Testimony submitted by the American Physiological Society to the Senate Appropriations Subcommittee on Labor, Health and Human Services, and Education, and Related Agencies on the topic of funding for the National Institutes of Health.

The American Physiological Society (APS) thanks the subcommittee for its ongoing support of the National Institutes of Health (NIH). Research carried out by the NIH contributes to our understanding of health and disease, which allows all Americans to look forward to a healthier future. The APS urges you to make every effort to provide the NIH with at least $32 billion in FY 2016. This is necessary to prevent further erosion of research capacity.

Federal investment in research is critically important because breakthroughs in basic and translational research are the foundation for new drugs and therapies that help patients, fuel our economy, and provide jobs. The federal government is the primary funding source for discovery research through competitive grants awarded by the NIH. Although the private sector partners with academic researchers to develop research findings into new treatments, industry relies upon federally funded research to identify where innovation opportunities can be found. This system of public-private partnership has been critical to U.S. leadership in the biomedical sciences. However, this position of leadership is at risk as other nations, including China, increase their investments in research and development while the United States investment has lagged in recent years.

Federal research dollars also have a significant impact at the local level: more than 80% of the NIH budget is awarded throughout the country to researchers who use grant funds to pay research and administrative staff, purchase supplies and equipment, and cover other costs associated with their research.

Challenges facing the scientific community

Twenty years ago leaders in Congress undertook the grand challenge of doubling the budget of the NIH with a vision of moving biomedical science forward and improving quality of life for people around the world. The investment that Americans made between 1995 and 2003 allowed the biomedical research enterprise to grow in many ways: more research was funded, new investigators were trained, and the infrastructure required to support the science expanded to fit the need.
Unfortunately, the NIH budget has declined in constant dollars each year since 2004, causing a slow erosion of research capacity. Between FY 2003 and 2015, NIH’s capacity to support research declined by 22.9%. This was further exacerbated by the spending caps put in place by the Budget Act of 2011, which caused significant cuts for the agency in FY 2013. One analysis showed that NIH supported approximately 1000 fewer investigators in FY 2013 as a result of budget cuts. Researchers who lose their funding face an uncertain future as there are few options to sustain their research without federal grants. Losing federal support puts at risk the investment that it took to build those programs over many years. It also means that talented individuals working in those labs will have to look elsewhere for increasingly scarce jobs. As a result of stagnant funding for NIH, scientists at all stages of their careers struggle to maintain their research programs.

Fundamental changes are needed to ensure long-term sustainability for the scientific enterprise and many groups have undertaken efforts to maximize the amount of research that can be carried out with the resources available. However, the reality is that scientists are approaching the point where they can no longer “do more with less” and as a result, less research will be accomplished. We urge Congress to make every effort to provide NIH with the resources necessary to sustain the scientific enterprise and move research forward. The APS joins the Federation of American Societies for Experimental Biology (FASEB) in urging that NIH be provided with at least $32 billion in FY 2016.

**The promise of research**

This year the NIH has announced plans to advance scientific priorities including:

- Continued investment in the **Brain Research through Advancing Innovative Neurotechnologies ("BRAIN") initiative**. The BRAIN initiative brings together researchers from diverse disciplines to tackle major gaps in current knowledge about the brain and brain diseases.
- A new **Precision Medicine** initiative would invest heavily in cancer genomics, and develop a national research cohort of 1 million participants.
- Resources would also be devoted to a multi-agency **Antimicrobial Resistance** initiative to address the growing public health crisis represented by the rise of multiple drug resistant pathogenic bacteria.

These important projects require significant resources, and at a time of constrained budgets, that will further diminish funding for investigator-initiated grants that focus on major disease areas including cancer and cardiovascular disease, the major killers of American citizens. The NIH system of allowing investigators to develop and propose ideas, which are then evaluated by their peers and selected for funding based on their merit has fostered a research enterprise that is second to none and has been the source of most every major new discovery in medicine. Increasing the NIH budget to $32 billion would provide funding for priority projects as described above, while also providing resources for individual scientists to pursue creative new avenues of research.
The NIH also uses the Institutional Development Award (IDeA) Program to broaden the geographic distribution of NIH funds by providing support to researchers and institutions in areas that have not previously received significant NIH funding. IDeA builds research capacity and improves competitiveness in those states by developing shared resources, infrastructure and expertise. Networks established through this program expand research opportunities for students and faculty at predominantly undergraduate institutions and enhance the level of science and technology knowledge of the workforce in IDeA states. The program currently serves institutions and researchers in 23 states and Puerto Rico. The APS believes this program is an important way to broaden participation in the scientific workforce.

The APS is a professional society dedicated to fostering research and education as well as the dissemination of scientific knowledge concerning how the organs and systems of the body work. The Society was founded in 1887 and now has more than 10,000 member physiologists. APS members conduct NIH-supported research at colleges, universities, medical schools, and other public and private research institutions across the U.S.

1 http://www.asbmb.org/asbmbtoday/201403/PresidentsMessage/