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# Commentary

## Low NCI Paylines and Grant Success Rates Compromise Research Potential

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(Pictured clockwise, from upper left.)

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### Commentary Overview

- The National Cancer Institute (NCI) is currently only able to fund about one in eight research applications that are determined to be "meritorious."
- Between 1997 and 2019, the payline for meritorious NCI-funded proposals declined from the 28th percentile to the 8th percentile.
- Research funding challenges could discourage current and future generations of promising cancer scientists and limit economic benefits to communities that research centers call home.
- In defining funding priorities for the current NCI budget, a fresh look at how funds are allocated internally may be warranted.

A flood of scientific discoveries in fields such as bioengineering, computational science, genomics, and immunotherapy has contributed to marked progress against cancer in the

past 30 years. Between 1991 and 2019, the rate of cancer deaths in the United States dropped 32 percent, from 215 to 146 deaths per 100,000 people. And yet, cancer remains the second most common cause of death in the U.S.

According to the [American Cancer Society](#), in the states where our cancer centers are located, the estimated number of new cases in 2022 remains stubbornly high: 75,350 more people in Illinois will get cancer this year; 55,730 more in New Jersey; 42,620 in Washington; and 16,580 in Kansas. Nationwide, the total will approach two million, with 600,000 people predicted to die from the disease.

One encouraging development in our work against cancer is the significant increase in proposals submitted to the National Cancer Institute (NCI) in recent years. Specifically, from 2013 to 2019, grant applications to the NCI grew by 50 percent, far outpacing applications to all of the National Institutes of Health (NIH), which increased by about 11 percent.

More scientific breakthroughs open doors to more opportunities for research and, ultimately, cancer cures. But there's a downside to the increased demand for cancer research funding: more grant applications have resulted in many promising proposals going unfunded.

### Grant Application Success Rates, Payline Falter

An analysis by the nonprofit ACT for NIH found that the NCI is currently only able to fund about one in eight research applications that are determined to be "meritorious," and the downward trend extends back nearly a generation. Between 1997 and 2019, the payline for meritorious NCI-funded proposals declined from the 28th percentile to the 8th percentile. (A payline is a funding cutoff point for a grant application. A percentile number, determined by NIH reviewers, ranks a grant application relative to other applications.)

For comparison, more recent NIH funding data shows that other NIH institutes typically fund above the 20th percentile, with success rates ranging up to 33 percent at the eight largest NIH institutes, compared to the NCI being funded at the 11th percentile with just under a 14 percent success rate. An uptick since 2019, to be sure, but still a distressingly low rate of successful applications. With NCI grants still being funded at the 11th percentile as we await a Fiscal Year (FY) 2023 budget from Congress, it makes the chances of reaching the NCI's goal of funding to the 15th percentile by FY 2025 seem even more fleeting.

Dim prospects for research funding could discourage current and future generations of promising scientists and limit economic benefits to communities that research centers call home. This is something that Dr. Monica Bertagnolli, NCI's new director, will have to consider as she defines funding priorities for the current NCI budget. A fresh look at how funds are allocated internally may be warranted. Internal re-allocations may help to some degree but are unlikely to be sufficient to completely reverse the low paylines and success rates.

#### FY2021 Grant Application Success Rates for the Eight Largest NIH Institutes

	Success Rate
National Cancer Institute	13.8%
National Institute of Allergy and Infectious Diseases	17.5%
National Institute on Aging	24.2%
National Heart, Lung and Blood Institute	20.5%
National Institute of General Medical Sciences	33.4%
National Institute of Neurological Disorders and Stroke	20.2%
National Institute of Diabetes, Digestive, and Kidney Diseases	22.7%
National Institute on Mental Health	22.1%
<b>NIH Totals</b>	<b>19.1%</b>

Source: National Institutes of Health, Office of Budget

## New Priorities in a New Cancer Moonshot

Against this unsettled backdrop for cancer science, President Biden launched a new Cancer Moonshot in early 2022, renewing the initiative established during his vice presidency under President Obama. With assistance from the bipartisan 21st Century Cures Act, the original Cancer Moonshot, passed in late 2016, provided a \$1.8 billion boost to cancer research over a seven-year period.

The current iteration of the Cancer Moonshot has charted a more executive-level course, calling for collaboration by multiple agencies to achieve President Biden's goal to cut cancer death rates by 50 percent over the next 25 years. The president's team has reached out to the private sector, foundations, academic institutions, and health care providers to join the effort, which includes improving patient experiences with cancer diagnosis, treatment, and survival.

The Cancer Moonshot team has identified several priorities that align with those of AACI cancer centers: improving prevention tools; increasing screening rates; improving access to innovative treatments and therapies; and improving health equity. Achieving these ends will require sufficient means in the form of robust support for research funding, particularly through the NCI. The more cancer research grant proposals that are successfully funded, the closer we get to meeting President Biden's goal of cutting cancer death rates by half in a generation.

### Congressional Turnover Requires Renewed Advocacy

It will take bold, bipartisan action to address this funding crisis. Last December, Senators Chris Coons (D-DE) and Jerry Moran (R-KS) pitched a \$1-billion boost to the NCI in [Scientific American](#). Late last year, Representatives Debbie Dingell (D-MI) and Brian Fitzpatrick (R-PA) also introduced the [Knock Out Cancer Act](#), which would add a 25 percent increase to NCI research funding in Fiscal Years 2023-2027.

While these legislative actions are encouraging, potential new challenges for cancer research advocacy have cropped up on Capitol Hill. The 2022 midterm election changed the composition of Congress, and the impact of that changeover on the cancer community has been amplified by the retirement of some of cancer research's foremost congressional champions, notably Sens. Roy Blunt (R-MO) and Richard Shelby (R-AL), and Rep. Fred Upton (R-MI).

Compared to their predecessors, the new class of congressional members and staffers are likely unfamiliar with the essential elements, let alone the finer points, of cancer research funding, and the pressing need to ensure that federal support for our work continues to be a priority. It's up to us—cancer center leaders and the organizations that support us—to continue to educate our elected officials, keeping attention focused not only on NIH research funding but on specific efforts around the NCI payline and the benefits that successful NCI research proposals bring to cancer patients, their families, and the communities we serve.

### Our Mission

The Association of American Cancer Institutes (AACI) represents 106 premier academic and freestanding cancer centers in the United States and Canada. AACI is accelerating progress against cancer by enhancing the impact of academic cancer centers and promoting cancer health equity.

### About AACI Commentary

To promote the work of its members, AACI publishes *Commentary*, a monthly editorial series focusing on major issues of common interest to North American cancer centers, authored by cancer center leaders and subject matter experts.



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