

NCI Director's Report

Norman E. Sharpless, M.D.

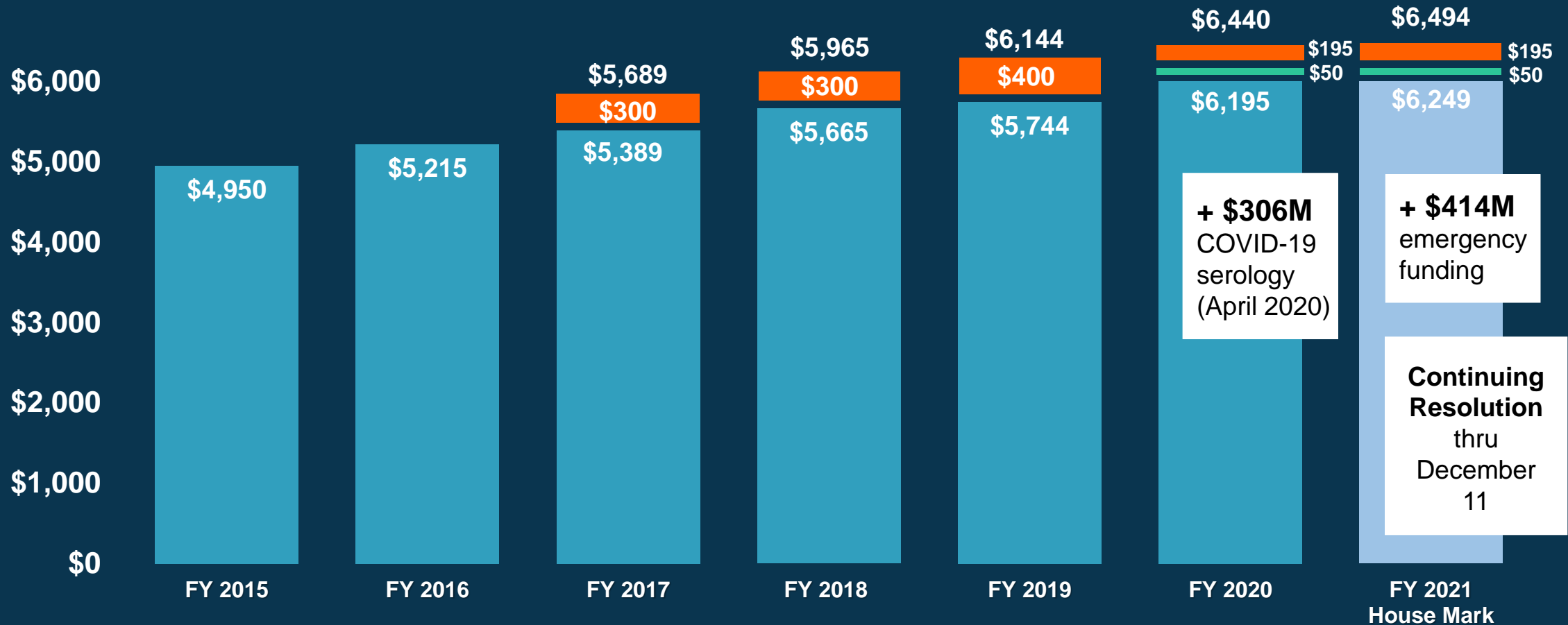
*5th Virtual Meeting of the Frederick National
Laboratory Advisory Committee*

October 14, 2020

@NCIDirector
@TheNCI

NCI Appropriations FY 2015 – 2020 (in millions)

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



COVID-19 Serological Science at NCI

- SeroNet
- Antibody testing device evaluation for FDA
- Development of “standard” SARS-CoV-2 serum
- Serology Study Dashboard
- Real World Evidence
- Seroprevalence Studies

