

Testimony submitted on behalf of the American Physiological Society, Jeff Sands, MD, President

The American Physiological Society (APS) thanks the subcommittee for its ongoing support of the National Institutes of Health (NIH). The \$3 billion funding boost you provided in FY 2018, following on the \$2 billion increases you provided in FY 2016 and 2017, have put the NIH on a path toward sustainable budget growth. These much-needed increases will help NIH address critical health problems and emerging challenges through cutting-edge research. **The APS urges you to sustain this vital effort by providing the NIH budget with at least \$39.3 billion in FY 2019.**

Breakthroughs in basic and translational research are the foundation for new drugs and therapies that help patients, fuel our economy, and provide jobs. Federal investment in research is essential because the NIH is the primary funding source for discovery research through its competitive grants program. We look to the private sector to develop new treatments, but the private sector relies upon this federally-funded research to identify where to find the next break-through. This system of public-private partnership has been critical to U.S. leadership in the biomedical sciences. A recent article in the *Proceedings of the National Academy of Sciences* showed that all of the 210 new molecular entities approved by the Food and Drug Administration between 2010 and 2016 were associated with NIH-supported research. Importantly, 84 of those new drugs were first-in-class, meaning they work through a novel mechanism of action or target.¹

Federal research dollars also have a significant impact at the local level: Approximately 83% of the NIH budget is awarded to some 30,000 researchers who work in institutions throughout the country. They in turn use these grant funds to train students, pay research and administrative staff, purchase supplies and equipment, and cover other costs associated with their research. According to an updated 2018 report, NIH research funding in FY 2017 supported more than 400,000 jobs nationwide, generating nearly \$69 billion in total economic activity nationwide.²

The increases Congress has provided NIH over the last three years are helping to correct the devastating effects of sequestration and several years of budgets that declined in real terms due to inflation. To keep the agency on the right path forward, we urge you to continue providing meaningful and predictable annual budget increases that will keep up with the rate of inflation and take full advantage of the incredible opportunities for discovery that are before us.

As specified in the 21st Century Cures Act, NIH continues to pursue a number of important initiatives including the Cancer Moonshot, the All of Us program (formerly the precision medicine initiative), and the Brain Research through Advancing Innovative Neurotechnologies (BRAIN) Initiative. These programs focus resources on specific areas of scientific opportunity that are ripe for innovation, but it is important to bear in mind that these projects build upon decades of basic research. If we are to advance our knowledge and lay the groundwork for

similar opportunities for innovation in the future, NIH must continue to invest in creative investigator-initiated research.

Over the past several decades, NIH has used a merit-based peer review system to identify and fund the best research proposals. To date, NIH has supported the work of 153 Nobel Laureates, including the 2017 winners of the Chemistry and Physiology or Medicine prizes. Thanks to NIH research, Americans can expect to live longer and healthier lives. NIH also plays an important role in training the next generation of scientists, supporting trainees through individual fellowships and institutional grants as they complete their graduate degrees and seek the post-doctoral training necessary to pursue successful independent research careers.

Today significant challenges loom before us: The opioid epidemic has become a national public health crisis. An aging population will bring an increase in diseases that contribute to death and disability such as heart disease, diabetes, kidney disease, arthritis, and cancer. New and emerging infectious diseases will require us to be able to make a nimble investment of resources. If we are to continue to advance new and innovative ways to address these and other challenges on the horizon—including developing the workforce necessary to do so—the NIH will need stable and predictable funding increases in future years.

The APS joins the Federation of American Societies for Experimental Biology (FASEB) in urging that NIH be provided with no less than \$39.3 billion in FY 2019. This represents a \$2 billion increase over FY 2018 in addition to 21st Century Cures funding.

The American Physiological Society 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 11,000 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.pnas.org/content/early/2018/02/06/1715368115>

² <http://www.unitedformedicalresearch.com/wp-content/uploads/2018/02/NIHs-Role-in-Sustaining-the-U.S.-Economy-2018-Update-FINAL.pdf>