Welcome to the Center to Reduce Cancer Health Disparities (CRCHD), Professional Advancement Virtual Engagement Series (PAVES) Webinar!

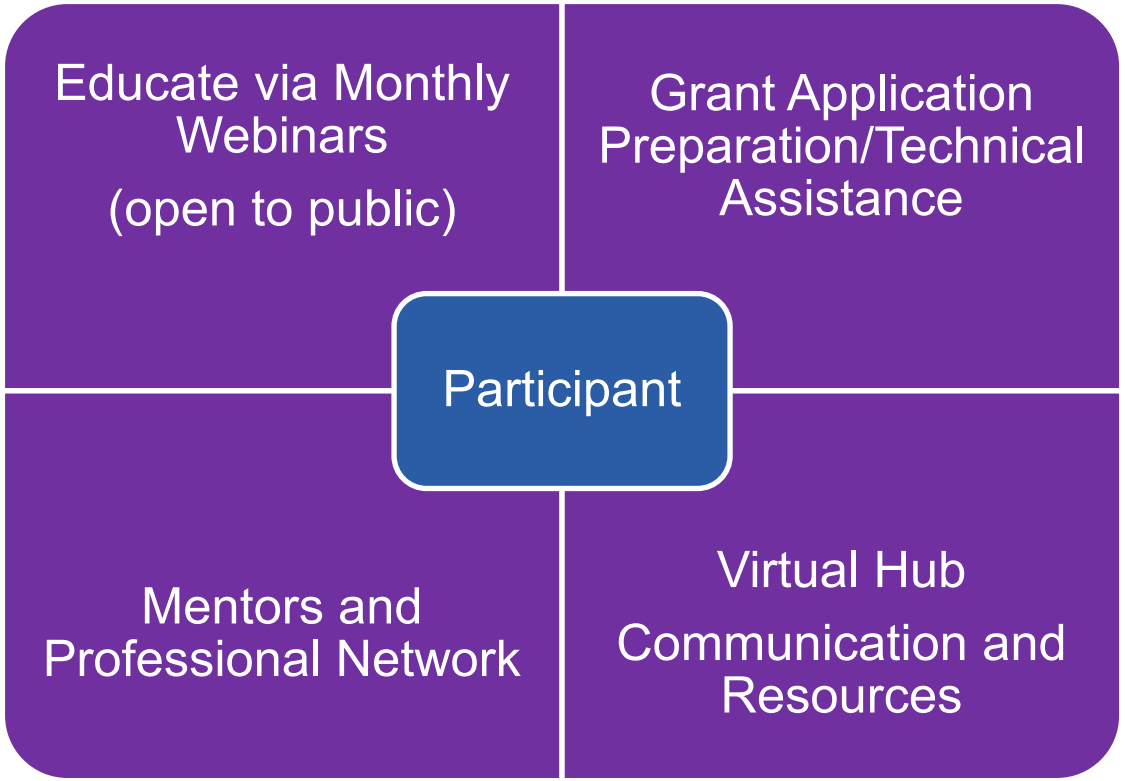
NIH NATIONAL CANCER INSTITUTE

October 26, 2022

Early Investigator Advancement Program (EIAP)

Early Investigator Advancement Program (EIAP) to promote the transition of early career investigators from diverse backgrounds to independent investigators

Program Components



- 1 cohort per year
- 20 participants per cohort
- FY2023 application period open: Oct. 1 - Nov. 1

Contact

JoBeth McCarthy (C)
jobeth.mccarthy-jean@nih.gov

Dr. Jay Revilleza
mariajamela.revilleza@nih.gov

Outcomes for Each Participant

- **Complete and submit an R01 grant proposal by October 5, 2023**
- Become part of a group of peers with similar career goals
- Engage with mentors who are established investigators
- Become familiar with job and funding opportunities
- Develop professional and management skills critical to growing a research group

https://www.cancer.gov/about-nci/organization/crchd/diversity-training/eiap

Intramural Continuing Umbrella of Research Experiences Program

- Recruits' cohorts of individuals from diverse backgrounds for mentored research experiences on **NCI campuses** in Bethesda, Shady Grove (Rockville) and Frederick, Maryland
- Supports **postbacs** (2 years), **graduate students** (2 years) and **postdocs** (3 years)
- Applications NOW OPEN from October 17 – December 15 for research experiences beginning Fall 2023.Check out the website for more details on how to apply: *https://www.cancer.gov/about-nci/organization/crchd/diversity-training/icure*
- Centralized review and program-facilitated matches for scholars to NCI PIs; **applicants do not need to pre-identify a PI to apply**
- NCI is particularly interested in encouraging applications of individuals from groups identified as underrepresented in the biomedical, clinical, behavioral, and social sciences (NOT-OD-20-031).

Contact

Dr. Gregory Adams

Dr. Jessica Calzola

iCURE@nih.gov

Professional Advancement Virtual Engagement Series

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Seminar 21

"The All of Us Research Hub and Workbench."

The All of Us Research Program is a historic effort to collect and study data from one million or more people living in the United States. The goal of the program is better health for all of us.

Tuesday, November 15th 4-5 ET

AGENDA

- Welcome, Polling, and Housekeeping
- Introductions
- Special Announcements
- Presentations (Q and A following each presentation)
  - Division of Cancer Control and Population Sciences
  - Breast and Gynecologic Cancer Research Group, Division of Cancer Prevention
  - Cancer Imaging Program, Division of Cancer Treatment and Diagnosis (DCTD)
  - Division of Cancer Biology (DCB)
- Special Announcements
  - EIAP opportunity
  - November PAVES: ALL OF US

Professional Advancement Virtual Engagement Series

Division Priorities, Funding Opportunities, and Strategies for Applying for Grants

Gary Ellison, Ph.D., M.P.H

Deputy Director, Division of Cancer Control and Population Sciences (DCCPS), NCI

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Division of Cancer Control and Population Sciences: Overview of Research Interests and Opportunities

Gary L. Ellison

Professional Advancement Virtual Engagement Series

October 26, 2022

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Outline

- Overview of DCCPS
- Health Disparities/Health Equity
  - Definitions
  - Priorities
  - Funding Opportunities
- Discuss Existing and New Funding Opportunities

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Division of Cancer Control & Population Sciences

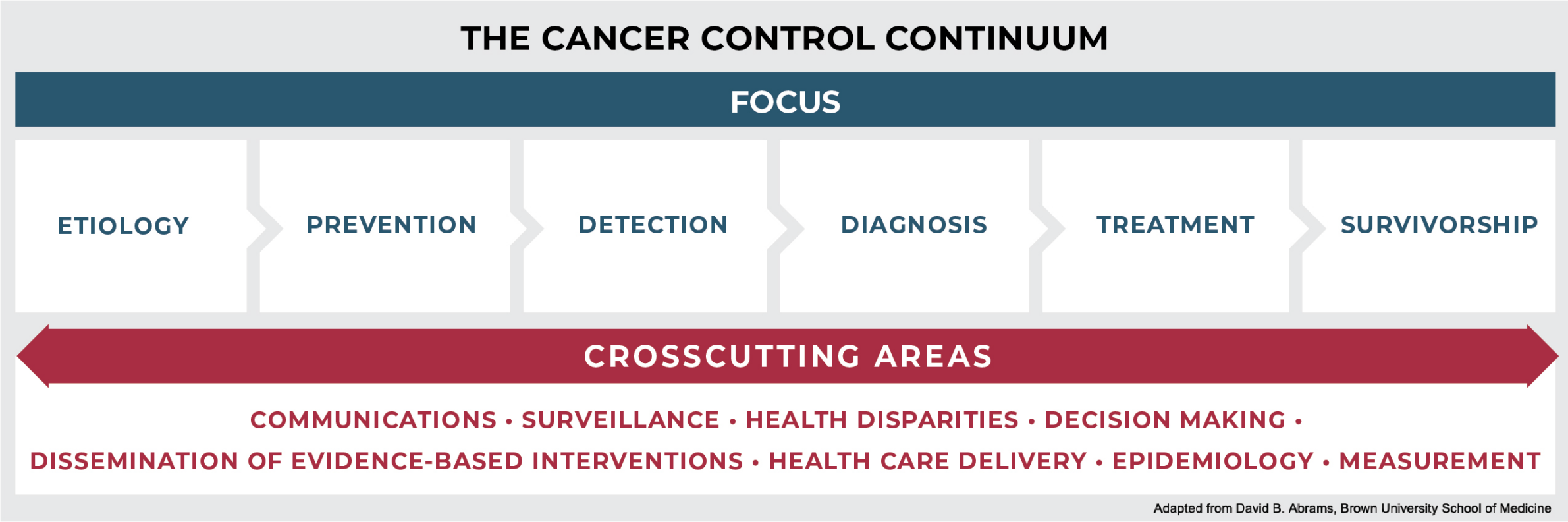
Program Areas of Science:

- Behavioral Health Research
- Epidemiology and Genomics Research
- Healthcare Delivery Research
- Surveillance Research

Cross-cutting Areas:

- Implementation Science
- Cancer Survivorship
- Health Disparities and Health Equity

Reducing the Burden of Cancer



Health Disparities and Health Equity

DCCPS seeks to eliminate cancer-related disparities by promoting and conducting health equity research that identifies and addresses the mechanisms

– *such as structural, social and behavioral determinants, biological and genetic factors, and policies* –

that contribute to these disparities across the cancer control continuum and throughout the human lifespan

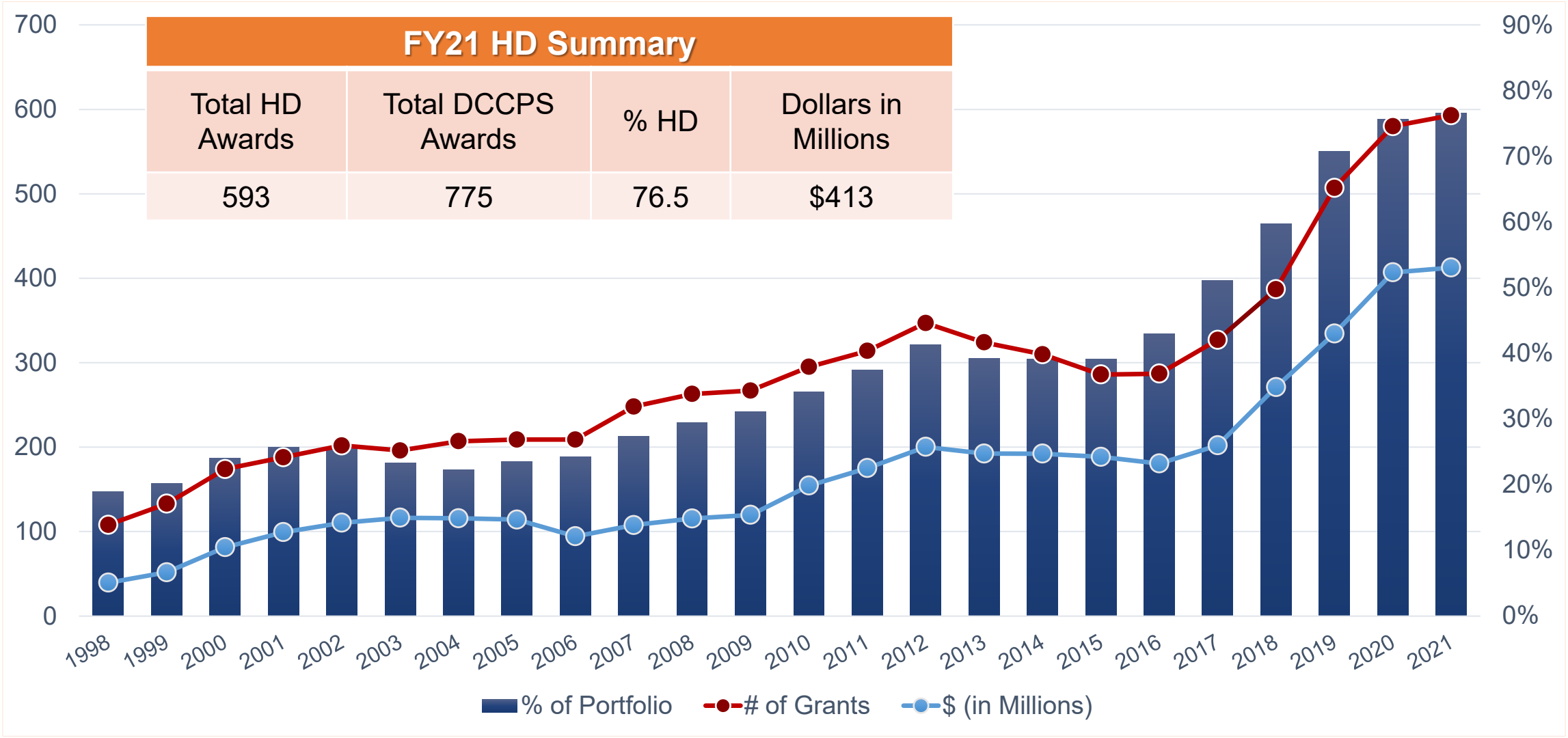
https://cancercontrol.cancer.gov/research-emphasis/health-disparities

Heath Disparities

HEALTH DISPARITIES (HD) are the adverse effects on groups of people who have systematically experienced greater obstacles to health based on their *racial or ethnic group, socioeconomic status, gender, age, mental health, cognitive, sensory or physical disability, sexual orientation or gender identity, geographic location (place/context) or other characteristics historically linked to discrimination or exclusion*.

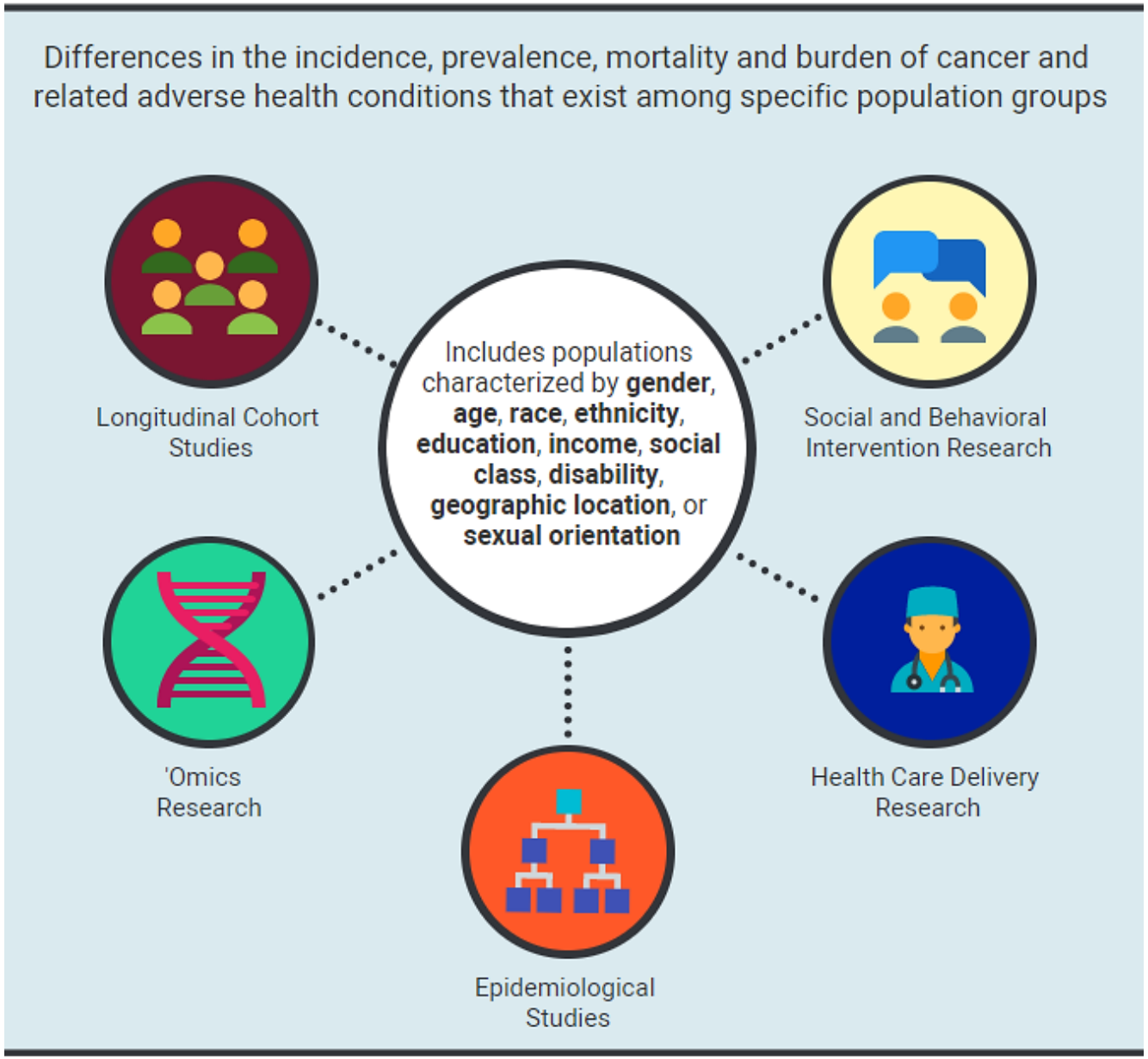
- HD research has benefited significantly from *transdisciplinary research teams* by delineating the factors that contribute and exacerbate conditions, including understanding the biological and genetic factors that mediate the outcomes. Research on issues related to HD has particularly benefitted from understanding the intersectionality of these factors to develop and implement strategies to improve health outcomes.
- HD research delineates the process by which different groups face challenges in achieving the highest possible levels of health.

DCCPS HD Portfolio Trends FY 1998 - FY 2021



DCCPS
HEALTH DISPARITIES PORTFOLIO

76.5% of DCCPS FY21 Portfolio is Health Disparities



Health Equity

HEALTH EQUITY (**HE**) is the attainment of the highest level of health for all people. Achieving HE requires valuing everyone equally with focused and ongoing societal efforts to address avoidable inequalities, historical and contemporary injustices, and the elimination of health and healthcare disparities.

https://www.healthypeople.gov/2020/about/foundation-health-measures/Disparities

NCI's **Division of Cancer Control and Population Sciences** focus is on groups of people who have systematically experienced greater obstacles to health based on their racial or ethnic group, socioeconomic status, gender, age, mental health, cognitive, sensory or physical disability, sexual orientation or gender identity, geographic location (place/context) or other characteristics historically linked to discrimination or exclusion.

Achieving equity is doing 'more than'

SEER Registry Data

- SEER collects and publishes cancer incidence and survival data from population-based cancer registries covering approximately **47.9%** of the U.S. population
- Coverage includes **69.2%** of Hispanics
- Sensitivity for Identifying Hispanic Individuals in Registries: 85%
  - When comparing ethnicity as recorded in SEER with self-reported ethnicity from the Current Population Survey in the SEER-National Longitudinal Mortality Study https://seer.cancer.gov/registries/

Altekruse SF et al. J Registry Manag. 2017 Spring;44(1):30-3.
CDC. Vital and Health Statistics. August 2016; Series 2, No 172, DHHS Publication No. 2016–1372.

