

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

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Professional Advancement Virtual Engagement Series

October 26, 2022

Outline

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



NATIONAL CANCER INSTITUTE

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

THE CANCER CONTROL CONTINUUM

FOCUS

ETIOLOGY

PREVENTION

DETECTION

DIAGNOSIS

TREATMENT

SURVIVORSHIP

CROSSCUTTING AREAS

COMMUNICATIONS • SURVEILLANCE • HEALTH DISPARITIES • DECISION MAKING •
DISSEMINATION OF EVIDENCE-BASED INTERVENTIONS • HEALTH CARE DELIVERY • EPIDEMIOLOGY • MEASUREMENT

Adapted from David B. Abrams, Brown University School of Medicine



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* –

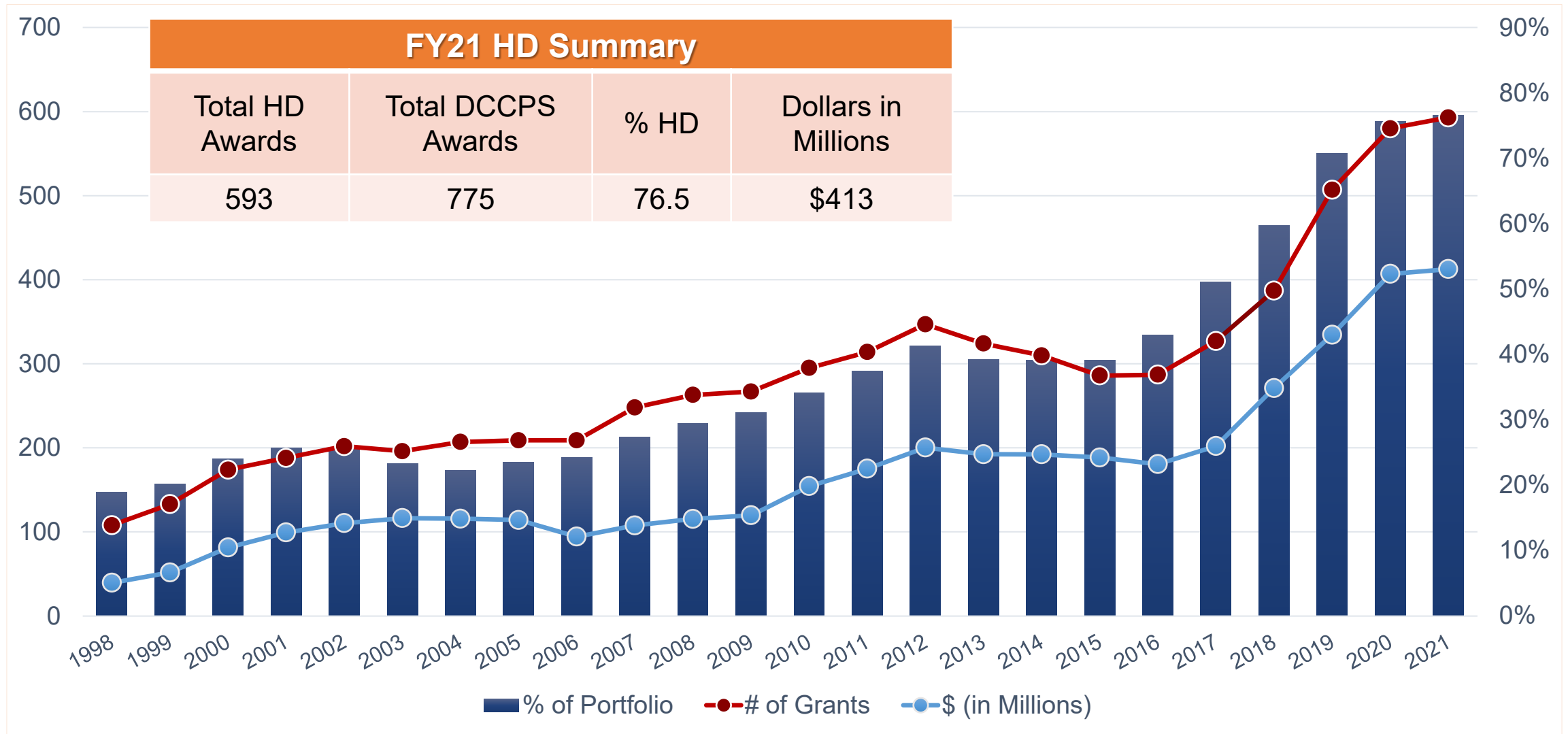
that contribute to these disparities across the cancer control continuum and throughout the human lifespan

