### **NCI Director's Report**

Norman E. Sharpless, M.D.

6<sup>th</sup> Virtual Meeting of the Frederick National Laboratory Advisory Committee February 23, 2021

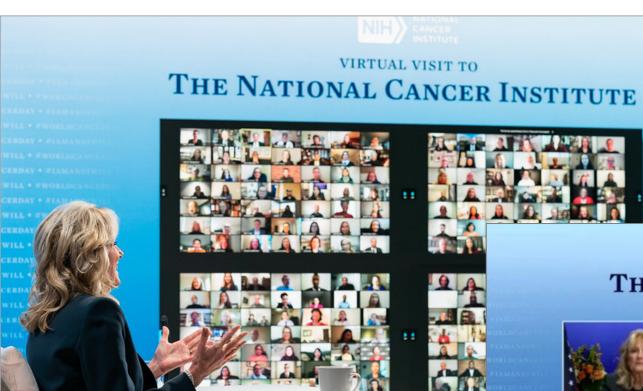
@NCIDirector @TheNCI



### Agenda

- 50th Anniversary of the National Cancer Act
- Cancer Moonshot Midpoint
- NCI Appropriations & Paylines
- COVID-19 Impacts and Activities
- CCDI, Equity and Inclusion
- NCI Research Highlights





VIRTUAL VISIT TO

#### THE NATIONAL CANCER INSTITUTE



FIRST LADY JILL BIDEN



DR. NORMAN E. SHARPLESS



DR. WORTA MCCASKILL-STEVENS
DIRECTOR OF NCI'S COMMUNITY ONCOLOGY
RESEARCH PROGRAM (NCORP)



DR. STEPHANIE GOFF STAFF CLINICIAN IN THE NOI'S CENTER FOR CANCER RESEARCH



DR. LIGA PINTO
DIRECTOR OF THE VACCINE, IMMUNITY
AND CANCER PROGRAM AT NCI'S
FRECERIC\* NATIONAL LABORATORY
FOR CANCER RESEARCH



### NCA-50 commemoration launched February 8









### **Cancer Moonshot**



MOONSHOT PROGRESS 2017-2020

240

**RESEARCH PROJECTS & INITIATIVES** 

Cancer Currents: An NCI Cancer Research Blog

The Cancer Moonshot: A Midpoint Progress Update

January 11, 2021, by Norman E. Sharpless, M.D., and Dinah Singer, Ph.D.

