Testimony of Ulrich von Andrian, MD, President of the American Association of Immunologists (AAI), submitted on behalf of AAI to the House Appropriations Subcommittee on Labor, Health and Human Services, Education, and Related Agencies, regarding the FY 2027 budget for the National Institutes of Health, the National Institute of Allergy and Infectious Diseases, and the Advanced Research Projects Agency for Health

April 15, 2026

The American Association of Immunologists (AAI), the nation's largest organization of research immunologists, with a mission to improve global health and well-being by advancing immunology and elevating public understanding about the immune system, respectfully submits this testimony regarding fiscal year (FY) 2027 appropriations for the National Institutes of Health (NIH), the National Institute for Allergy and Infectious Diseases (NIAID), and the Advanced Research Projects Agency for Health (ARPA-H). AAI recommends an appropriation of **at least $51.3 billion for the NIH base budget for FY 2027.** Within that total, AAI recommends an appropriation of **at least $7.15 billion for NIAID,** which funds a large proportion of NIH's immunology research - a wide-ranging portfolio that includes infectious, chronic, and immune-mediated diseases. In addition, AAI recommends an appropriation of **at least $1.7 billion for ARPA-H** but it is crucial that this funding supplements and does not supplant the NIH base budget. Increased funding for ARPA-H will help accelerate its mission to achieve better health outcomes by supporting high-risk, high-impact research proposals that would not ordinarily be funded by NIH or the private sector.

Robust funding for NIH will enable the agency to make bold investments in understanding, preventing, and treating high-priority chronic diseases that involve the immune system, including cancer, Alzheimer's disease, organ transplantation, and more than 100 autoimmune and inflammatory diseases. It will also strengthen the economy: investment in NIH stimulated more than $94 billion in economic activity in the U.S. in FY 2025 and supported nearly 391,000 jobs.[1] And crucially, it will help America maintain its global preeminence in science and innovation. The U.S. is in danger of ceding this edge to China, which had already surpassed America in terms of annual patents filed and scientific publications, and recently surpassed the U.S. in overall spending on research & development.[2]

Recent Immunology-related Breakthroughs Fueled by NIH Funding

Advances in Harnessing the Immune System to Treat Cancer

Decades of federally funded biomedical research have helped drive a steady decline in cancer mortality since the 1990s, yet cancer still claims more than 600,000 American lives each year. New immunotherapy approaches are showing strong promise, including mRNA-based cancer

vaccines that train the immune system to recognize and attack tumors—demonstrating strong and long-lasting immune responses and delayed recurrence in hard-to-treat cancers like pancreatic and triple negative breast cancer.[3,4] In parallel, NIH-supported research on the immune signaling molecule IL-15 has led to the first new cytokine therapy approved by the U.S. Food and Drug Administration (FDA) to treat cancer in over 30 years. This new bladder cancer therapy underscores how continued investment in immunology is accelerating the development of more precise and effective cancer treatments.[5]

Breakthroughs in the Treatment of Autoimmune and Inflammatory Diseases

Advances in immunology are revealing more effective and precise ways to treat, prevent, and even one day cure autoimmune diseases, which arise when parts of a person's immune system attack his or her own cells, tissues, or organs. These often-debilitating diseases affect an estimated 25-50 million Americans. One promising therapeutic approach is inverse vaccines, designed to retrain the immune system to stop attacking something it should not. These novel vaccines have shown success in conditions like celiac disease, multiple sclerosis, and food allergies, raising the possibility of achieving remission without broadly suppressing the immune system.[6] At the same time, precision approaches like B-cell depletion and CAR T-cell therapy have shown the ability to reset the immune system by specifically eliminating disease-causing cells, inducing favorable results and even remission in diseases like lupus.[7]

GLP-1 receptor agonists, such as Ozempic, are demonstrating great promise well beyond their FDA-approved use for reducing obesity and controlling blood sugar to treat type 2 diabetes. Recent studies are showing that this class of drugs may have broader immunomodulatory and anti-inflammatory effects that have the potential to be useful across a range of diseases, including neurodegenerative conditions such as Alzheimer's and Parkinson's disease.[8]

Improved Vaccines to Prevent Infectious Diseases and Promote Healthy Aging

Immunology research is also driving major advances against infectious diseases that increasingly threaten Americans. Improved vaccines for chikungunya and dengue—mosquito-borne viruses now appearing in multiple U.S. states—are being designed to generate stronger, safer, and more balanced immune responses, addressing infection risks like chronic joint pain and severe, life-threatening complications.[9,10] At the same time, researchers are making significant progress toward a "universal" influenza vaccine that could provide long-lasting protection against many or even most strains of flu, eliminating the need for annual shots and strengthening preparedness for future pandemics.[11] Beyond infectious disease, emerging evidence suggests vaccines may also offer broader health benefits, including protection against age-related conditions. Recent studies have found an association between the shingles vaccine and a

reduced risk of dementia, highlighting how immunology research has the potential to unlock new strategies to help Americans live longer, healthier lives.[12]

The Economic Impact of NIH Research

NIH is the largest public funder of biomedical research in the world and this investment fuels economic activity across America. Every state and nearly every congressional district in the nation receives NIH funding, flowing to more than 300,000 researchers at approximately 2,500 institutions. In FY 2025, NIH funding supported 390,863 jobs and led to $94 billion in economic activity, which translates to a 250% return on investment for every dollar invested in NIH.[13]

About half of the NIH budget supports fundamental research, which is essential to accumulating knowledge and answering foundational questions about how life works and why disease occurs. Pharmaceutical companies and other private sector entities are far less likely to fund this type of research because it does not immediately result in products that can be commercialized (like drugs and devices). Basic research is a prerequisite to developing these products, as demonstrated by a 2023 study published in *JAMA Health Forum* which found that NIH funding contributed to 354 of the 356 (99.4%) drugs approved by the FDA from 2010 to 2019.[14]

The Importance of NIAID in Strengthening Public Health

NIAID supports an important and diverse portfolio of immunologic, infectious, and chronic disease research that is pivotal to our nation's health and preparedness. NIAID-funded discoveries were crucial to the development of the COVID-19 vaccines that were developed as a result of Operation Warp Speed, the recently FDA-approved vaccines against respiratory syncytial virus (RSV), and the LEAP-Trio study, which found that peanut consumption in infancy significantly reduces the risk of acquiring a peanut allergy. These preventative measures are already reaping extremely positive results and open the door to preventative options against many other diseases.

