NCI Director's Report

Norman E. Sharpless, M.D.

15th Virtual Meeting of the National Cancer Advisory Board

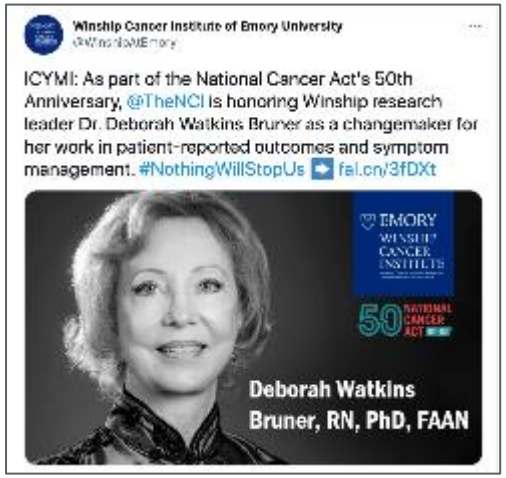
September 1, 2021

@NCIDirector
@TheNCI

NIH NATIONAL CANCER INSTITUTE

Commemoration across the Community

Cancer Centers



Cancer Organizations

Govt. Organizations

NOTHING WILL STOP US™ 50 YEARS
NATIONAL CANCER ACT

#ThisIsWhy We Work in Cancer Research

grn.carla Because together we can make a great improvement in cancer treatment, saving lives. I personally started this career because of my mom. She was my biggest supporter, my inspiration. I lost her because of a gastric cancer when I was 19. She is the reason why I do what I do.

premagram Because of my personal survival with cancer! ❤️

5d 2 likes Reply

angieflowers because I believe in science and the power of hope. Together they have the potential to produce miracles.

5d 9 likes R

hannahwol Because I want to move the needle of survivability and offer hope to patients!

5d 4 likes Reply

zee_zeinab_ Because I want to help prevent cancer and improve the survival of cancer patients so they can live a long and healthy life 💞

5d 18 likes Reply

I work in cancer research because _____.

Stephanie L Goff, MD, FACS

I work in #CancerResearch because I have seen the experimental therapies give people their lives back, their futures back. We can make that the norm rather than the exception. #ThisIsWhy #NothingWillStopUs

Tony Kerlavage, Ph.D. @NCIKerlavage · Aug 23

I work in cancer research because it presents very motivating & complex scientific challenges. Cancer touches everyone. I believe that contributing my experience in data science can help reduce the suffering from these devastating diseases. #ThisIsWhy #NothingWillStopUs

Terry Williams

I work in cancer research to bring new hope to patients with devastating disease. I've seen too much tragic loss and lives cut short. We've made great advances but there is so much more to do. #NothingWillStopUS @CityofHope

