

Cover story

With Trump's proposed NIH cuts, Mass. has more to lose than any other state

Mar 24, 2017, 6:00am EDT Updated: Mar 24, 2017, 9:55am EDT

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The cover page of [Donald Trump](#)'s 2018 budget promises to "Make American Great Again." But with a proposed \$5.8 billion cut to the [National Institutes of Health](#) budget, leading academic scientists and lawmakers say the budget will bring America — and Massachusetts in particular — back to the dark ages.

The proposal would cut 19 percent from the massive \$32.3 billion NIH budget — money that's already so tight, less than one-fifth of applications receive funding. Nowhere is that money more important than in Massachusetts, which receives the highest amount per capita of NIH funding annually.

The proposed cut comes after a year of record funding for the Bay State, with Massachusetts organizations collecting \$2.57 billion. But in inflation-adjusted dollars, the numbers have been steadily dwindling. In 2012, Massachusetts received \$2.68 billion in inflation-adjusted dollars, 4 percent higher than figures reported in 2016.

The funding cuts face heavy opposition on Capitol Hill, and seem drastic on the heels of the Obama administration's one-year, \$4.8 billion boost to NIH funds. That new funding has been stalled by Congress, and there is no promise that it will be available for more than just one year.

Meanwhile, researchers are gnashing their teeth over the threat to scientific discovery.

"A \$5.8 billion cut in NIH support will be a tsunami — a disaster — for our patients," said Dr. [Laurie Glimcher](#), president and CEO of [Dana-Farber Cancer Institute](#).

The promise of discovery

Health care experts point to the dire need for new treatments, not only to help patients, but also to control costs. Taking care of Alzheimer's patients cost the U.S. \$200 billion in 2012, and that is expected to grow to \$1 trillion by 2050.

"Alzheimer's alone will take down our health care system," Glimcher said. "To me, the only way of dealing, really fixing our health care system, is to continue to come up with new treatments for all these diseases, including cancer."

The bulk of so-called basic research — the kind which is aimed at increasing our understanding of disease — is being done by NIH scientists. That's because private companies rarely invest in research that's so risky, despite the fact that without that risk, there would be nothing to translate into drugs and diagnostics.

Federal funding accounts for more than half the total contribution to scientific research. The majority of research funding for Dr. Anne Klibanski, the chief academic officer at Partners HealthCare and an established investigator at Massachusetts General Hospital, comes from NIH. While an experienced investigator like herself may have other resources, younger scientists will not.

"We may lose a whole generation of scientists," she said. "And you can't capture them again when they leave."

Dr. Bruce Johnson, chief clinical researcher at Dana-Farber Cancer Institute and the director of the Center for Cancer Precision Medicine, said because grants are awarded over multiple years, a 20 percent cut would effectively eliminate the funding of new grant applications. That's not to mention the grant requests to extend ongoing work — Johnson is preparing an NIH request to elongate a decade-long lung cancer research project another five years.

"Biomedical research takes years to bring to fruition. Having big swings ... has an enormous implication," he said.

An economic engine

The Bay State boasts the two most highly awarded hospitals in the country: Massachusetts General Hospital and Brigham and Women's Hospital. Those two hospitals alone account for 42 percent of the total NIH dollars received by the state's institutions.

U.S. Rep. [Joseph Kennedy](#) said NIH funding is a driver of the state's economy.

"This cut risks pulling and destroying the foundation on which Massachusetts is known, upon which our basis of scientific discovery is built (as) other countries in the world, like China, are making massive investments in this," Kennedy said.

Basic research at Partners is already the foundation for breakthrough therapies and new companies. Hemophilia drugs Eloctate and Alprolix, based on 20 years of NIH-funded research at Partners, formed the foundation for the company Bioverativ. Chris Coburn, chief innovation officer at Partners HealthCare, estimates that two-thirds of medical products developed by Partners got their start with NIH funding.

NIH funding has typically been one of the most protected bipartisan efforts in the country and Kennedy said the budget proposed by President [Donald Trump](#) is likely “dead on arrival.”

“At least (NIH as a program) survived,” said U.S. Rep Michael Capuano, who said he would be OK with no increase in NIH funding in order to fund other programs. “I think level funding would be ... a significant victory,” he said.

Legislators are preparing to fight against many of the cuts, but adding NIH to the mix will crowd out other battles. “It’s a troubling sign of the fights we’ll have to wage to protect programs that under any rational basis shouldn’t need protecting,” Kennedy said.