



# Annual Plan & Budget Proposal for Fiscal Year 2024

At a Glance

## DIRECTOR'S MESSAGE

**F**or much of the past 50 years, a melanoma diagnosis was essentially a death sentence. Today, thanks to advances in cancer research, the outlook for people with melanoma—and several other cancers—has dramatically improved.

Over the course of my career, I have seen countless examples where cancer research has given hope to people who might once have had none. With the scientific opportunities available to us today and the right investments, we can create many more reasons for hope.

The extraordinary progress we have seen was made possible by decades of investments in basic, translational, clinical, and implementation research. Thanks to these advances, I am confident that we can end cancer as we know it—not only for a lucky few, but for all.

For instance, efforts to develop drugs that target mutant forms of KRAS, which drive more than 30% of cancers and were long considered undruggable, hit a major milestone in 2021: the first approval of a KRAS inhibitor. And more such drugs are on the horizon. Meanwhile, although lung cancer is still

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one of the leading causes of cancer death, its toll has dropped more rapidly in recent years, thanks to the combination of tobacco prevention and cessation, screening, and an explosion of Food and Drug Administration approvals for new drugs—including targeted therapies and immunotherapies—since 2010.

As a young cancer researcher decades ago, I could not have imagined the incredible scientific resources available to today’s researchers thanks to NCI support across the cancer research enterprise. For instance, many scientists supported by NCI grants conduct their research at state-of-the-art facilities, such as the 71 NCI-Designated Cancer Centers, with access to sophisticated technology that would have seemed like science fiction not long ago. Researchers are taking advantage of resources such as NCI’s National Cryo-Electron Microscopy Facility, Patient-Derived Models Repository, and Cancer Research Data Commons. Others are embarking on their careers through a wide array of NCI training programs and support for early-stage investigators.

Despite research advances that have led to steady—and, in some cases accelerating—declines in cancer death rates since the early 1990s, far too many people still face cancer’s devastating effects. We can do so much more. We can prevent more cancers. We can diagnose cancers earlier. We can develop more effective—and less toxic—therapies. We can unravel the mysteries of even the rarest and most treatment-resistant cancers. And we can ensure that these advances are available to all.

The Cancer Moonshot<sup>SM</sup>, initially launched in 2016, has helped NCI unleash many more opportunities for cancer research. The Cancer Moonshot has established important networks of scientists who collaborate on a greater scale. The Pediatric Immunotherapy Discovery and Development Network, for example, has made advances such as improving the cancer-fighting ability of CAR T cells.

The Cancer Moonshot has also enabled NCI to build infrastructure with the unprecedented capabilities to share cancer data across the research community. For instance, the Human Tumor Atlas Network’s three-dimensional cancer atlases will help researchers understand and intercept tumor growth at any stage. Additional investments outlined in the Professional Judgment Budget Proposal will ensure that we build on the Cancer Moonshot’s successes thus far and further catalyze progress to achieve the bold goals put forth by President Biden.

This Annual Plan and Budget Proposal describes the resources needed to ensure that the cancer research enterprise remains strong, delivers on the opportunities before us, and transforms what it means to have cancer. Because fundamental scientific discovery is the backbone of cancer research, we must make strong investments in investigator-initiated research aimed at unlocking cancer biology and increasing the pipeline of new, less toxic drugs for cancer prevention, interception, and treatment.

NCI will also continue to expand and modernize clinical trials to reach more people, so that everyone benefits, no matter their demographics. Through implementation science, NCI aims to better understand how to ensure current and new standards of cancer care reach all patients equitably. All of these efforts depend on a cancer research workforce that reflects the populations we serve. To that end, NCI will expand its efforts to recruit more early-stage investigators from diverse backgrounds, further leverage existing programs that train members of underrepresented groups, and drive cultural change at the institution level that embraces equity, inclusion, and diversity of thought.

As I consider what we can achieve through cancer research, I am humbled by the advances made possible by the many people with cancer who have participated in research, and I am filled with hope. What once seemed so far off is closer than ever. By harnessing the incredible talent and dedication of the cancer research workforce, building on decades of scientific discovery, and taking advantage of today’s cutting-edge technology, we can truly transform what it means to have cancer so that far more people live longer, healthier lives.



**Douglas R. Lowy, M.D.**

Acting Director  
National Cancer Institute

## HIGHLIGHTED SCIENTIFIC OPPORTUNITIES

NCI continually pursues new and emerging scientific opportunities that, with further investment, would catalyze additional progress in cancer research. Read about four areas of opportunity highlighted in the Fiscal Year 2024 Annual Plan and Budget Proposal.