SEER Expansion

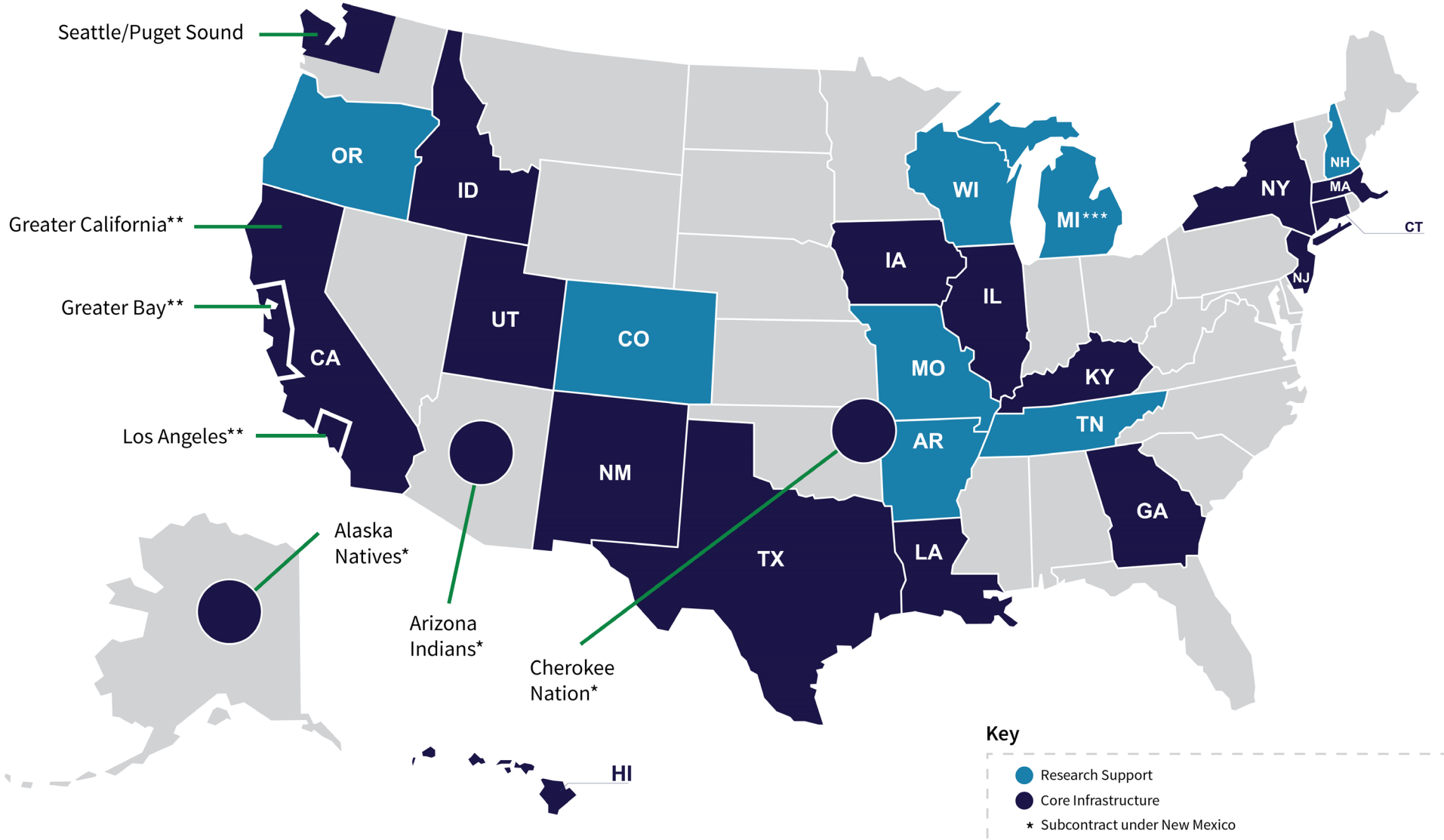
In order to represent real world data at the population level

- Increase data coverage to:
  - enable reporting of trends in more refined, clinical categories such as histologic subtype, biomarkers status, treatment categories
  - **and by important population subgroups**
- As of June 2021, SEER now covers ~50% of the US population
  - Represents >850,000 incident cancers reported annually

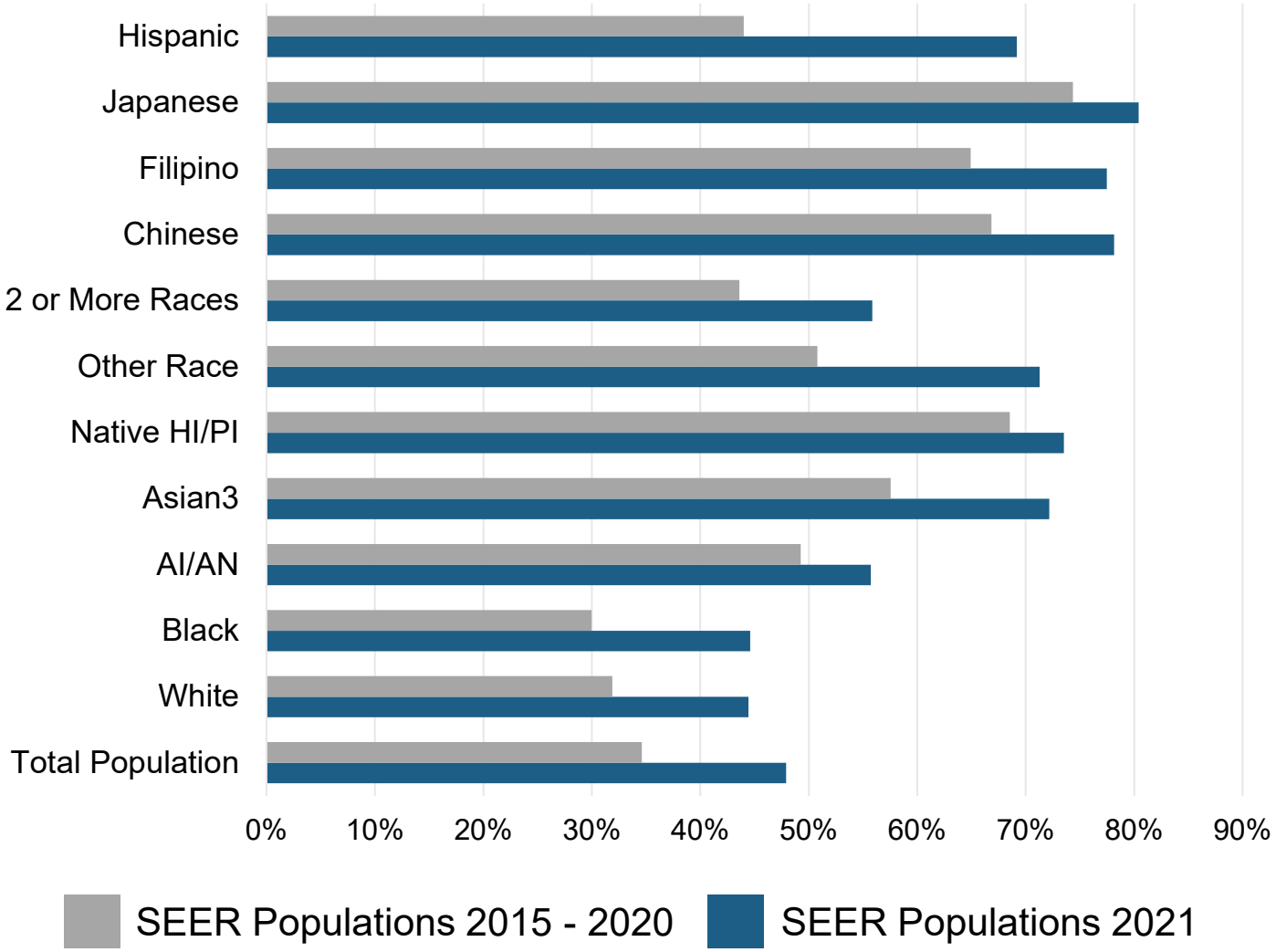
Map of SEER Program June 1, 2021

Dark Blue represents ***Core Registries*** (Reporting data)

Light Blue represents ***Research Support Registries*** (participate in special projects)



Increase in Representation of Population Subgroups with SEER Expansion

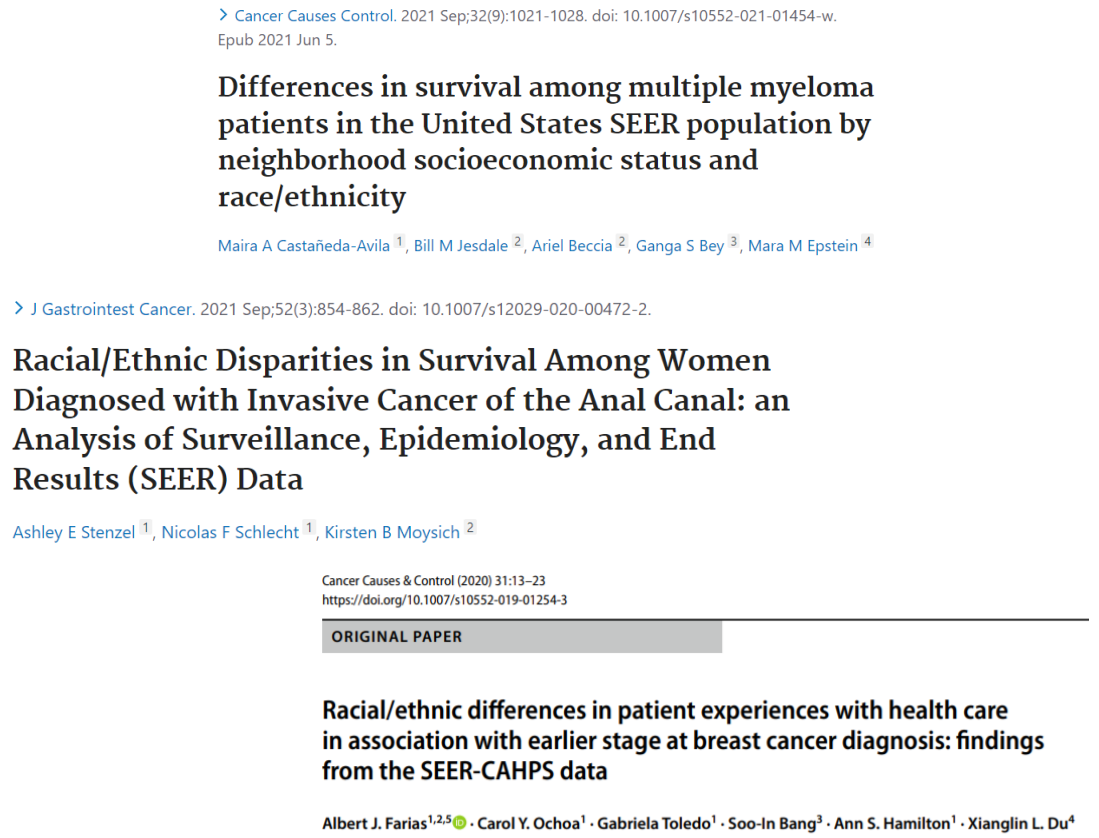


Percent Increase for US Population Subgroups with SEER Expansion 2021	
Total Population	**13.3**
White	12.5
Black	14.6
American Indian/Alaska Native	6.5
Asian	14.6
Native Hawaiian/Pacific Islander	5.0
2 or more races	12.3
Chinese	11.3
Filipino	12.5
Japanese	6.1
Hispanic	25.2

SEER Expansion – Expanding Reach

- The expansion will enable researchers to study disparities and equity issues in-depth in underserved populations

- These studies have been possible with the available data, and future agendas will be able to build off the expansion



> Cancer Causes Control. 2021 Sep;32(9):1021-1028. doi: 10.1007/s10552-021-01454-w. Epub 2021 Jun 5.

Differences in survival among multiple myeloma patients in the United States SEER population by neighborhood socioeconomic status and race/ethnicity

Maira A Castañeda-Avila [1], Bill M Jesdale [2], Ariel Beccia [2], Ganga S Bey [3], Mara M Epstein [4]

> J Gastrointest Cancer. 2021 Sep;52(3):854-862. doi: 10.1007/s12029-020-00472-2.

Racial/Ethnic Disparities in Survival Among Women Diagnosed with Invasive Cancer of the Anal Canal: an Analysis of Surveillance, Epidemiology, and End Results (SEER) Data

Ashley E Stenzel [1], Nicolas F Schlecht [1], Kirsten B Moysich [2]

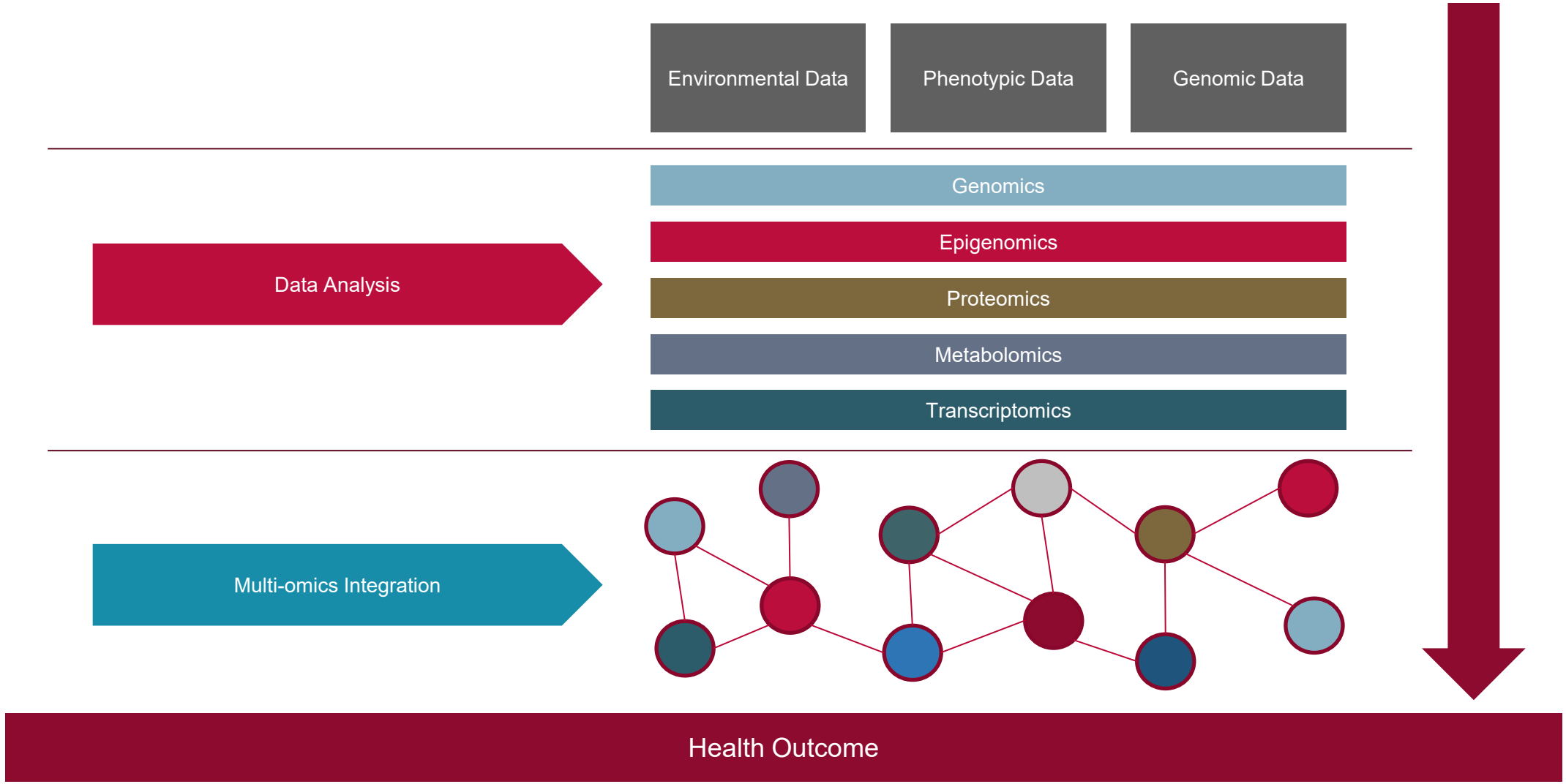
Cancer Causes & Control (2020) 31:13–23
https://doi.org/10.1007/s10552-019-01254-3

ORIGINAL PAPER

Racial/ethnic differences in patient experiences with health care in association with earlier stage at breast cancer diagnosis: findings from the SEER-CAHPS data

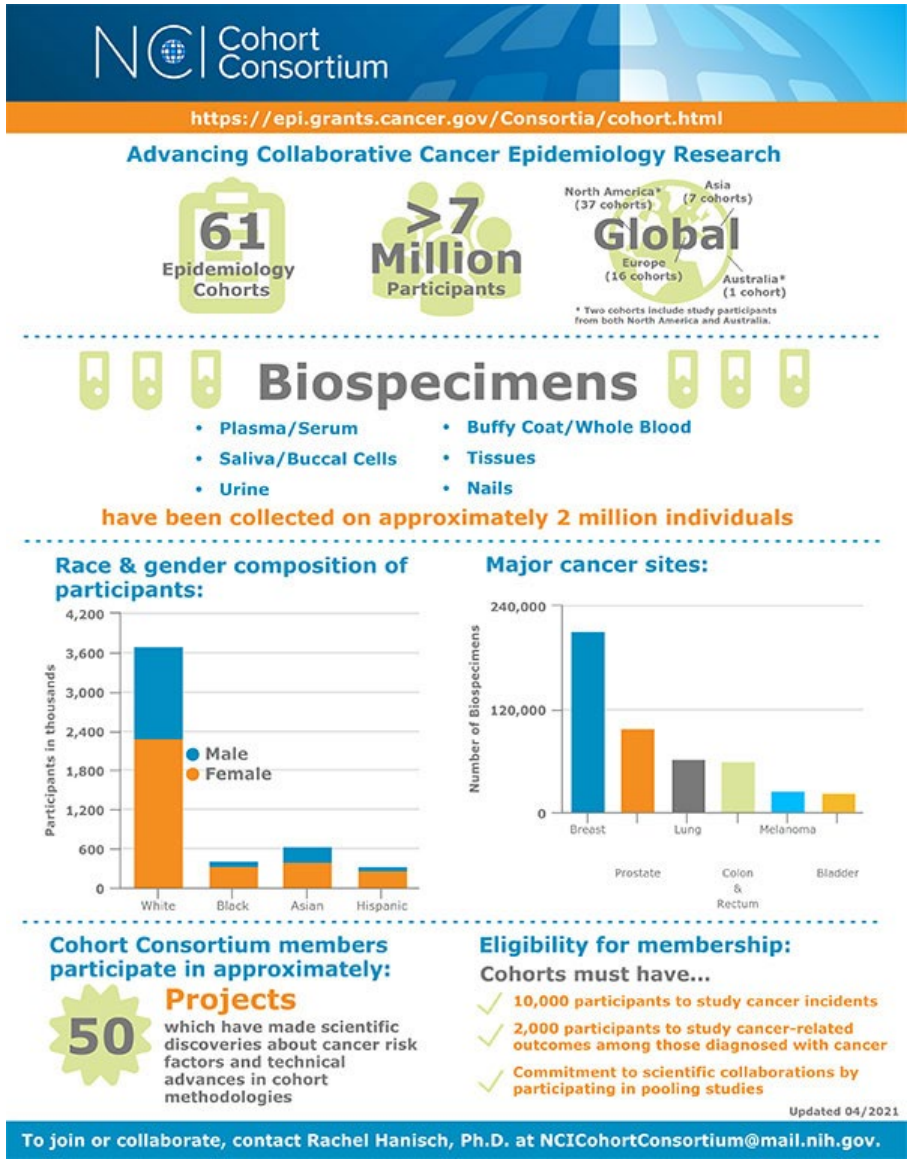
Albert J. Farias[1,2,5] · Carol Y. Ochoa[1] · Gabriela Toledo[1] · Soo-In Bang[3] · Ann S. Hamilton[1] · Xianglin L. Du[4]

