NIH Grant Disruptions Slow Down Breast Cancer Research

Reductions in research funding will have a direct impact on treatment options for patients.

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Inside a cancer research laboratory on the campus of Harvard Medical School, two dozen small jars with pink plastic lids sat on a metal counter. Inside these humble-looking jars is the core of Joan Brugge's current multiyear research project.

Brugge lifted up one of the jars and gazed at it with reverence. Each jar holds samples of breast tissue donated by patients after they underwent a tissue biopsy or breast surgery — samples that may reveal a new way to prevent breast cancer.

Brugge and her research team have analyzed the cell structure of more than 100 samples.

Using high-powered microscopes and complex computer algorithms, they diagram each stage in the development of breast cancer: from the first sign of cell mutation to the formation of tiny clusters, well before they are large enough to be considered tumors.

Their quest is to prevent breast cancer, a disease that afflicts roughly 1 in 8 U.S. women over their lifetimes, as well as some men. Their ultimate goal is to relieve the pain, suffering, and risk of death that accompany this disease. And their painstaking work, unspooling across six years of a seven-year, $7 million federal grant, has yielded results.

In late 2024, Brugge and her colleagues identified specific cells in breast tissue that contain the genetic seeds of breast tumors.

And they discovered that these "seed cells" are surprisingly common. In fact, they are present in the normal, healthy tissue of every breast sample her lab has examined, Brugge said, including samples from patients who haven't had breast cancer but have had surgery for other reasons, such as breast reduction or a biopsy that proved benign.

The next research challenge for Brugge's lab is clear: Find ways to detect, isolate, and terminate the mutant cells before they can spread and form tumors.

"I'm excited about what we're doing right now," Brugge said. "I think we could make a difference,

so I don't want to stop."

Work in Brugge's lab slowed significantly last year. In April, her $7 million grant from the National Cancer Institute at the National Institutes of Health was frozen, along with virtually all other federal money awarded to Harvard researchers.

The Trump administration said it was withholding the funds over the university's handling of antisemitism on campus.

Some of Brugge's lab staff lost federal fellowships that funded their work. Brugge told others funded through the NIH grant that she couldn't guarantee their salaries. In all, Brugge lost seven of her 18 lab employees.

In September, the funding for the NIH grant was restored. But in the intervening months, the Trump administration said Brugge and other Harvard researchers needn't bother applying for the next round of multiyear grants.

A federal judge lifted that ban, but Brugge had missed the deadline to apply for renewal. So her current funding will end in August.

Brugge scrambled to secure private funding from foundations and philanthropists. She was then able to reinstate two positions for at least a year — but job applicants are wary.

Across the United States, the future of federal funding for cancer research is uncertain.

President Donald Trump has proposed cutting the NIH budget by nearly 40% in the 2026 fiscal year.

In a budget message, the White House said the "NIH has broken the trust of the American people with wasteful spending, misleading information, risky research, and the promotion of dangerous ideologies that undermine public health."

But Congress has other plans: The Senate and House Appropriations Committees released a compromise bill on January 20 that would set the NIH's budget at $48.7 billion, $415 million more than in the 2025 fiscal year.

In the meantime, advocates such as Mark Fleury with the American Cancer Society are reminding lawmakers that the cancer death rate has declined — by 34% since the early 1990s — due in part to federally funded research advances.

"But we still have an incredible ways to go before we can say that we've changed the trajectory of cancer," Fleury said. "There are still cancer types that are fairly lethal, and there are still populations of people for whom their experience of cancer is vastly different from other groups."

Reductions in research funding will have a direct impact on treatment options for patients, Fleury

said. For example, a 10% cut to the NIH budget would eventually result in two fewer new drugs or treatments per year, according to a projection from the nonpartisan Congressional Budget Office.

A recent study looked at drugs that were developed through NIH-funded research and approved by the Food and Drug Administration since 2000. More than half those drugs would probably not have been developed if the NIH had been operating with a 40% smaller budget.

“We can’t say, ‘But for that grant, that [specific] drug would not have come into existence,’” said Pierre Azoulay, a co-author of the study and a professor at the Massachusetts Institute of Technology. But fewer drugs would have made it to market, he said. “It makes us at least want to pause and say, ‘What are we doing here? Are we shooting ourselves in the foot?’”

Amid all the uncertainty, Brugge has trouble focusing on her goal of finding new ways to prevent breast cancer.

Nowadays, she spends about half her time searching for new sources of funding, managing her remaining employees’ anxieties, and monitoring the most recent news about Harvard, the Trump administration, and the NIH and other federal agencies that have experienced grant freezes, staff layoffs, and other disruptions.

She’d rather return her attention to her ongoing investigations, which she’s confident could eventually save lives.

The breakdown of Brugge’s lab highlights another problem: The U.S. is kneecapping the next generation of cancer researchers. Her employees included staff scientists, postdocs, and graduate students. Of the seven who left the lab in 2025, one left the U.S., one took a job at a health care management company, four went back to school, and one is still looking for work.

One of Brugge’s former staffers, Y., is a computational biologist. She helped design and run a tool that analyzes millions of breast tissue cells from the samples in the pink-lidded jars.

Y. moved to Switzerland in October to begin a PhD program. KFF Health News and NPR are identifying her by her middle initial because she plans to return to the U.S. for scientific conferences and worries that speaking publicly about her experience could risk future visa approvals.

“I thought the U.S. would be a safe place for scientists to learn and grow,” said Y., who moved to Boston from abroad for Harvard’s master’s degree program in bioinformatics. “I really hope that those who have the opportunities to study this further can fill in those missing pieces in cancer research.”

Brugge is no longer accepting job applicants from outside the U.S., even if they are top candidates, because she can’t afford to pay the Trump administration’s new $100,000 fee on visas for some foreign researchers.

The Association of American Universities and the U.S. Chamber of Commerce have filed a legal challenge, claiming the fee is misguided and illegal. The Trump administration said the fee would discourage reliance on foreign workers and improve opportunities for Americans.

Brugge doubts work in her lab will ever return to normal.

“There’ll always be, now, this existential threat to the research,” Brugge said. “I will definitely be concerned because we don’t know what’s going to happen in the future that might trigger a similar kind of action.”

Brugge has thought about shutting down her lab. But she still employs staff members whose future scientific careers are tied to finishing some of the research. And when she looks at those pink-lidded jars, she still sees so much promise.

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