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Commentary

Our Best Defense Against Cancer

Robust Funding is Essential to Continued Research Progress

By Roy A. Jensen, MD



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Commentary Overview

- For the past 50 years, progress against cancer has accelerated at an unprecedented rate, thanks in large part to investments in biomedical research.
- An increase in grant applications to the NCI underscores the continued dynamism of cancer research. However, thousands of promising ideas are abandoned due to lack of funding.
- We are at risk of losing an entire generation of cancer researchers and compromising our ability to deliver new therapeutic approaches to our patients.
- To ensure robust funding for cancer research, Congress must pass the Fiscal Year 2022 budget.

Since the passage of the National Cancer Act in 1971, our knowledge of the nature of cancer has expanded exponentially. Progress against cancer accelerated at an unprecedented rate, thanks in large part to research discoveries and technological advances made possible by our investments in biomedical research. Over the last 50 years, essential funding of cancer research has led to innovations in prevention, detection, screening, and treatment; improved survival rates; and reduced mortality.

We are poised at a pivotal moment in cancer research—a time that **Dr. Norman E. Sharpless** has referred to as a "**golden age**"—transitioning from an era when cancer was an inscrutable mystery, to a time when cancer is becoming an engineering problem whose solution is constrained by a lack of resources.

Despite this incredible progress, cancer was forecast by the [American Cancer Society](#) to cause 1.9 million cases and 600,000 deaths in the United States in 2021 – a truly staggering toll. Furthermore, from an economic standpoint, cancer is a significant societal burden and is projected to cost the U.S. economy \$245 billion annually by 2030, according to a [2020 report](#) from the American Association for Cancer Research. In addition, new cancer diagnoses are predicted to increase by 45 percent by 2030 due to demographic trends and we simply are not adequately preparing for the consequences of these increases.

However, there is reason for continued optimism. One of the most encouraging developments is the significant increase in proposals submitted to the National Cancer Institute (NCI) in recent years. From 2013 to 2019, grant applications to the NCI grew by 50 percent, while applications to the National Institutes of Health (NIH) as a whole increased by about 11 percent. The great news is that cancer researchers are brimming with new ideas on how to make progress against this disease, supporting the premise that progress is more resource-limited than idea-limited.

In my opinion, the biomedical research community now has the expertise to close gaps in knowledge and translate research findings into new more effective treatments—and even cures—for many forms of cancer, but only if we have the will to make the investment. Every scientific discovery that helps us better understand and treat cancer is the culmination of many years of work and we know exactly what it takes to make that progress: a skilled and highly trained workforce, time, and money.

Declining Percentage of Funded Grant Applications

The flip side of the dramatic increase in NCI grant applications is the negative impact the increase has had on the percentage of cancer proposals that are funded. Between 1997 and 2019, the percentage of NCI-funded proposals took a nosedive, from 28 percent to 8 percent. This contrasts with all other NIH institutes, which typically fund above the 20th percentile. This difference is incredibly damaging to cancer research and cannot be allowed to continue if we hope to make further progress against this disease.

According to data from the nonprofit [ACT for NIH](#), the NCI is only able to fund about one in eight meritorious research applications. Though the increase in applications underscores the continued dynamism of cancer research, this lower success rate adds up to thousands of promising ideas abandoned due to lack of funding. In 1980, the average age at which a PhD scientist received their first R01 grant was 35.7; in 2016, the age was 43. This is a direct result of the difficulty that many researchers have in getting their ideas funded in today's fiscal environment.

The daunting challenge of the current funding levels at the NCI and the diminishing likelihood of being able to establish and sustain funding over the span of one's career is demoralizing to young cancer researchers and has even caused many outstanding young scientists to question whether cancer research is a viable career path. We face the very real risk of losing an entire generation of cancer researchers. The ripple effect of such a loss would severely compromise our collective ability to deliver new therapeutic approaches to our patients, both now and long into the future.

The leadership of the NCI is well aware of this issue. To address the problem, the NCI Fiscal Year (FY) 2022 budget proposal had positioned the agency to continue its efforts to increase the grant approval payline—the cutoff point used to determine which applications will be funded—to 15 percent by 2025.

Unfortunately progress in addressing the payline issue has been stalled, as the NCI has been operating under a Continuing Resolution (CR) since October 1, 2021. A second CR, which President Biden signed into law on December 3, 2021, extends NCI funding through February 18, 2022. As a result of this fiscal uncertainty, the agency has adopted an interim budget that has frozen the payline at its FY 2021 level of 11 percent. This is not only well below the goal of 15 percent by 2025 – it is also much lower than the payline of any other institute at the NIH.

To stay on track toward the 2025 goal, the NCI will need to increase its annual commitment to the research project grant pool. **But the first step is for Congress to pass the FY 2022 budget.** As Senators Chris Coons (D-DE) and Jerry Moran (R-KS) noted in a recent [Scientific American opinion piece](#), "...we must work together to treat cancer with the same urgency that

we tackled the pandemic — starting with a robust, sustained investment in cancer research...” The senators recommend a \$1 billion “boost” this year, with consistent increases moving forward – a figure aligned with AACI’s budget request of \$7.6 billion for the NCI.

As we've learned from COVID-19, biomedical research is our best defense. The same is true for cancer. Robust financial resources are essential to accelerating research progress and improving outcomes for cancer patients and survivors. We owe them nothing less.

[Ask Your Legislators to Pass the FY 2022 Budget](#)

Our Mission

The Association of American Cancer Institutes (AACI) comprises 103 premier academic and freestanding cancer centers in the United States and Canada. AACI is accelerating progress against cancer by empowering North America's leading cancer centers in their shared mission to alleviate suffering.

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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