SeroNet Serological Sciences Network



Frederick National
Laboratory Serology Lab

Network Coordinating
Center

8 Centers of Excellence

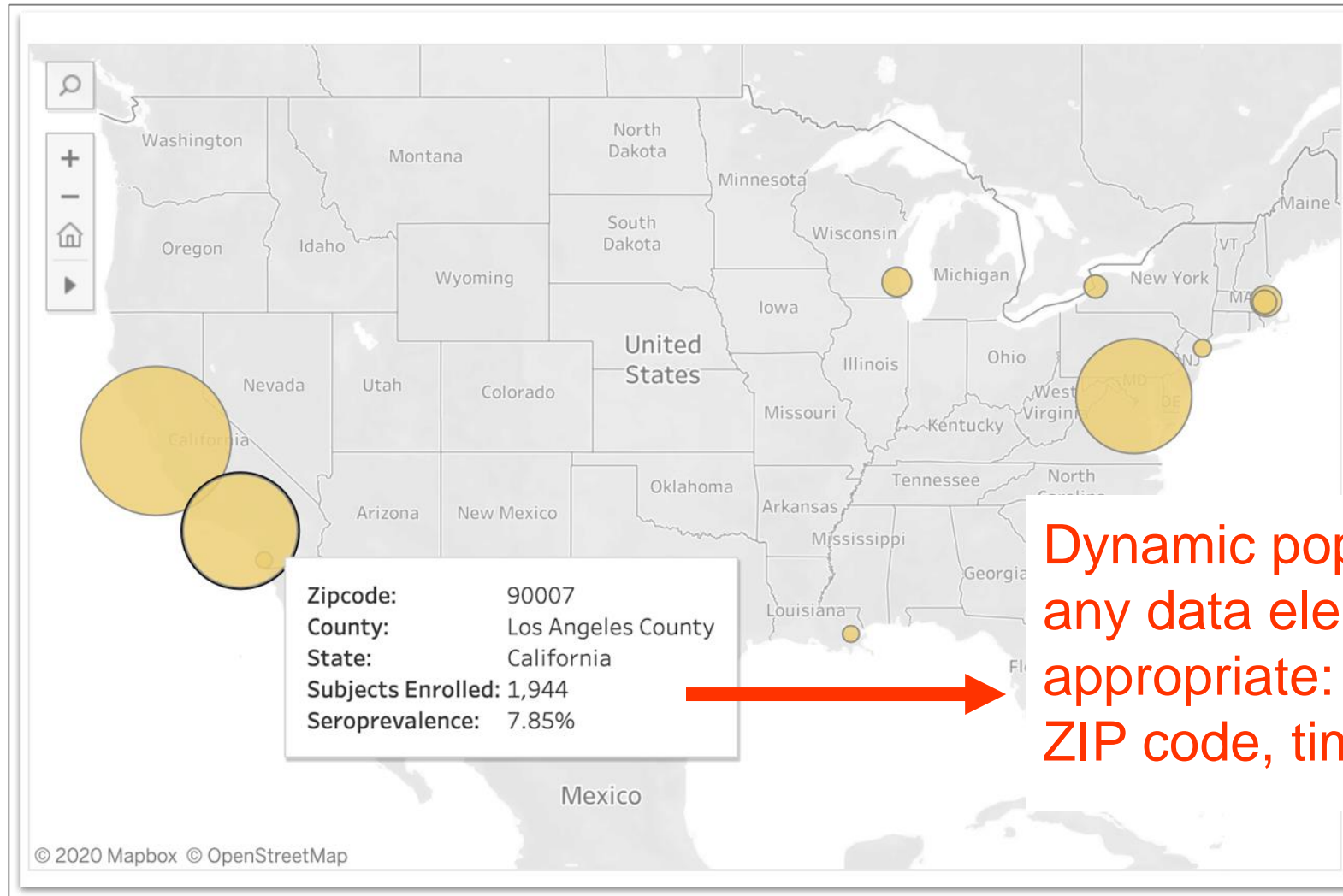
13 Research Projects

4 Capacity Building Centers

Developing a SARS-CoV-2 serology data warehouse and dashboard

- Early June: HHS, CDC, NIAID ask NCI to develop data warehouse & dashboard for tracking SARS-CoV-2 seroprevalence and other US-based serology studies
- Builds on FNL dashboard expertise developed with NCI Clinical Trials Reporting Program (CTRP), other databases
 - Collaboration between NIAID, CDC, NCI
- Key features:
 - A publicly accessible data warehouse to systematically document and track SARS-Cov-2 serology studies and associated test results
 - A tracking dashboard to visualize SARS-Cov-2 serology data and present results overall and by key strata

