



American Society for
Biochemistry and Molecular Biology
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America is the global leader for biomedical research and innovation, and that leadership mantle is made possible by the robust investments in the National Institutes of Health that begin here, with the bipartisan support of the members of this subcommittee. Under the leadership of Chairman Cole and Ranking Member DeLauro, the NIH has seen its budget begin to grow again, following a decade of stagnant investments, at a time when federal investments in research – especially basic research – are critically important. For this reason, we ask the subcommittee to continue its commitment to the biomedical research community, and fund the NIH at a level 3.5% above the fiscal year 2017 level for FY18. Specifically, this increase should support investigator initiated research (R-01 grants), in an attempt to improve historical low funding success rates at many of the institutes that make up the NIH. We thank you for your commitment, and look forward to working with you and the rest of the committee as partners into the future.

ASBMB is a nonprofit scientific and educational organization that was established in 1906 by 28 biochemists and has since grown to an organization with more than 12,000 members worldwide. Most members conduct research and teach at colleges and universities, government laboratories, at nonprofit research institutions and in industry. The Society's student members attend undergraduate and graduate institutions. We are proud to include 97 Nobel Prize winners among our members since 1922. 2 The increased longevity and improved quality of life enjoyed by Americans over the past century can be attributed in large part to innovations resulting from discoveries and breakthroughs in biomedical research--most of which stem from biochemistry and molecular biology. Beyond health

improvements, the biomedical research enterprise has been a key segment of economic growth and job creation in the 21st century.

Let me highlight a few key contributions made in the fields represented by ASBMB that have made this possible. Biochemistry deals with how molecules taken in as food are converted into other molecules that are essential for normal, healthy biological function. Control of the conversion of fats into cholesterol is key to reducing the risk of cardiovascular disease. Our knowledge of these biochemical pathways led to the development of a number of drugs that have contributed greatly to the reduction in death due to cardiovascular disease. Molecular biology is a field that emerged as a marriage of biochemistry with genetics.

Molecular biology is the foundation for much of modern biomedical science including genomics and other cutting edge technologies being used today. Discoveries in molecular biology led to the development of biotechnology as an entirely new industry. Biotechnology allows the production of complex biological molecules such as human insulin and antibodies such as the breast cancer drug, Herceptin. The lives of individuals with diabetes, cancer, and many other disorders have been greatly improved because these molecules are now produced in pure form and in sufficient quantity for use as drugs. Furthermore, the United States has been the leader in this important new industry largely because the key, foundational discoveries were made here.

The power of these approaches, both as research tools and as drivers for industry, had become strikingly clear toward the end of the last century. Congress wisely supported substantial increases in the appropriation for the NIH between 1998 and 2003. Those funds made it possible to increase the capability of the biomedical research enterprise in the United States. Established scientists were able

to take their research in new directions and many talented young scientists launched productive careers. Sequencing of the human genome was completed and many important and unanticipated discoveries were made. Many of these exposed levels of complexity in biological systems that had not been anticipated. For example, RNA, a close cousin of DNA, was found to play new roles in regulating biological systems in important, but subtle, ways. The human body was found to include more microbial cells than human cells. Research has shown that these microbes contribute to both health and disease in newly discovered and unexpected ways.

Despite this impressive progress, there is still much to learn about human biology to enable the successful translation of what we do know into improvements in human health. NIH funded research has successfully reduced the mortality and morbidity of once acute and lethal conditions. This research continues to reduce the burden of heart disease, cancer, stroke (the three leading causes of death in the United States), as well as other diseases such as AIDS, Alzheimer's and diabetes. Robust and sustainable future funding for NIH will support continued biomedical research that saves lives, improves human health and provides the basic knowledge needed by private industry to develop the drugs and therapies we rely upon today and will continue to rely on in years to come.

When setting budgetary priorities, it is important to remember that technological innovation will be a key component for our future economic security and international competitiveness. More than 80% of the investment this Congress makes in the NIH leaves the Bethesda campus and funds academic researchers across the country. Each NIH grant – on average – supports approximately seven high-tech, high-paying jobs. These are precisely the type of jobs each member of this committee would want to have in their own district. These are also the kind of jobs that contribute to a 21st century,

technology and information based economy. Additionally, analysis of the economic impact of your NIH investments indicates that for every \$1 invested in the NIH, the economy derives a \$2 return. Finally, investment in research will continue to modernize our nation's research laboratories and facilities, spur innovation, and provide an immediate boost in employment for our nation's workforce.

The ASBMB understands the nation is facing difficult budgetary decisions, with federal spending reaching nearly unsustainable levels. Some programs will need to be cut, while some, such as biomedical research, cannot sustain continued, "stop-start" funding. Given this context, our membership appreciates that the Congress recognizes the importance of NIH support, if the US is to contribute to biomedical discovery at the cutting edge.

Today, the US stands proud as the world's leader in biomedical research, but this will not continue to be true if we do not do all we can in support of the NIH. The American biomedical research enterprise plays a critical role in creating hightech, high-paying jobs, helping to keep America a global leader in innovation and discovery, but it cannot do so without a reliable and robust federal investment.