Health 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**

Differences in the incidence, prevalence, mortality and burden of cancer and related adverse health conditions that exist among specific population groups



Longitudinal Cohort Studies



Social and Behavioral Intervention Research

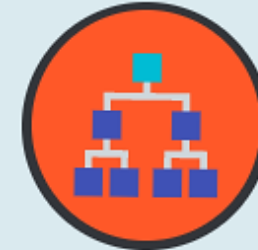
Includes populations characterized by **gender, age, race, ethnicity, education, income, social class, disability, geographic location, or sexual orientation**



'Omics Research



Health Care Delivery Research



Epidemiological Studies

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

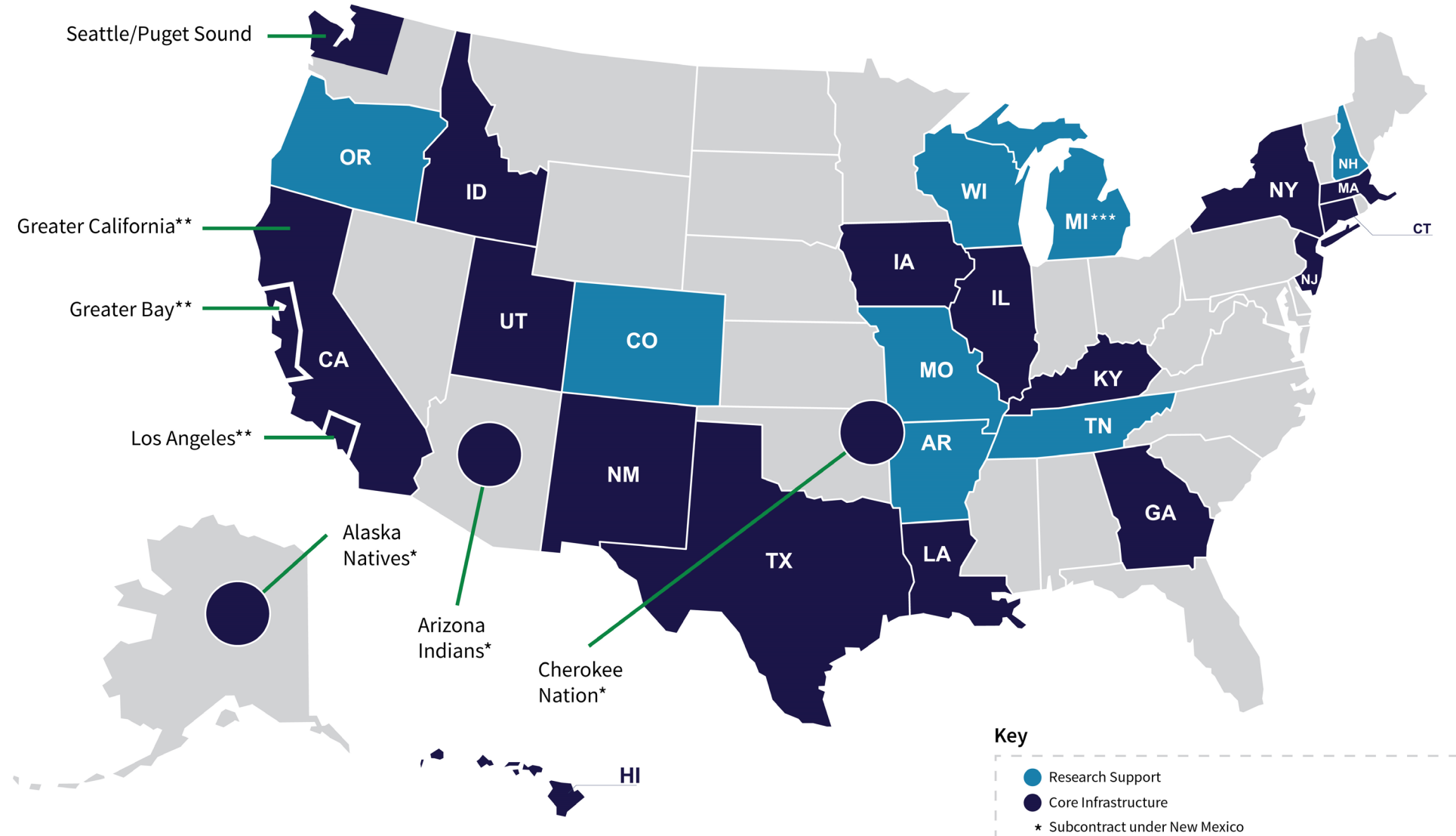
In order to represent real world data at the population level

