

**All
of Us**
RESEARCH PROGRAM



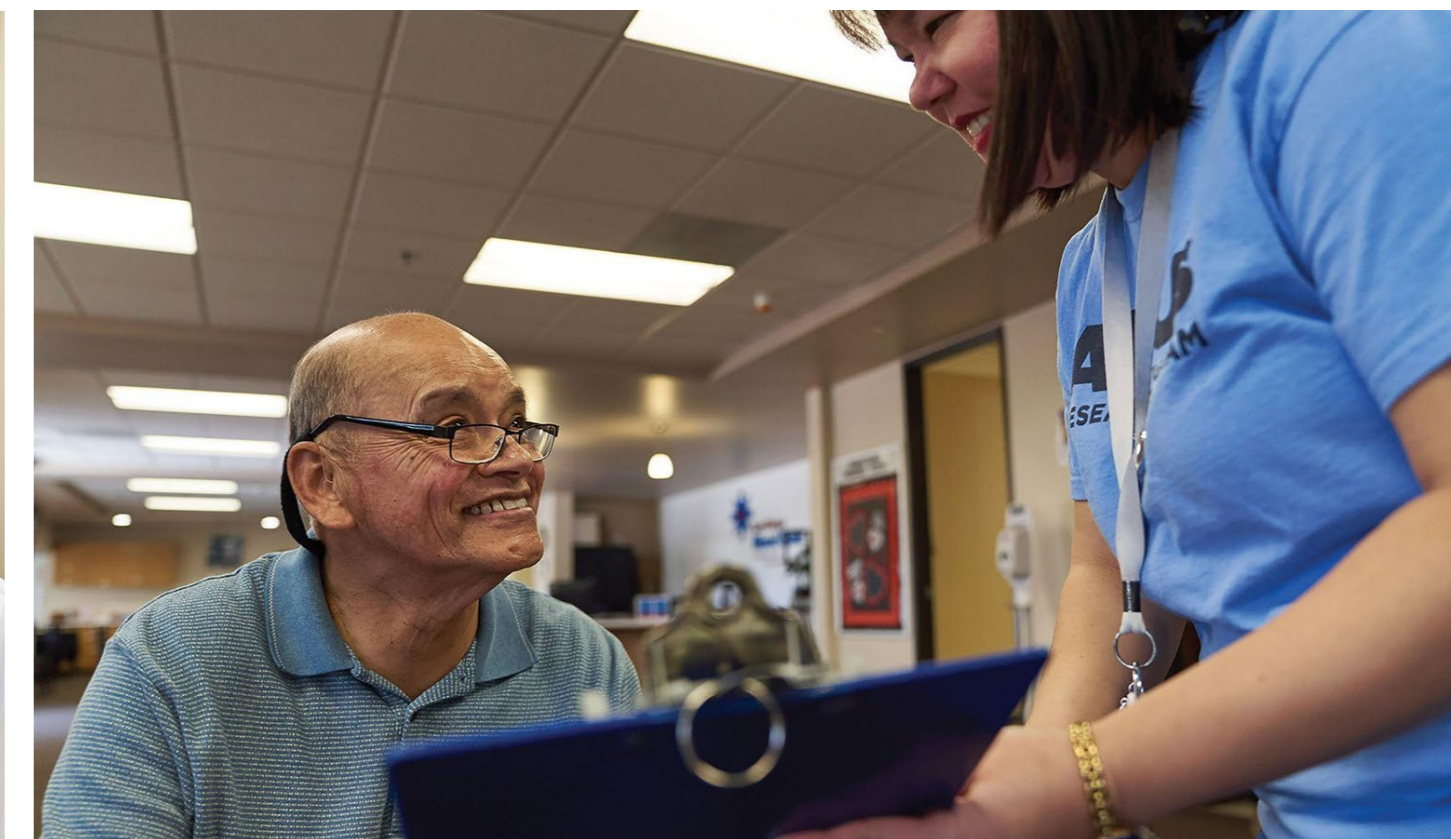
The NIH *All of Us* Research Program Advancing Health Research Through Community and Researcher Engagement

