The American Physiological Society Statement on FY 2006 Funding For the National Institutes of Health

The American Physiological Society (APS) thanks the Subcommittee for its sustained financial support of the National Institutes of Health (NIH). The recently completed doubling of the NIH budget has allowed the agency to expand and take on a variety of existing and emerging challenges in biomedical science. Investment in the basic and applied sciences plays an important role in the continued health and prosperity of our nation, and increased NIH funding has allowed researchers to explore science on a new scale. In order to build on existing knowledge and develop new technologies, NIH funding must continue to support the biomedical research enterprise. Faltering levels of funding, such as the 0.7% increase recommended by the administration, will discourage the best and brightest minds from pursuing careers in the sciences, and will hamper the efforts of researchers already at work.

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 11,000 physiologists. The APS recognizes both the enormous financial challenges facing our nation and the enormous opportunities before us to make progress against disease. The APS urges you to make every effort to provide the NIH with a 6% funding increase to take advantage of these opportunities.

The NIH operates on a scale that permits it to look broadly at areas of biomedical research that need attention. The NIH maintains a diverse portfolio of research activities ranging from research on common diseases with obvious public health implications to basic science studies that contribute to a body of knowledge whose application can only be determined over time. Physiology provides the foundation upon which translational research builds, ultimately working towards therapies and prevention strategies. Below are a few select examples of how NIH has used its resources to support exemplary programs of research and education.

In a recent issue of the New England Journal of Medicine, a group of NIH funded researchers showed that the current obesity epidemic in the United States may actually shorten our life expectancy as a population. Using new methods to calculate life expectancy based upon health status, researchers supported by the National Institute on Aging and the National Institute of Diabetes and Digestive and Kidney Diseases found that with the current rates of obesity, life expectancy could fall by 1/3 to 3/4 year in the coming decades. (1) Physiologists have been instrumental in showing that conditions associated with obesity such as cardiovascular disease, cancer and type 2 diabetes cause
significant numbers of premature deaths and health complications. Physiologists have also shown the value of interventions such as exercise. This latest research emphasizes the broad implications of the nation’s obesity crisis and the need to find ways to protect our population.

Another recent study supported by the NIH looked at the effects of aspirin therapy in a large group of women over the span of 10 years. Based on results in male patients, it was expected that aspirin use in women might reduce the risk of heart attack. Researchers funded by the National Heart Lung and Blood Institute and the National Cancer Institute showed that long term low dose aspirin treatment in fact has little effect on heart attack rates in women, but does reduce the risk of ischemic stroke. (2) Since women make up the majority of the aging population, strategies to reduce the burdens of chronic disease can help stem the escalation of health care costs. This study highlights the need to continue funding projects that address differences in health and disease between population groups.

These examples show how research funded by the NIH can have a direct impact on clinical outcomes and treatment. Studies that are more basic in nature provide the building blocks that are the foundation of this kind of applied research, and both kinds of research are necessary to improve health care and quality of life.

In addition to supporting research, the NIH can also address workforce issues to be sure our nation’s researchers can meet the challenges they face. The National Institute of General Medical Sciences has agreed to fund four Short Courses in Integrative and Organ Systems Pharmacology. These educational initiatives will train scientists to carry out research at the level of organ systems and whole organisms. Studies of this kind are critical in bridging the understanding between what goes on at the molecular level, and what goes on in the organism as a whole. Studying physiological changes that result from drug treatment and other causes will be of critical importance in developing safe and effective new disease treatments.

The NIH plays many critical roles in advancing biomedical research. The NIH provides opportunities for individual researchers at universities and medical schools throughout the country to compete for research funds based upon the scientific merit of their ideas. NIH also carries out other functions including:

- Sponsoring research training opportunities for young scientists and physicians
- Funding major collaborative initiatives that bring together multiple institutions with diverse resources
- Providing the public with up-to-date information about the latest research on various diseases and health conditions through individual institutes and online resources such as “MedLine Plus” and ClinicalTrials.gov
- Supporting unique science education programs, particularly for underserved minority students
- Funding innovative research through the NIH Roadmap initiative
These activities are critical to moving science forward, and they are unique to the NIH. For example, the Human Cancer Genome Project (HCGP) was established as a joint effort between the National Human Genome Research Institute and the National Cancer Institute. The HCGP will assemble a network of extramural centers to collect tumor samples from every major cancer, and generate genomic sequences that will reveal the genetic defects responsible for enabling the tumor’s growth. The information generated can then be used to develop therapies tailored to each tumor’s unique characteristics. Collaborative projects such as this one serve as a model for data and resource sharing among scientists, which in turn improves the efficiency of the research enterprise.

The examples listed above represent a select few examples from the NIH’s extensive and outstanding portfolio. The APS joins the Federation of American Societies for Experimental Biology (FASEB) and the Ad Hoc Group for Medical Research Funding in urging that NIH be provided with a 6% funding increase in FY 2006 to permit the agency to maintain its current wide-ranging and important research efforts. This forward-looking approach to our nation’s biomedical research efforts is much to be preferred over the administration’s proposed increase of 0.7%, which would force the NIH to contract its research portfolio, thus leaving many important projects unfunded.