- 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

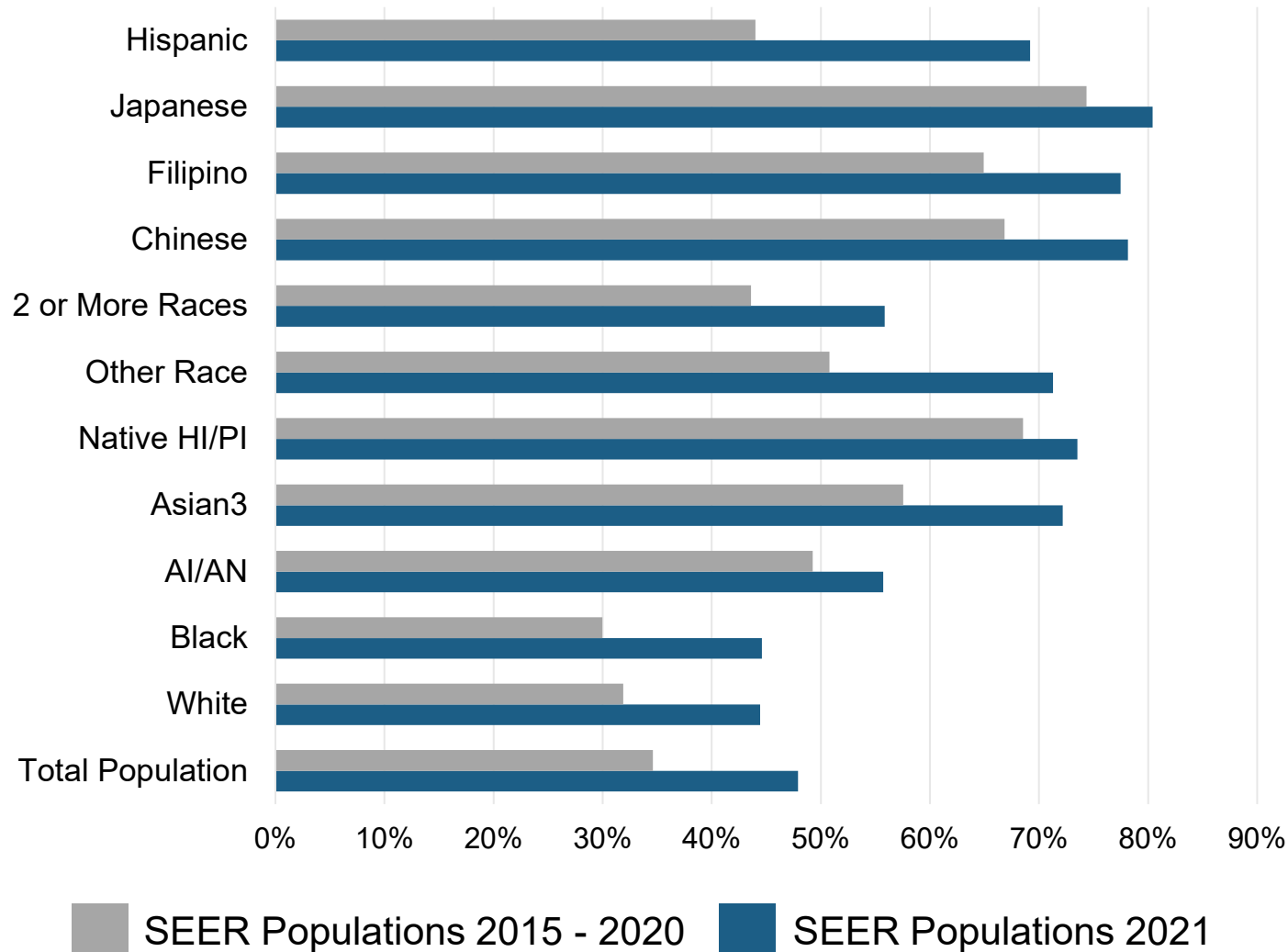
Map of SEER Program June 1, 2021

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