Masonic Cancer Center

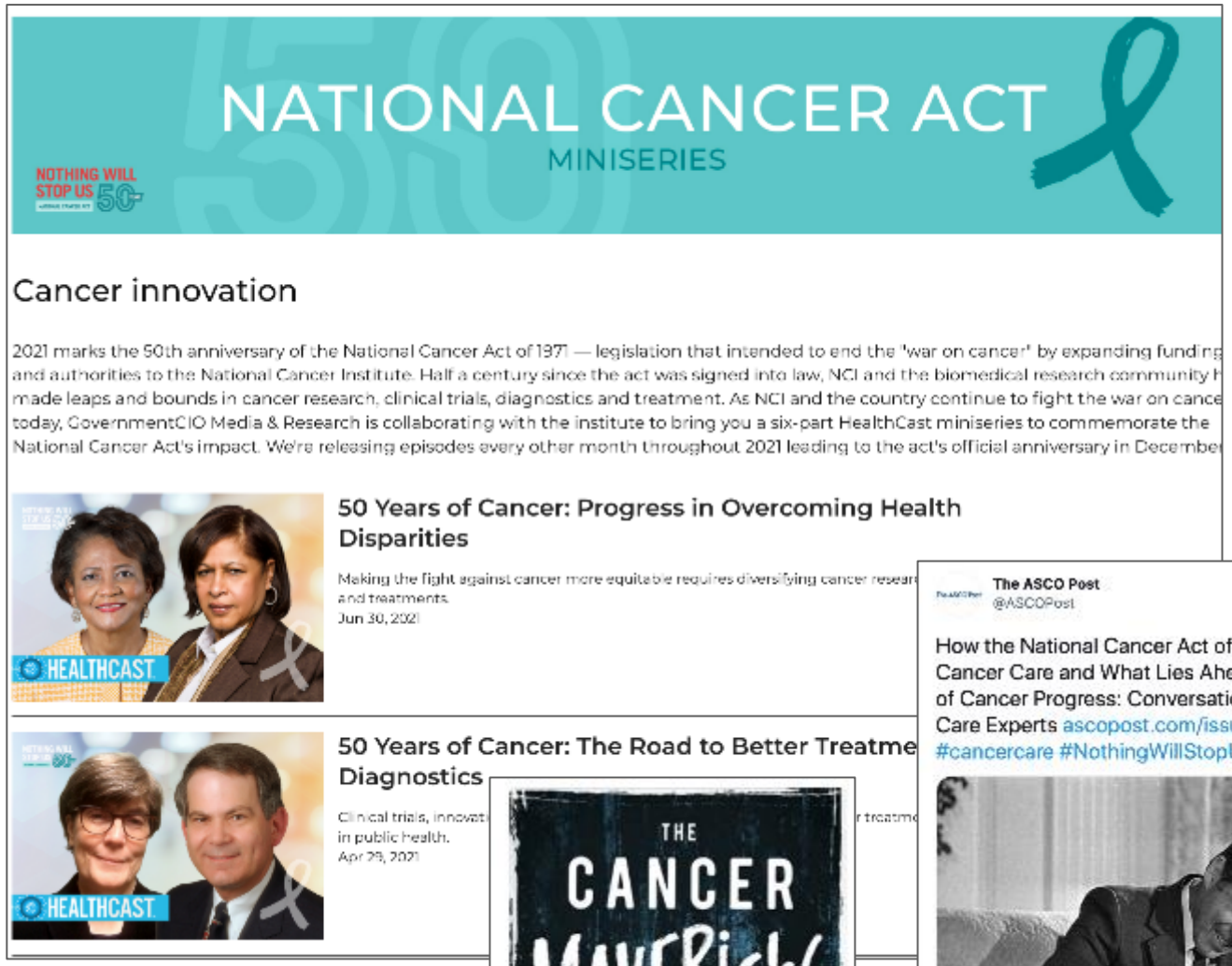
Yale Cancer Center @YaleCancer

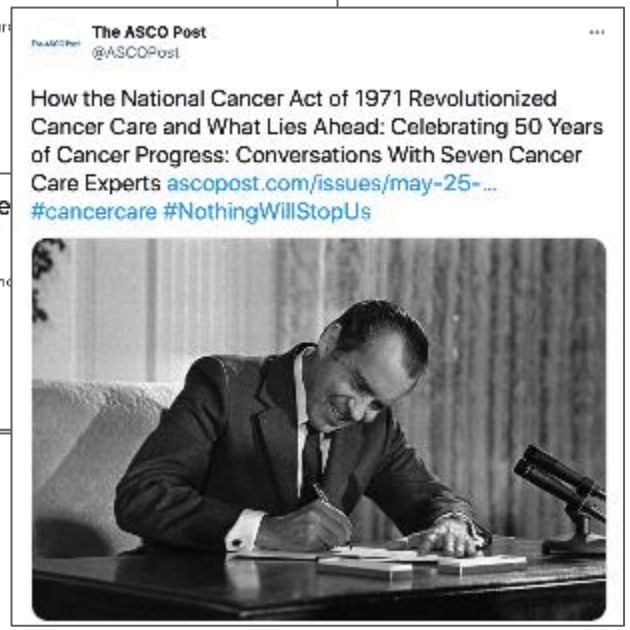
According to .@YaleCancer Dr. Xavier Llor, knowledge is power when it comes to #cancer research and knowing your risk of developing cancer. #ThisIsWhy #NothingWillStopUs #GITwitter @YNHH @SmilowCancer @YaleMed

