

June 7, 2023

The Honorable Patty Murray
Chair, Committee on Appropriations
U.S. Senate
Washington, DC 20510

The Honorable Susan Collins
Vice Chair, Committee on Appropriations
U.S. Senate
Washington, DC 20510

The Honorable Tammy Baldwin
Chair, Subcommittee on Labor, Health and
Human Services, Education, and Related
Agencies
U.S. Senate
Washington, DC 20510

The Honorable Shelley Capito
Ranking Member, Subcommittee on Labor,
Health and Human Services, Education, and
Related Agencies
U.S. Senate
Washington, DC 20510

The Honorable Kay Granger
Chair, Committee on Appropriations
U.S. House of Representatives
Washington, DC 20515

The Honorable Rosa DeLauro
Ranking Member, Committee on Appropriations
Ranking Member, Subcommittee on Labor,
Health and Human Services, Education, and
Related Agencies
U.S. House of Representatives
Washington, DC 20515

The Honorable Robert Aderholt
Chair, Subcommittee on Labor, Health and
Human Services, Education, and Related
Agencies
U.S. House of Representatives
Washington, DC 20515

Dear Chair Granger, Chair Aderholt, Chair Murray, Chair Baldwin, Ranking Member DeLauro, Vice
Chair Collins, and Ranking Member Capito,

As biomedical, bioengineering, and healthcare researchers from a diverse range of academic fields at the Massachusetts Institute of Technology, we are writing in support of the Administration's funding request for the Advanced Research Projects Agency for Health (ARPA-H). ARPA-H will fill in significant gaps in the research funding system, and it needs sustained funding if the agency is to help improve health outcomes for the American public.

ARPA-H has a mission that is distinct from, yet complementary to that of the National Institutes of Health, with a focus on high-risk, high-reward, interdisciplinary research that is often overlooked under the traditional NIH model. **Both** NIH and ARPA-H are critical to ensuring that the United States continues to be a leader in biomedical research and innovation.

NIH's traditional programs have many strengths, but they are not well adapted to tackle problems that require a concentrated effort involving collaborations among many fields of science and technology (and experts outside of biomedicine) and between academia and industry. Therefore, biomedicine has much to gain from an agency applying the ARPA model – which emphasizes a focus on the solution of specific problems, a team-based approach, linkages between engineering and science, risk-taking, milestones designed to enable projects to fail quickly or advance, and partnerships between academia and industry.

ARPA-H can bring new tools like AI – and the experts who create them – to bear on pressing medical challenges. Examples of research well-suited for ARPA-H include:

- Creating innovative biomanufacturing technologies to help decrease the costs of biologic drugs;
- Advancing precision medicine to individualize care by integrating state-of-the-art computation sciences such as artificial intelligence, machine learning, physics-based modeling, and data systems;
- Developing new breakthroughs in synthetic biology that have potential applications in diagnostics that could, for example, warn of heart attacks.

Congress should not put additional ARPA-H funding on hold while the agency is getting started. ARPA-H's funding needs will ramp up quickly, and stop-and-start funding will not put the agency on solid footing or win the confidence of researchers. Neglecting to maintain a steady ramp up of funding will only make it harder for ARPA-H to reach the critical mass it needs to pursue innovative biomedical research.

We appreciate Congress' longstanding support of biomedical research, and hope that it will extend to supporting the request for ARPA-H.

Signed,

Regina Barzilay, School of Engineering Distinguished Professor for AI and Health, Department of Electrical Engineering and Computer Science; AI Faculty Lead, Jameel Clinic; MacArthur Fellow

Angela Belcher, Head of the Department of Biological Engineering, James Mason Crafts Professor of Biological Engineering and Materials Science and Engineering

Edward Boyden, Y. Eva Tan Professor in Neurotechnology; Professor, Department of Brain and Cognitive Sciences, Media Arts and Sciences, and Biological Engineering; Investigator, McGovern Institute and Howard Hughes Medical Institute

Emery Brown, Edward Hood Taplin Professor of Medical Engineering; Professor of Computational Neuroscience; Professor of Health Sciences and Technology; Investigator of the Picower Institute for Learning and Memory; Warren M. Zapol Professor of Anaesthesia, Harvard Medical School, Massachusetts General Hospital

Richard Braatz, Edwin R. Gilliland Professor of Chemical Engineering

Elazer R. Edelman, Edward J. Poitras Professor of Medical Engineering and Science, Director MIT Institute for Medical Engineering and Science, Senior Attending Physician Brigham and Women's Hospital and Professor of Medicine, Harvard Medical School

Paula Hammond, Institute Professor, Head of the Department of Chemical Engineering

Susan Hockfield, President Emerita of MIT, Professor of Neuroscience, Joint Professor of Work and Organization Studies at MIT Sloan School of Management

Richard Hynes, *Daniel K. Ludwig Professor for Cancer Research, Investigator at the Howard Hughes Medical Institute*

Tyler Jacks, *David H. Koch Professor of Biology, Daniel K. Ludwig Scholar, Co-director, Ludwig Center for Molecular Oncology*

Jacquie Niles, *Professor of Biological Engineering, Director of the Center for Environmental Health Sciences (CEHS)*

Kenneth Oye, *Professor of Political Science, Professor of Data Systems and Society, Director of the Program on Emerging Technologies (PoET)*

Rajeev Ram, *Professor of Electrical Engineering*

J. Christopher Love, *Raymond A. and Helen E. St. Laurent Professor of Chemical Engineering*

Phil Sharp, *Institute Professor and Professor of Biology; Nobel Laureate*

Anthony Sinskey, *Professor of Microbiology, Co-Director of the Malaysia-MIT Biotechnology Partnership Program, Faculty Director of the MIT Center for Biomedical Innovation*

Stacy Springs, *Executive Director of the MIT Center for Biomedical Innovation, Executive Director of the Biomanufacturing Research Program and the Consortium on Adventitious Agent Contamination in Biomanufacturing*

Matthew Vander Heiden, *Director, Koch Institute for Integrative Cancer Research; Lester Wolfe Professor of Molecular Biology, Professor of Biology*