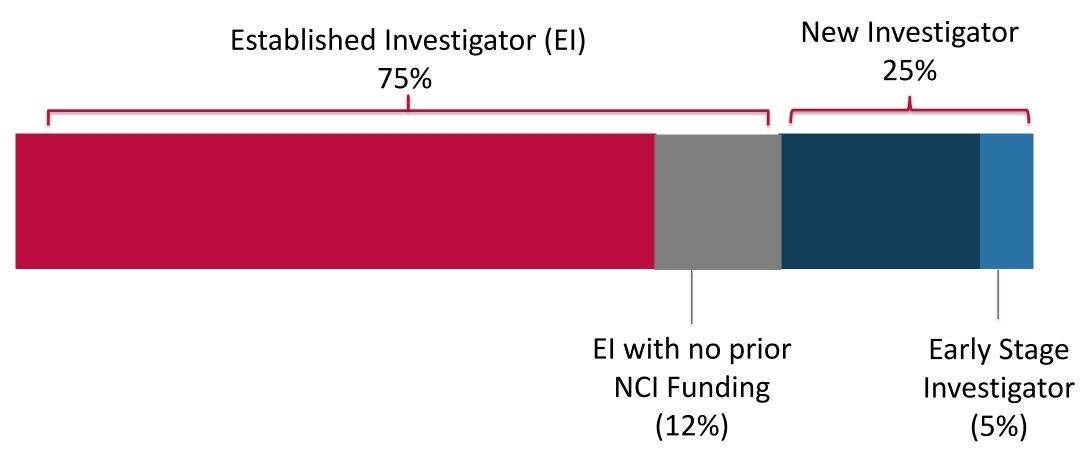


### **Cancer Moonshot Initiatives (2017-2020)**

		FY17			FY18		FY19		FY20
	Network for Patient	Biobank (R&D)	#ClinicalTrialsSM Workshop	-	CCR Rare Tumor Patient Engagement Network (IR)	$\dashv$	Personal Control of Data Workshop  Portal to Support	V	Participant Engagement and Cancer Genome Sequencing (PE-CGS) Research Network
/	Engagement	Canine Immunotherapy Trials  Pancreatic Cancer  Microenvironment Network	Immunotherapy Related P01s  Characterizing Sequelae w/ Immunotherapy (Admin Supp)		Immuno-Oncology Translation Network (IOTN): Data Centers		Patient Engagement (R&D)  IOTN Immuno-Engineering for Immunotherapy (i3) Centers		Community Liaison-based Patient Engagement for (Admin Supp)
/	Immuno- therapy Network	Metabolic Reprogramming in Tumor Immunity R01	Enhancing Applicability of Mammalian Models		IOTN Immunoprevention & Immunotherapy Research Projects		IOTN Immunoprevention Projects  Discovery and Dissemination of		Mitigating Immune-Related Adverse Events (irAEs)
//		National Center for Ce	ell-Based Therapy (IR)		Research to Identify & Treat Cancer Sensitivity/Resistance (Admin Supp)		TCR Gene Therapy (IR)		Moonshot Collaborative Meeting
///	Overcome Drug Resistance	Drug Resistance and Sensitivity Research Network	Drug Target Related Grants (P01s & STTRs)		MasterLymph: Precision Medicine to Improve DLBCL Therapy (IR & R&D)		IOTN Reissuance  DRSN Supplements to Support		TCR Gene Therapy Multicenter Trial Supplement (IR)
					GENIE Supplements	h ]	Collaborations (Admin Supp)		Collaborative Cancer Moonshot Projects (Admin Supp)
	Cancer Data Ecosystem	Support for GA4GH (Admin Supps)	Data Ecosystem (R&D)  CIMAC-CIDC Network		Cancer Data Aggregator (R&D)		Imaging Data for APOLLO (R&D)  Expand Data Commons (R&D)	\\	Mechanisms of Cancer Drug Resistance (Comp Rev)
	Loosystem	Office of Data Sharing (R&D)	Expand Data Commons (R&D)		Pediatric Immunotherapy Discovery & Development Network		PI-DDN Reissuance		DRSN Coordinating Center
2016 Blue Ribbon	Intensify Research on Childhood	Ewing Sarcoma R21	Pediatric Core (R&D)		Fusion Oncoproteins in Childhood Cancers (FusOnC2) Consortium		FusOnC2 Reissuance		(Admin Supp)
Panel	Cancers	Fusion Oncoproteins of Childhood Cancer (APRC)	Cancer Immunotherapy Trials & Network - Pediatric		Assessing Tolerability of Treatment		PRO Measures to Address Accrual Barriers to Underserved (R&D)		De-Identification of Narrative Clinical Text Documents (R&D)
	Symptom				Using CTCAE & PRO-CTCAE  Improving Management of		STAR Act: Improving Outcomes for Pediatric & AYA Cancer Survivors	1/	PI-DDN Supplements FusOnC2 Supplements
11111	Management	Dissemination & Imple	ementation Research		symPtoms Centers (IMPACT)  cGVHD Symptom Measure (IR)		Implementation Science Centers for	; \	Optimizing Management and
11111	Prevention &	Tobacco Control in Canc	117		Accelerating CRC Screening with		Cancer Control (ISC3)  Communication & Decision Making		Outcomes for Cancer Survivors
	Detection Strategies	Smoking Cessation R01 Comparing Colon Cancer De	HPV Vaccine Trial (IR) stection (R01 & Admin Supp)	$\mathbb{N}$	Implementation Science (ACCSIS)  Approaches to Identify and Care for		for Inherited Cancer Syndromes		Diffusion, Sustainability, and Leveraging of 3Cl (Admin Supp)
1111	Retrospective	Retrospective Turn	nor Analysis (R&D)	1	Inherited Cancer Syndromes  Prostate Cancer in Men of		Accelerated Control of Cervical Cancer (Admin Supps)		3D Technologies to
	Analysis of Biospecimens	Integrative Oncogenomics of	Tumor Atlas		African Ancestry (RESPOND)		ACCSIS Reissuance  Approaches to Identify and Care for		Accelerate HTAN Efforts
///		Multiple Myeloma P01	Pilot Projects (R&D)		Dissemination of CRC Screening for Native Americans (Admin Supp)		Inherited Cancer Syndromes Reissuance	1/	APHIROM Exploratory and
//	Human Tumor Atlases	PDX Development and Trial Centers (PDTCs)	Integration & Validation of Technologies (R33/SBIR)	<b> </b>	Control of Cervical Cancer (R&D)		Human Tumor Atlas Research	=/	Developmental Research  HCMI: Next Gen Technology for
//		Advancing BRP Highlighted Technologies (APTRC Supp)	Cancer Detection Technologies (SBIR/STTR Grants/Contracts)		Molecular Profiling to Predict Responses - MP2PRT (R&D)		(Admin Supp)	.	Next Gen Cancer Models  Next Gen Models Supplement
\'	New Cancer Technologies	Models for Cancer Disparities (SBIR Contracts)		\	Human Tumor Atlas Research Centers & Coordinating Center	$\gamma$	APHIROM (Admin Supps)  SBIR Contracts for Innovative Tech		Data Visualization Methods and Tool Development Projects
\		Human Cancer Models	` '	μ/	Minority-PDTCs	И	PDXNet Supplements Reissuance Tech Prize Competition: Metadata	1	Data Visualization Supplements
	Partnerships	Partnership for Accelerating Cancer Therapies (PACT)	NCI-DOE Collaborations (Pilots, JDACS4C, and ATOM)		PDXNet (Admin Supp)		Automation DREAM Challenge		M-PDTC Supplements  SBIR Contracts for New Tech
		APOLLO with DOD and VA			PSMA-PET of Prostate Cancer (IR)  SBIR Contracts for Enabling Tech	IJ [	CCR NCI Program for Natural Product Discovery (IR)	ļ	