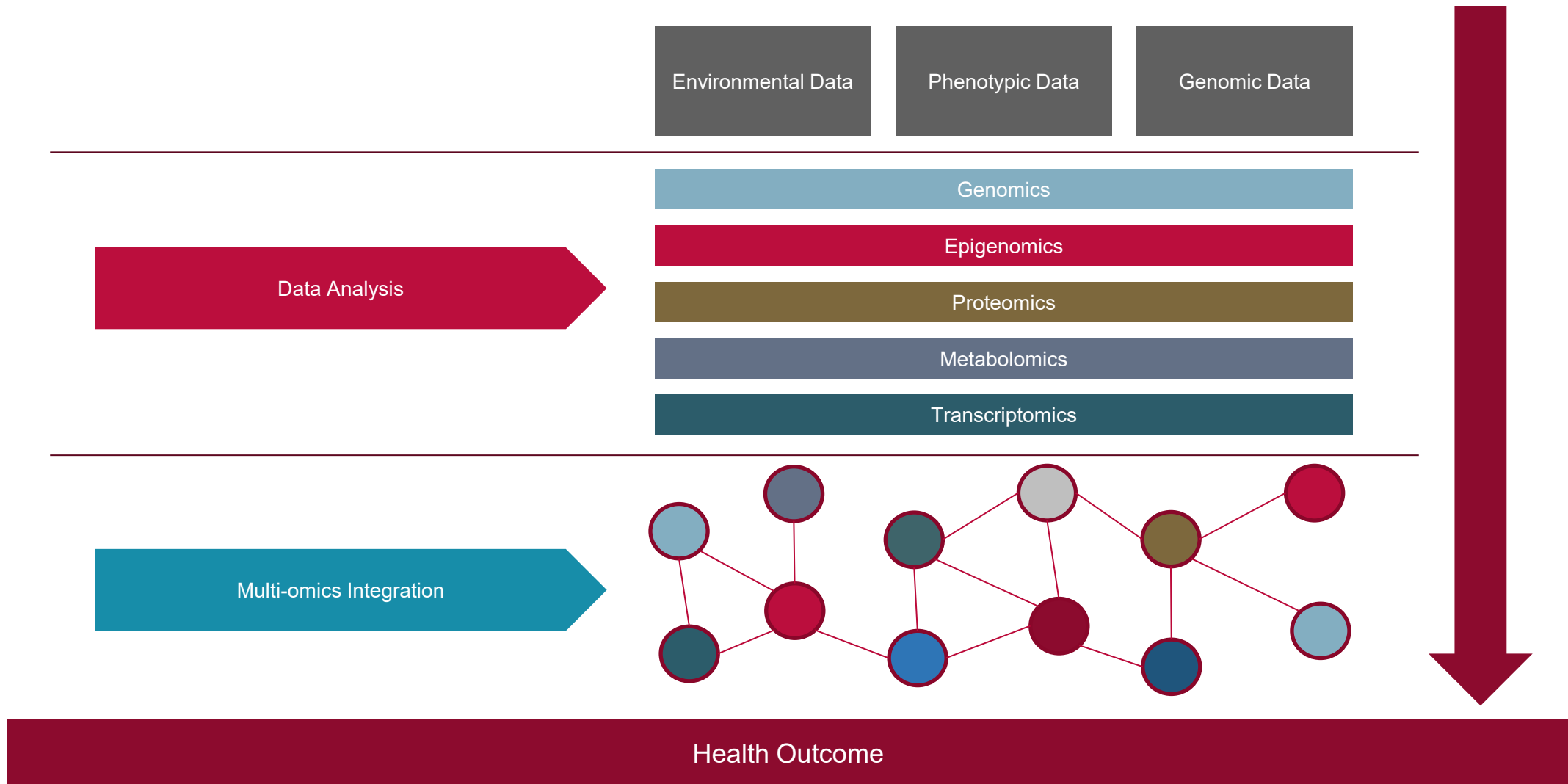
[Cancer Causes & Control](#) (2020) 31:13–23
<https://doi.org/10.1007/s10552-019-01254-3>