Serology Study Dashboard

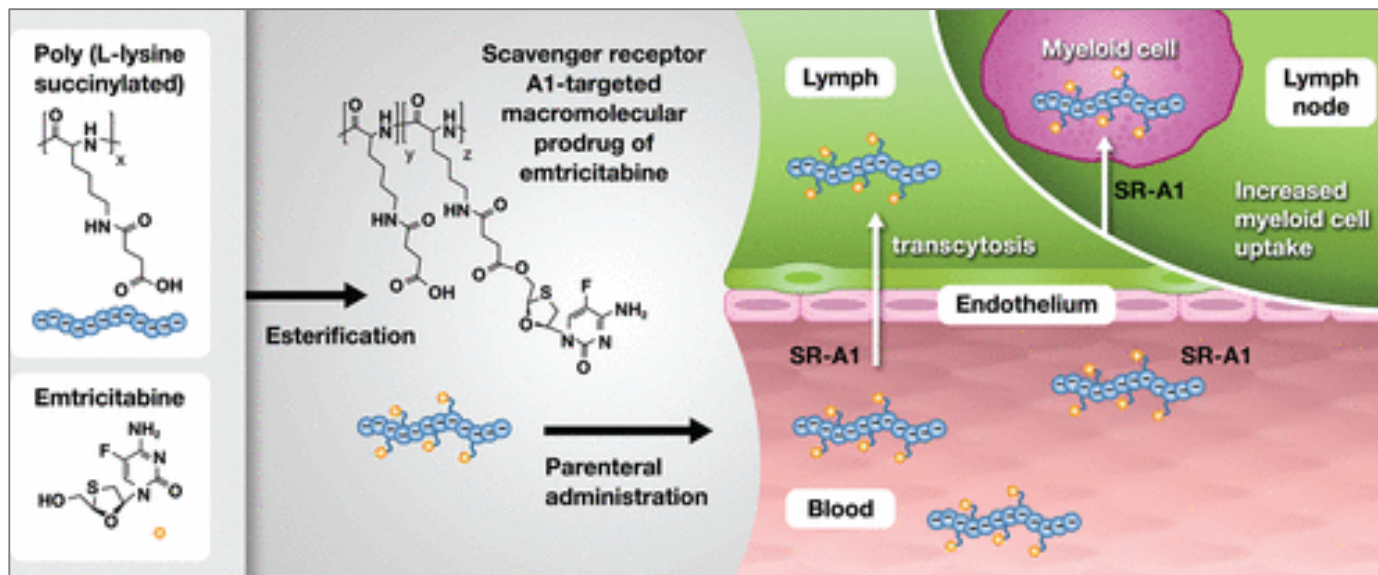


Dynamic popups showing any data elements deemed appropriate: State, county, ZIP code, time-trends

Nanotechnology Characterization Lab

Application of a Scavenger Receptor A1-Targeted Polymeric Prodrug Platform for Lymphatic Drug Delivery in HIV

David M. Stevens, Pavan Adisheshaiah, Siva S. K. Dasa, Tim M. Potter, Sarah L. Skoczen, Kelsie S. Snapp, Edward Cedrone, Nimit Patel, Kathleen Busman-Sahay, Elias P. Rosen, Craig Sykes, Mackenzie Cottrell, Marina A. Dobrovolskaia, Jacob D. Estes, Angela D. M. Kashuba, and Stephan T. Stern*



NCI-ComboMATCH Precision Medicine Cancer Trial

HYPOTHESIS

In vivo evidence, in particular patient-derived xenograft (PDX) and cell-line-derived xenograft (CDX) data, can be used to predict the benefit of drug combination therapy in multiple specified patient subgroups

- Will test combinations of targeted drugs supported by preclinical *in vivo* evidence
- Aim to overcome drug resistance to single-agent therapy by developing genomically-directed targeted agent combinations

FNLCR Role in ComboMATCH

NCI Patient-Derived Models Repository (PDMR)