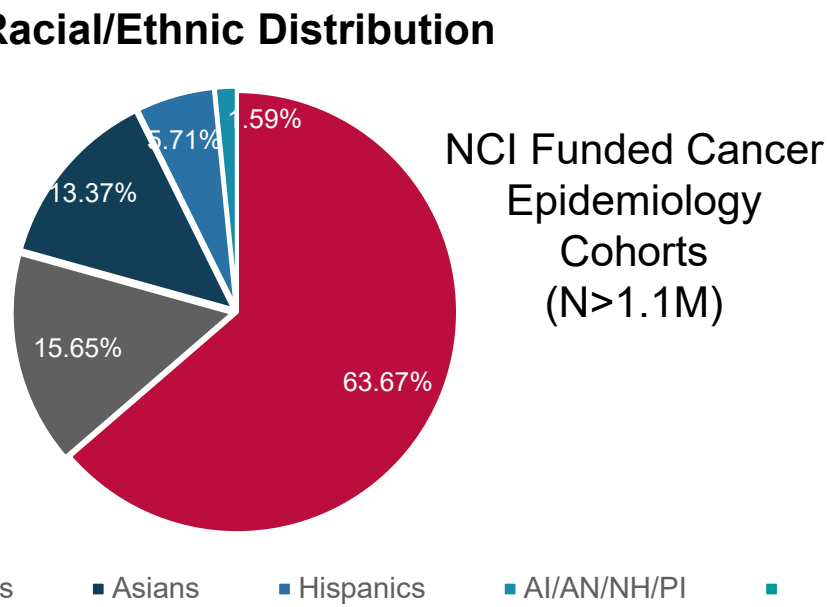
Expertise at all steps in the precision health pipeline

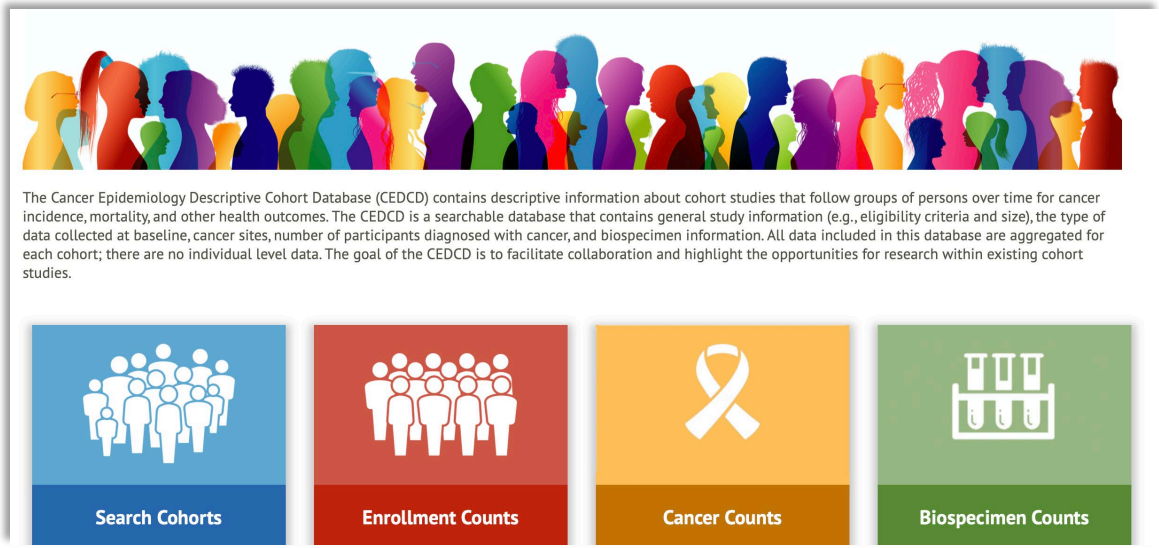


Courtesy of Dr. Richard Kwok, NIEHS

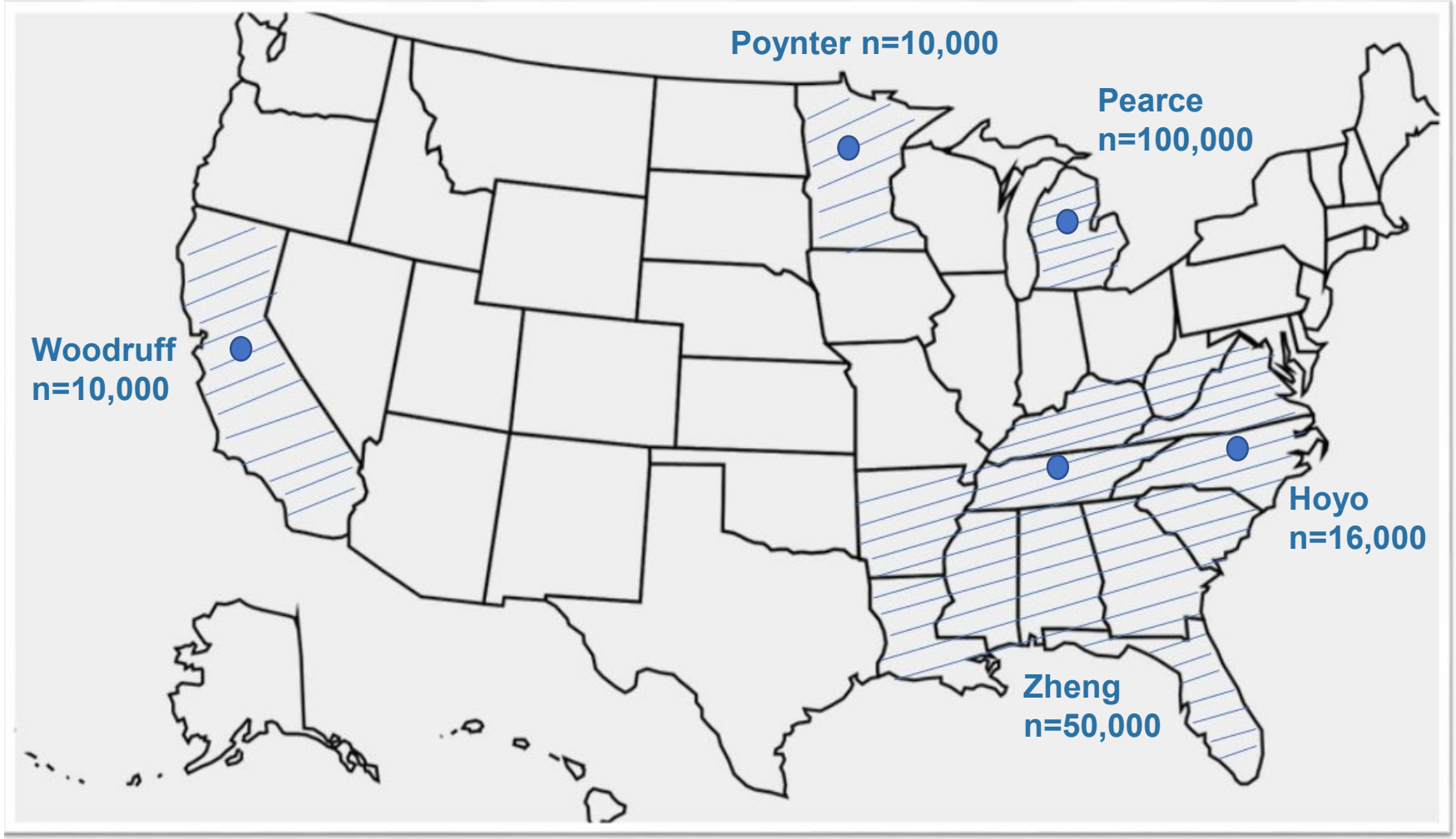
NCI Cancer Epidemiology Cohort Resources







New Cohorts for Environmental Exposures and Cancer Risk (CEECR)



- Five new cohorts
- Diversity of populations:
  - Latina
  - Black
  - White
  - Middle Eastern
  - North African
  - Somalian
- Wide set of exposures
- Population-based studies in communities at risk from environmental exposures
- Scientific collaboration with NIEHS
- Potential for major public health advancement

CEECR Data Collected

Environmental Exposures
PFAS series of chemicals
PCBs
Phthalates and other plasticizers
Phenolic compounds and aromatic amines
Organochloride
Toxic metals
Air and water pollution
Pesticides
Radon
Geospatial data
Community factors

Questionnaire Domains
Sociodemographic – race, ethnicity, education, income, insurance status, etc.
Health – chronic disease, medications, function and well-being
Lifestyle – smoking, personal care products, cooking instruments, sun exposure, alcohol
Residential history
Environment – drinking water sources; household type; occupational exposures
Psychosocial – literacy, racial discrimination
Life-course – adverse childhood experiences, birthplace

CEECR Data Collected Continued…

Biomarkers & Other Outcomes
Overall cancer; Liver cancer
NAFLD/NASH
CHIP
DNA methylation & Accelerated Aging (DNAmAge)
Inflammatory biomarkers
Inflammation markers
Immune modulation/dysregulation markers
Oxidative stress & DNA damage
Hormones
Cell death

Biological Samples
Blood
Urine
Nail
Saliva
Hair
Dried blood spots
Teeth

Technology
Silicone wristband – personal exposures
OMICS
GIS
Data linkages

Research Opportunities in Established Cancer Epidemiology Cohort Studies

- Seeks to support research using data from established cancer epidemiology cohort studies:
  - Address important hypothesis-based research questions using existing cohort resources
  - Understudied populations (e.g., minority populations including racial/ethnic groups, rural, and persistent poverty areas)

PAR-22-162 (U01 Clinical Trial Not Allowed)

https://grants.nih.gov/grants/guide/pa-files/PAR-22-162.html

Cancer Epidemiology Cohorts: Building the next generation of research cohorts

- Seeks to support initiating and building the next generation of population-based cancer epidemiology cohorts that address critical scientific and resource gaps:
  - Emerging/unique exposures in relation to cancer risk and outcomes
  - Understudied populations (e.g., minority populations including racial/ethnic groups, rural, and persistent poverty areas)

PAR-022-161 (U01 Clinical Trial Not Allowed)

https://grants.nih.gov/grants/guide/pa-files/PAR-22-161.html

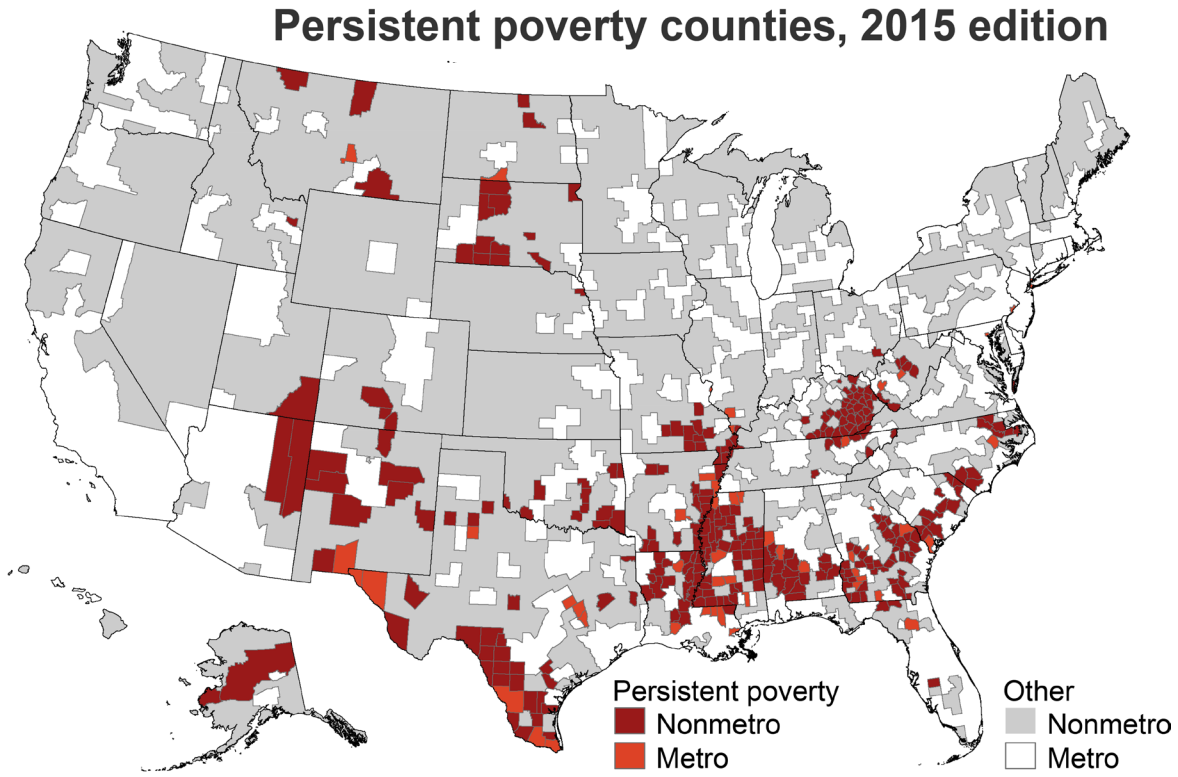
What are Persistent Poverty Areas?

Persistent Poverty County Definition (Federal poverty level = $26,200/yr)

USDA's Economic Research Service: Poverty rates of 20% or more in U.S. Census data from 1980, 1990, and 2000 decennial censuses and 2007-11 American Community Survey 5-year estimates

- *353 counties (11.2%) across 30 states*
- *301 (85.3%) of counties are nonmetro*
- *Nearly 84% located in the South*

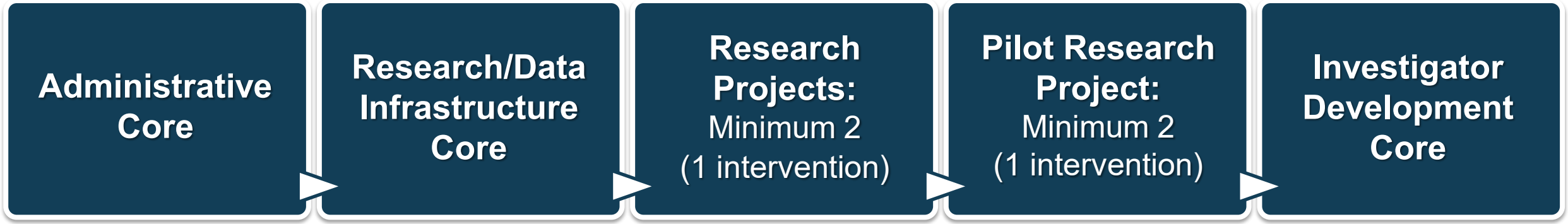
https://www.ers.usda.gov/topics/rural-economy-population/rural-poverty-well-being/



Note that county boundaries are drawn for the persistent poverty counties only.
Source: USDA, Economic Research Service using data from U.S. Census Bureau.

Cancer Control Research in Persistent Poverty Areas (U54 Clinical Trial Optional) RFA-CA-22-015

- U54 Specialized Center - Cooperative Agreements



- Long-term goal: to build capacity in persistent poverty areas to foster cancer prevention and control research and promote the implementation of programs and practices in institutions/clinics/ communities/tribes to alleviate the effects of persistent poverty
- RFA closed in July 2022; Awards to be made in FY23

NCI Cancer Moonshot Scholars Diversity Program

- RFA-CA-22-050 solicits R01 grant applications that propose independent research projects that align with the NCI's mission
- **Overarching goal**: to increase the number of R01 Early Stage Investigators (ESIs) and enhance the diversity of the cancer research workforce, while promoting scientific advancements in cancer

- Investigators from diverse backgrounds, including those from underrepresented groups (NOT-OD-20-031), are encouraged to work with their institutions to apply
- Program due dates: November 8, 2022, June 6, 2023, and February 6, 2024
- DCCPS Contact: Dr. Amy Kennedy, amy.kennedy@nih.gov

https://grants.nih.gov/grants/guide/rfa-files/RFA-CA-22-050.html

Highlighted DCCPS Health Disparities Research Opportunities

- Development of **theory- and evidence-based multilevel** and population (community) **interventions** that target both **structural and individual** factors
- Development of **new measures** on inequity and social environment; the **adaptation** of existing measures of SDOH; and a comprehensive understanding of the **pathways** by which the social context affects health
- **Research in small populations** that are largely excluded from clinical trials and interventions due to the limited size of these population
- **Intersectionality** of factors that contribute to and exacerbate health disparities

https://cancercontrol.cancer.gov/research-emphasis/health-disparities

Potential Directions Leading to Change

- Operationalizing structural racism in research: new applications of pre-existing measures, and measuring structural racism utilizing new, multidimensional indicators
- Research focusing on the root causes of racial/ethnic disparities
- Healthcare context: implementing multilevel interventions
- Addressing multiple domains of racism: from upstream to factors

Adapted from Drs Zinzi Bailey and Salma Shariff-Marco Racism & Discrimination Lecture Series

Modular R01s in Cancer Control & Population Sciences

PAR-21-190 - R01 Clinical Trial Optional

- **Overarching goal**: provide support to promote research efforts on novel scientific ideas that have the potential to substantially advance cancer research, and that lend themselves to a *shorter time span* and *reduced budget*
- FOA encourages and supports ESIs, and aims to grow the ESI applicant pool and portfolio
- NCI encourages applications that address a variety of topics that are a high priority for DCCPS, including, but not limited to:

Statistical and Analytic Methods	Healthcare Delivery Research	Cancer Survivorship
Behavioral Research	Implementation Science	Applied Informatics Methods for Cancer Surveillance
Systems Modeling in Cancer Epidemiology	Genomic Epidemiology	Environmental Epidemiology

- Max Direct Costs for any year: $250K Max project period: 5 years
- Expiration Date: March 08, 2024
- Contact: Scott Rogers, rogerssc@mail.nih.gov

https://grants.nih.gov/grants/guide/pa-files/PAR-21-190.html

Title	FOA #	Activity Code	Expiration
Addressing the Etiology of Health Disparities and Health Advantages Among Immigrant Populations	PAR-21-080	R01	January 08, 2023
Intervention Research to Improve Native American Health	PAR-20-238	R01	September 08, 2023
Leveraging Health Information Technology (Health IT) to Address and Reduce Health Care Disparities	PAR-22-145	R01	May 08, 2025
Long-Term Effects of Disasters on Health Care Systems Serving Health Disparity Populations (R01- Clinical Trial Optional)	PA-20-172	R01	September 08, 2023
Measures and Methods to Advance Research on Minority Health and Health Disparities-Related Constructs	PAR-22-072	R01	May 08, 2024
Notice of Intent to Publish the Reissuance of RFA-OD-20-011, Mentored Research Scientist Career Development Award in Tobacco Regulatory Research	NOT-OD-22-082	K01	
Notice of NCI Participation in PAR-22-064, "Patient-Clinician Relationship: Improving Health Outcomes in Populations that Experience Health Care Disparities"	NOT-CA-22-048	R01	January 08, 2025
Notice of NCI Participation in RFA-MD-22-008, Understanding and Addressing Misinformation among Populations that Experience Health Disparities	NOT-CA-22-066	R01	November 14, 2022
Notice of Special Interest (NOSI): Research on the Health of Bisexual and Bisexual+ People	NOT-OD-22-166		May 08, 2025