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September 8, 2023

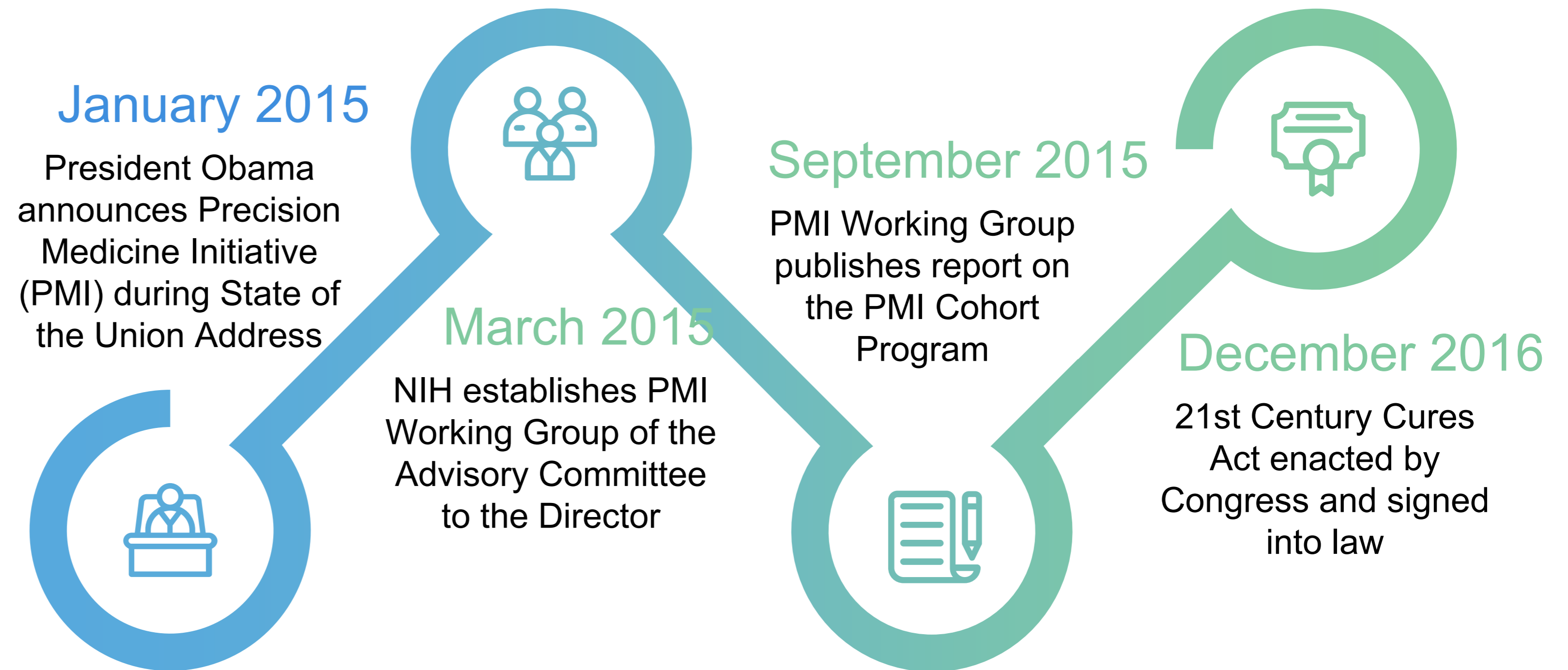
What We Hope to Accomplish Today

1. **INTRODUCE** the *All of Us* Research Program.
2. **DISCUSS** the importance of advancing genomics through community engagement by including populations underrepresented in biomedical research (UBR).
3. **HIGHLIGHT** opportunities for researchers and PACHE grantees.



The NIH *All of Us* Research Program

The *All of Us* Research Program is a historic, longitudinal effort to **gather data from one million or more people** living in the United States **to accelerate research and improve health.**