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. Ochoa¹ · Gabriela Toledo¹ · Soo-In Bang³ · Ann S. Hamilton¹ · Xianglin L. Du⁴

Expertise at all steps in the precision health pipeline



NCI Cancer Epidemiology Cohort Resources



Advancing Collaborative Cancer Epidemiology Research

61
Epidemiology
Cohorts

>7
Million
Participants

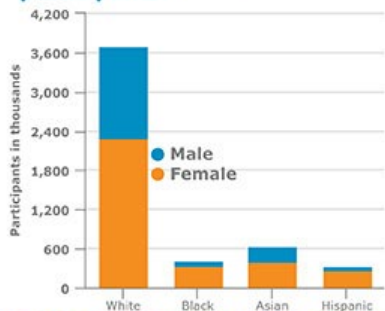
Global
North America* (37 cohorts)
Asia (7 cohorts)
Europe (16 cohorts)
Australia* (1 cohort)
* Two cohorts include study participants from both North America and Australia.

Biospecimens

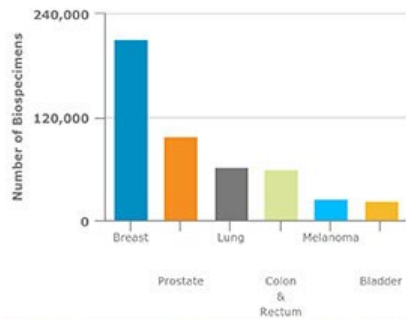
- Plasma/Serum
- Saliva/Buccal Cells
- Urine
- Buffy Coat/Whole Blood
- Tissues
- Nails

have been collected on approximately 2 million individuals

Race & gender composition of participants:



Major cancer sites:



Cohort Consortium members participate in approximately:

50 **Projects** which have made scientific discoveries about cancer risk factors and technical advances in cohort methodologies

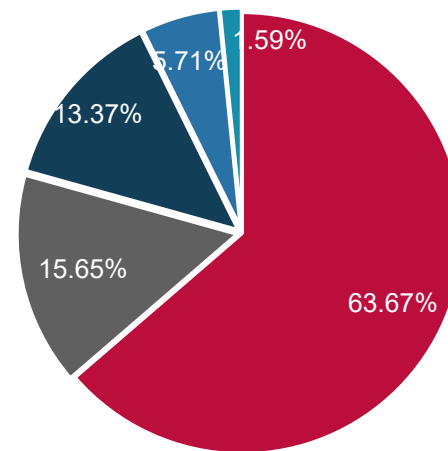
Eligibility for membership:

- Cohorts must have...
- ✓ 10,000 participants to study cancer incidents
 - ✓ 2,000 participants to study cancer-related outcomes among those diagnosed with cancer
 - ✓ Commitment to scientific collaborations by participating in pooling studies

Updated 04/2021

To join or collaborate, contact Rachel Hanisch, Ph.D. at NCICohortConsortium@mail.nih.gov.

Racial/Ethnic Distribution




NCI Funded Cancer Epidemiology Cohorts (N>1.1M)

- Whites
- Blacks
- Asians
- Hispanics
- AI/AN/NH/PI



The Cancer Epidemiology Descriptive Cohort Database (CEDCD) contains descriptive information about cohort studies that follow groups of persons over time for cancer incidence, mortality, and other health outcomes. The CEDCD is a searchable database that contains general study information (e.g., eligibility criteria and size), the type of data collected at baseline, cancer sites, number of participants diagnosed with cancer, and biospecimen information. All data included in this database are aggregated for each cohort; there are no individual level data. The goal of the CEDCD is to facilitate collaboration and highlight the opportunities for research within existing cohort studies.