Title	FOA #	Activity Code	Expiration
Notice of NCI's participation on PAR-22-145, "Leveraging Health Information Technology (Health IT) to Address and Reduce Health Care Disparities"	NOT-CA-22-082	R01	May 08, 2025
NOSI: Disparities Affecting Healthcare Utilization and Health Outcomes Among Childhood Cancer Survivors More Information	NOT-CA-22-029		October 09, 2024
NOSI: Expanding Cancer Control Research in Persistent Poverty Areas	NOT-CA-21-071	P01	May 08, 2023
NOSI: Preventive Interventions to Address Cardiometabolic Risk Factors in Populations that Experience Health Disparities	NOT-OD-22-154		September 08, 2025
NOSI: Research on the Health of Bisexual and Bisexual+ People	NOT-OD-22-166		May 08, 2025
NOSI: Stimulating Research to Understand and Address Hunger, Food and Nutrition Insecurity	NOT-OD-22-135		November 29, 2024
Patient-Clinician Relationship: Improving Health Outcomes in Populations that Experience Health Care Disparities	PAR-22-064	R01	January 08, 2025
Research Supplements to Promote Diversity in Health-Related Research	PA-21-071		May 08, 2023
Research to Address Vaccine Hesitancy, Uptake, and Implementation among Populations that Experience Health Disparities	NOT-MD-22-006		January 08, 2023
Research to Improve Native American Health (R21 Clinical Trials Optional)	PAR-20-214	R21	September 08, 2023
The Role of Work in Health Disparities in the U.S.	PAR-21-275	R01	September 08, 2024

Start planning early for your submission

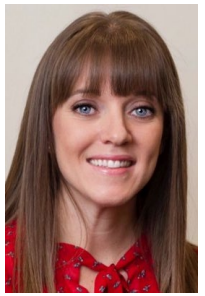
- **Before applying, contact a DCCPS program director to ask about:**
  - DCCPS funding opportunities, initiatives, and programs
  - Resources available from NIH/NCI
  - Eligibility, mechanisms, and requirements for funding
  - Information on policies or guidelines
  - Priority areas for an institute, program, or branch

- **Discuss with a Scientific Review Officer:**
  - Specific expertise for review of your application
  - Ways to avoid reviewer assignment conflicts
  - Information about post-submission materials:
    - Revised budget page(s)
    - Biographical sketches for changes in key personnel
    - Additional letters of support
    - News of an article accepted for publication since submission

Find the Right Program Director

- BEHAVIORAL RESEARCH PROGRAM
- EPIDEMIOLOGY AND GENOMICS RESEARCH PROGRAM
- HEALTHCARE DELIVERY RESEARCH PROGRAM
- SURVEILLANCE RESEARCH PROGRAM
- IMPLEMENTATION SCIENCE
- OFFICE OF CANCER SURVIVORSHIP
- HEALTH DISPARITIES AND HEALTH EQUITY

Shobha Srinivasan
Senior Advisor for Health Disparities
sriniva2@mail.nih.gov



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www.cancer.gov

www.cancer.gov/espanol

QUESTION AND ANSWERS

Professional Advancement Virtual Engagement Series

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Division Priorities, Funding Opportunities, and Strategies for Applying for Grants

Vikrant Sahasrabuddhe, M.B.B.S, Dr.P.H

Deputy Chief, Breast and Gynecologic Cancer Research Group, Division of Cancer Prevention (DCP), NCI

NCI Division of Cancer Prevention

Research Program Focus Areas and Funding Opportunities for Investigator-initiated Research

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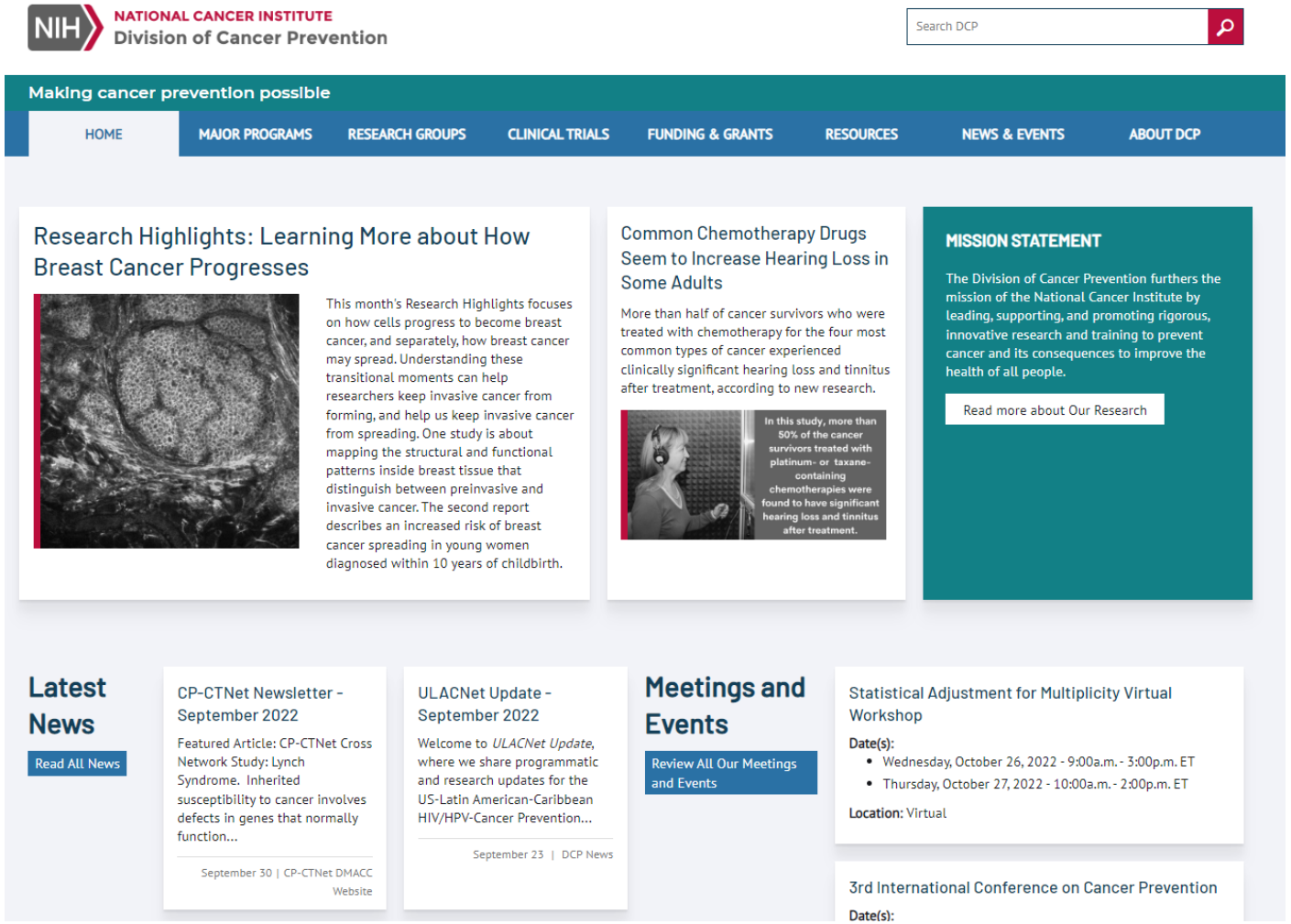
Vikrant Sahasrabuddhe, MBBS, DrPH
Division of Cancer Prevention
vikrant.sahasrabuddhe@nih.gov
https://prevention.cancer.gov



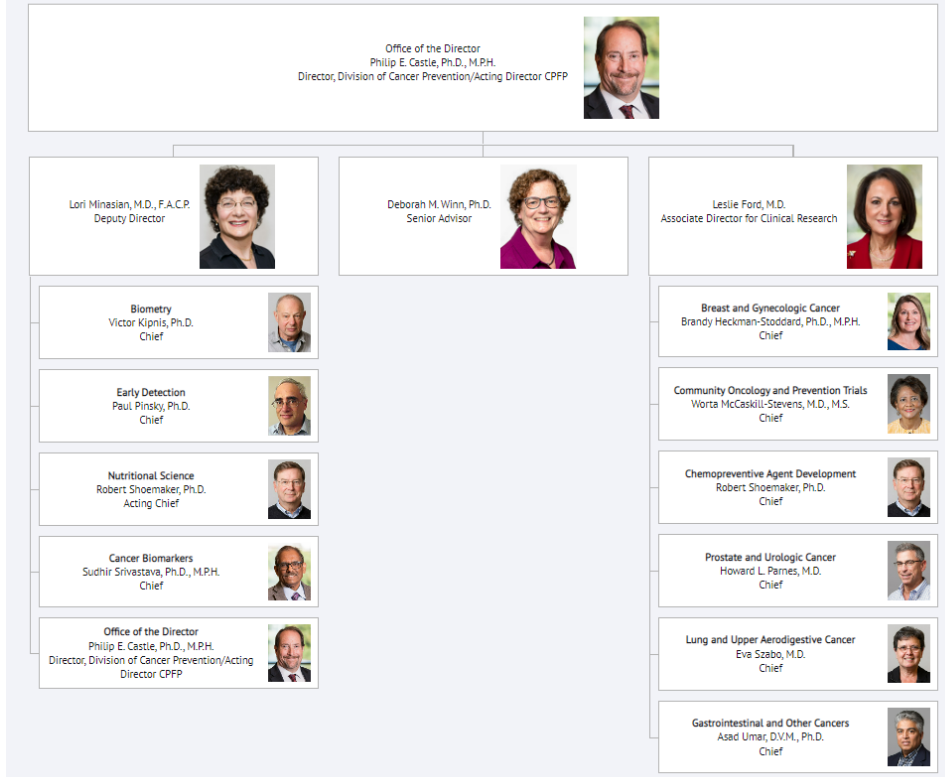
- The Division of Cancer Prevention (DCP) is the extramural division of the National Cancer Institute (NCI) devoted to cancer prevention research.
- DCP conducts and supports research in cancer prevention, early detection, and screening, and on prevention and management of symptoms and toxicities in cancer patients.
- DCP leads, promotes, and supports rigorous, innovative research and training to reduce the risk, burden, and consequences of cancer for all people.

https://prevention.cancer.gov

NIH NATIONAL CANCER INSTITUTE
Division of Cancer Prevention

Making cancer prevention possible

DCP Leadership



https://prevention.cancer.gov

Cancer Biomarkers

Research to identify, develop and validate biomarkers for early cancer detection and risk assessment.

Early Detection

Research on the effectiveness and clinical impact of early detection technologies and practices.

Community Oncology and Prevention Trials

Clinical oncology trials in cancer prevention and control in community settings.

Biometry

Supports research in biostatistical, clinical trial, and epidemiological methodologies and mathematical modeling of processes relevant to cancer prevention.

Chemopreventive Agent Development

Research on cancer preventive agent development, from preclinical studies to initiation of phase I clinical trials.

Nutritional Science

Understanding how diet and food components affect cancer risk and tumor cell behavior.

Breast and Gynecologic Cancer

Prevention and early detection of breast, cervix, endometrial and ovarian cancers and their precursors.

Prostate and Urologic Cancer

Conducts and supports research on the prevention and early detection of prostate, bladder, and skin cancers.

Lung and Upper Aerodigestive Cancer

Conducts and supports research on the prevention and early detection of lung and head and neck cancers.

Gastrointestinal and Other Cancers

Prevention and early detection of colorectal, esophageal, liver, pancreas and hematolymphoid cancers.

DCP-supported preclinical, clinical, community, and symptom management research networks/programs

PREVENT Cancer Preclinical Drug Development Program (PREVENT)

The peer-reviewed research pipeline supports new prevention interventions and biomarkers headed toward clinical trials.

Cancer Prevention Clinical Trials Network (CP-CTNet)

Research Centers develop and conduct early phase clinical trials to assess the preventive potential of agents and interventions of varying classes.

NCI Community Oncology Research Program (NCORP)

A clinical trials network of cancer professionals brings research to diverse populations across the country in the communities where most patients live.

Supportive Care and Symptom Management

Clinical trials and grant-funded projects examine symptoms and morbidities related to cancer and its treatment, with a focus on interventions to improve quality of life.

Cancer Prevention-Interception Targeted Agent Discovery Program (CAP-IT)

A collaborative research network with the overarching goal of discovering molecularly or immunologically targeted agents designed to prevent or intercept the oncogenic process in higher-risk populations.

US-Latin American-Caribbean HIV/HPV-Cancer Prevention Clinical Trials Network (ULACNet)

Partnership Centers will focus on improving prevention of human papillomavirus (HPV)-related cancers in human immunodeficiency virus (HIV)-infected individuals.

HIV/Cervical Cancer Prevention 'CASCADE' Clinical Trials Network

Seeks to conduct pragmatic clinical trials evaluating the effectiveness of clinically proven interventions to optimize the cervical cancer screening, management, and precancer treatment cascade for WLWH.

Cancer Treatment Tolerability Consortium

A consortium of multi-disciplinary teams that is developing new methods for analyzing patient-reported outcomes in the setting of cancer clinical trials.

https://prevention.cancer.gov

DCP-supported early detection and translational research networks/programs

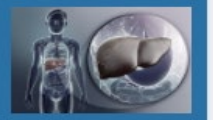
Early Detection Research Network (EDRN)

Labs and centers bring together comprehensive infrastructure and resources critical to discovery, development and validation of biomarkers for cancer risk and early detection.

Pancreatic Cancer Detection Consortium (PCDC)

Research teams develop and test new molecular and imaging biomarkers to detect early stage pancreatic ductal adenocarcinoma and its precursor lesions.

Translational Liver Cancer (TLC) Consortium

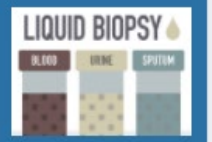


Five Translational Research Centers conduct studies to improve surveillance of liver cancer in high-risk populations, increase detectability at early stages, and stratify at-risk patients.

Small Cell Lung Cancer (SCLC) Consortium

Six investigators conduct research to expand the understanding of the critical molecular changes in the lung that precede the development of frank SCLC and/or to identify populations at particularly high risk for SCLC.

Liquid Biopsy Consortium

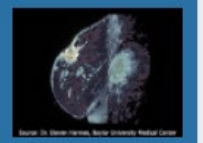


A partnership with academic and industrial laboratory teams developing noninvasive liquid biopsy techniques to detect early stage cancer from biomarkers in blood, urine and sputum.

Alliance of Glycobiologists for Cancer Research

Tumor Glycomics Laboratories work to reveal cancer-related dynamics of complex carbohydrates.

Consortium for Imaging and Biomarkers (CIB)



Research Units integrate imaging strategies with biomarkers to improve cancer screening, early detection of aggressive cancer, assessment of cancer risk, and diagnosis of early stage cancer.

Translational and Basic Science Research in Early Lesions (TBEL) Program

A collaborative research network that aims to further understand the biological and pathophysiological mechanisms and to facilitate biology-backed precision prevention approaches.

https://prevention.cancer.gov

DCP-supported cancer screening clinical trials networks/programs

NATIONAL CANCER INSTITUTE
PLCO
Prostate, Lung, Colorectal, & Ovarian
CANCER SCREENING TRIAL

NLST
National Lung
Screening Trial
NATIONAL CANCER INSTITUTE

NCI Cervical Cancer 'Last Mile' Initiative

A public private partnership between several stakeholders to validate self-sampling as a comparable (non-inferior) alternative to provider-collected sampling for HPV testing in cervical cancer screening.

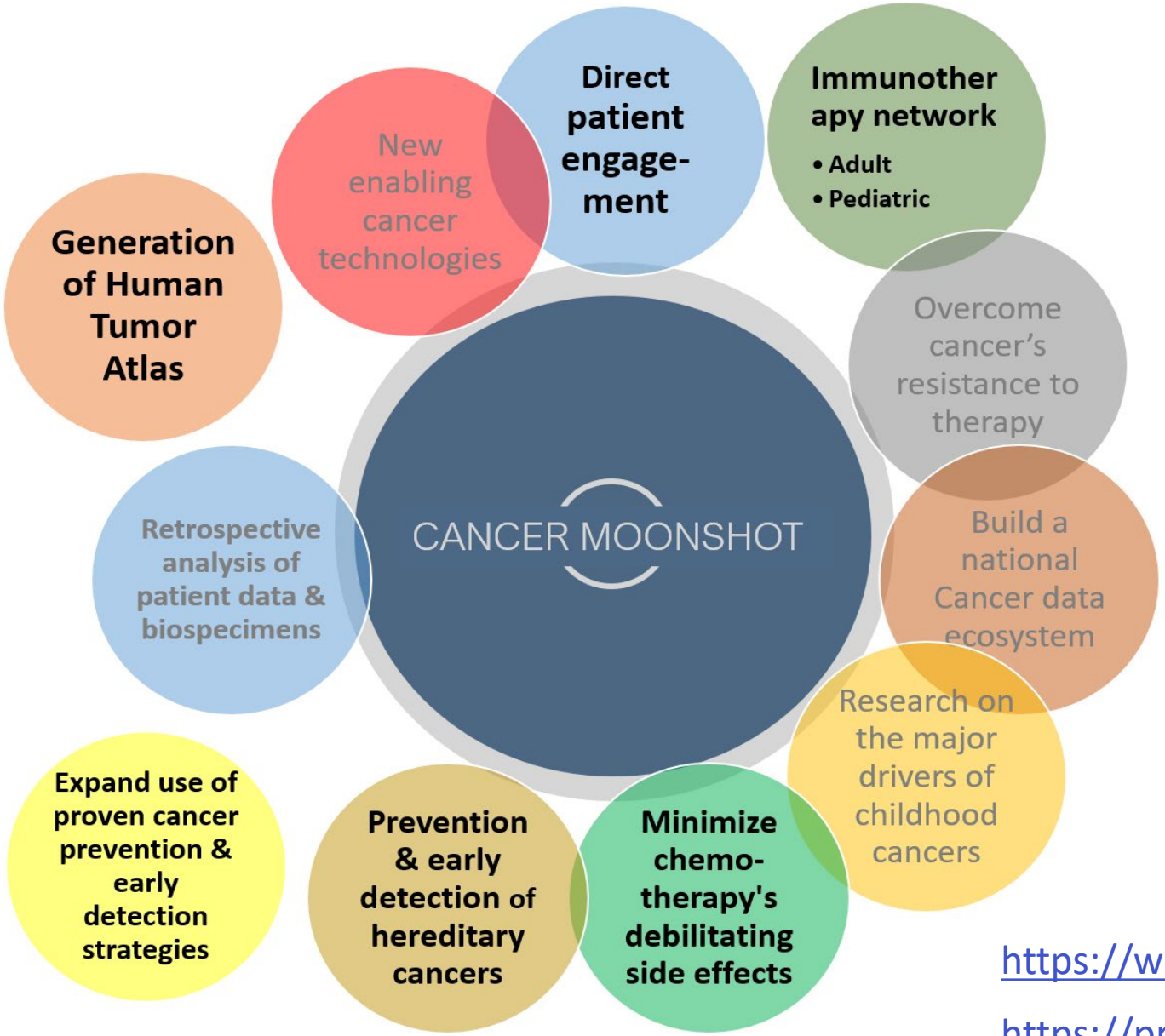
Multi-Cancer Detection (MCD) Research

Several assays using different technologies to detect multiple components of a growing cancer are under development for the purpose of detecting cancers at early stages.

Cancer Screening Research Network (CSRN)

The National Cancer Institute (NCI) is establishing a new Cancer Screening Research Network (CSRN) to conduct trials and studies specifically related to cancer screening.