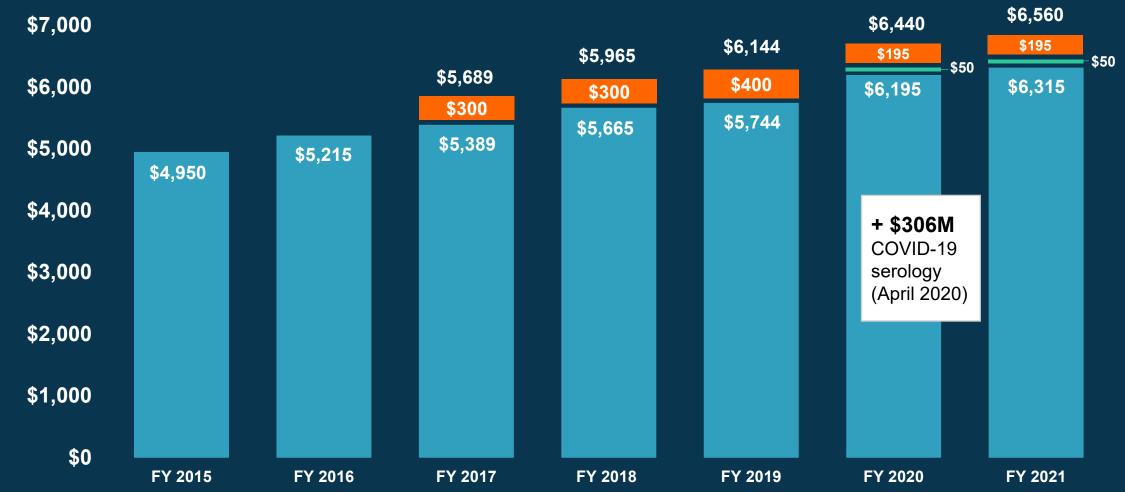
### 25% of Moonshot Extramural Pls are New Investigators

343 Extramural Moonshot Pls (FY17-FY20)



### NCI Appropriations FY 2015 – 2021 (in millions)

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



### **NCI Paylines for FY 2021**

GRANT TYPE	PAYLINE			
R01 Grants for Established and New Investigators	11 <sup>th</sup> Percentile			
R01 Grants for Early- Stage Investigators (ESIs)	16 <sup>th</sup> Percentile			
R21 Exploratory Grants	9th Percentile			

Non-competing grants will be funded at 100%.



Funding from Congress Allows NCI to Raise Grants Payline

February 4, 2021, by Dr. Norman E. Sharpless



#### **NCI COVID-19 activities**

### FOUNDATIONAL SEROLOGY

Serological Sciences Network (SeroNet)

- 8 Centers of Excellence
- 13 Research Projects
- 4 Capacity Building Centers
- FNL Serology Lab & Network Coordinating Center

# 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

Standard reference serum

Clinical trials for COVID-19 therapeutics

- Tocilizumab
- CD24Fc

#### SUPPORT FOR CANCER RESEARCH AND CARE AMID THE PANDEMIC

NCI COVID-19 in Cancer Patients Study (NCCAPS)

Flexibilities for grantees

Clinical trials adaptations

Modeling to predict long-term cancer outcomes

### ADDITIONAL COVID-19 RESEARCH

- Excess Mortality Study
- Digital Health
  Solutions (with NIBIB)
- ACTIV (trans-NIH)





### NCI COVID-19 in Cancer Patients Study (NCCAPS)

875

TRIAL SITES ACTIVATED IN

**50** 

STATES + DC, PUERTO RICO, AND CANADA Special emphasis on minority, underserved and rural communities

Enrolled patients will be followed for 2 years

Now open to pediatric patients

Launched May 21
Conception to Launch in
6 weeks

Aims to enroll 2,000 patients across 1,000 sites in U.S.

