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Introduction

For nearly 140 years, the National Institutes of Health (NIH) has supported the development of critical medical advances in the United States (NIH, 2014). In a statement made on February 7th, 2025, following the inauguration of US President Donald Trump, the NIH reiterated its mission of “‘[seeking] fundamental knowledge about the nature and behavior of living systems’ in order to enhance health, lengthen life, and reduce illness and disability.” During the same announcement, the NIH informed the public that it would more than halve the amount of grant funding allocated to indirect costs, which are used to fund facilities and administration costs (NIH, 2025). This major change comes as the Trump administration seeks to reduce government spending more broadly. The Trump administration has claimed that this cut of indirect costs by the NIH will save over $4 billion annually; however, the research community holds concerns about the future of biomedical research under this new funding framework (Seminera, 2025).

What is the NIH?

The NIH has been central to the United States’ role as a leader in biomedical innovation and advancement since its founding in 1887, in a rudimentary laboratory within the Marine Hospital Service. It was only in 1930 that the organization was formally renamed to the National Institute of Health; over the subsequent decades, 27 institutes, including the National Cancer Institute, the National Institute of Allergy and Infectious Diseases, and the National Institute of Mental Health, were formed to create the NIH that we know today (NIH, 2015a; NIH, n.d.).

Grants from the NIH are a significant source of funding for biomedical research across the country. In fiscal year (FY) 2024, the NIH budget was more than $47 billion,

83% of which supports extramural research conducted in research bodies outside of the NIH, while 11% goes to intramural research (Sekar, 2024; NHGRI, 2015). Grants can be awarded to a wide variety of organizations, whether they be internal or external to the United States, for-profit or non-profit, or public or private. This can include other federal institutions, universities, non-profits, hospitals, and even individuals (NIH, 2024a).

Countless lives have been altered by technology developed by NIH-funded projects (NIH, 2015b). When the Vanderbilt Comprehensive Care Clinic opened in 1994, it was little more than a palliative care facility for patients suffering from human immunodeficiency virus (HIV) with little hope for survival. As the years have passed, medical innovation has made it possible to live life with an HIV diagnosis, without significant risk of the disease progressing into AIDS. Steve Raffanti, co-founder of the clinic, remarks on the dramatic change in the patient base of the clinic, "Our mortality rate in '96 dropped 93% and has stayed down ever since. You would walk through the hallways of the clinic where all the exam rooms were and some would run out and hug you and say, 'Oh, Dr. Raffanti, you can't believe how well I feel'" (NIH, 2016a). Funding from the NIH was essential in bringing about this dramatic reversal of HIV mortality. In FY 1995, the NIH provided $1.3 billion in funding to HIV/AIDS research, while by FY 2000, funding for the same research had reached $2.1 billion (Kates & Summers, 2004).

Although many NIH-funded projects address the deadliest, most prevalent conditions that people face—including HIV/AIDS, cancer, and cardiovascular disease—the NIH also provides support to patients with rare diseases. For example, twins Alexis and Noah Beery faced a rare neurological disease, called dopa-responsive dystonia, early in life. It was only through NIH-supported genetic sequencing that the cause of the disease was accurately discovered. This discovery provided clinicians with the ability to properly treat the Beery twins, ultimately giving them a healthy life (Knox, 2011; NIH, 2016b).

NIH Funding in Early 2025

The February 7th statement by the NIH shook the research community by announcing that a 15% indirect cost rate would be applied to any active or new grants after February 10, 2025. This stands in stark contrast to the previous indirect cost rates, which have averaged approximately 28% over the past decade, and in some cases, even more.

When considering indirect costs, there are two distinct components to consider: facilities and administration (NIH, 2025). Facility costs account for depreciation and interest on the debt of research facilities, equipment, and capital improvements, as well as utilities and maintenance (NIH, 2024b; Clark & Klumpp, 2025; NIH, 2025). Administrative costs are a catch-all for everything not facilities-related, including the salaries of grant administrators and staff who have to manage the administrative, financial, regulatory, and safety activities necessary to meet federal regulations, as well as accounting and legal fees.

In response to the statement by the NIH, Dr. John Shaw, Vice Provost for Research at Harvard University, filed a court declaration on February 10th, which argued that "a sudden and unexpected reduction in the indirect cost rate would be disastrous [to Harvard's research endeavors]."

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Shaw cited the many impacts these cuts would have on Harvard and research at large. He projected that Harvard would need to make immediate staff cuts, ultimately slowing the progression of current research projects. Halted projects could become obsolete or require further repetition, creating more work and necessitating more funding. Shaw noted the potential impacts on the Boston area: Harvard University's research has a significant impact on the local economy, employing over 18,700 citizens and creating new ventures in the private sector. Finally, Shaw recognized the gap in technological advancement and economic growth that could occur between the United States and competitor nations if research lags (Shaw, 2025). Shaw's concerns about the NIH announcement echoed throughout the Harvard research community. In one article by *The Harvard Crimson*, nine researchers across several schools within the University expressed concerns that this policy change would be the end of some important research groups, such as the Brugge Laboratory in the Department of Cell Biology at Harvard Medical School and the Fortune Laboratory studying tuberculosis at the Harvard T.H. Chan School of Public Health (Patel & Yoon, 2025).

