Testimony of the American Society for Biochemistry and Molecular Biology to the both the House Appropriations Committee Subcommittee on Labor, Health and Human Services, Education and Related Agencies

Testimony in support of the National Institutes of Health

Submitted by:

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The American Society for Biochemistry and Molecular Biology (ASBMB) is a nonprofit professional society that builds and empowers a broad community of molecular life scientists to advance discovery. Its community comprises over 11,000 scientific researchers and educators of many different kinds, ranging from students to senior scientists. ASBMB strongly advocates for strengthening the science, technology, engineering and mathematics (STEM) workforce, and supporting sustainable funding for the U.S. research enterprise.

Our members conduct ground-breaking foundational research that leads to medical, agricultural, and technological advancements that make Americans' lives better. With each basic science breakthrough, the scientific enterprise grows, adding new therapies, interventions, and solutions to the most pressing issues affecting the country. To further the thriving American research ecosystem, **the ASBMB strongly recommends that policymakers appropriate $51.3 billion to the National Institutes of Health in FY2027** to maintain the agency's pivotal role in laying the foundational research needed to drive cures and innovation and secure this country's global leadership in science and technology.

Federally funded research, such as that conducted by our members, has led to the development of life-saving treatments and foundational discoveries that have propelled the scientific enterprise, including:

- Studies on the connection between a high-fat diet and atherosclerosis.
- Research on proteins involved in Parkinson's Disease.
- Research that studies microbes involved in enhancing heat resistance in plants.

Similarly, my research at City University of New York focuses on understanding how cells sense and respond to their environment. When conditions change, like shifts in light or oxygen levels, specialized proteins detect these signals and set off a chain reaction inside the cell, changing how other proteins interact with one another. My lab uses a combination of techniques, including biochemistry and structural biology, to figure out exactly how these molecular "switches" work. The goal is both to understand the basic science of how cells communicate and to apply that knowledge in useful ways, whether as new tools for research or as medical treatments. This foundational work on proteins that respond to light and oxygen has already led to practical

results, including new tools for controlling cells with light (optogenetics) and a first-of-its-kind targeted cancer drug, Merck's belzutifan.

NIH funding supports scientific research like mine that studies specific intricacies of biological systems and processes that are needed to lay the foundation for innovative cures and therapies. Basic scientific research is the first step in this process; without it, scientists would not have the vital information to translate into cures or innovations that help the American people. For example, last year an infant with Carbamoyl Phosphate Synthetase 1 (CPS1) deficiency, a rare disease that does not allow the body to remove ammonia and has a high death rate, was remarkably treated using the first personalized CRISPR gene editing therapy. I underscore that this therapy was developed after over two decades of basic science research in gene editing, much of which occurred with such medical applications far beyond the realm of reality

Such bold research continues today, laying the seeds of the next round of the next discoveries to improve the nation's health. Indeed NIH-funded researchers across the country are aiming to answer essential questions about the workings of living organisms, leading to discoveries that serve as targets for therapies.

For instance, researchers at the University of Wisconsin-Madison are studying RNA processing to find more effective way to treat spinal muscular atrophy, a rare disorder that is the most common genetic cause of death in infants; a group at the State University of New York at Buffalo are using a new imaging approach to map fentanyl's effect on brain immune cells, a finding that could lead to new diagnostic and therapeutic tools for addiction; and a team at a team at the University of California, San Diego are researching lipids to serve as biomarkers to detect the risk of liver disease.

The United States' biomedical research enterprise, led by the NIH, has generated transformative advancements that paved the way for life-saving medications and treatments. From 2010 to 2019, 354 out of 356 drugs approved by the FDA were supported by NIH-funded research, providing treatments for numerous diseases. These innovations have cemented the U.S. as a global leader in biomedical innovation and have supported the health of all Americans. The benefit of these innovations can be seen through recent cancer drugs that have prolonged the lives of thousands of Americans as well as in the measurable economic returns seen in every state.

Investing in these researchers drives innovation forward and pours economic benefits into local economies. Basic research, supported by the NIH, has tremendous economic impacts: stimulating local economies through the training of the next generation of scientists, attracting talent to communities across the country, purchasing laboratory supplies, supporting small businesses and ultimately, creating thriving research hubs that uplift economies. These research hubs, centered around publicly funded institutions, support numerous non-research related positions, including local construction, electrician and HVAC jobs and so much more.

Furthermore, publicly funded research institutions are fertile ground for expanding partnerships between the public and private sectors. Public-private partnerships such as the National Institutes of Health's Science and Technology Research Infrastructure for Discovery, Experimentation, and Sustainability (STRIDES) Initiative cultivates research collaborations between institutions of higher education and the nation's leading technology companies, to accelerate biomedical research through cloud-based technologies including Artificial Intelligence (AI).

Lastly, to execute the mission of the NIH, the scientific ecosystem must have a strong and talented workforce. Recent policy changes to expand multi-year funding have greatly decreased the number of meritorious grant projects that NIH supported in 2025, especially for early-career investigators. The abrupt policy change, which has been advanced to ostensibly enable NIH to nimbly respond to emerging opportunities or challenges, has instead slowed progress in numerous ways today by pushing early career researchers to our top scientific competitors abroad or outside of the field altogether. If multi-year funding continues at the same rate or higher without increased funding, this pattern will continue, and it will jeopardize our standing on the global science stage.

If we are to maximize the potential of medical research to deliver improved health for patients and families facing devastating diagnoses, to enhance our global economic competitiveness, and to inspire the next generation of researchers, we must resume the trajectory of robust, sustained growth in NIH funding. Investing in basic scientific research accelerates research and development and revitalizes America's science and technology enterprise. We strongly urge appropriators to increase the NIH budget to the highest possible level, and eliminate arbitrary changes to multi-year funding policies, to raise the country on the global research stage, fuel the economy and save American lives.