929
PATIENTS
ENROLLED

### **NCI Research on Vaccine Hesitancy**



### COVID-19 Vaccination\* Communication:

Applying Behavioral and Social Science to Address Vaccine Hesitancy and Foster Vaccine Confidence\*\*

Wen-Ying Sylvia Chou, Ph.D., M.P.H., 'Caitlin E. Burgdorf, Ph.D.,' Anna Gaysynsky, M.P.H., 'Christine M. Hunter, Ph.D.'

- 1 National Cancer Institute, National Institutes of Health (NIH)
- Office of Behavioral and Social Science Research, Division of Program Coordination, Planning, and Strategic Initiatives, NR1 \* Athrough technically these are SARS-CoV-2 vaccines, see refer to them as COVID-19 vaccines to be consistent with how most
- \*\* The content of this paper is based on what was known as of December 2020 regarding COVID-19 vaccines. Recommendations from this report may need to be adapted as new information becomes available.

"...communication about COVID-19 vaccines can benefit from drawing on the extant social and behavioral science literature about successful strategies to influence health decisions and behaviors."

#### NCI

Wen-Ying Sylvia Chou, Ph.D., M.P.H. Anna Gaysynsky, M.P.H.

NIH Office of Behavioral and Social Sciences Research Caitlin E. Burgdorf, Ph.D. Christine M. Hunter, Ph.D.



# **Childhood Cancer Data Initiative Governance Structure**

#### 4 working groups

co-chaired by NCI and extramural experts and made up of NCI staff, external experts and advocates

Childhood
Molecular
Characterization
Protocol

**CCDI CCDI Steering Committee Engagement** Committee **National** Childhood Cancer **Cohort** Coordination Center Childhood Cancer Data **Platform** 



### **NCI Equity and Inclusion Program**

### EQUITY COUNCIL

**Chair**Ned Sharpless

Vice Chair
Paulette Gray

Mark Alexander Andrea Apolo Nelvis Castro Bob Croyle Montse Garcia-Closas Anne Lubenow Ji Luo Donna Siegle Dinah Singer Sanya Springfield

#### **WORKING GROUP 1**

Enhancing Research to Address Cancer Health Disparities **WORKING GROUP 2** 

Ensuring Diversity of Thought and Background in the Cancer Research Workforce **WORKING GROUP 3** 

Promoting an Inclusive and Equitable Community at NCI

**WORKING GROUP 4** 

Systematic Tracking and Evaluation of Equity Activities

**WORKING GROUP 5** 

Communications and Outreach for Equity Activities

#### **CO-CHAIRS**

Jim Doroshow Worta McCaskill-Stevens Tiffany Wallace **CO-CHAIRS** 

LeeAnn Bailey
Susan McCarthy
Glenn Merlino

**CO-CHAIRS** 

Shannon Bell Paige Green Satish Gopal **CO-CHAIRS** 

Michelle Bennett Doug Lowy

**CO-CHAIRS** 

Peter Garrett Angela Jones Anita Linde



### **Cancer Grand Challenges**

# Expressions of interest accepted until **April 22, 2021**

- Understand how cells and tissues
   maintain "normal" phenotypes while
   harboring oncogenic mutations and how
   they transition to become a tumor
- Determine the potential benefits and risks of e-cigarette use
- Develop novel therapies to target unique features in solid tumors in children
- Systematically deliver macromolecules to intracellular targets for therapeutic benefit in cancer

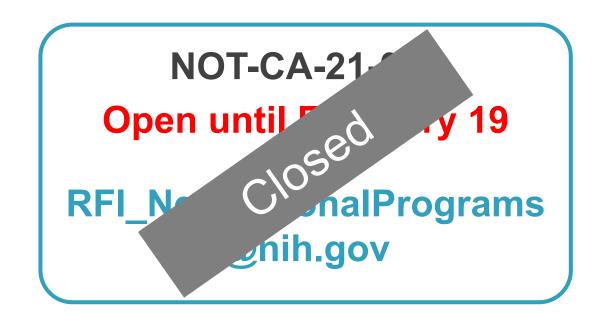


## cancer.gov cancergrandchallenges.org

- Understand and exploit senescence to improve cancer treatment
- Determine how inflammation causes cancer
- Identify and target dormant cancer cells
- Understand the biology of extrachromosomal DNA (ecDNA) generation and action and develop approaches to target these mechanisms in cancer
- Understand and reverse cachexia and declining performance status in cancer patients