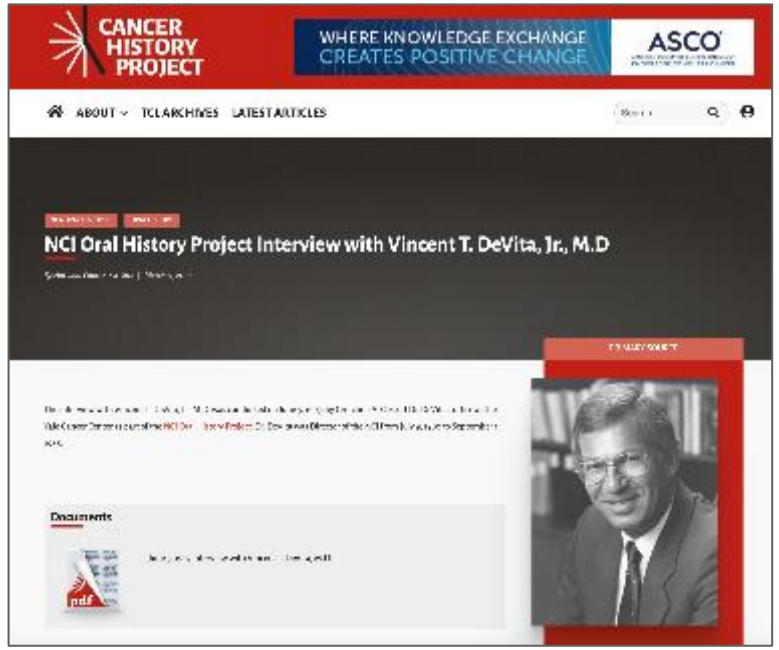
The Wistar Institute @TheWistar · Aug 27

This year, @theNCI celebrates 50 years of the National Cancer Act. Stay tuned for @TheWistar staff to share personal reasons why they work in #cancerresearch. bit.ly/2Y7SUkZ #ThisIsWhy #NothingWillStopUs

Media Interest







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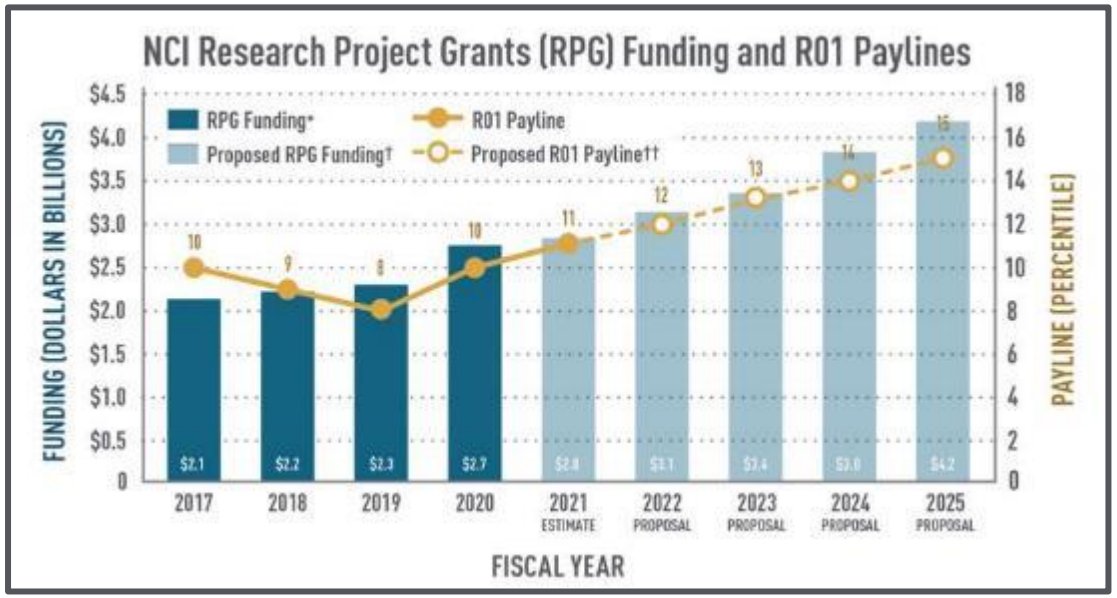
Annual Plan & Budget Proposal for Fiscal Year 2023