For the time being, Judge Angel Kelley of the United States District Court for the District of Massachusetts has blocked the policy of decreased indirect cost support from taking effect nationwide. This ruling was made in response to two lawsuits claiming that the new NIH policy violated federal law (Stein, 2025). If the temporary policy block is lifted, there will be a significant impact on the wider research community. Dr. Donald Ingber, Founding Director of the Wyss Institute at Harvard University, released an article on February 13, 2025, entitled "Bringing the American Economic Flywheel to a Screeching Halt," where he addresses how these research funding cuts could impact the United States' reign as a major economic leader.

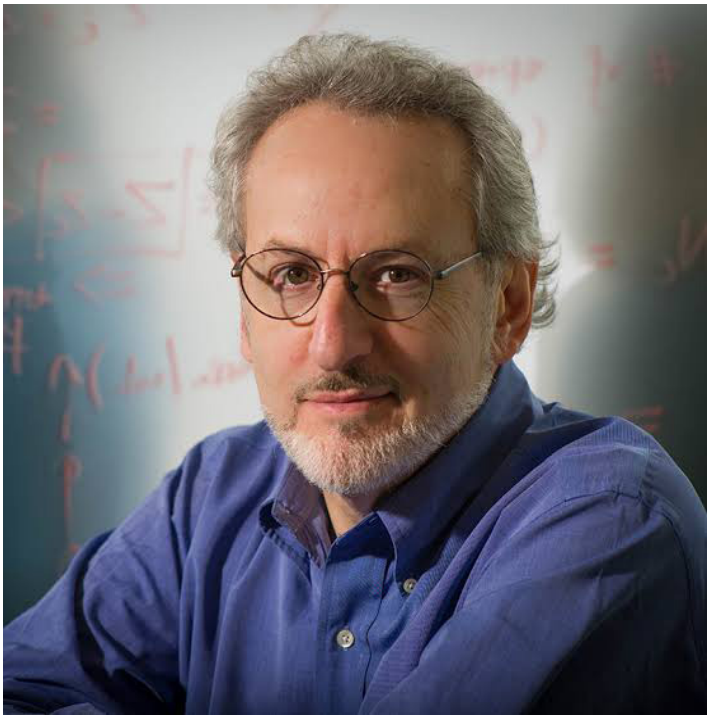

Figure 1. Donald Ingber (Courtesy of the Global Virus Network)

In early March, THURJ interviewed Ingber, who expanded on his motivations for writing the article as well as the implications of the NIH policy change for the United States and Harvard as research bodies. Once the announcement had been made, many researchers commented on the detriment such a change would bring to medical advancement; however, Ingber set out to discuss a different perspective. In his statement, Ingber thought it was important to emphasize the disastrous economic consequences of such a funding change, given that economic growth and success are a major focus of the current federal administration. "I think all they care about is economic competitiveness, international competitiveness—the economy, and I thought we needed to translate the impact of this decision on that sort of outcome," Ingber told THURJ. Technologies derived from NIH-funded research have been a key driver of economic growth due to their ability to circulate funds and generate jobs. If NIH-funded research declines, biomedical advancements will likely slow, attracting fewer of the world's top researchers to the American system.

Moving Forward

In its February 7th statement, the NIH argued that the funding cuts were being implemented "to ensure that as many funds as possible go towards direct scientific research costs rather than administrative overhead," implying that the $4 billion the administration expects to save will be funneled into direct scientific research costs (NIH, 2025; Marquez & Bush, 2025). In response, Ingber said, "I think the chance that they're going to shift the money from indirect costs into direct costs—it's slim at best." Ingber argues that it would likely take years to make such an adjustment, and it remains true that the haste with which the funding changes were administered is a real threat to ongoing research projects.

Unexpectedly, the Trump administration has since decided to freeze $2.2 billion in federal funding to Harvard, following Harvard President Alan Garber's refusal to adhere to the Trump administration's excessive demands regarding academic freedom and discipline on campus. This announcement came on April 14, 2025 and has had an immediate impact on current research activities across the University, including those of Ingber, who received an order to stop two projects related to his organ-on-a-chip technology (Rai & Sundar, 2025).

Prior to these most recent cuts, Ingber acknowledged, "I think if you ask what it feels like for faculty and students—we're confused." Until further decisions can be reached, it is critical to remain informed about the ongoing dialogue surrounding funding and the role that research plays in broader society. As Ingber writes, "Change can only come about when many voices are heard."

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Ultimately, scientific progress will inevitably be made. Whether the private sector assumes a larger role in innovation or the government reconsiders its current path, researchers will continue to push to make the world better, day by day. Ingber assures us: "I think science is something that will always be done; even in the dark ages, there were people doing interesting stuff behind the scenes, you know?"

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