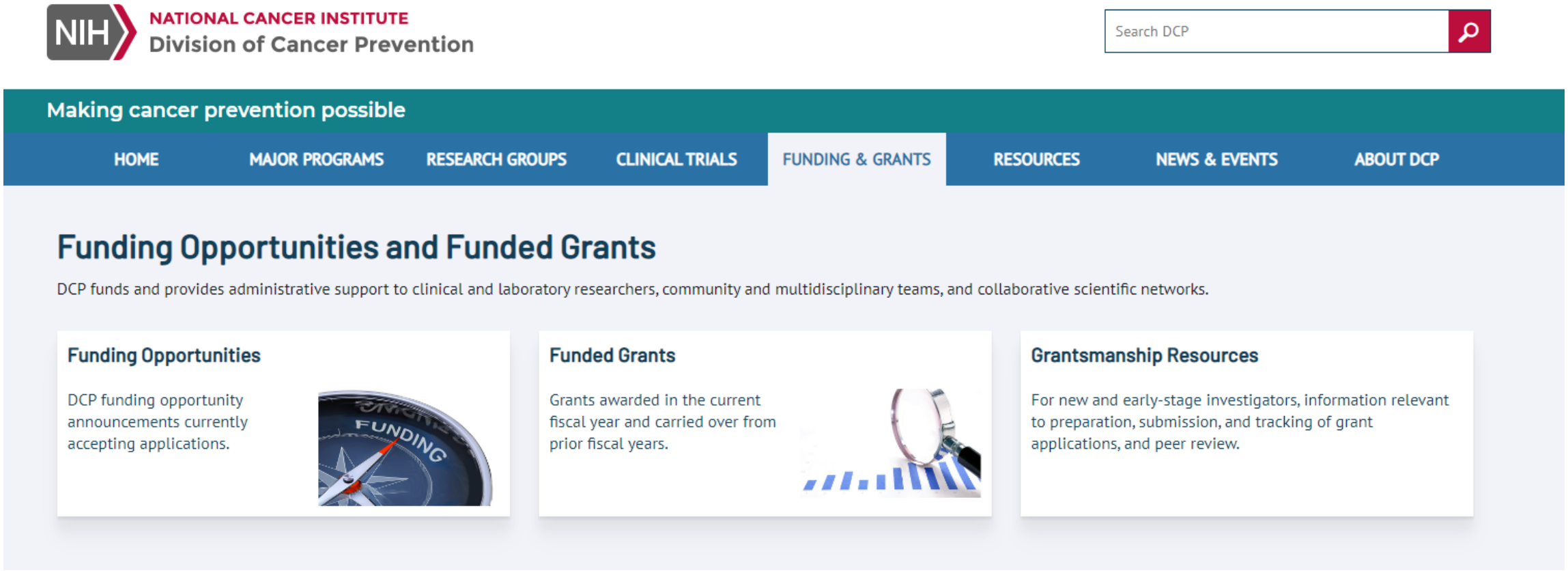
DCP-supported research via Cancer Moonshot℠



https://www.cancer.gov/moonshot

https://prevention.cancer.gov

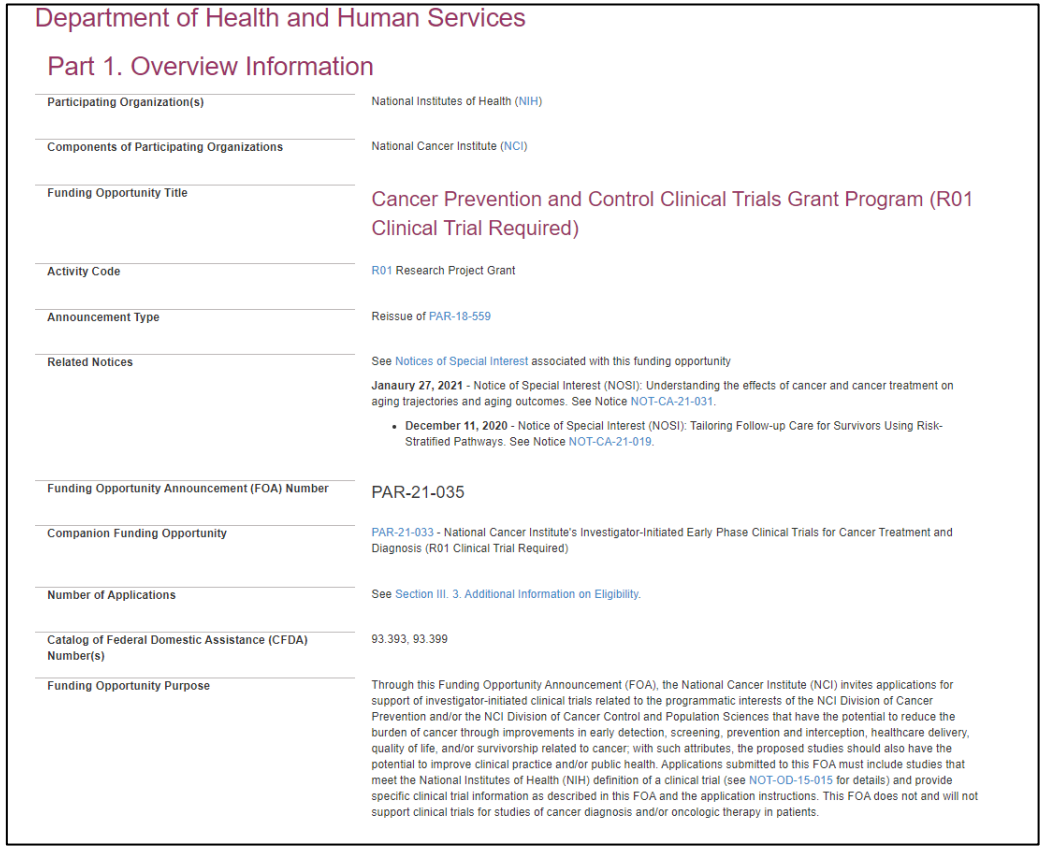
DCP Focus Areas for Investigator-initiated Research Studies on Cancer Prevention



https://prevention.cancer.gov

DCP Funding Opportunities for Investigator-initiated Clinical Trials on Cancer Prevention

PAR-21-035 Cancer Prevention and Control Clinical Trials Grant Program (R01)



Department of Health and Human Services

Part 1. Overview Information

Participating Organization(s)	National Institutes of Health (NIH)
Components of Participating Organizations	National Cancer Institute (NCI)
Funding Opportunity Title	Cancer Prevention and Control Clinical Trials Grant Program (R01 Clinical Trial Required)
Activity Code	R01 Research Project Grant
Announcement Type	Reissue of PAR-18-559
Related Notices	See Notices of Special Interest associated with this funding opportunity **Janaury 27, 2021** - Notice of Special Interest (NOSI): Understanding the effects of cancer and cancer treatment on aging trajectories and aging outcomes. See Notice NOT-CA-21-031. • **December 11, 2020** - Notice of Special Interest (NOSI): Tailoring Follow-up Care for Survivors Using Risk-Stratified Pathways. See Notice NOT-CA-21-019.
Funding Opportunity Announcement (FOA) Number	PAR-21-035
Companion Funding Opportunity	PAR-21-033 - National Cancer Institute's Investigator-Initiated Early Phase Clinical Trials for Cancer Treatment and Diagnosis (R01 Clinical Trial Required)
Number of Applications	See Section III. 3. Additional Information on Eligibility.
Catalog of Federal Domestic Assistance (CFDA) Number(s)	93.393, 93.399
Funding Opportunity Purpose	Through this Funding Opportunity Announcement (FOA), the National Cancer Institute (NCI) invites applications for support of investigator-initiated clinical trials related to the programmatic interests of the NCI Division of Cancer Prevention and/or the NCI Division of Cancer Control and Population Sciences that have the potential to reduce the burden of cancer through improvements in early detection, screening, prevention and interception, healthcare delivery, quality of life, and/or survivorship related to cancer; with such attributes, the proposed studies should also have the potential to improve clinical practice and/or public health. Applications submitted to this FOA must include studies that meet the National Institutes of Health (NIH) definition of a clinical trial (see NOT-OD-15-015 for details) and provide specific clinical trial information as described in this FOA and the application instructions. This FOA does not and will not support clinical trials for studies of cancer diagnosis and/or oncologic therapy in patients.

Project Type	• Investigator-initiated clinical trials • IND filed by investigator/institution
Submission deadlines	• General: March, July, November (2022-23) • AIDS-related: May, September, January (2022-24)
Funding caps	• Not specified; project-specific • Projects with direct costs >$500,000/year any single year require pre-submission discussion via Awaiting Receipt of Application (ARA)

https://grants.nih.gov/grants/guide/pa-files/par-21-035.html

For more information, please email
Brandy Heckman-Stoddard, PhD, MPH at heckmanbm@mail.nih.gov

https://prevention.cancer.gov

DCP Funding Opportunities for Investigator-initiated Clinical Trials on Cancer Prevention

PAR-22-216 NCI Clinical and Translational Exploratory/Developmental Studies (R21)

Department of Health and Human Services

Part 1. Overview Information

Participating Organization(s)	National Institutes of Health (NIH)
Components of Participating Organizations	National Cancer Institute (NCI)
Funding Opportunity Title	NCI Clinical and Translational Exploratory/Developmental Studies (R21 Clinical Trial Optional)
Activity Code	R21 Exploratory/Developmental Research Grant
Announcement Type	Reissue of PAR-20-292
Related Notices	See Notices of Special Interest associated with this funding opportunity • NOT-OD-22-190 - Adjustments to NIH and AHRQ Grant Application Due Dates Between September 22 and September 30, 2022 • **July 21, 2022** - Notice of Correction to PAR-22-216, NCI Clinical and Translational Exploratory/Developmental Studies (R21 Clinical Trial Optional). See Notice NOT-CA-22-108
Funding Opportunity Announcement (FOA) Number	PAR-22-216
Companion Funding Opportunity	None
Number of Applications	See Section III. 3. Additional Information on Eligibility.
Assistance Listing Number(s)	93.393, 93.394, 93.395, 93.396, 93.399
Funding Opportunity Purpose	This Funding Opportunity Announcement (FOA) supports preclinical and early phase clinical research, as well as correlative studies, directly related to advancements in cancer treatment, diagnosis, prevention, comparative oncology, symptom management, or reduction of cancer disparities. This includes (but is not limited to) development and testing of the following: new molecular agents or biologics for cancer treatment; management strategies for cancer-related symptoms or treatment-related toxicity; cancer screening or diagnostic tools, such as imaging techniques; cancer preventive agents or approaches; predictive and prognostic biomarkers for patient selection or stratification; clinically relevant *in vivo* or *in vitro* tumor models (including genetically engineered mouse models, patient-derived xenograft models, organoids, and cell lines); and strategies to address therapeutic outcome disparities among underserved populations. In addition to novel agents, new treatment

Project Type	• Applications proposing research directly related to the development of novel approaches for cancer treatment, diagnosis, prevention, symptom management, or reduction of cancer disparities. • Investigator-initiated exploratory/pilot clinical trials; IND filed by investigator/institution
Submission deadlines	• General: Oct/Feb/June (2022-2025) • AIDS-related: Nov/March/July (2022-2025)
Funding caps	• $275,000 direct costs over 2 years; $200,000 max in one year

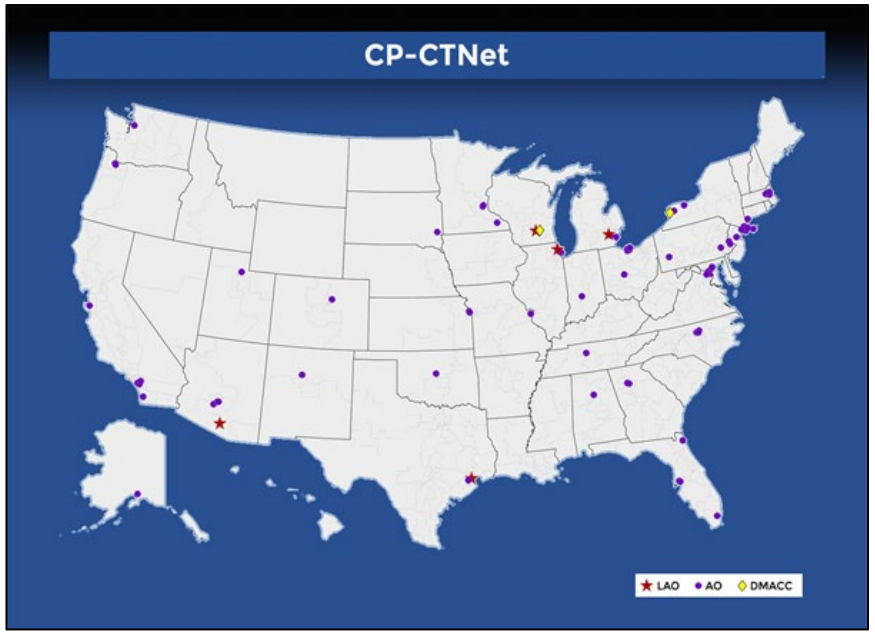
https://grants.nih.gov/grants/guide/pa-files/PAR-22-216.html

For more information, please email
Marjorie Perloff, MD at perloffm@mail.nih.gov

https://prevention.cancer.gov

DCP Funding Opportunities for Clinical Trials on Cancer Prevention

Cancer Prevention Clinical Trials Network (CP-CTNet)



Project Type	• UG1/U24 Cooperative Agreement Network • IND filed by investigator/institution or NCI
Submission deadlines	• Investigators can join UG1s led by Lead Academic Organizations (LAOs); submit concepts for approvals; approved concepts move to protocol development and conduct in CP-CTNet sites • Concept submission deadlines every quarter
Funding caps	• Not specified; project-specific • CP-CTNet LAOs and Data Management, Auditing, and Coordinating Center (DMACC) provide clinical trials management support

https://prevention.cancer.gov/cp-ctnet

For more information, please email
Eva Szabo, MD at szaboe@mail.nih.gov

PAR-22-173 (R34) and PAR-22-174 (U34): Cancer Prevention and Control Clinical Trials Planning Grant Program (Clinical Trials Optional)

Purpose: Facilitate well planned clinical trials across the cancer prevention and control spectrum aimed at improving prevention/ interception, cancer-related health behaviors, screening, early detection, healthcare delivery, management of treatment-related symptoms, supportive care, and the long-term outcomes of cancer survivors.

- R34 for investigator-initiated trials, U34 for trials that will be completed through an NCI-network
- Planning grant support can be requested for a maximum of 3 years.
- Application budgets are limited to $225,000 per year and $450,000 in direct costs over the 3-year project period without a clinical trial.
- Applications that include a pilot/feasibility clinical trial are limited to $225,000 per year and $600,000 in direct costs over the 3-year project period.
- Applications due: various deadlines: 2022-2025
- https://prevention.cancer.gov/funding-and-grants/grantsmanship-resources/R34-U34-guidance

DCP Funding Opportunities for Preclinical studies on Cancer Prevention

PREVENT Cancer Preclinical Drug Development Program (PREVENT)


PREVENT Cancer Preclinical Drug Development Program (PREVENT)

The PREVENT program is a peer-reviewed agent development program designed to support preclinical development of innovative interventions and biomarkers for cancer prevention and interception towards clinical trials. All interested researchers with novel concepts are eligible to apply. PREVENT is not a grant program, but allocates NCI contract resources and expertise to generate data and materials, which are used by the applicants for further development. PREVENT's current research priority areas include immunoprevention, chemoprevention, and clinically translatable biomarkers.

Read more About PREVENT.

Application Instructions

Submission deadlines occur twice per year on the second Monday in January and July.

New! NEXT Deadline: Monday, July 12, 2021

Instructions for Applying
Please use the latest application template (DOC, 32 KB).

Supported Projects

114 Projects from PREVENT Cycles 1 through 19:

- 68 Chemoprevention projects
- 38 Immunoprevention projects
- 8 Biomarker projects

Read more about supported projects and supported prevention approaches.

Available Resources

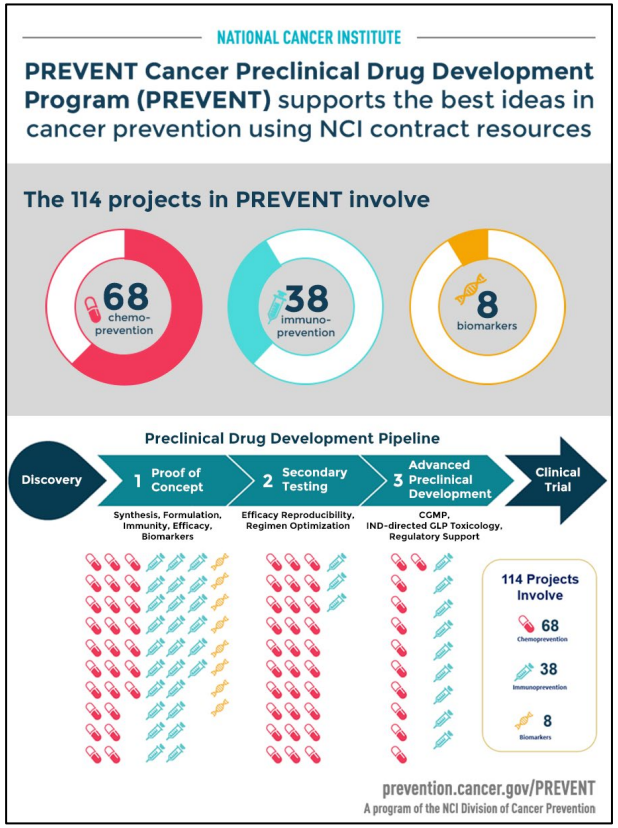
- Efficacy and Intermediate Endpoint Biomarker Work
- Toxicology and Pharmacology Testing
- CGMP Production of Vaccines and Biologicals
- Prime Contractors 2019–2023

View available resources

Program Administration

- Governance Structure
- Technology Transfer Considerations

Learn more about program administration



Project Type	• IND-enabling support (proof-of-concept, secondary testing, advanced preclinical development) via NCI Research and Development Contract resources • IND filed by investigator/institution or NCI
Submission deadlines	• Submission deadlines twice-yearly: in January and July
Funding caps	• Not specified; project-specific • NCI contracts support generation of data and materials to further advance novel cancer preventive agents or biomarkers toward IND filing and proof-of-principle clinical testing.

https://prevention.cancer.gov/prevent

For more information, please email
Shizuko Sei, MD at seis@mail.nih.gov

NIH/NCI Funding Opportunity Announcements in support of Cancer Prevention*

FOA number	*FOA title*	*FOA weblink*
PA-20-185	NIH Research Project Grant (Parent R01 Clinical Trial Not Allowed)	https://grants.nih.gov/grants/guide/pa-files/PA-20-185.html
PAR-20-077	National Cancer Institute Program Project Applications (P01 Clinical Trial Optional)	http://grants.nih.gov/grants/guide/pa-files/PAR-20-077.html
PAR-21-206	Academic-Industrial Partnerships for Translation of Technologies for Diagnosis and Treatment (R01 - Clinical Trial Optional)	https://grants.nih.gov/grants/guide/pa-files/PAR-21-206.html
Various	PHS 2021-2 Omnibus Solicitation of the NIH, CDC and FDA for Small Business Innovation Research Grant Applications (Parent SBIR [R43/R44])	https://grants.nih.gov/grants/guide/pa-files/PA-22-176.html https://grants.nih.gov/grants/guide/pa-files/PA-22-177.html https://grants.nih.gov/grants/guide/pa-files/PA-22-178.html https://grants.nih.gov/grants/guide/pa-files/PA-22-179.html https://sbir.cancer.gov/funding

Not an exhaustive list; for illustrative purposes only

NIH NATIONAL CANCER INSTITUTE

Cancer Prevention Fellowship Program

Applications accepted May–August for positi
starting the following June.