### ASYMPTOMATIC MULTI-CANCER DETECTION

Multi-cancer detection (MCD) tests that can reliably find precancer or cancer before it is symptomatic have the potential to substantially change cancer screening. Using a single blood draw, these tests may be able to detect the presence of multiple cancer types—including ones without established screening methods. By rigorously evaluating MCD tests and ensuring that the benefits outweigh potential risks, we may be able to take important steps toward ending cancer as we know it today.



### CELL THERAPY TO TREAT CANCER

Cell therapy is a personalized treatment that attacks cancer by using the patient's own immune cells. While several cell therapies have been approved to treat certain blood cancers, more research on cell therapy technology and scalable production is needed to expand this treatment to a much larger number of people with cancer. Additional funding will enable the fundamental laboratory research and early-phase clinical trials to test novel cell therapy approaches.



### PERSISTENT POVERTY AND CANCER

Cancer death rates are 12% higher in counties with persistent poverty than in other US counties. Without effective interventions, persistent poverty will continue to exacerbate health disparities. More research is needed to clarify the systemic traits of persistent poverty that lead to cancer disparities. Ending cancer as we know it requires connecting research findings with comprehensive cancer interventions that reach and are accepted by communities, no matter the zip code.



### UNDRUGGABLE CANCER TARGETS

Armed with novel tools and more knowledge about cancer biology than ever before, researchers have made significant progress targeting drivers of cancer that were once considered undruggable. Sustained investment is needed to seize on the progress that has been made so far. Imagine ending cancer as we know it with strategies to target almost any cancer driver, leading to effective medicines for more people with cancer.

## CANCER MOONSHOT

### NEW GOALS, NEW OPPORTUNITIES

In 2016, the Cancer Moonshot was launched with the mission of accelerating the rate of progress against cancer. That year, the 21st Century Cures Act authorized \$1.8 billion in funding for the Cancer Moonshot over 7 years from fiscal year (FY) 2017 through FY 2023. Early in 2022, the Cancer Moonshot was reignited with the bold goals of reducing cancer death rates by 50% in the next 25 years and improving the quality of life for all people with cancer and cancer survivors.

NCI is uniquely positioned to lead the research that will result in changes in standards of care for patients and to conduct the implementation research needed to identify optimum methods to deliver research findings and other evidence-based knowledge into clinical practice.

In this next phase of the Cancer Moonshot, NCI will sustain the progress made from research funded through the 21st Century Cures Act and build upon the successes to continue to improve treatment outcomes and quality of life for all. With support from the White House and bipartisan congressional support, NCI can change the experience of cancer as we know it, for all people, by focusing on the following:

- **expanding and modernizing cancer clinical trials and the enterprise supporting them**
- **continuing to invest in basic and translational research to ensure a continuous stream of new approaches to cancer prevention, diagnosis, and treatment**
- **ensuring equitable health care delivery of current and new standards of care**
- **expanding and enhancing the diversity of the cancer research workforce**

# PROFESSIONAL JUDGMENT BUDGET PROPOSAL FOR FISCAL YEAR (FY) 2024

(DOLLARS IN MILLIONS)

Prior (FY 2023) Professional Judgment Budget Proposal	\$7,550*	
Proposed Budget Increase for FY 2024 to Seize Opportunities for Progress	\$1,166	\$354 Cancer Biology Research \$247 Cancer Prevention Research \$192 Cancer Detection & Diagnosis Research \$227 Cancer Treatment Research \$86 Public Health & Cancer Control Research \$60 Training & Infrastructure
Funding to Revolutionize Cancer Clinical Research†	\$1,272	
<b>FY 2024 TOTAL</b>	<b>\$9,988</b>	

\*This proposal includes \$50 million for the Childhood Cancer Data Initiative, a 10-year initiative that began in FY 2020.

†This proposed funding will be used to achieve the goals of reducing cancer death rates by 50% over the next 25 years and ending cancer as we know it for all.

This proposal for a significant budget increase in FY 2024 is designed to capitalize on important scientific opportunities in pursuit of the goal to end cancer as we know it for all people. These opportunities include

- the **exceptional ideas** being put forth by the cancer research community, particularly in the explosion of RO1 applications in recent years. Investigator-initiated research supported through research project grants, including RO1 grants, is the source of some of the most innovative and transformative ideas in cancer research.
- the need to **expand and modernize cancer clinical trials**, which are essential for moving new methods of preventing, diagnosing, and treating cancer from the laboratory to physicians' offices and other clinical settings to improve care and quality of life for people with cancer or at risk of cancer.
- the successes of the **Cancer Moonshot**, which NCI will build upon to sustain the progress made through the 21st Century Cures Act and continue to improve our

understanding of cancer and identify new approaches to prevent, detect, and treat cancer.

