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Testimony of

Kenneth E. Thummel on behalf of

The American Society for Pharmacology & Experimental Therapeutics (ASPET)
Submitted for the record to the Senate Committee on Appropriations
Subcommittee on Labor, Health and Human Services, Education, and Related Agencies
Senator Roy Blunt, Chairman; Senator Patty Murray, Ranking Member
Regarding

Fiscal Year (FY) 2017 Appropriations for the National Institutes of Health

- Steady and sustained investment in NIH is critical to improving human health, stimulating state and local economies, and maintaining the nation's global competitiveness.
- The short-term implications of decreased funding for NIH is that only 1 out of 6 grant applications are funded, the lowest rate in the agency's history, leaving unfunded many highly innovative ideas that have important implications for human health.
- The long-term implications of a lack of sustained federal investment in biomedical research are more dire: the U.S. share of global research and development will decline, as a consequence of increasing research-related spending by China, Russia, and the European Union. In addition, an increasing number of scientists who trained in and/or working in the U.S. will leave to pursue careers in other countries, further compromising our competitiveness and leadership in the health sector of the global economy.
- Lawmakers must secure a bipartisan, balanced approach to deficit reduction so that vital investments in biomedical research can be sustained in the best interests of the nation.
- We call upon Congress to ensure that NIH remains a national priority, by awarding an FY2017 minimum budget of \$35 billion to restore purchasing power lost over the last decade and to increase the pool of talented young scientists who pursue a career in biomedical research that will advance the health of the American people.

The American Society for Pharmacology and Experimental Therapeutics (ASPET) respectfully submits the following testimony regarding Fiscal Year (FY) 2017 federal appropriations for biomedical research. ASPET is a 5,100-member professional society, whose members conduct basic, translational, and clinical pharmacological research within the academic, industrial and government sectors and are educators of research, medical, dental, pharmacy and other health professionals. Our members discover and develop new therapeutic agents that fight existing and emerging diseases, and disseminate that knowledge to improve human health. Sustainable, consistent funding for research is critical to the development of new disease prevention and treatment modalities. To this end, ASPET recommends a minimum of \$35 billion for NIH in FY 2017.

Overview

ASPET recognizes and very much appreciates the investment in research made by Congress with the \$2 billion increase in funding for NIH included in the FY2016 omnibus appropriations bills. However, sustained commitment from Congress in FY 2017 is essential to mitigate losses from budget sequestration initiated in FY 2013. From 2003-2013, NIH budget failed to keep pace with inflation in research costs leading to a nearly 25% reduction in the agency's purchasing power and 34% reduction in the primary grant mechanism that supports investigator-initiated research. Budget sequestration since 2013 has effectively codified the loss. A FY 2017 budget of \$35 billion would help restore the agency's lost purchasing power that has occurred over the past decade and enable the NIH to fund 465 more research grants.

Diminished Support for NIH Will Negatively Impact Human Health

Industry, venture capital, and private philanthropy can supplement some elements of health research but they cannot replace the investment in basic, translational and clinical biomedical research provided by NIH. Much of the research undertaken by industry builds upon the discoveries generated from NIH-funded projects. The majority of NIH's investment in basic biomedical research is broad with a long-term commitment, thereby providing an ongoing source of discoveries that are utilized by commercial entities to manufacture and market diagnostics, drugs and devices. Many such entities have shrunk their research and development programs and thus, are making smaller commitments to invest in research that may be of higher risk and require several years to fully mature. High-risk but high impact efforts, especially in basic research, represent the essential role played by NIH and its funded investigators.

Past investment in NIH-funded basic research has led to many innovative medicines. In addition, NIH-funded research has provided major gains in our knowledge of the human genome, resulting in enhanced drug efficacy and a reduction in adverse drug reactions that currently limit the effectiveness of potential life-saving medications. NIH is the world leader in efforts to prevent and treat HIV-AIDS; recent genetic studies have pinpointed disease-causing variants that have led to improved cure rates, but further advances and improvements in technology will be delayed with diminished NIH funding. The evolution of patient care into what has been termed "personalized" or "precision medicine" and its application to a wide range of clinical disorders, including cancer, necessitates research to identify and test optimal diagnostic and therapeutic approaches for individuals. Past investigator support from NIH has revealed new frontiers of immunopharmacology and regenerative medicine, which are saving millions of dollars by reducing in-patient hospital care for debilitating autoimmune diseases, such as rheumatoid arthritis, and restoring movement and function through regenerative interventions. Moreover, NIH is the only health organization capable of mounting an effective response to understand the mechanisms and develop treatments for rapidly emerging infectious diseases such as the Zika virus. Enhanced and sustained funding of NIH is essential for continued improvements in the prevention and treatment of these and many other diseases.

Investing in NIH Helps America Compete Economically

NIH research funding catalyzes private sector growth. More than 83% of NIH funding is awarded to over 3,000 universities, medical schools, teaching hospitals and other research institutions in every state in our nation. One national study found that combined federal and state funded research at the nation's medical schools and hospitals supports almost 300,000 jobs and adds nearly \$45 billion to the U.S. economy. NIH funding also provides the foundation for major scientific innovations in the pharmaceutical and biotechnology industries, with new drug targets being discovered through NIH-supported basic research that can then be translated into novel drug treatments. Thus, an investment in NIH will help create jobs and promote economic growth. By contrast, a stagnating NIH budget will mean forfeiture of future discoveries and jobs to other countries, which are eager to "pick up this slack".

If funding for the next ten years is similar to that of the past decade, the nation will lose a generation of young scientists. Increasingly, these individuals, seeing no prospects for careers in biomedical research, will leave the research enterprise or look for employment in foreign countries. The "brain drain" of young scientific talent seriously jeopardizes the nation's leadership in biomedical research and compromises future advances in the prevention and treatment of disease. A 2013 survey of ASPET's membership revealed that 45% of post-doctoral trainees and 25% of graduate students say they are no longer considering a career in biomedical research due to the restrictive funding environment; 50% of graduate students and 29% of post-doctoral trainees say they are willing to consider leaving the U.S. in order to pursue a career in biomedical research.

It is a sobering fact that the U.S. share of global research and development investment has declined substantially over that last two decades. In contrast, other nations are investing aggressively in science. For example, China has grown its science portfolio with annual increases to the research and development budget averaging over 20% annually since 2000. Russia plans to increase support for research substantially over the next decade. The European Union, despite great economic distress among its member nations, has proposed to increase spending on research and innovation by 45% between 2014 and 2020. All of these nations recognize the long-term economic value of scientific research and they are prioritizing their budgets accordingly.

Conclusion

ASPET acknowledges the many competing and important spending decisions that are made by the Subcommittee. However, NIH's contribution to the nation's economic well-being and to the health of its citizens should make it one of the nation's top funding priorities. Ensuring a long-term commitment to discovering cures for disease is one major way in which we can work together as a Nation to reduce Medicare Medicaid expenditures without cutting benefits. Moreover, investment in research today has the potential, through new discoveries, to improve the quality, while lowering the cost of, health care, especially through efforts on the major causes of death of Americans. Lawmakers must replace sequestration in 2016 and beyond with a bipartisan, balanced approach to deficit reduction so that vital investments can be made that are in the best long-term interest of the nation. With enhanced and sustained funding, NIH can begin to reverse the decline in its operational footprint and help achieve its potential to address the most promising scientific opportunities and critical healthcare needs of our country. A budget of at least \$35 billion in FY 2017 will build on the progress of the FY2016 funding, expand opportunities for investigation and increase the likelihood of new discoveries that prevent, diagnose, and treat disease.