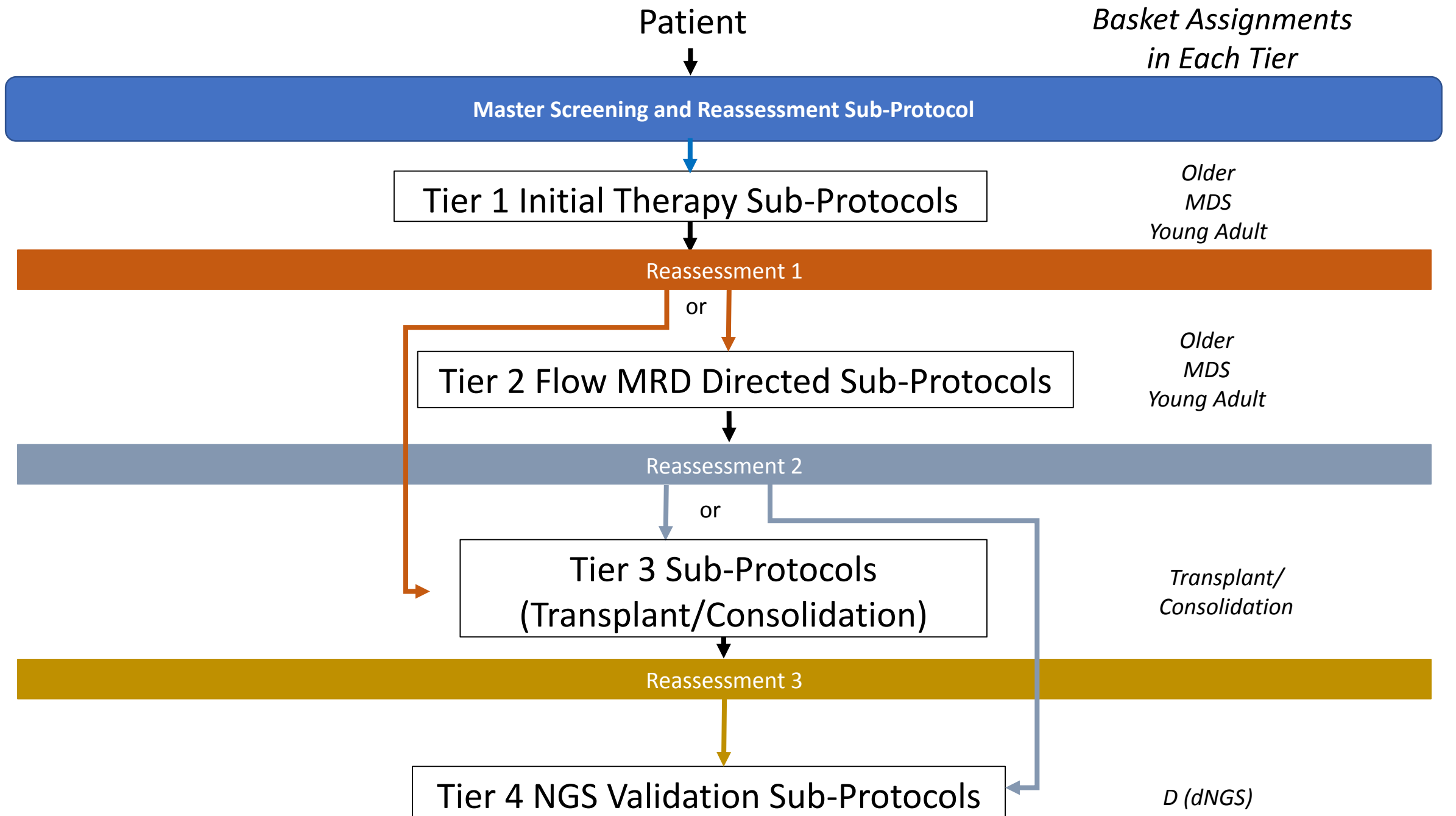
- Collects and provides PDX models to laboratories conducting drug response studies with molecular characterization of models to PDXNet and the larger research community
- Conducts PDX drug response studies with drug combinations
- Provides expert reference information on drug dosing for xenograft studies to PDXNet and the larger research community
- Establishes SOPs for conducting drug-response studies using PDX models
- Provides data and methods for data harmonization and data sharing efforts so that PDX dose-response studies across institutions can be shared and compared
- Provides pathogen monitoring and testing SOPs to PDXNet and the larger research community