Be a part of the program that supports postdoctoral research and professional development, plus offers:

- Competitive stipends, relocation expenses, health insurance benefits, and travel allowances
- Support for up to four years
- Opportunity to earn your MPH, sponsored by NCI
- Research opportunities with experienced NCI mentors
- A cohort of fellows spanning STEM and other fields

cpfp.cancer.gov CPFPCoordinator@mail.nih.gov 240-276-5626

Questions? More Information?

vikrant.sahasrabuddhe@nih.gov

https://prevention.cancer.gov

NATIONAL CANCER INSTITUTE

www.cancer.gov www.cancer.gov/espanol

QUESTION AND ANSWERS

Professional Advancement Virtual Engagement Series

Division Priorities, Funding Opportunities, and Strategies for Applying for Grants

Pushpa Tandon, Ph.D.

Program Director, Cancer Imaging Program, Division of Cancer Treatment and Diagnosis (DCTD), NCI

NIH NATIONAL CANCER INSTITUTE

Division of Cancer Treatment and Diagnosis (DCTD)

Pushpa Tandon, Ph.D.

Program Director, Division of Cancer Treatment and Diagnosis, NCI

Cancer Imaging Program

NIH NATIONAL CANCER INSTITUTE

PAVES: Sept 28, 2022

NCI Organizational Structure

Extramural

- Division of Cancer Biology
- Division of Cancer Control and Population Sciences
- Division of Cancer prevention
- Division of Extramural activities
- Division of Cancer Treatment and Diagnosis

Intramural

- Center for Cancer Research
- Division of Cancer Epidemiology and Genetics

Division of Cancer Treatment and Diagnosis (DCTD)

- Cancer Imaging Program
- Cancer Diagnosis Program
- Cancer Therapy Evaluation Program
- Radiation Research Program
- Biometric research Program
- Development Therapeutics Program
- Translational Research Program
- Office of Cancer Complementary and Alternative Medicine
- Office of Cancer Clinical Proteomics Research

DCTD: Common Themes

Diagnosis and Treatment

- Cancer Biology
- Molecular Imaging
- Nanotechnology
- Target identification,
- Drug development
- Clinical trials
- Technology development
- Biobanks, genomic, proteomic and imaging archives

- Imaging: diagnosis, treatment planning; radiation therapy treatment evaluation

- Information Technologies
  - Artificial Intelligence
  - Algorithm development
  - Machine learning
  - Treatment Planning
  - Predictive analysis
  - Robotics

DCTD: Major Activities

- Experimental Therapeutics Clinical Trial Network (ETCTN)
- National Clinical Trials Network (NCTN)
- Specialized Programs of Research Excellence (SPORE)
- NCI Experimental Therapeutics (NExT) Program
- NCI Formulary
- NCI Patient-Derived Models Repository (PDMR)
- NCTN/NCORP Data Archive
- NCTN Navigator
- Quantitative Imaging Network (QIN)
- Co-Clinical Imaging Resources Program (CIRM)
- Cancer Moonshot: Biobank

Research Resources

DCTD has a variety of resources available for preclinical and clinical anti-cancer drug development, as well as resources pertinent to clinical applications of imaging.

- Biomarkers
- Biometric Research
- Cancer Diagnosis Research
- Clinical Proteogenomics
- Clinical Trials
- Drug Discovery & Development
- Imaging
- Radiation Research

https://dctd.cancer.gov/ResearchResources/default.htm

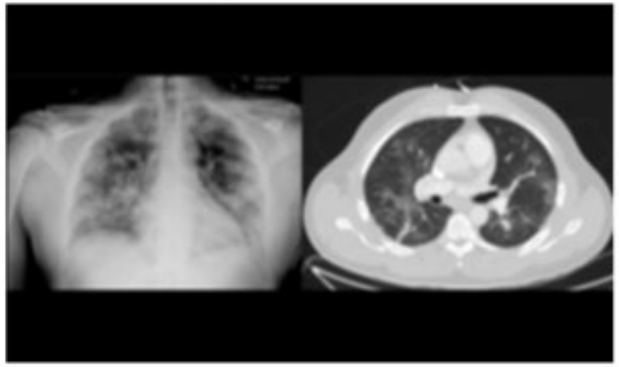
COVID-19 Research Initiatives

- **NCI COVID-19 in Cancer Patients study (NCCAPS):** involves all clinical trial programs
- **NCI COVID-19 Serology Program:** understand immune response to SARS-CoV-2 (SeroNet)
- **Study of Other Risk Factors:** (smoking status in COVID patients related to severity)
- **Search for COVID 19-Treatments:** (RAS initiative: compounds that block RAS protein that drive tumor growth)
- **Digital Health Solutions:** To address the COVID-19 (pandemic (Along with NIBIB)
- **Genomic Studies of COVID-19 Outcomes- (DCEG)**
- https://www.cancer.gov/research/key-initiatives/covid-19

THE CANCER IMAGING ARCHIVE

The Cancer Imaging Archive posts COVID-19 imaging data to benefit community

The Frederick National Lab (FNL) has published an article about TCIA's COVID-19 response efforts!



"Publicly available datasets related to COVID-19 are appearing in an unexpected place—the Cancer Imaging Archive (TCIA), a project of the Division of Cancer Treatment and Diagnosis of the National Cancer Institute.

Since the start of the pandemic, researchers around the world have been racing to learn as much as possible about the virus—how it spreads, how to diagnose and treat it, and how to develop vaccines against it. One way to help speed up scientific discovery is data sharing."

Read the full article here and find the COVID Collections available on TCIA here.

FNL newsletter
February 2021 by Justin Kirby

CIP: Focus Areas and Funding Support

- The Cancer Imaging Archives (TCIA)
- Co-Clinical Imaging Research Resource Program (CIRP)
- Nanotechnology: NCI Alliance for Nanotechnology in Cancer
- Quantitative Imaging Network (QIN)
- Information Technologies for Cancer Research (ITCR)
- Investigator initiated R01 grant
- Small Business grants and contracts (SBIR/STTR)

Radiation Research Program (RRP)

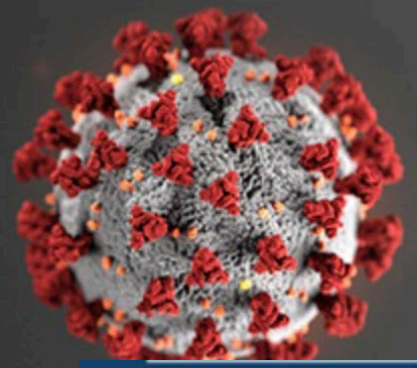
Funding Opportunities

RRP Initiatives (current)

FOA #	Initiative Title
RFA-CA-22-046	Radiation Oncology-Biology Integration Network (ROBIN) Centers (U54 Clinical Trial Required)
NOT-CA-22-113	Notice of Intent to Publish a Funding Opportunity Announcement for Radiation Oncology-Biology Integration Network (ROBIN) Centers (U54 Clinical Trial Required)
PAR-22-198	Precision Approaches in Radiation Synthetic Combinations (PAIRS, R01 Clinical Trial Optional)
PAR-22-199	Precision Approaches in Radiation Synthetic Combinations (PAIRS, R21 Clinical Trial Optional)
PAR-22-139	Systematic Testing of Radionuclides in Preclinical Experiments (STRIPE) (R01 Clinical Trial Not Allowed)
PAR-22-140	Systematic Testing of Radionuclides in Preclinical Experiments (STRIPE) (R21 Clinical Trial Not Allowed)

Guidance for NCI Clinical Trial Activities Affected by the Novel Coronavirus

More...



NCI National Clinical Trials Network

a National Cancer Institute program

NCTN Overview

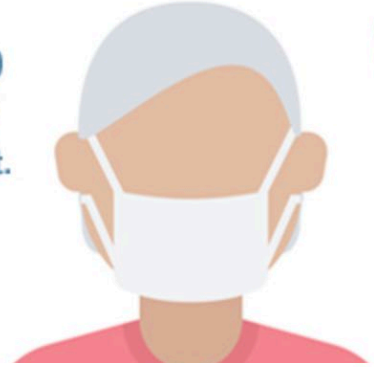
NCI transformed its longstanding Cooperative Group Program into the new NCI National Clinical Trials Network (NCTN) Program. More...

Cancer Therapy Evaluation Program

Early Drug Development

How Does COVID-19 Affect People with Cancer? NCCAPS Will Help Find Out.

More...

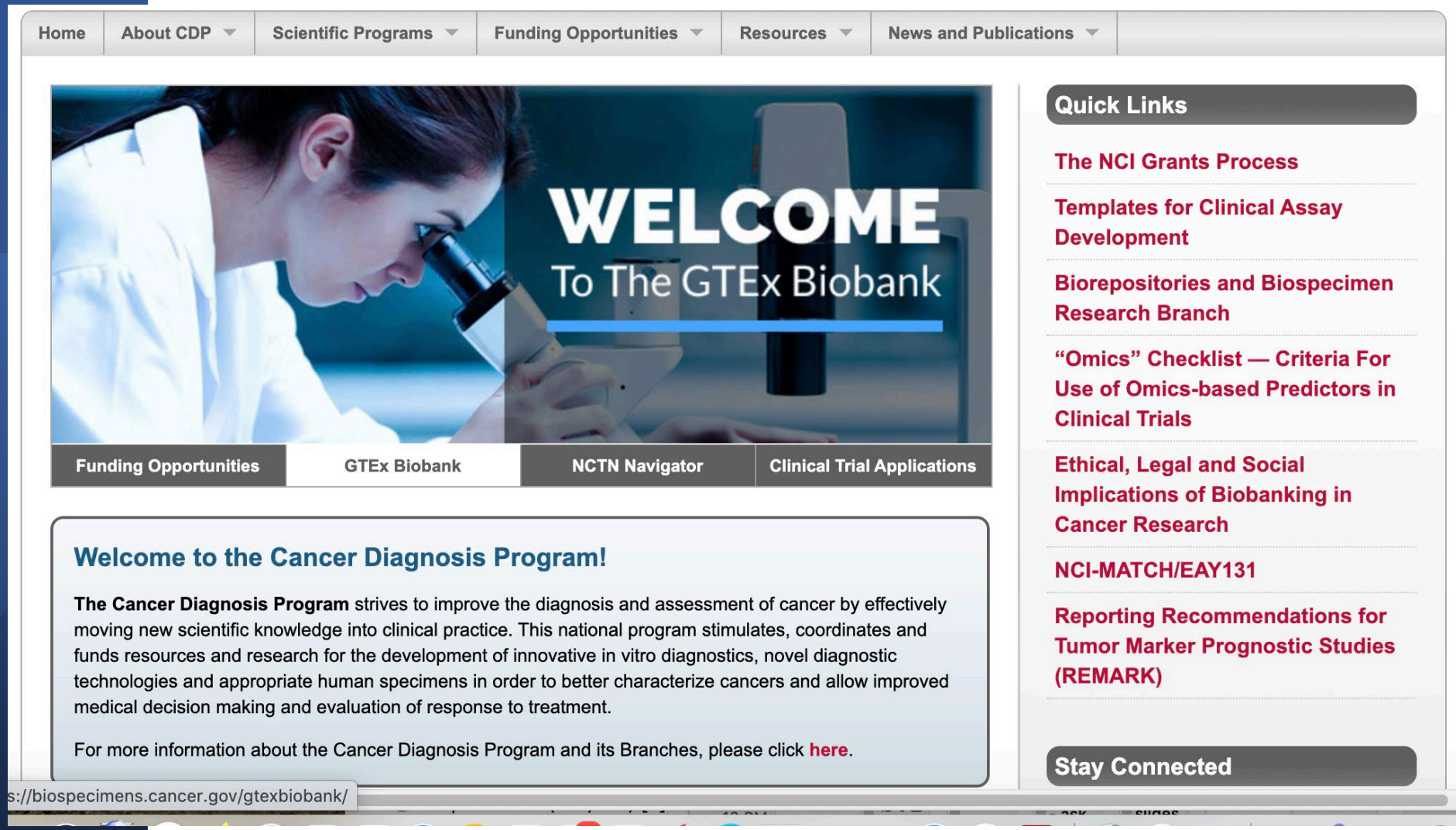


NCI-COG Pediatric MATCH (Molecular Analysis for Therapy Choice) is a phase 2 clinical trial for children and adolescents with advanced solid tumors – including non-Hodgkin lymphomas, brain tumors, and histiocytoses – that have not responded to treatment or have progressed on standard therapy. More...

Experimental Trials Networ

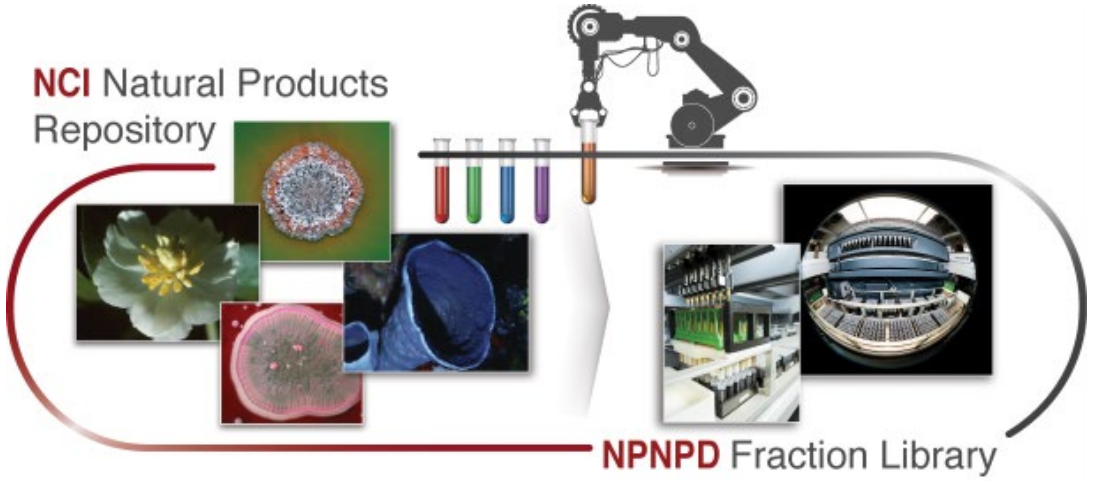
The National Canc in the pharmaceuti individual investiga innovative cancer t Clinical Trials Netw these therapies us inclusive team-bas

CDP
Improve the diagnosis and assessment of cancer



Developmental Therapeutics Program (DTP)

The NCI Development Therapeutics Program (DTP) provides services and resources to the academic and private-sector research communities worldwide to facilitate the discovery and development of new cancer therapeutic agents



Funding Opportunity Announcement:

- Assay development and screening for discovery of chemical probes, drugs or immunomodulators (R01 Clinical Trial Not Allowed)
- Notice of Special Interest (NOSI): Advancing the development of tumor site-activated small molecules
- NCI Clinical and Translational Exploratory/Developmental Studies (R21 Clinical Trial Optional)

(DCTD) Tumor Repository

Translational Research Program (TRP)

NCI Specialized Programs of Research Excellence (SPORE)

Translational Research Program (TRP)
Division of Cancer Treatment and Diagnosis (DCTD)
National Cancer Institute (NCI)
National Institutes of Health (NIH)
Website: trp.cancer.gov

Peter Ujhazy, MD, PhD
2018 NCI IMAT PI Meeting

NIH NATIONAL CANCER INSTITUTE

November 29, 2018

Office of Cancer Complementary and Alternative Medicine (OCAM)

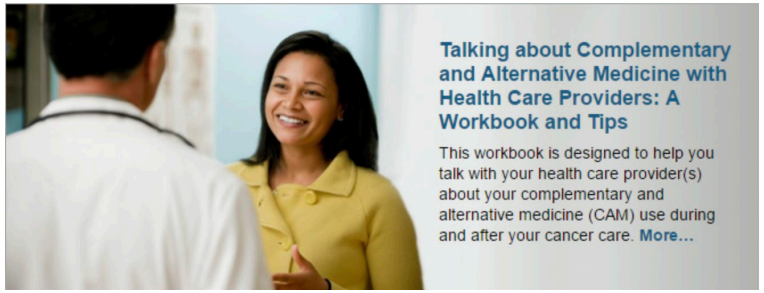
Established in October 1998 to coordinate and enhance the activities of the National Cancer Institute (NCI) in the arena of complementary and alternative medicine (CAM)

International Activities:

Chinese Medicine

Indian Medicine

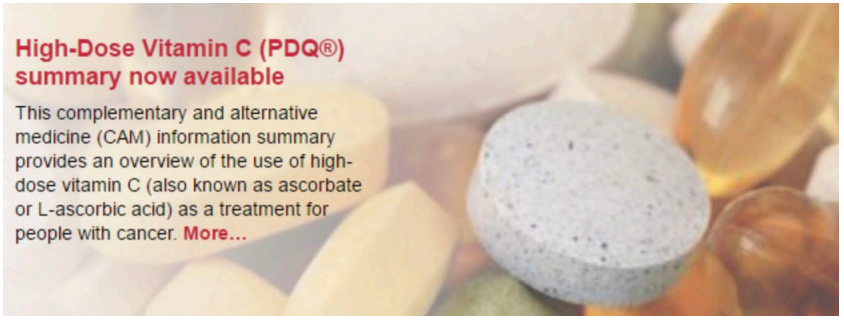
Research Resources

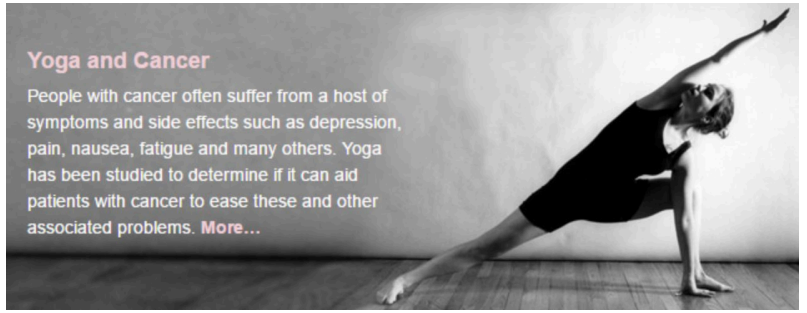


Microbial-based Cancer Therapy - Bugs as Drugs

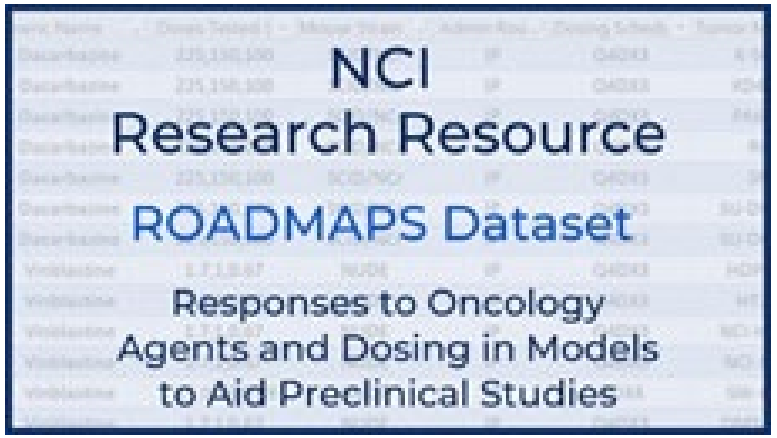
Technologies to Overcome Cancer

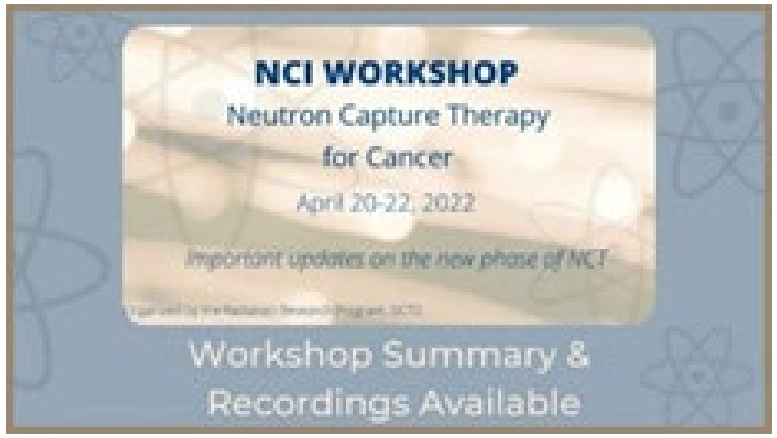
- **Annual Integrative Women's Health Symposium 2022**
- **View Videocast – Traditional Medicines for COVID-19 and Cancer: Effects on Immunity and Inflammation**
- **Integrative Oncology: Addressing the Global Challenges of Cancer Prevention and Treatment**
- **The National Cancer Institute Cannabis, Cannabinoids, and Cancer Research Symposium videos**
- **The NCI Library of TCM Plant Extracts**
- **New Funding Opportunity: Microbial-based Cancer Therapy – Bugs as Drugs**

