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NIH Funding Is Drying Up. Drug Discovery Could Go With It.

By Josh Nathan-Kazis Follow

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The National Institutes of Health campus in Bethesda, Md.

Mass firings hit U.S. health agencies over the past week, but disruptions to the nation's medical research system have been mounting for months now, with unexplained funding delays and grant cancellations raising questions about the future of U.S. scientific research.

Dr. Jordan Green runs a busy biomedical engineering laboratory at Johns Hopkins University, where he and 14 other scientists work on projects like designing a new nanoparticle to treat patients with cystic fibrosis.

It's costly and complex work. Over the past five years, the National Institutes of Health awarded $8 million in grants to Green's lab, helping fund work on 67 papers and 14 patents.

Now, for the first time in 16 years, the lab is shrinking. The annual renewal of one of Green's major NIH grants is more than a month late. In most years, the renewal process is little more than a formality. He's worried that the routine renewals of other NIH grants due this spring won't come, either.

Without certainty that he'll get the funds to support salaries and supplies, Green says he's now cutting his lab size by about 20%.

"We'll be less productive," he says.

Jeremy Berg, a former director of one of the institutes that make up the NIH, has been closely tracking the disruptions at NIH in recent weeks, and says that delays like the one affecting Green's lab are widespread.

NIH hasn't paid out $1.8 billion in expected annual grant renewals from October through February, according to his analysis. Those missing funds don't show up in the more talked-about list of canceled grants.

The cutbacks at NIH will have a drastic impact on drugs and drugmakers in the U.S. Research funded by NIH was behind every single new medicine the Food and Drug Administration approved from 2010 through 2016, according to a study published in the Proceedings of the National Academy of Sciences, a peer-reviewed journal.

Getting a NIH grant is a major effort involving book-length proposals and multiple rounds of review and peer review. Once funded, the grants last four years on average, with annual payments and historically pro forma renewals.

In February 2024, NIH paid out 98.3% of those continuations. In February 2025, the first full month of the Trump administration, the renewal rate fell to 45%.

"Every CFO has a spreadsheet that tells them when they're getting aliquots [portions of a larger whole] of money in, so they can plan their cash flow, and all of a sudden that isn't there," Berg says. "People are starting to fire staff, and so on. And that is not necessarily reversible."

Grants that have been canceled are just as problematic for researchers.

At Columbia University, things are particularly dire. One research scientist told *Barron's* that NIH pulled a grant funding work on an antiviral nasal spray to treat or prevent Covid-19.

NIH had already spent $2.9 million on the scientist's project, according to an NIH database, and funding was meant to continue through mid-2026. While Columbia reportedly reached a deal with the federal

government on March 21 to undo hundreds of millions of dollars in grant cancellations, the researcher told *Barron's* that their grant was "officially terminated," and that they hadn't heard anything about the money coming back.

A spokesperson for the Columbia University Irving Medical Center said the university is "in the process of determining the full extent of the impact of the federal government's grant cancellations, which remain in effect."

Universities across the country have paused or shrunk their Ph.D. admissions plans for next year.

"The number of positions being offered to young people to train in this field is being markedly diminished, or in some cases cut to zero, because they don't know if they are going to be able to pay people," says Dr. Paul Ngheim, a prominent cancer researcher at the University of Washington.

Some foreign labs have seized the opportunity. Bryan Jones, a retinal neuroscientist at the University of Utah School of Medicine, says he's aware of efforts from a number of countries to recruit neuroscientists out of the U.S. in light of the recent NIH disruptions.

Drugmakers have said little about the disruptions at NIH. The industry group BIO, which represents biotech companies, told *Barron's* that "we recognize the administration's goals to enable a more nimble and efficient U.S. government."

Those drugmakers rely heavily on NIH-funded research to develop their products. The NIH's basic science work takes decades and doesn't fit the profit-focused profiles of public pharmaceutical companies.

Big pharmaceutical companies spend most of their money on expensive late-stage trials of all-but-proven medicines. At NIH, about half of the grant money goes to basic science research.

NIH made $34.9 billion in grants in its 2023 fiscal year, up 4.7% from 2022. According to the Congressional Budget Office, the pharmaceutical industry spent $83 billion dollars on research and development in 2019.

In a 2023 paper in the journal JAMA Health Forum, Dr. Fred Ledley, a professor at Bentley University, found that NIH spent $1.4 billion on the science underlying every new first-in-class drug approved by the FDA from 2010 through 2019.

One of those drugs is Keytruda, the world's top-selling medicine, which accounts for roughly a third of Merck's revenue. According to an analysis by Ledley, the NIH spent over $2.8 billion on basic research underlying Keytruda, which was approved by the FDA in 2014. The drug has since revolutionized cancer care, adding years to the lives of countless patients.

Today, when Big Pharma companies launch a new medicine, the work rests on piles and piles of research done in academic labs. "You need to have that mature foundation of basic science," says Ledley. "That basic science is not paid for by industry. That's paid for by governments."

Write to Josh Nathan-Kazis at josh.nathan-kazis@barrons.com