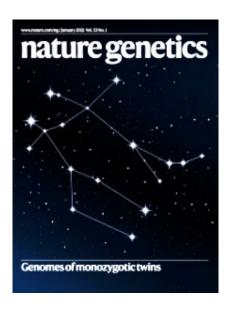
### Request for Information (RFI)

New National Programs at the NCI's Frederick National Laboratory for Cancer Research



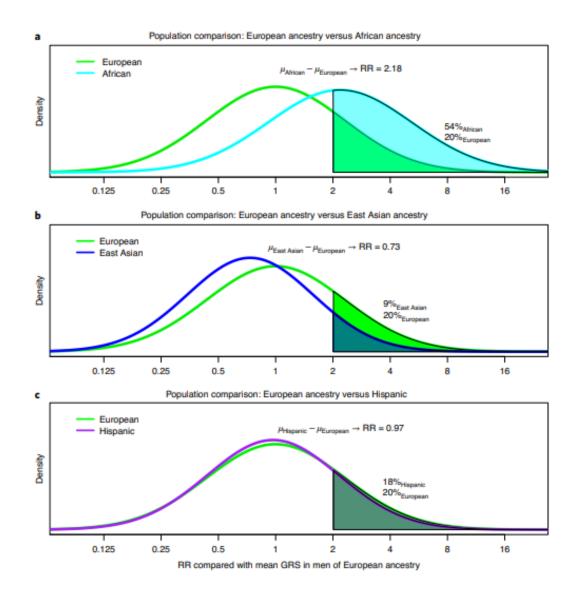
Seeking input from members of the cancer research community on the most important needs and promising opportunities in cancer research that are difficult to address on an individual scale or by a research network.

### **Prostate cancer GWAS**



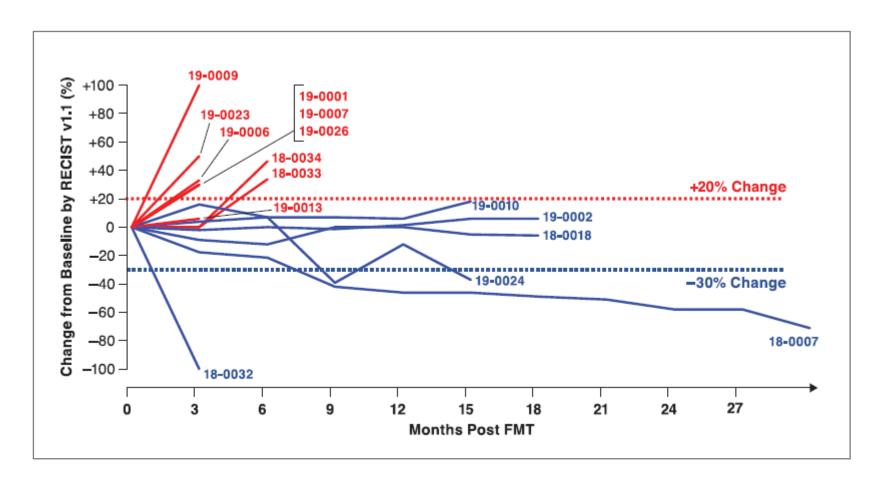
Article | Published: 04 January 2021

Trans-ancestry genome-wide association meta-analysis of prostate cancer identifies new susceptibility loci and informs genetic risk prediction



### Fecal microbiota transplant in melanoma

Fecal microbiota transplant promotes response in immunotherapyrefractory melanoma patients

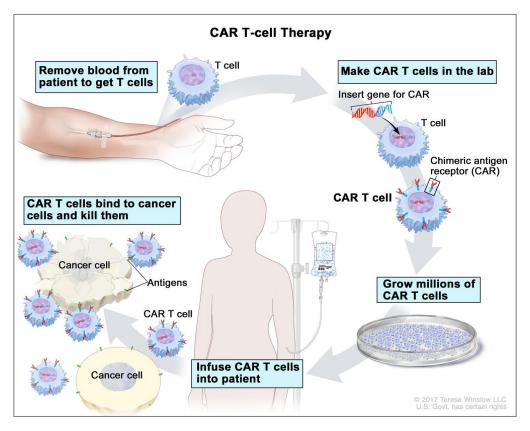


Science 05 Feb 2021: Vol. 371, Issue 6529, pp. 602-609 DOI: 10.1126/science.abb5920



### **CAR T-cell manufacturing**





https://www.cancer.gov/about-cancer/treatment/types/immunotherapy/t-cell-transfer-therapy



## Discussion