NIAID research is also imperative if the US is to be prepared and able to respond to emerging and re-emerging diseases. NIAID has been the primary NIH Institute responsible for responding to outbreaks of diseases like Dengue fever, Ebola, Mpox, and Zika, diseases that started outside of the U.S. but that know no borders. As Representative Tom Cole (R-OK, 4th), then-Chair of the House Labor-HHS Appropriations Subcommittee said in 2017, "[D]o you want to deal with Ebola in West Africa or do you want to deal with it in West Dallas? . . . The federal government defending you from Ebola is probably as important as defending you from a terrorist attack because a pandemic will kill more people..."

ARPA-H and Its Potential for Rapid, Groundbreaking Innovations

ARPA-H was created by Congress in 2022 to address some of society's greatest health-related challenges by supporting high-risk, high-reward projects. Every ARPA-H project must seek to answer a big question. Currently funded ARPA-H projects seek to answer questions like, "what if your immune system could manufacture cures to devastating diseases?" and "what if we could harness the immune system using AI for faster and better critical care?" ARPA-H investigators must develop and adhere to a rigid set of milestones, and award payments are contingent on meeting those milestones.

The ARPA-H budget has been frozen at $1.5 billion since FY 2023. Increased funding for the agency will enable investment in new, bold, and innovative solutions that have the potential to make an immediate, transformative impact on the nation's health. It is crucial, however, that this funding supplement the NIH base budget, rather than supplanting any part of it.

Conclusion

AAI is deeply thankful for this subcommittee's support for biomedical research and urges it to provide NIH with a base budget of at least $51.3 billion for FY 2027, including $7.15 billion for NIAID. This increase will allow NIH to invest in a strong portfolio of biomedical research focused on preventing, treating, and curing disease, and to address the great health challenges of today and those on the horizon. AAI also recommends providing at least $1.7 billion for ARPA-H to further invest in high-risk innovative health solutions.

---

[1] https://www.unitedformedicalresearch.org/annual-economic-report/

[2] https://www.oecd.org/en/data/insights/statistical-releases/2026/03/oecd-overall-rd-growth-stable-government-rd-budgets-decline-and-reorient-towards-defence.html

[3] Sethna, Z., Guasp, P., Reiche, C. *et al.* RNA neoantigen vaccines prime long-lived CD8+ T cells in pancreatic cancer. *Nature* **639**, 1042–1051 (2025). https://doi.org/10.1038/s41586-024-08508-4

[4] Sahin, U., Schmidt, M., Derhovanessian, E. *et al.* Individualized mRNA vaccines evoke durable T cell immunity in adjuvant TNBC. *Nature* **651**, 1088–1096 (2026). https://doi.org/10.1038/s41586-025-10004-2

[5] Li, Z., Wrangle, J., He, K., Sprent, J., & Rubinstein, M. P. (2025). IL-15: from discovery to FDA approval. *Journal of hematology & oncology*, *18*(1), 19. https://doi.org/10.1186/s13045-025-01664-8

[6] Arnold, C. 'Inverse vaccines' could treat autoimmune disease—from multiple sclerosis to celiac disease. *Nature Medicine* **30**, 1218–1219 (2024). https://doi.org/10.1038/d41591-024-00024-2

[7] Schett, G., and June, C. CAR T cells in autoimmune disease: On the road to remission. *Immunity* **57**, 1758–1763 (2024). https://doi.org/10.1016/j.immuni.2024.07.012

[8] Athauda, D., Greig, N. H., Meissner, W. G., *et al.* The promise of GLP-1 receptor agonists for neurodegenerative diseases. *Journal of Clinical Investigation* **136**, e194745 (2026). https://doi.org/10.1172/JCI194745

[9] Richardson, J. S., *et al.* Chikungunya virus virus-like particle vaccine safety and immunogenicity in adolescents and adults in the USA: a phase 3, randomised, double-blind, placebo-controlled trial. *Lancet* **405**, 1343–1352 (2025). https://doi.org/10.1016/S0140-6736(25)00512-7

[10] Mandaric, S., *et al.* Humoral and cellular responses to a tetravalent dengue vaccine in flavivirus-seronegative and -seropositive individuals. *Vaccine* **77** (2026). https://doi.org/10.1016/S0264410X26001817

[11] Arevalo, C. P. *et al.* A multivalent nucleoside-modified mRNA vaccine against all known influenza virus subtypes. *Science* **378**, 899–904 (2022). https://doi.org/10.1126/science.abm0271

[12] Eyting, M. *et al.* A natural experiment on the effect of herpes zoster vaccination on dementia. *Nature 2025 641:8062* **641**, 438–446 (2025). https://doi.org/10.1038/s41586-025-08800-x

[13] See endnote 1

[14] Galkina Cleary, E., Jackson, M., Zhou, E., *et al.* (2023) Comparison of Research Spending on New Drug Approvals by the National Institutes of Health vs the Pharmaceutical Industry, 2010-2019. *JAMA Health Forum.* https://doi.org/10.1001/jamahealthforum.2023.0511