NCI PROFESSIONAL JUDGMENT BUDGET PROPOSAL FOR FISCAL YEAR 2023

(DOLLARS IN MILLIONS)



FISCAL YEAR 2021 NCI BASE APPROPRIATION	$6,365*	
TOTAL BUDGET INCREASE (Proposed Allocation)	$1,185†	$277 Inflation Adjustment†† $165 Cancer Biology Research $185 Cancer Prevention Research $150 Cancer Detection & Diagnosis Research $205 Cancer Treatment Research $125 Public Health & Cancer Control Research $78 Training & Infrastructure
FY 2023 BUDGET RECOMMENDATION	**$7,550**	
FY 2023 CANCER MOONSHOT℠ FUNDING	$216	
FY 2023 TOTAL	**$7,766**	

National costs for cancer care were estimated to be

$190.2 billion in 2015
$208.9 billion in 2020

Modeled annual productivity cost from cancer mortality

$147.6 billion for 2020

Cathy J. Bradley, K. Robin Yabroff, Bassam Dahman, Eric J. Feuer, Angela Mariotto, Martin L. Brown, Productivity Costs of Cancer Mortality in the United States: 2000–2020, JNCI: Journal of the National Cancer Institute, Volume 100, Issue 24, 17 December 2008, Pages 1763–1770.

If you think research is expensive, try disease!

Mary Lasker

HIGHLIGHTED SCIENTIFIC OPPORTUNITIES

Clinical Trials: Bringing Cancer Research to All Possible Participants

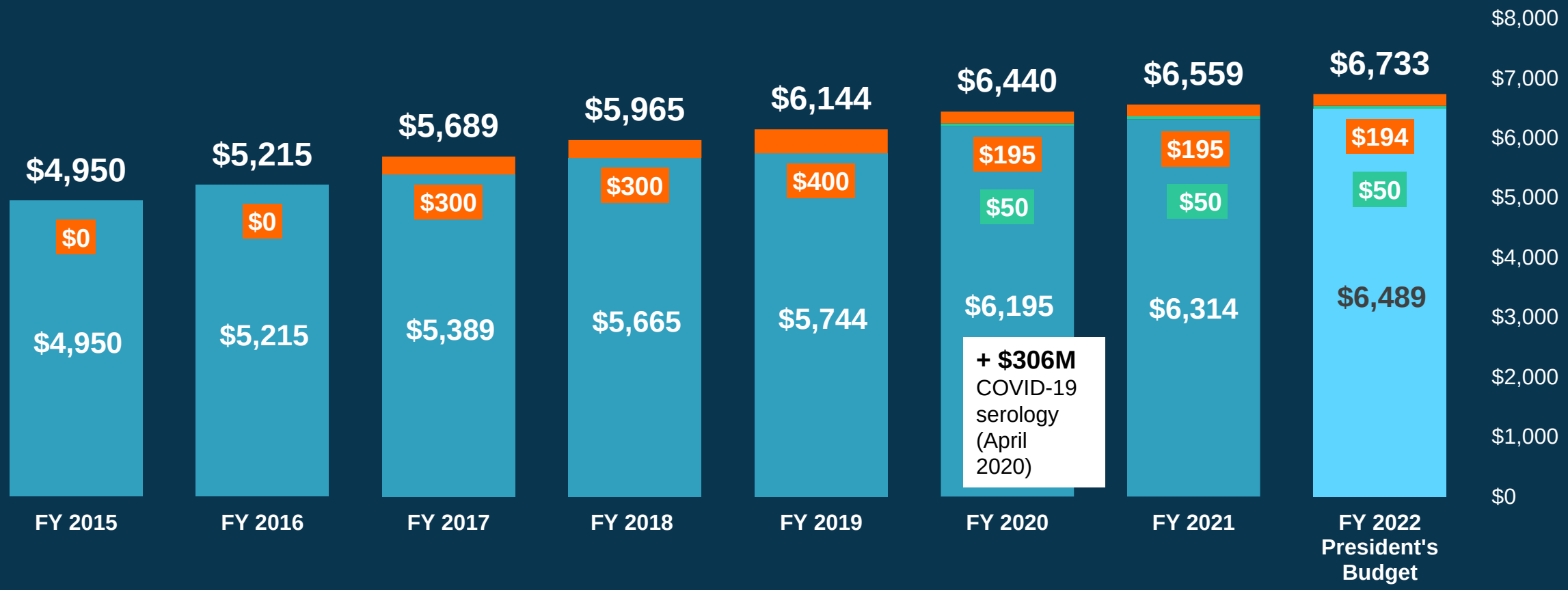
Computer-Based Drug Design: Advancing the Discovery of New Cancer Medicines