- a continued commitment to **advancing health equity and ensuring rapid dissemination and delivery of standards of care** so that the benefits of cancer research reach populations that, for too long, have not benefited fully from research progress.

Funding at the level proposed also represents progress toward NCI's goal of increasing the RO1 payline, a commitment to nurturing a pipeline of talented and diverse scientists to ensure the future strength of the cancer research workforce, and continued support of the expansive infrastructure and resources that are vital parts of the National Cancer Program.

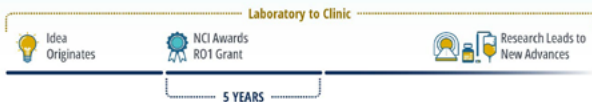
**With the necessary increases to NCI's budget and sustained investments over time, we can leverage the scientific and societal opportunities before us to deliver the research advances that the American people want and deserve.**

# WHY SUPPORTING THE BEST IDEAS IN CANCER RESEARCH REQUIRES FUNDING INCREASES OVER TIME



## R01 GRANTS: A SOURCE OF INNOVATIVE IDEAS

R01s are a type of competitive research project grant that supports investigator-initiated research. These grants enable researchers to translate their ideas into evidence, the foundation for advances that help people with cancer and those at risk.



In fiscal year (FY) 2021, NCI received 6,178 applications for new R01s. That's **47%** more than in FY 2013. Yet, during that time span, the NCI budget increased only **32%**.

## GRANTS ARE MULTIYEAR COMMITMENTS

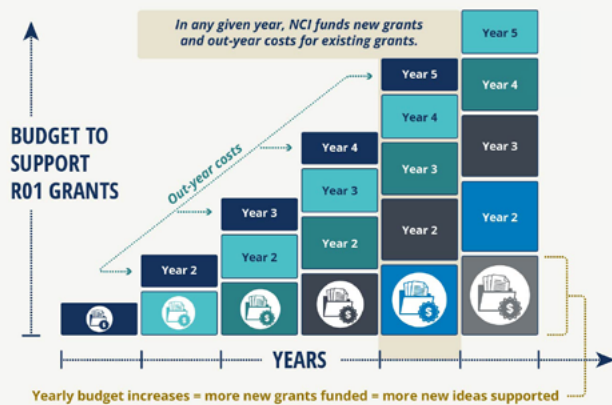
Each new R01 grant creates a financial commitment for the initial year and up to 4 subsequent years (referred to as out-years). The new group of grants NCI funds each year represents a cohort of awards with a multiyear financial commitment.



= Year 1 of a 5-year funding commitment

## FUNDING MORE NEW R01 GRANTS EACH YEAR: AN INCREASING STAIR-STEP EFFECT ON NCI'S COSTS

NCI must have sustained funding increases to support as many new ideas as possible, to take advantage of emerging opportunities, and to attract and retain the cancer research workforce.



These new ideas from researchers drive advances that allow people with cancer, those at risk, and the growing population of survivors to live longer, healthier lives.



Investigator-initiated research is the main engine of innovation in the nation's biomedical research enterprise. NCI must support as many new ideas as possible to ensure that we do not miss the most promising opportunities to make progress against cancer. Over much of the past decade, NCI has experienced a tremendous increase in R01 grant applications, outpacing budget increases. This means we support far fewer grants than we would like, and we are surely missing out on ideas that could bring us closer to ending cancer as we know it.

Most NCI grants provide 5 years of funding to researchers. While this timeframe is necessary for testing ideas with sufficient rigor, the number of new grants awarded each year cannot grow without robust annual funding increases. NCI must support both the cost of grants that carry over from previous years (out-year costs) and the initial-year costs of newly awarded grants. When grants conclude, the allocation that would have gone to them becomes available to support new grants and out-year costs of grants made in previous years. However, this amount is not enough for NCI to increase the number of new awards, year after year. That can only be achieved through sustained funding increases that allow NCI to raise the R01 payline and fund more new ideas each year, particularly in the form of R01 grants.

Focusing on R01 grants, the payline in FY 2019 was at the 8th percentile, down from the high of the 16th percentile in FY 2009. Thanks to Congress's continued support, NCI was able to increase the R01 payline to the 11th percentile in FY 2021. NCI has set a goal to reach a payline at the 15th percentile by FY 2025. To achieve this requires sustained and robust annual budget increases.