MyeloMATCH

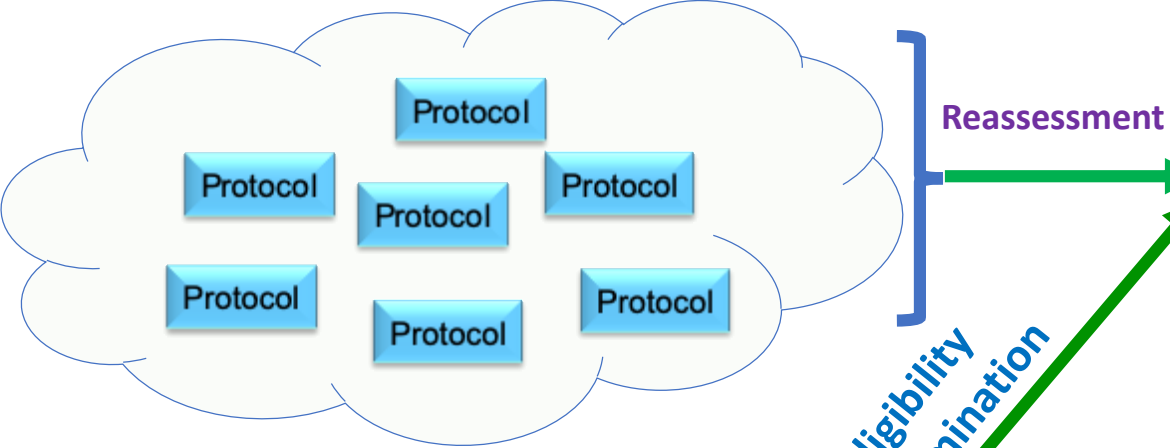
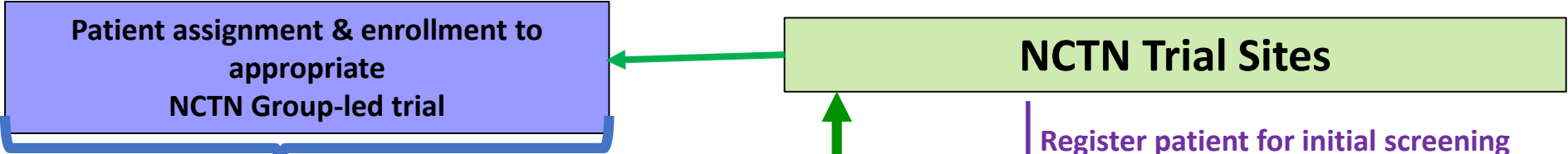
Umbrella trial to test treatments for acute myeloid leukemia (AML) and myelodysplastic syndromes (MDS) and to evaluate early endpoint efficacy signals in specific molecular and clinical risk groups

Overarching scientific rationale:

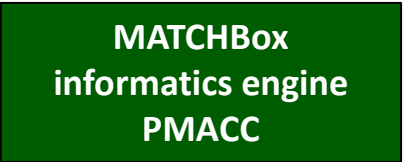
- As tumor burden is reduced over the course of treatment, low-level residual disease can be identified by advanced assays and therapeutically targeted.
- These assays will require clinical utility validation and myeloMATCH is positioned to conduct the necessary trials to accomplish this.
- Estimated to launch mid-2021



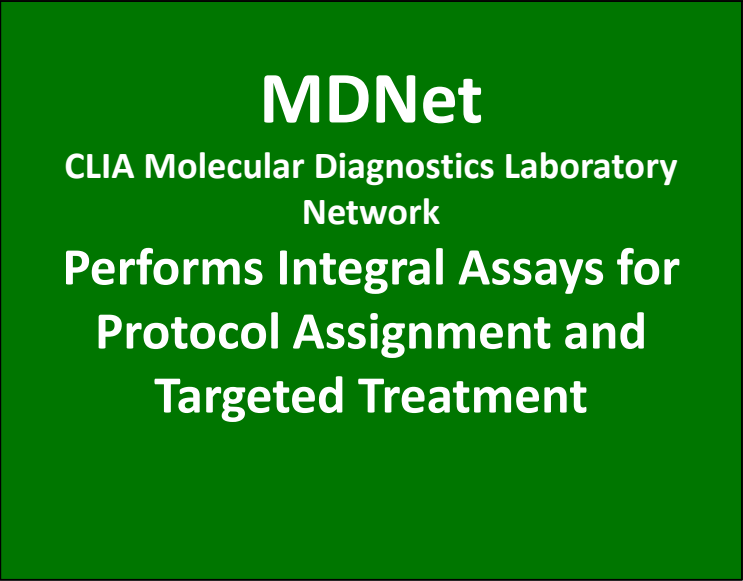
MDNet Screening and Reassessment for AML MDS PMI