Precision Prevention: Predicting and Intercepting Your Cancer

Tumor Dynamics: Predicting Cancer's Trajectory Using Tumor Atlases

NCI Appropriations FY 2015 – 2022 (in millions)

21st Century Cures Act - orange
Childhood Cancer Initiative - green



Blue Ribbon Panel Report Anniversary Seminar

Reflections, Progress, and Potential of the Cancer Moonshot℠

Thursday, September 9
12:00 – 1:00 pm EST

Speakers

Elizabeth Jaffee, M.D.
Tyler Jacks, Ph.D.
Elena Martinez, Ph.D.
Dinah S. Singer, Ph.D.
Norman E. Sharpless, M.D.

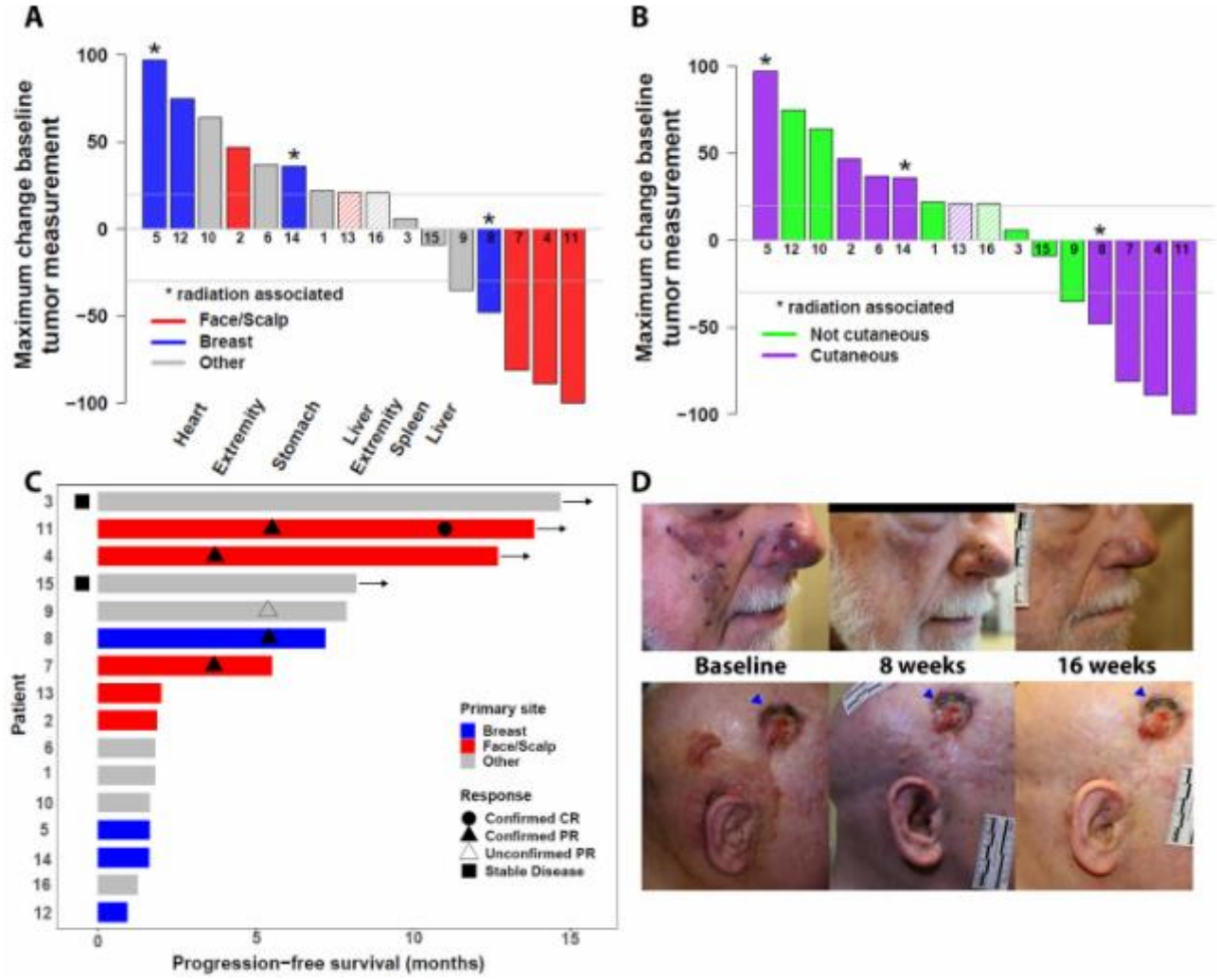
Visit the Cancer Moonshot Seminar Series web page on cancer.gov to

