

DECLARATION OF DR. GREG HIRTH

I, Greg Hirth, declare as follows:

1. I am the Vice President for Research at Brown University (“Brown”) in Providence, Rhode Island. I have held that position since February 4, 2025, after serving as interim Vice President for Research starting in September 2024. I am also a Professor of Earth, Environmental, and Planetary Science, and a federally funded researcher. I have been on the faculty at Brown University since 2007.

2. As Vice President for Research, I have personal knowledge of the contents of this declaration, or have knowledge of the matters based on my review of information and records gathered by Brown University personnel, and could testify thereto.

3. Brown is a major research institution that receives funding from the Department of Energy (“DoE”). This funding supports cutting-edge, multi-year research projects both in the School of Engineering and in Brown’s Departments of Physics, Applied Mathematics, Chemistry, and Earth, Environmental and Planetary Sciences.

4. Specifically, Brown conducts fundamental and applied research directed at the forefront of priorities of the Department of Energy on a broad range of problems critical to the nation’s current and future energy needs and security, as well as the technology and innovation required to maintain global leadership in these categories. Our projects cover many critical areas that remain priorities of the current administrations, including artificial intelligence, quantum information science, and nuclear technology.

5. Examples of critical, DoE-funded research projects being conducted by Brown include the following:

a. Research funded by \$1,257,822 from the DoE Basic Energy Sciences (BES) office supports new fundamental science of interfaces between different semiconductor materials that are ubiquitous in everyday devices such as microelectronics, electronic displays, energy harvesters, and batteries. The knowledge gained from this research will enable the design and creation of improved devices with enhanced durability and reliability. This has the potential to improve the efficiency of a broad array of technologies for solar energy, sensing, medical imaging, computing, and communication.

b. Research funded by the DoE Advance Scientific Computing Research (ASCR) program aims to develop the mathematical principles of the next generation of AI systems that will be able to reason and quantify uncertainties, and will consume much less energy than the current generation of AI systems. This approach will be key to developing AI-enabled technologies in the future, and has the potential to reduce the cost of next-generation manufacturing, advance health-diagnostic technologies, and significantly enhance the state-of-the-art with security systems for banking, personal data, and national security.

c. Research funded by \$725,181 from DoE supports work at Brown in collaboration with Lawrence Livermore National Laboratory to advance the fundamental theoretical understanding of the interaction between ions and electrons at electrified interfaces, and their influence on reactions, using AI-guided modeling. These interfaces are crucial in a broad range of emerging technologies, including batteries, hydrogen, supercapacitors, and advanced manufacturing technology for products such as next-generation fertilizers and cements. The modeling group at LLNL is relying on Brown researchers' experiments to inform its work. This work has the potential to produce energy

efficient vehicles, reduce the impact of corrosion on materials and structures, and contribute to the development of fast-charging personal electronics such as laptops, tablets, and cell phones.

d. Research funded by \$749,993 from DoE over 5 years aims to decipher spin and orbital dynamics in quantum materials through neutron scattering. The results of this research will provide essential input to establish theoretical frameworks for predicting the properties of quantum magnets with fluctuating spin and orbital degrees of freedom. In turn, this knowledge will guide the design of materials and devices with novel quantum functionalities.

e. Research funded by \$20,425,001 from DoE over 5 years leverages expertise in Brown University's High-Energy Physics (HEP) group to explore detailed understanding of the newly discovered Higgs boson and searching for new physics beyond the standard model, uncovering the origin and nature of dark matter and dark energy, understanding the deep connections between physics of the smallest and largest scales via means of quantum field theory. This research harnesses advanced AI technologies and was awarded the 2025 Breakthrough in Fundamental Physics Prize.

f. A traineeship program funded by \$1,700,000 from DoE over 3 years (January 2022 through December 2026) works to fill critical gaps in the curricula that educates high energy experimentalists and to train students to innovate and build the particle detectors for tomorrow. This award is aimed at addressing DOE's acknowledged critical shortage of high energy physicists with these fundamental skills, and prepares trainees to join the STEM workforce.

g. Research funded by \$1,807,998 from DoE over 3 years (May 2023 through July 2026) is aimed at understanding the structures and chemical dynamics of molecules in states far from equilibrium, with great importance for basic energy science and applied science. To advance chemistry, there is an urgent need to measure molecular structures during chemical reactions in short lived states, and in geometries that are dramatically different from those of the ground state equilibrium structures. This project also delivers important benchmarks that are valuable to the continued development of computational codes.

h. Research funded by \$1,796,120 from the DoE BES office over 7 years focuses on the properties of polycyclic aromatic hydrocarbon molecules. Some of these molecules, found in the natural environment and our daily life, are air pollutants. Results from this research project will contribute to the understanding of the molecules' chemistry and to finding ways to mitigate their impact.

7. Brown receives federal research funding in the form of sponsored grants and contracts, which normally provide for the recovery of certain indirect costs at contractually negotiated rates. Overall, in the 2024 fiscal year, Brown's federally sponsored grants and contracts totaled \$253.56 million, or 19% of Brown's operating revenue. Of that \$253.56 million, \$69.63 million was in the form of indirect costs. In the current 2025 fiscal year, Brown's operating budget projects \$300 million in sponsored research, which represents 19% of the University's net revenue and anticipates \$73 million in indirect costs.

8. On April 11, 2025, DoE issued "Policy Flash 2025-22" stating that it "is setting a standardized 15 percent indirect cost rate for all grant awards to [Institutions of Higher Education]" and that it would "terminate all grant awards to IHEs that do not conform with this updated policy."

