden; and (4) continued support of merit-based peer review.

FASEB appreciates your leadership on this matter, and we look forward to working with you as craft this important piece of legislation.

Sincerely,

Parker B. Antin, PhD
FASEB President