



Grants under threat at the US National Institutes of Health

Changes to how research grants are assessed and awarded are undermining the world's largest public funder of biomedical research. Washington Correspondent Susan Jaffe reports.

So far this year, the Trump administration has fired more than 1000 scientists and grant administrators at the National Institutes of Health (NIH) and cut thousands of its research grants, including clinical trials with 74 000 patients. But long-time grant recipients and former institute directors worry that changes in how grants are awarded—and who receives them—threaten the pathways for new discoveries and the many academic research centres that train future scientists.

“For almost every area of research—and certainly, biomedical research—the United States has become a Mecca for our students and people around the world”, said Anthony Ferrante, a professor of medicine at the Columbia University Vagelos College of Physicians and Surgeons whose research laboratory focuses on obesity and metabolically related diseases. But the funding changes at NIH have “completely destroyed confidence that science is a valued and important and stably funded enterprise by the federal government”, he said. “Certainly nothing on this scale has happened before in terms of the actual disruption in funding.”

Andrew Nixon, a spokesperson for the Department of Health and Human Services (HHS), which includes the NIH, told *The Lancet* that “grant adjustments associated with leadership transitions are routine”.

For Jeremy Berg, a former director at NIH's National Institute of General Medical Sciences, what has happened at the NIH over the past 10 months is anything but routine. It has been “a chaos machine”, he said. The combination of cancelled grants and new funding policies has created an atmosphere of dread in the scientific community.

“It's a level of precarity I think many of us are not really prepared for”, said Genevieve Wojcik, a genetic epidemiologist and associate professor at Johns Hopkins Bloomberg School of Public Health. Her research focuses on how genetics influence human health, particularly in medically underserved populations. “At any moment you could lose the funding that you're dependent on.” Due to this uncertainty, she hesitates hiring laboratory

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assistants. “You're asking people in academic research to move across the country or move internationally”, she said, without guarantees of how long funding will last. “That's not how you strengthen American science.”

One change in the grant-making process particularly alarms many researchers, who expect it to result in significant grant reductions. The NIH has shifted to “forward funding” most grants, a practice that pays multiyear grants in 1 year instead of equal portions over the term of the grant. But the agency's annual budget is not enough to pay out all years of all grants in a single year. The result has been “far fewer grants” said former NIH director Monica Bertagnolli, who served during the Biden administration and is now a senior fellow at the Harvard Kennedy School of Government. For example, the National Cancer Institute funded only about 10% of reviewed grant applications in the 2024 fiscal year and Bertagnolli is concerned that the competition will get ever tougher.

“You might think you're still getting 4% of the best of the best, which, if that were true, would be good”, she said. “But researchers and reviewers tend to be highly conservative, they don't want to take a lot of big, innovative bets.” She said more intense competition could further tamp down innovation and undermine the goals NIH Director Jayanta Bhattacharya has set “to fund more high-risk, high-reward research. That's very hard to do when you have a hyper competitive environment”.

She is also alarmed by the president's proposal to cut the NIH's \$48 billion budget by 40% for the fiscal year beginning Oct 1, 2025. A Senate committee rejected the cut and added a \$400 million increase. A House of Representatives committee also opposed the cut and voted to continue funding at about this year's level.

The NIH is the world's largest public funder of biomedical research, supporting projects in all 50 states and overseas. “There is no investment that pays greater dividends to American families than our investment in biomedical research”, said Senator Susan Collins, a Maine Republican and chair of the powerful Senate Committee on Appropriations. She was speaking earlier this year against one of the Trump administration's first grant cuts: a decision to allocate no more than 15% of a grant for indirect research costs—such as laboratory space and administrative expenses. The cap would apply to new and current NIH grants for universities and is estimated to reduce their annual funding by 15–20%, according to a study cited by the Congressional Research Service.

After extracting a commitment from Robert F Kennedy Jr to reconsider the policy, Collins voted for him to lead

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the Department of Health and Human Services, but Kennedy did not change it. The cap is on hold as lawsuits filed by 22 states, the Association of American Universities, Association of American Medical Colleges, and other groups seek to block it.