This reduction to the indirect cost rate and the termination of these critical grants will have devastating effects on Brown's research initiatives and the progression of science, not only for the University and for Rhode Island, but for the nation and its citizenry.

9. Setting the overhead rate of sponsored grants and contracts to 15% would disrupt Brown's research initiatives, operating budgets, personnel, core infrastructure, and communities, all of which depend upon the current rate of F&A cost recovery. If the indirect cost reimbursement of Brown's DoE sponsored grants and contracts had been reduced to 15%, the loss for Fiscal Year 2024 would have exceeded \$2M. We estimate the loss for Fiscal Year 2025 would be similar to Fiscal Year 2024 based on year-to-date expenditures.

10. Grant awards are factored into the University's multi-year financial plan, so any reduction in the F&A rate has a significant impact on Brown's multi-year planning and long-term strategic decision-making. These funds are critical as Brown weighs making capital and other infrastructure investments that support the research mission of the University.

11. Even more immediately, a reduction in the F&A rate to 15% would require Brown to move very quickly to adjust its operations to absorb the loss of millions of dollars of expected revenue. That would include eliminating positions that support the research enterprise and facilities, such as administrators, research coordinators, lab managers, custodial staff, and security officers.

12. Importantly, like all research-intensive universities, Brown cannot make up for the resulting gap in funding because research is already highly subsidized by the University. Brown's full cost of research is significantly more than what is covered by sponsored direct costs and indirect cost recovery. In the 2024 fiscal year, for example, Brown's full cost of research was approximately \$395 million, which was about \$100 million more than sponsored direct costs

(\$224M) and indirect costs (\$70M) received from the federal government. Because Brown's federal awards cannot exceed 26% for administrative costs, all Brown's administrative costs above 26% go unrecovered and are subsidized by the University.

13. There is currently no other identified source of funds that Brown can utilize to bridge the gap for the current costs of research. The University would have little choice but to significantly scale back the amount of research it conducts.

14. It has been suggested that Brown use its endowment to make up for these lost federal funds. The endowment provides an essential source of support for the University's financial aid, faculty salaries, and academic and co-curricular programs and consists of over 3,800 unique funds that are legal contracts given as charitable gifts by alumni, parents, students, and friends of the University. These are restricted by law and purpose for their designated use, and cannot simply be reallocated.

15. The purpose of Brown's endowment is to support the mission of Brown in perpetuity. It is managed with a dual mandate to balance the competing demands of current operations and preserve purchasing power to support future operations.

16. Brown's annual endowment payout, or the amount distributed from the endowment to support each fund's designated purpose, is between 4.5% and 5.5% of the endowment value's 12-quarter trailing average, as approved by Brown's Corporation. Brown's current endowment payout is set to 5.5%, the highest payout currently allowed. Because all endowments are legally subject to the Uniform Prudent Management of Institutional Funds ACT (UPMIFA), the University's ability to increase this annual payout beyond the Corporation-approved range is limited. In short, Brown's endowment cannot make up for the significant gap in funding a reduction in F&A or total termination of DoE awards would create.

17. A reduction in F&A or total termination of DoE awards would further threaten Brown's ability to train and retain the next generation of engineers, mathematicians, physicists, and chemists. If these awards are terminated, graduate students will have to stop their work, which would hinder their degree completion. This would impact Brown's workforce and ability to be competitive in fields such as sensing, AI, materials, and energy.

18. Conducting critical, cutting edge research requires specific facilities and equipment, as well as experienced support staff who can ensure that projects are conducted safely, within budget, and in compliance with all relevant regulations. Both a change in the indirect rate and grant termination would force Brown to reduce or close experimental and computational infrastructure facilities necessary to perform this important research, and significantly impact our ability to maintain the equipment necessary to conduct advanced research.

19. Wholesale termination of these awards would have devastating impacts on Brown and well beyond the University. The reduced utilization of research supplies, equipment, and services would immediately affect companies that produce lab equipment and other supplies, and have serious ramifications for the supply chain that supports the engineer, mathematics, chemistry, and physics research enterprises.

20. Stopping or slowing DoE-funded research not only impedes work in specific fields, but also necessarily causes America to lose its global competitive edge in areas such as AI, microelectronics, advanced functional materials, and quantum science—today and in the future. In fact, one of Brown's DoE-funded grants focuses on training PhD students from across the country in innovative skills that prepare them to be a part of the STEM workforce

21. The American scientific ecosystem would be undermined by any disruptions to and cancellation of federally sponsored, university-conducted research, with immense consequences

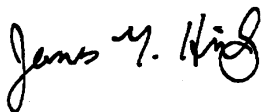
for our nation's competitiveness and economy. For example, several ongoing projects at Brown are essential to the interests of the national labs, including key strategic areas for the United States such as advanced manufacturing. Stopping or reducing the work at the university will affect projects of national interest, including those at the following national laboratories: Sandia National Labs, Oak Ridge National Labs, Pacific Northwest National Labs, Lawrence Livermore National Labs, Idaho National Labs, and Fermi National Accelerator Lab.

21. Without the opportunity to conduct this research, skilled faculty will opt to leave Brown, and likely the United States, in pursuit of viable work. This brain-drain will inevitably lead to lost opportunities to develop U.S. intellectual property, advance American science and energy security, create U.S. startup companies, and develop a workforce critical for the science and technical priorities of the current administration.

22. Accordingly, implementation of the Policy Flash will significantly and immediately compromise scientific advancement in numerous areas critical to the public interest and the advancement of key areas for American global competitiveness and security.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on April 13, 2025, at Providence, Rhode Island.



Greg Hirth, PhD
Vice President for Research
Brown University