Eligibility determination



Specimen analysis data



2020 FNLCR Technology Showcase



[techtransfer.cancer.gov/
2020-Technology-Showcase](https://techtransfer.cancer.gov/2020-Technology-Showcase)

- Virtual half-day event September 9 engaged 300 viewers
- Featured technologies from NCI and FNL inventors primed for commercialization and/or collaboration
- Educational panel sessions focused on technology commercialization
- NCI Technology Transfer Ambassadors Program virtual poster session

Lung cancer mortality

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

The Effect of Advances in Lung-Cancer Treatment on Population Mortality

Nadia Howlader, Ph.D., Gonçalo Forjaz, D.V.M., Meghan J. Mooradian, M.D., Rafael Meza, Ph.D., Chung Yin Kong, Ph.D., Kathleen A. Cronin, Ph.D., Angela B. Mariotto, Ph.D., Douglas R. Lowy, M.D., and Eric J. Feuer, Ph.D.

AUGUST 13, 2020

— AMONG U.S. MEN —

DEATHS FROM THE
MOST COMMON TYPE OF
LUNG CANCER

FELL

↓ 3.2%

EACH YEAR FROM 2006 TO 2013

THEN FELL

↓ 6.3%

EACH YEAR FROM 2013 TO 2016

Cancer Grand Challenges – NCI/CRUK Partnership



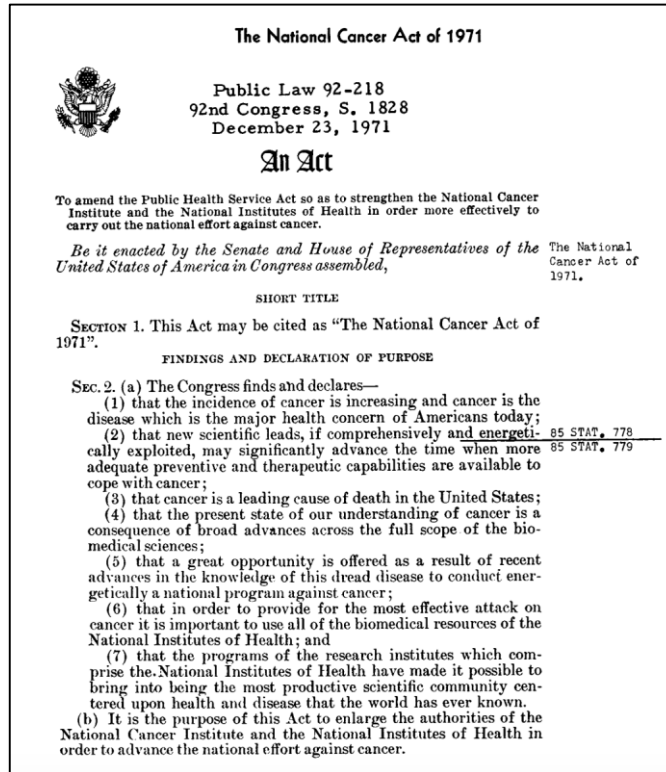
NCI and Cancer Research UK will seek *novel ideas from multidisciplinary research teams* from around the world that offer the potential to make bold advances in cancer research and improve outcomes for people affected by cancer.



New challenges will be announced in October 2020.



The National Cancer Act of 1971 — A Watershed Moment



The Act united patients, scientists, doctors, industry, and government in one vision.

- Created the nation's clinical trials network, leading to practice-changing trials for patients.
- Established the NCI-designated Cancer Centers Program of world class institutes, driving research and patient care.
- Built SEER and improved cancer registries.
- Created Frederick National Lab, providing the NCI with a government lab for targeted, high priority cancer projects.
- Accelerated research on prevention, screening, diagnosis, and treatment of cancer.
- Increased support for basic research, providing a critical underpinning to our cancer progress.
- Assured high-level access of the NCI to the President.
- Appointed advisory committees, allowing the NCI Director to explore new issues and opportunities.

Discussion