- Register
- View previous seminars
- Learn about upcoming seminars

DART: Dual Anti-CTLA-4 & Anti-PD-1 blockade in Rare Tumors

Prospective, open-label, multicenter phase II clinical trial of ipilimumab plus nivolumab for angiosarcoma

- Sub-study N=16
- Tumors in 4 patients partially or completely responded to treatment
- Two patients maintained stable disease on the drug combination >6 months
- Some responses sustained for over one year
- One patient had tumors disappear entirely



SWOG 1609, Cohort 51. ClinicalTrials.gov Identifier: NCT02834013

Wagner MJ, et al. J Immunother Cancer 2021;9:e002990. doi:10.1136/jitc-2021-002990

Liquid biopsy in NF1 to distinguish between benign and malignant tumors

PLOS MEDICINE

OPEN ACCESS PEER-REVIEWED

RESEARCH ARTICLE

Cell-free DNA ultra-low-pass whole genome sequencing to distinguish malignant peripheral nerve sheath tumor (MPNST) from its benign precursor lesion: A cross-sectional study

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NCI Press Release

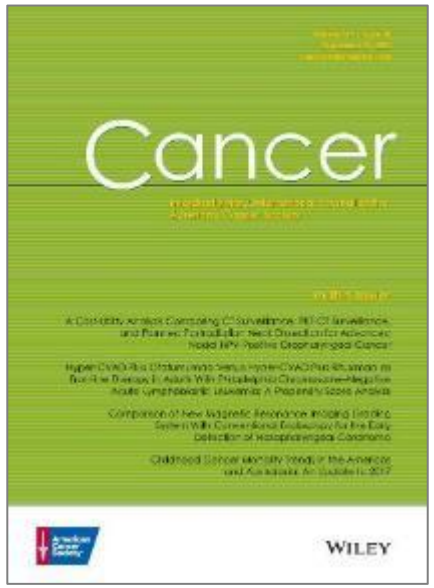
In a common genetic disorder, blood test reveals when benign tumors turn cancerous

Posted: August 31, 2021

Contact: NCI Press Office
240-760-6600

Szymanski JJ, Sundby RT, Jones PA, Srihari D, Earland N, Harris PK, et al. (2021) Cellfree DNA ultra-low-pass whole genome sequencing to distinguish malignant peripheral nerve sheath tumor (MPNST) from its benign precursor lesion: A cross-sectional study. PLoS Med 18(8): e1003734.

Cancer Survival Outcomes for Adolescents and Young Adults, 1975- 2016 – using SEER and NCHS data



Significant improvement	• brain and other nervous system tumors • colon and rectum cancer • lung and bronchus cancer • acute myeloid leukemia • non-Hodgkin lymphoma
Limited or no improvement	• female breast cancer • cervical cancer • ovarian cancer • bone and joint sarcomas

Five-year relative survival for AYAs (aged 15 to 39) 85%

Lewis DR, Siembida EJ, Seibel NL, Smith AW, Mariotto AB. Survival outcomes for cancer types with the highest death rates for adolescents and young adults, 1975-2016. Cancer. 2021 Jul 26. doi: 10.1002/cncr.33793. Epub ahead of print. PMID: 34308557.