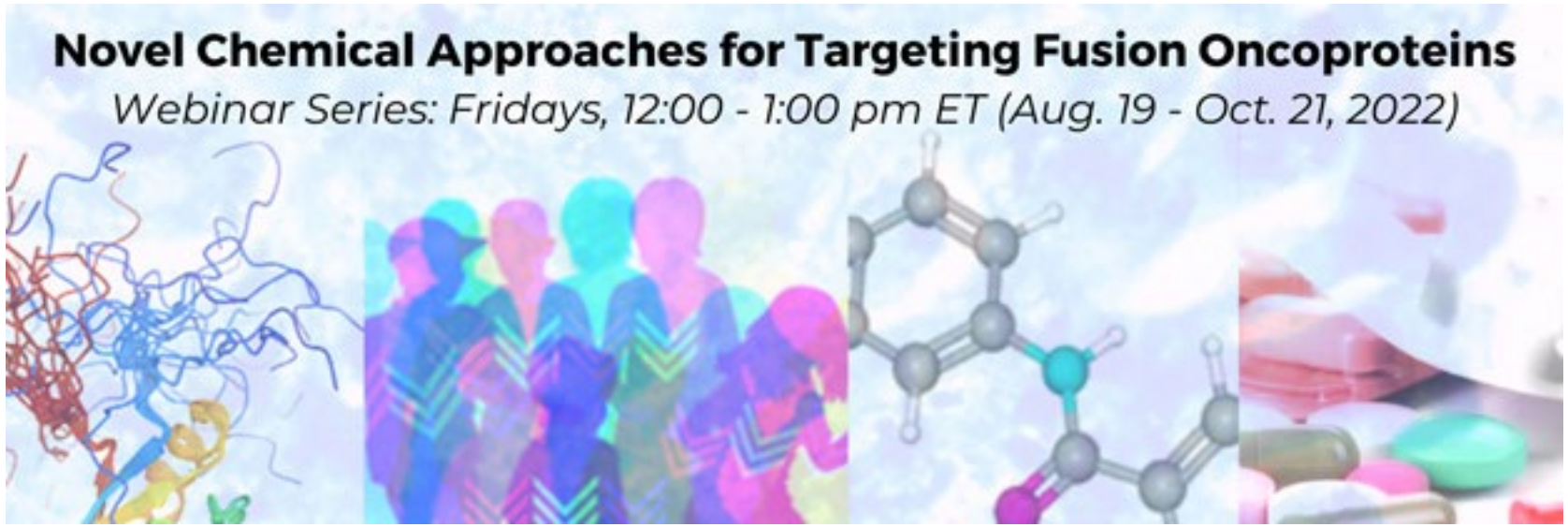




Publicly Available Research Resources





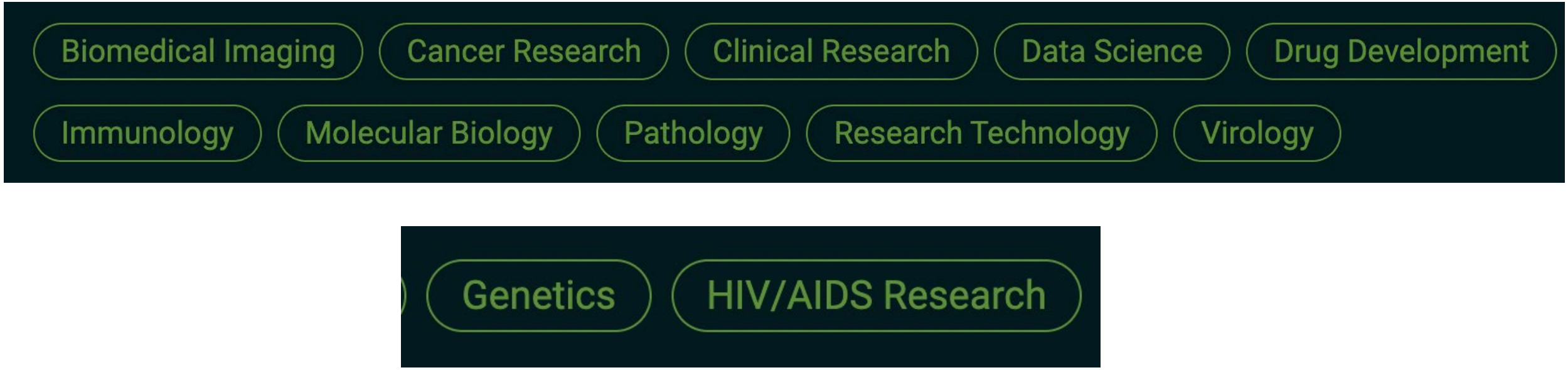


https://dctd.cancer.gov/ResearchResources/default.htm

Publicly Available Research Resources

Frederic National Lab for Cancer Research

The only national laboratory dedicated to the biomedical sciences



Funding Opportunities

https://dctd.cancer.gov/FundingPartnerships/PAsRFAs.htm

Workforce and Career Development

Diversity Career Development Program:

NCI is committed to excellence in science and to fostering a diverse and inclusive workforce. The Diversity Career Development Program (DCDP) seeks to empower talented intramural postdoctoral trainees, including but not limited to those from underrepresented groups in biomedical research, to achieve their full potential at NCI.

NCI Transition Career Development Award to Promote Diversity (K22 Clinical Trial Required)
https://grants.nih.gov/grants/guide/pa-files/PAR-21-302.html

NCI Equity and Inclusion Program

Funding Opportunities to promote workforce diversity

https://www.cancer.gov/research/key-initiatives/nci-equity-inclusion-program/funding

DCTD Newsletters:

https://dctd.cancer.gov/NewsEvents/News-2022.htm

QUESTION AND ANSWERS

Professional Advancement Virtual Engagement Series

Division Priorities, Funding Opportunities, and Strategies for Applying for Grants

Anu Sharman, Ph.D.

Program Director, Division of Cancer Biology (DCB), NCI

NIH NATIONAL CANCER INSTITUTE

Division of Cancer Biology: Program Priorities

Anu Sharman , Ph.D.

NIH NATIONAL CANCER INSTITUTE

September 23, 2022

1. *Role of DCB?*
2. *Cancer research supported by DCB*
3. *Emerging topics in cancer biology*

Divisions within NCI

DCCPS: Division of Cancer Control and Population Sciences

DCP: Division of Cancer Prevention

DCTD: Division of Cancer Treatment and Diagnosis

DCB: Division of Cancer Treatment and Diagnosis

DEA: Division of Extramural Activities

Division of Cancer Biology

- Provides funds for research that investigates basic cancer biology
- Basic cancer biology research focuses on:
  - Mechanisms of cell growth
  - Transformation of normal cells to cancer cells
  - Metastasis of cancer cells
- The research provides:
  - Building blocks to new treatments
  - Clinical trials
  - Improved understanding of cancer

Division of Cancer Biology

- Scientific management of ~2000 grants/year
- Facilitates investigator-initiated research
- Conducts workshops and symposiums
- Establishes program priorities
- Communicates with scientists
- Reports on scientific progress

Division of Cancer Biology

Director: Dan Gallahan

Office of the Director

Deputy: Shannon Hughes

Cancer Immunology, Hematology, and Etiology

Chief: Kevin Howcroft

Structural Biology & Molecular Applications

Chief: Jennifer Couch

DNA & Chromosomal Aberrations

Chief: Judy Mietz

Cancer Cell Biology

Chief: Rihab Yassin

Tumor Biology & Microenvironment

Chief: Jeff Hildesheim

Tumor Metastasis

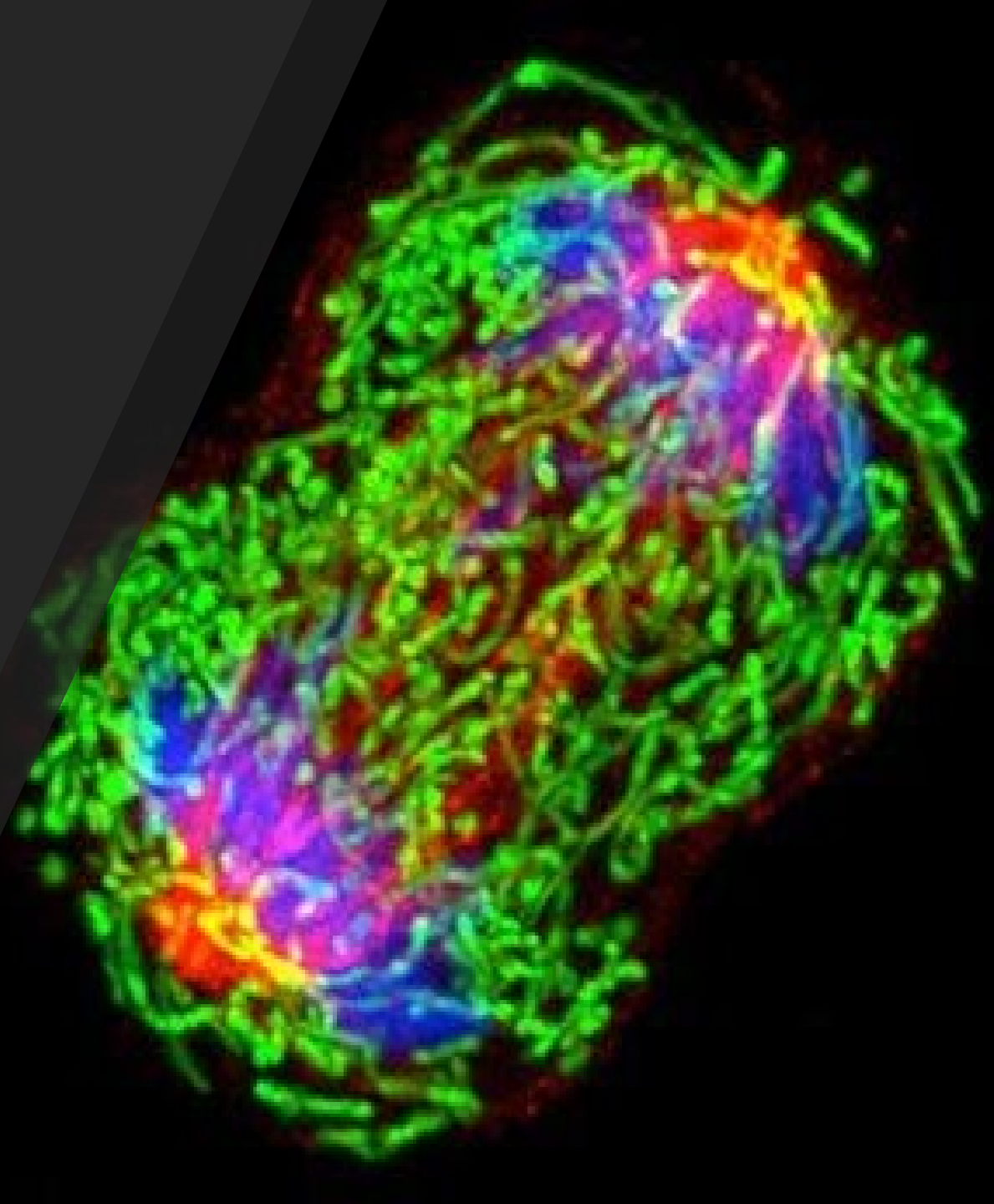
Chief: Joanna Watson

Cancer Immunology, Hematology, and Etiology Research

- Anti-tumor Immunity
- B and T Lymphoid Malignancies
- Hematopoiesis and Myeloid Malignancies
- Viral Carcinogenesis
- Bacterial Carcinogenesis and the Role of the Microbiome
- Host Predisposing States

Cancer Cell Biology Research

- Cancer Cell Metabolism
- Cancer Cell Stress Responses
- Organelle Biology
- Cancer Cell Cycle Control
- Post-transcriptional Regulations Influencing Cancer
- Basic Mechanisms of Cell Transformation
- Biospecimen Resources to Support Cancer Biology Research

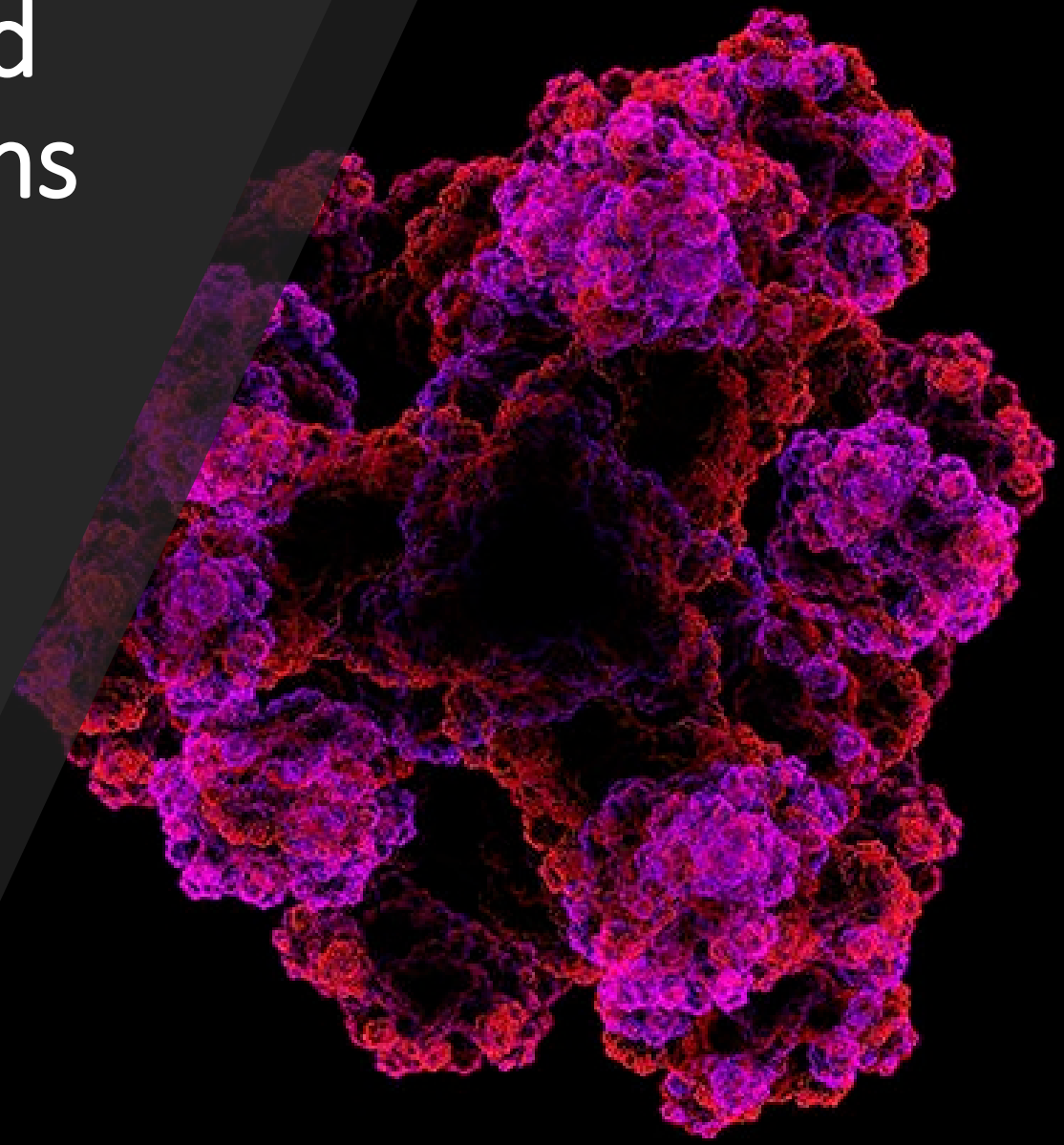


DNA and Chromosome Aberrations Research

- Gene Regulation and Epigenetics
- Mechanisms of Genomic Instability
- Cancer Genetics
- Mechanisms of DNA Damage and Repair
- Mechanisms of DNA Damage Signaling
- Chemical and Physical Carcinogenesis

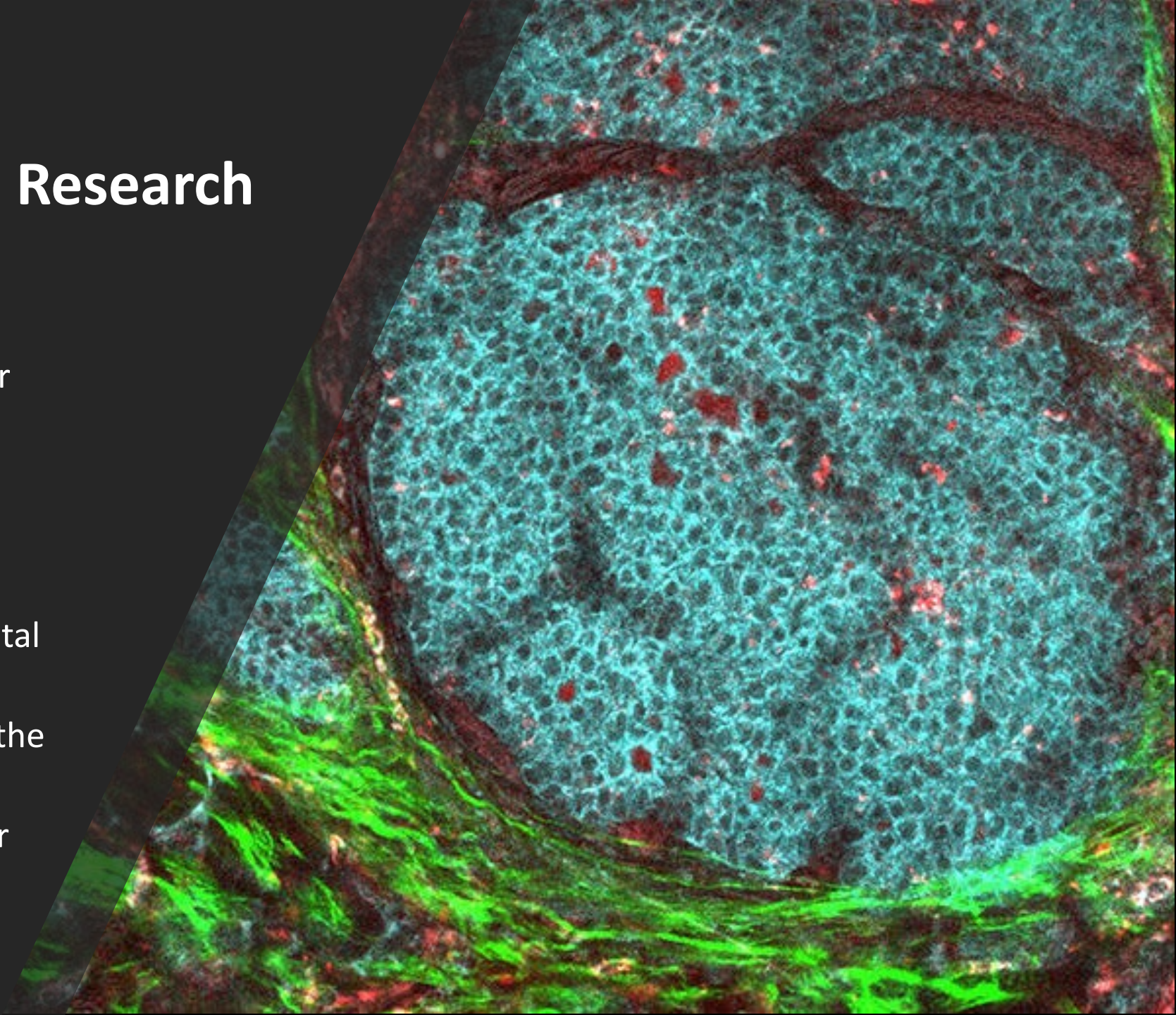
Structural Biology and Molecular Applications