Search Cohorts



Enrollment Counts

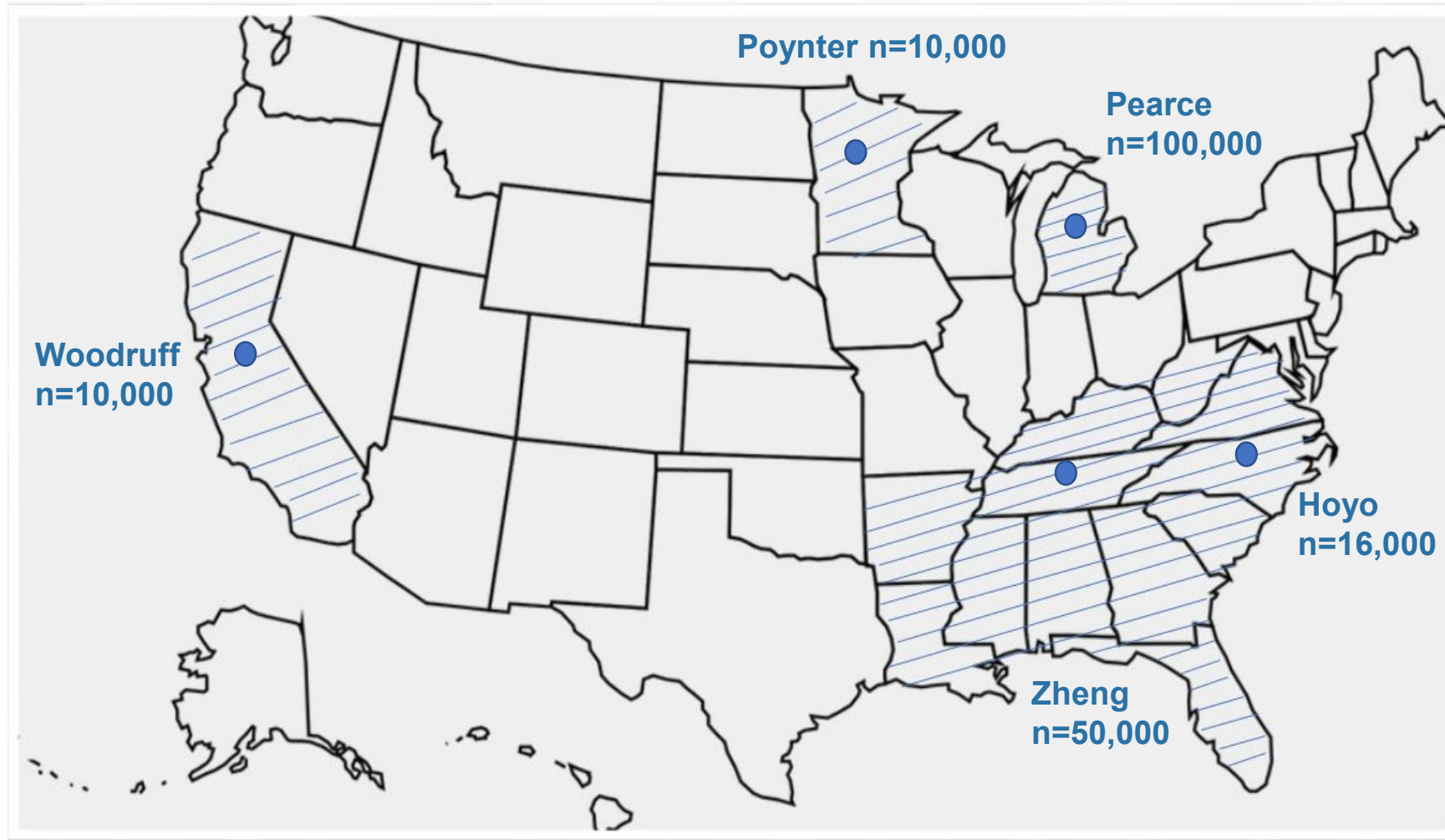


Cancer Counts



Biospecimen Counts

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

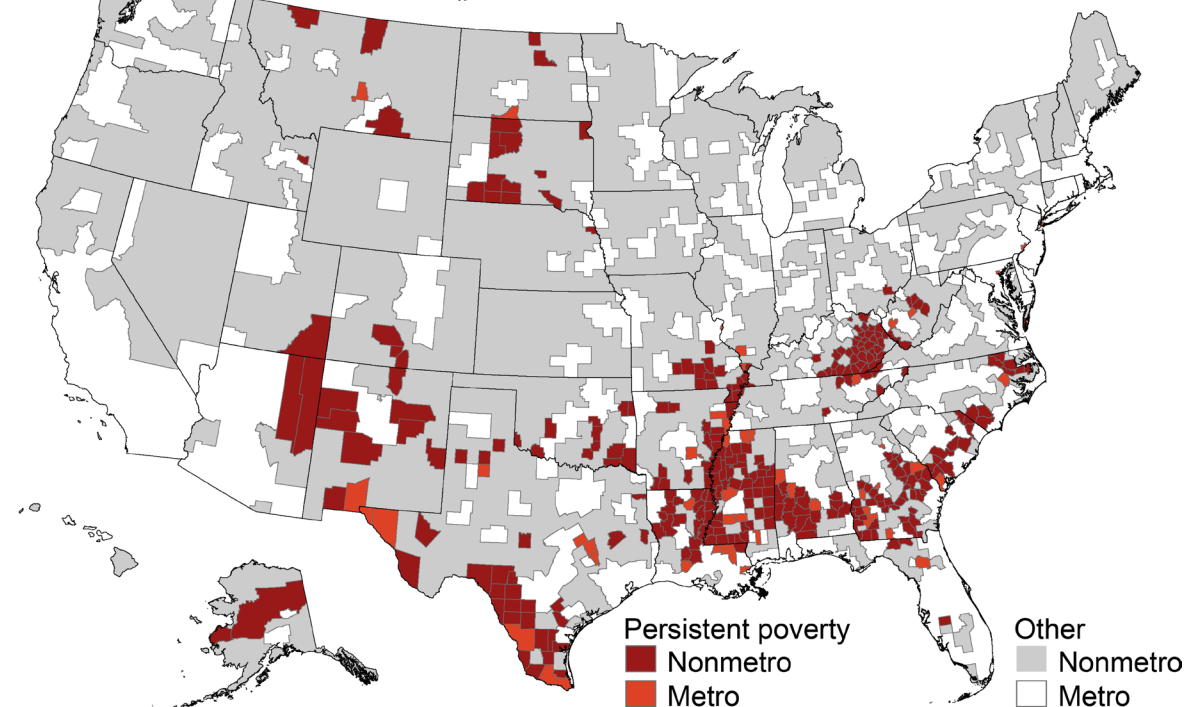
353 counties (11.2%) across 30 states

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/>

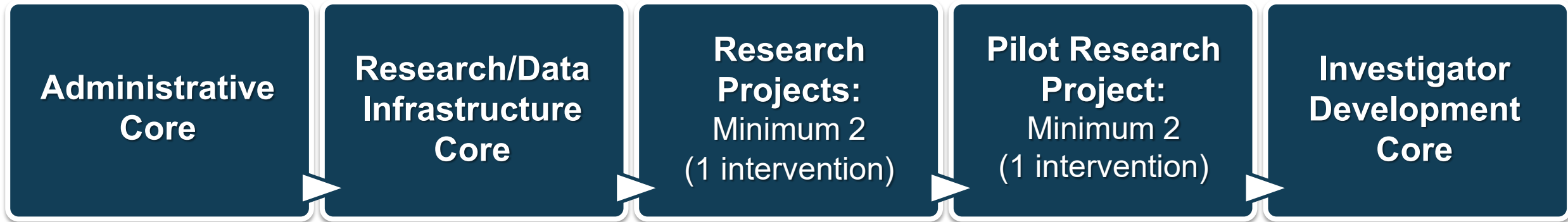
Persistent poverty counties, 2015 edition



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

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



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

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](#)



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