NCI Serology Research

FOUNDATIONAL SEROLOGY

Serological Sciences Network (SeroNet) – 25 groups

- Several groups are following vaccinated cancer patients to measure their immune response over time.
- Preliminary evidence that new kinds of lab-engineered antibodies may have some potential activity as COVID-19 treatments.
- Conducting social science research engaging people hesitant to be vaccinated

CLINICAL & TRANSLATIONAL SEROLOGY

Sero-protection Studies:

- Mount Sinai, University of Arizona, NIH All of Us, NCI SEER + Health Verity

COVID-19 Seroprevalence Studies Hub (SeroHub)

Antibody test performance evaluation, with FDA

- *130 evaluations completed*

Standard reference serum

- *Standard shipped to 31 requestors*

Clinical trials for COVID-19 therapeutics

NCI Serological Sciences Network for COVID-19 (SeroNet)

Recent notable publications

Impact of SARS-CoV-2 variants on the total CD4+ and CD8+ T cell reactivity in infected or vaccinated individuals
Tarke, et al. Cell Reports Medicine, Volume 2, Issue 7, July 20, 2021.

Infection and Vaccine-Induced Neutralizing-Antibody Responses to the SARS-CoV-2 B.1.617 Variants
Edara, et al. NEJM, August 12, 2021.

Longitudinal analysis shows durable and broad immune memory after SARS-CoV-2 infection with persisting antibody responses and memory B and T cells
Cohen et al. Cell Reports Medicine, Volume 2, Issue 7, July 20, 2021.

Covid-19 Breakthrough Infections in Vaccinated Health Care Workers
Bergwerk, et al. NEJM, July 28, 2021.

Cancer Diagnostic Devices (CD2) Interagency Task Force

VIRTUAL SIGNING CEREMONY
FRIDAY, SEPTEMBER 17, 2021
3:00 – 4:00 pm ET

NIH NATIONAL CANCER INSTITUTE
FDA U.S. FOOD & DRUG ADMINISTRATION
U.S. Department of Health and Human Services HRSA Health Resources and Services Administration

The CD2 Task Force will

- Coordinate scientific and programmatic collaborations
- Discuss areas of regulatory and technical challenges to translation and implementation of cancer screening and diagnostic devices for near patient use
- Efforts will emphasize challenges of rural and medically underserved communities

Cancer as a Global Health Priority

JAMA
The Journal of the American Medical Association

VIEWPOINT

Satish Gopal, MD
National Cancer Institute, Rockville, Maryland.

Norman E. Sharpless, MD
National Cancer Institute, Rockville, Maryland

Online ahead of print Aug 6, 2021.

Percentage of NCI extramural awards that included international components	IN 2020 Among 1079 extramural awards involving non-US countries
2010 9%	342 (32%)
2020 13%	involved LMICs

Strategic priorities for the Center for Global Health include	
	• increasing the portfolio of NCI extramural funding involving LMIC collaborators • targeting areas for extramural funding based on key scientific gaps in global cancer control • promoting equity in global cancer research by supporting the independent scientific capacity of LMIC investigators and institutions

U.S.-U.K. Bilateral Cancer Summit

Doug Mills/The New York Times

"We will bring together researchers, patients, and other stakeholders to share ideas and identify opportunities for collaboration to accelerate advances in lifesaving approaches to cancer, which remains a leading cause of death worldwide."

Joint statement, June 10, 2021

- Planning event scheduled for November 2021
- Bilateral Summit – Spring 2022

Updates to NCI Training Programs

- Increased **flexibility for surgeon-scientists under the K08** career development program
- Changes to stimulate **greater inclusion and innovation within the T32** grant program for institutional research training
- Details of a new **Early-Stage Surgeon-Scientist Program**, to encourage surgeon-scientists to pursue careers in cancer science.

NCI Bottom Line: A Blog about Grants and More

NCI Updates Training Programs to Support Cancer Researchers of the Future

August 3, 2021, by Dr. Oliver Bogler

Division of Cancer Control and Population Sciences Leadership

Robert T. Croyle, Ph.D.

Katrina Goddard, Ph.D.

Discussion