Nixon, the HHS spokesperson, also defended the administration's decision earlier this year to cancel grants investigating diversity, equity, and inclusion (DEI) initiatives aimed at improving access to health care for medically underserved communities. NIH claimed such studies support racial and other kinds of discrimination. When 16 states and several public health groups sued to restore the grants, the case eventually reached the Supreme Court which upheld the terminations, while allowing the challengers to narrowly pursue the issue in a lower court.

"NIH rejects the assertion that eliminating funding for DEI-focused research threatens public health", he said. "Under [NIH] Director [Jayanta] Bhattacharya, NIH remains committed to non-ideological, evidence-based research that advances the health of all Americans."

Another policy change makes it easier for NIH to cancel grants. Award notices issued after Oct 1 now contain additional requirements that researchers must meet in order to receive grants. They must agree "that continued funding for the award is contingent upon the availability of appropriated funds, recipient satisfactory performance, compliance with the terms and conditions of the award, and may also otherwise be terminated, to the extent authorized by law, if the agency determines that the award no longer effectuates the program goals or agency priorities".

The grant-making process usually begins when the NIH publishes a "notice of funding opportunities" to solicit grant applications. Until now, it was based on input from staff, external experts, and institute advisory councils who identify research needs reflecting

the populations most affected by the diseases to be studied.

However, in a March meeting with NIH leaders, Jeanne Marrazzo, the former director of the NIH's National Institute of Allergy and Infectious Diseases, learned that the notices would be required to conform to HHS and administration priorities, with the goal of reducing the number of notices by half. Marrazzo provided an account of the meeting and her objections to revamping the notices in a federal whistleblower complaint after she was placed on administrative leave in April. Kathleen Neuzil, then-director of the Fogarty International Center and NIH Associate Director for International Research, had expressed similar objections and was also placed on administrative leave in April. Both physicians claim their removal amounted to illegal retaliation.

Another way grant-making policy changes are likely to reduce the number of grants awarded comes in the early stages of review. Applications for grants are first scored by committees of independent experts called study sections. The highest rated proposals are then discussed by each group before a selection is forwarded for a second level of review by each institute's advisory council. Because of the freeze on application reviews earlier this year and the recent government shutdown, the study sections are discussing only a third of the highest rated applications and meeting for 1 day instead of 2, said Annika Barber, an ad hoc member of the molecular neurogenetics study section and an assistant professor in the Department of Molecular Biology and Biochemistry at Rutgers University.

All but five of the 24 advisory councils have vacancies compared with membership rosters in June, 2024, said Berg. A former senior NIH official told *The Lancet* that some members have been dismissed and individuals nominated by their respective institutes to join the councils have been rejected. The councils are

scheduled to meet in January, 2026 to recommend applications for funding. Each institute or centre director then decides whether to accept the recommendations.

However, in August, President Trump issued an executive order encouraging the administration's political appointees to pay less attention to the scientists' peer review process. "Senior appointees and their designees shall not ministerially ratify or routinely defer to the recommendations of others", the order states. They "shall instead use their independent judgment."

GR Scott Budinger, chief of pulmonary and critical care medicine at Northwestern University Feinberg School of Medicine, receives several NIH fundings to research new therapies for patients with lung diseases. "Currently some of our ongoing projects are on hold while we wait to see whether and how successfully reviewed renewal grants will be funded or approved", he said. While waiting for news, he said "We are not replacing many of our graduating trainees and have paused many investments in new equipment and innovative technologies."

The grant-making changes also affected a postdoctoral researcher from China who worked in Ferrante's laboratory for 5 years. "He was absolutely committed to staying here because he thought the United States was the place to do biomedical research", Ferrante said. But all of the institutions where he applied for research jobs had suspended hiring. He was crying as he told Ferrante in June he was returning to China because he was no longer confident he could conduct his research in the USA.

"He apologized to me, although there was really no reason to apologize", said Ferrante. "I think the reason he was so upset was that the dream that he had imagined disappeared all at once. The possibilities just evaporated for him."

Susan Jaffe