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Taking a ride on the NIH budget rollercoaster

By Harlan M. Krumholz *and* Gregg Gonsalves

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The possible ups and downs of the National Institutes of Health budget over the past few months have been enough to cause whiplash among NIH watchers. The

passage last December of the 21st Century Cures Act had researchers celebrating a several-billion-dollar addition to the NIH budget. A few months later, after President Trump proposed [decreasing the NIH budget](#)¹ by \$1.2 billion — which came on the heels of a [proposal](#)² to cut it by \$5.8 billion for fiscal year 2018 — many researchers [began worrying](#)³ about the future of their work. You could almost hear the sigh of relief among scientists after Congress included a \$2 billion increase in funding under a bipartisan spending deal [reached late Sunday night](#)⁴. That deal, though, does not address funding for 2018.

An increase in NIH funding would support many of the promised investments in the [21st Century Cures Act](#)⁵ for precision medicine, the cancer moonshot, mental health, and more. But it could also be a lifeline to scientists who now struggle with a 10 percent to 15 percent chance of getting grants funded due to the intense competition for limited funds. Enormous cuts would force a major retrenchment in the nation's commitment to biomedical science and lead to a lost generation of scientists as new researchers find even less support for the work they want to do.

Which will it be?

The 21st Century Cures Act was widely embraced by disease groups, biomedical research organizations, and universities as the beginning of a new golden age for the health sciences in the US. What was easy to miss by those who aren't policy wonks is the fact that the act didn't guarantee that the NIH would get any extra funding. For all the fanfare, there was no ironclad commitment.

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[Obama signs 21st Century Cures Act into law](#) ⁵

How can that be? In simple terms, there are two types of bills in Congress — authorizing legislation and appropriations legislation. Authorizing legislation does exactly what it says: It authorizes agencies of the executive branch to do the will of the American people, who have vested their trust in their congressional representatives. It gives these federal agencies the authority to carry out tasks like supporting research or reviewing new drug applications.

But it doesn't give them the money to do it. That's the work of appropriations bills. Authorization and appropriation are carried out by separate committees, even for the same agencies. Think of authorizing legislation as a wish list and appropriation legislation as those wishes coming true.

In other words, the promise of billions for the NIH in the 21st Cures Act was just that, a promise, and one that could easily become an empty one, akin to a "check is in the mail" statement to the scientific community.

As the 21st Century Cures Act was being developed, our representatives in Congress followed the classic approach of making positive headlines without firmly committing to funding the work. In a contentious budget environment and with a new president soon to take office, they left the reality of implementing the act to future appropriation negotiations.

Where does funding for the NIH stand now? Fortunately, the institutes have strong bipartisan support, which was reflected in the Sunday night spending bill, which included an extra \$2 billion for the NIH. The increase also signals that Congress intends to honor the agreements laid out in the 21st Century Cures Act.

That said, NIH Director Francis Collins has suggested that even despite the robust lobby for biomedical research across the country, he might need to sacrifice bits and pieces of the NIH, most notably the [Fogarty International Center](#)⁶, to hold off greater cuts down the line.

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Almost every organization, and the NIH is no exception, has the possibility of reducing waste and increasing efficiency. But that should come through smart planning, not a blindly applied axe.

What happens now? The start of appropriations season in Congress means that horse trading begins in earnest and the NIH must compete against other federal programs for funding in the fiscal year 2018 budget. If the scientific community rallies, we can regain the continuing support for the NIH that pervaded the halls

of Congress on both sides of the aisle last fall and this week.

We would like to believe that we're on the cusp of a new era in biomedical research. But that is unlikely to be anything more than a dream unless scientists are able to convince Americans, and those who represent them in the federal government, that science isn't just the process for discovering new cures and treatments for diseases, but that it is also the engine for economic prosperity based on innovation and global leadership in research and development. Other countries spend more on research and development (as a percentage of gross domestic product) than the US. We lag behind Israel, Finland, Sweden, South Korea, Denmark, Switzerland, and Taiwan.

Making America great again in science requires making investments that put us at the top of this list, not somewhere in the great middle, and then holding our institutions and scientists accountable on delivering on this investment in new knowledge.

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