- Structural and Biophysical Biology
- Molecular and Cellular Applications
- Bioinformatics and Data Science
- Computational Biology, Mathematical Modeling, and Systems Biology
- Bioengineering and Biotechnology



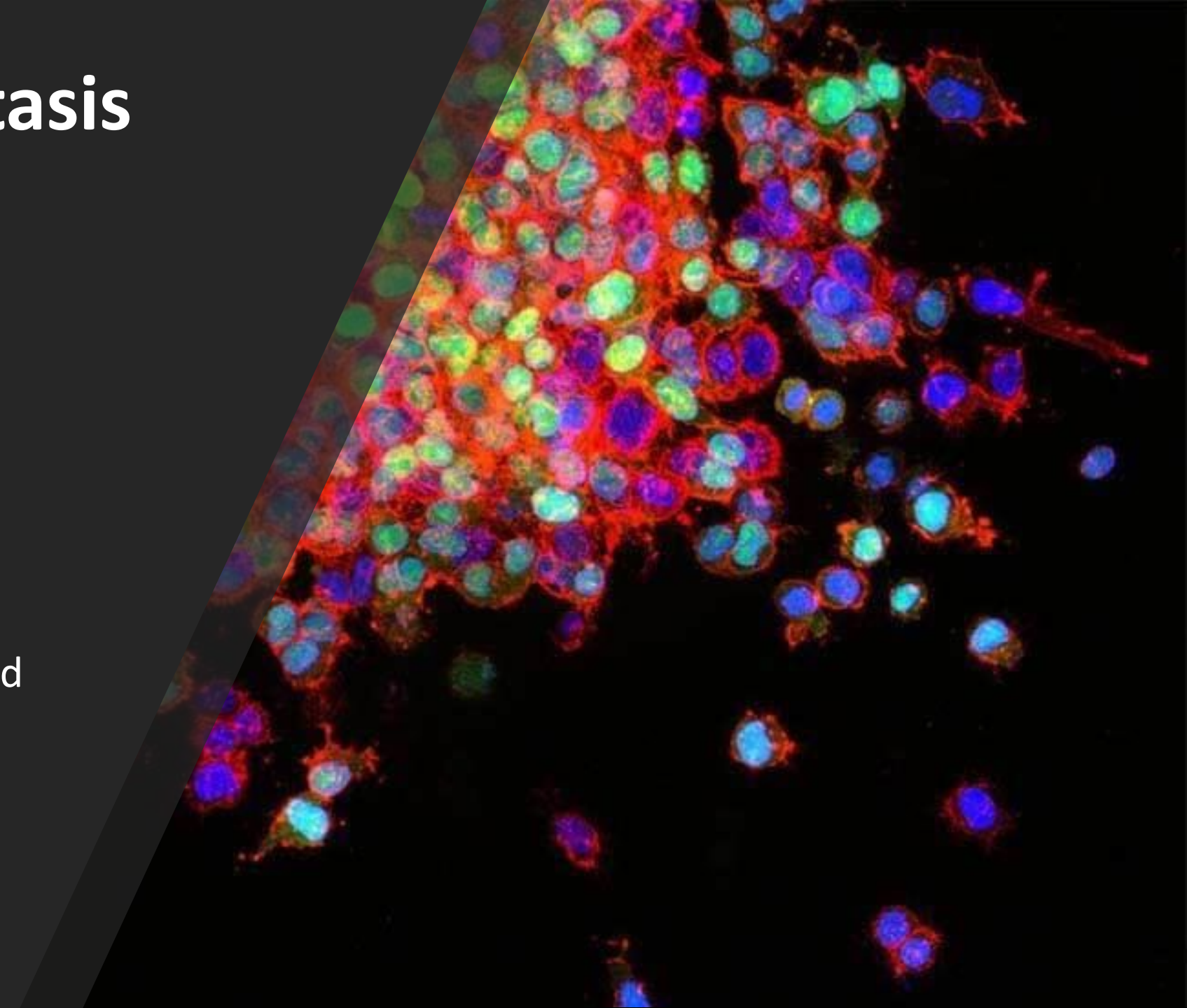
Tumor Biology and Microenvironment Research

- Tumor and Stromal Cellular Interactions
- Extracellular Matrix and Tumor Dynamics
- Angiogenesis and Lymphangiogenesis
- Tumor Cell Plasticity
- Cellular and Microenvironmental Aging in Tumors
- Metabolic Reprogramming of the Tumor Microenvironment
- Hormonal Signaling and Tumor Progression
- Glycobiology



Tumor Metastasis Research

- Cellular Invasion and Migration
- Intravasation and Extravasation
- Early Metastatic Dissemination
- The Metastatic Niche and Colonization
- Metastatic Dormancy



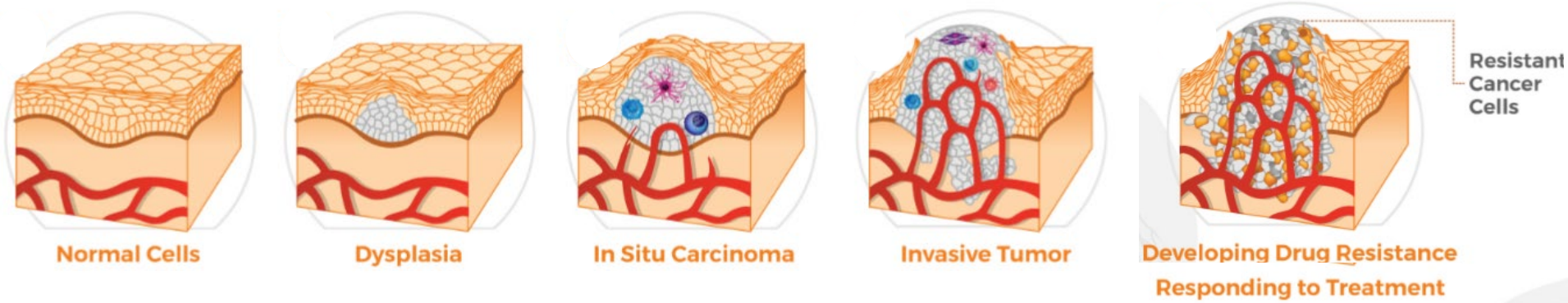
DCB Supported Research Programs

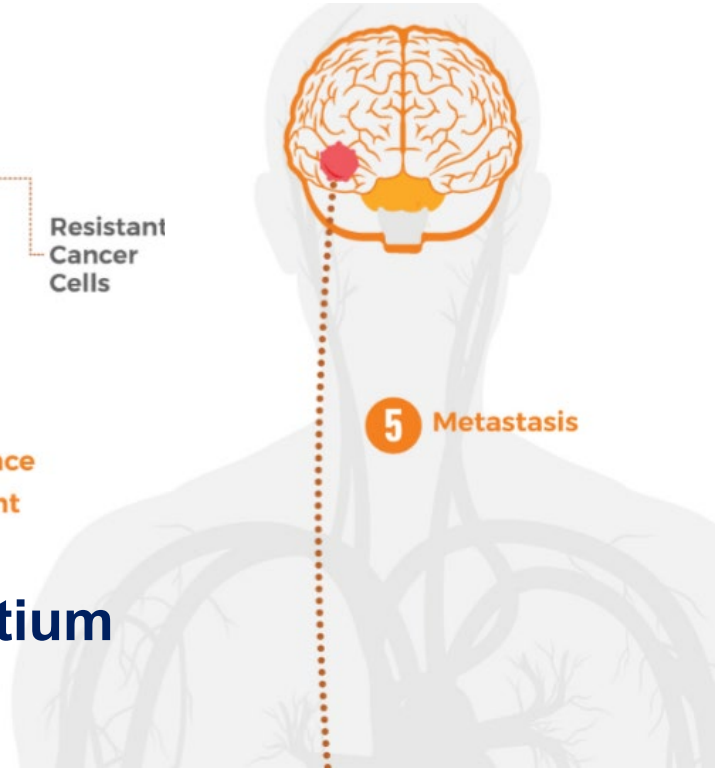
- Acquired Resistance to Therapy Network (ARTNet)
- Alliance of Glycobiologists for Cancer Research
- Barrett's Esophagus Translational Research Network (BETRNet)
- Cancer Systems Biology Consortium (CSBC)
- Cancer Tissue Engineering Collaborative (TEC)
- Cellular Cancer Biology Imaging Research (CCBIR)
- Metastasis Research Network (MetNet)
- Onco-Aging Consortium (OAC)
- Oncology Models Forum
- Pancreatic Ductal Adenocarcinoma (PDAC) Stromal Reprogramming Consortium
- Patient-Derived Models of Cancer (PDMC)
- Physical Sciences - Oncology Network (PS-ON)
- Program on the Origins of Gastroesophageal Cancers
- Translational and Basic Science Research in Early Lesions (TBEL)

DCB Programs: Interdisciplinary team science driving discovery

Cancer Systems Biology Consortium (CSBC) & Physical Sciences – Oncology Network (PS

Acquired Resistance to Therapy Network (ARTNet)





Origins of Gastroesophageal Cancers

PDAC Stromal Reprogramming Consortium (PRSC)

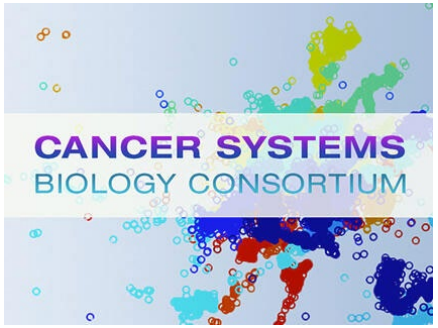
OncoAging Consortium

Translational and Basic Science Research in Early Lesions (TBEL)

Metastasis Research Network (MetNet)

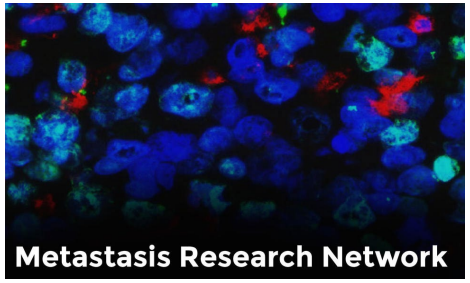
Graphics modified from NCI OCPL

Examples of ongoing DCB Programs that support collaborative, multidisciplinary research



Cancer Systems Biology Consortium (CSBC): Using systems biology approaches to advance the understanding of mechanisms that underlie fundamental processes in cancer

Cancer Cell Biology Imaging Research (CCBIR) Program: Bringing together technology developers and cancer biologists for designing and testing imaging technologies at the cellular and organ scales driven by questions in cancer biology



Metastasis Research Network (MetNet): Using systems level approaches to understand the spectrum of complex metastatic processes

DCB Research Resources

The NCI Resources for Researchers is a directory of NCI-supported tools and services for cancer researchers. Most resources are free of cost and available to anyone.

- The NCI Mouse Repository
- GM/CA X-ray Beamline
- The International Registry of Werner Syndrome
- NIH MHC Tetramer Program
- Reagents Available to NCI-funded Researchers
- Biomedical Citizen Science and Crowdsourcing: The NIH Citizen Science Working Group

https://www.cancer.gov/about-nci/organization/dcb/researcher-resources

New Grantee Workshop to Foster Careers of New Investigators

- Understand NIH/NCI organization and processes;
- Understand responsibilities as recipients of federal funding;
- Optimize interactions with extramural staff;
- Learn of available resources and opportunities to expand the investigator scientific enterprise.
- Active program since 2001
- Served over 1500 NI

DIVISION OF CANCER BIOLOGY

NEW GRANTEE WORKSHOP

Helping new grantees transition to established investigators since 2001!

Basic Cancer Health Disparities Research Grants (R03/R21/R01)

Important collaboration between DCB, DCP, and CRCHD

Science: Mechanistic studies that investigate biological/genetic basis of Cancer health disparities

Eligibility: Open to any qualified researcher

Research Project: Basic cancer disparities research, focus on racial/ethnic disparities

Emerging topics in cancer biology

Supporting emerging areas of cancer biology research

DCB plays an important role in:

- Recognizing underdeveloped, underfunded, or emerging areas of science. Mainly through staff experience, portfolio analysis, and informal discussion with extramural and intramural scientists.
- Convening public scientific workshops, think tanks, and symposia. These events aim to engage a diversity of perspectives and career stages.
- Building relationships across NCI, NIH, and with other funding agencies and foundations.

Extensive internal discussions and vetting are paramount to moving forward initiatives with the potential for high impact.

Early events in tumorigenesis

Cancer develops in unique niches throughout the body over varying time scales. This evolution is driven by intrinsic and extrinsic factors. It is critical to understand the biology underlying the earliest events to prevent, detect, diagnosis and treat early cancers.

- When is a cell transformed and not responsive to normal controls?
- What are the earliest changes? What role does the stroma or macroenvironment play? What is the reciprocal relationship between tumor initiating cells and the immune system?
- How universal are these early (non-genetic) events?

Keys to understanding:
Defining the pre-cancer niche, principles of cell competition, new experimental and computational models of early disease

Cancer Dynamics

Cancers adapt, evade, grow, and metastasize by employing dynamic multi-scale molecular mechanisms. Cumulatively, these mechanisms manifest in cell states that exhibit significant plasticity. Understanding cell states changes over time and how to manipulate state dynamics can lead to better treatment strategies.

- How do genetics impact cell state dynamics, cell fate decisions, and cellular plasticity? Epigenetics?
- How do combinatorial post-translational modifications contribute to cell state dynamics?
- What is the contribution of host physiology and vice versa?

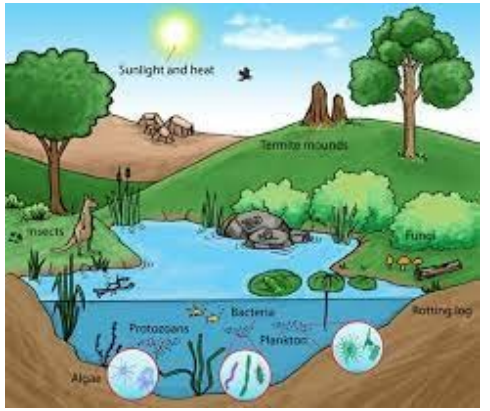
Keys to understanding:
New methods for lineage tracing, dynamic cellular imaging, and data integration.
Systematic study of cell processes (ex. cell death, organelle communication and dynamics)

Interactions within the tumor ecosystem

Single cell biology is providing a cellular parts list for the development, metastasis, and treatment of cancer. Understanding how the different cells within the tumor ecosystem cooperate to drive tumor phenotypes can pave the way to better cancer interception, detection, and therapy.

- How do emergent behaviors or structures driven by cell-cell interaction promote tumorigenesis?
- How do rare cell types, such as tumor-immune hybrid cells or giant polyploid cells, contribute to tumor progression?
- What interactions are common across tumor types?

Keys to understanding:
Engineered tumor mimetics to test specific hypotheses
Data integration and visualization methods
New label-free technologies



Disparate outcomes in cancer

Differences in cancer mortality are driven by many factors, including tumor biology. Epidemiological studies have demonstrated that co-morbidities, such as obesity, liver disease, and chronic inflammation, can contribute to disparate outcomes in cancer. Cancer outcomes also vary according to ancestry, ethnicity, and sex.

- To what extent does the intersectional biology of co-morbidities account for disparate outcomes in cancer?
- What is the role of sexual dimorphism in cancer biology?
- Can differences in tumor biology and the microenvironment across ancestral groups drive development of better therapies?

Keys to understanding:
Experimental model systems representative of the patient population
Collaborations across disciplines and disease states

Useful Links!

Funding Opportunities for Research – Basic Cancer Biology
https://www.cancer.gov/about-nci/organization/dcb/funding/opportunities

Application Process (Overview) Insider's Guide to Peer Review for Applicants:
http://www.csr.nih.gov/applicantresources/insider

Help Your Application Get to the Right Study Section:
http://www.csr.nih.gov

NIH's Resubmission Policy:
http://grants.nih.gov/grants/policy/resubmission_q&a.htm

What is the NIH Guide Notice? (Communicates changes in policy)
https://grants.nih.gov/policy/notices.htm

DCB is on Twitter!
Follow @NCICancerBio for the latest updates

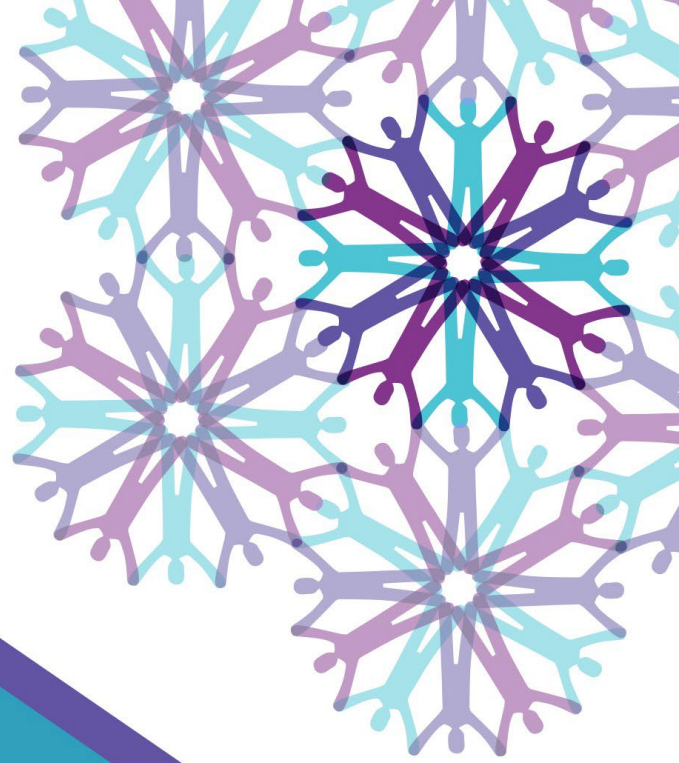
NATIONAL CANCER INSTITUTE

www.cancer.gov

www.cancer.gov/espanol

QUESTION AND ANSWERS

Thank you!



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cancer.gov/crchd