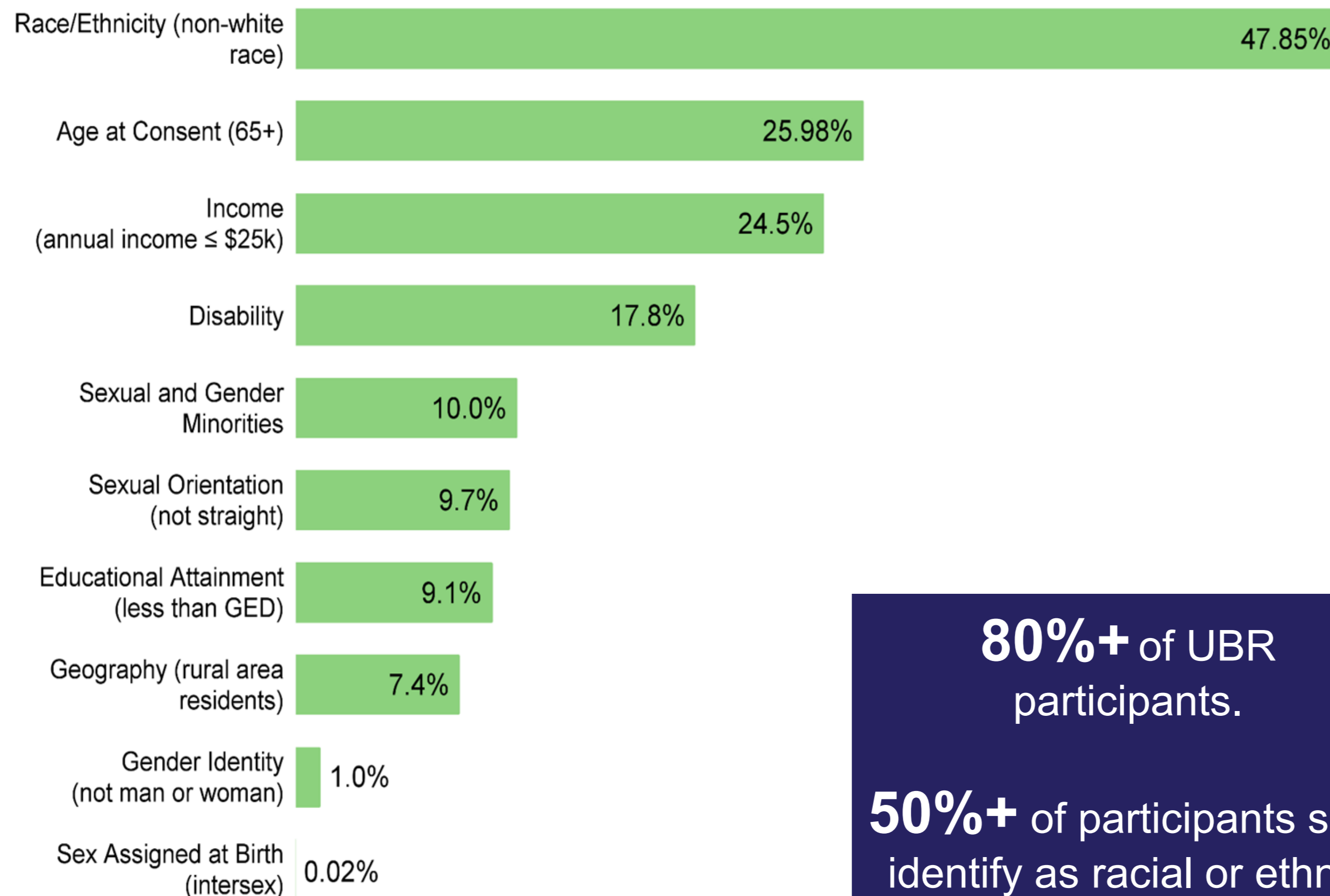
“Tonight I’m launching a new Precision Medicine Initiative to bring us closer to curing diseases like cancer and diabetes. And to give us all access to the personalized information we need to keep ourselves and our families healthier.”

President Barack Obama
State of the Union Address, January 20, 2015



All of Us Participant Diversity

UBR Category



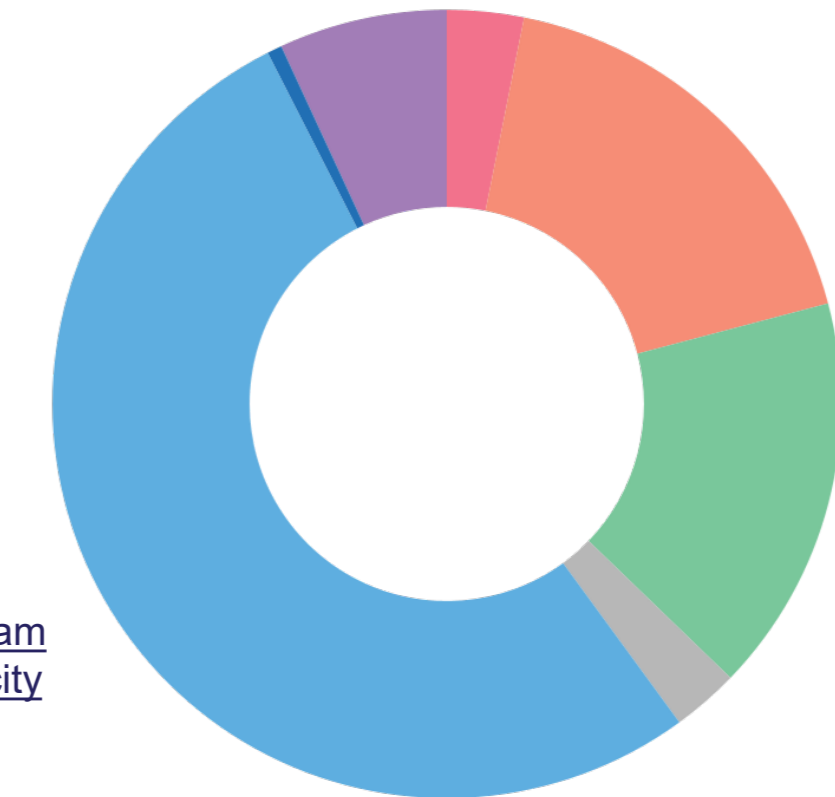
80%+ of UBR participants.

50%+ of participants self-identify as racial or ethnic minorities.

Source: [All of Us Research Program Data Snapshots](#) (Updated July, 2023)

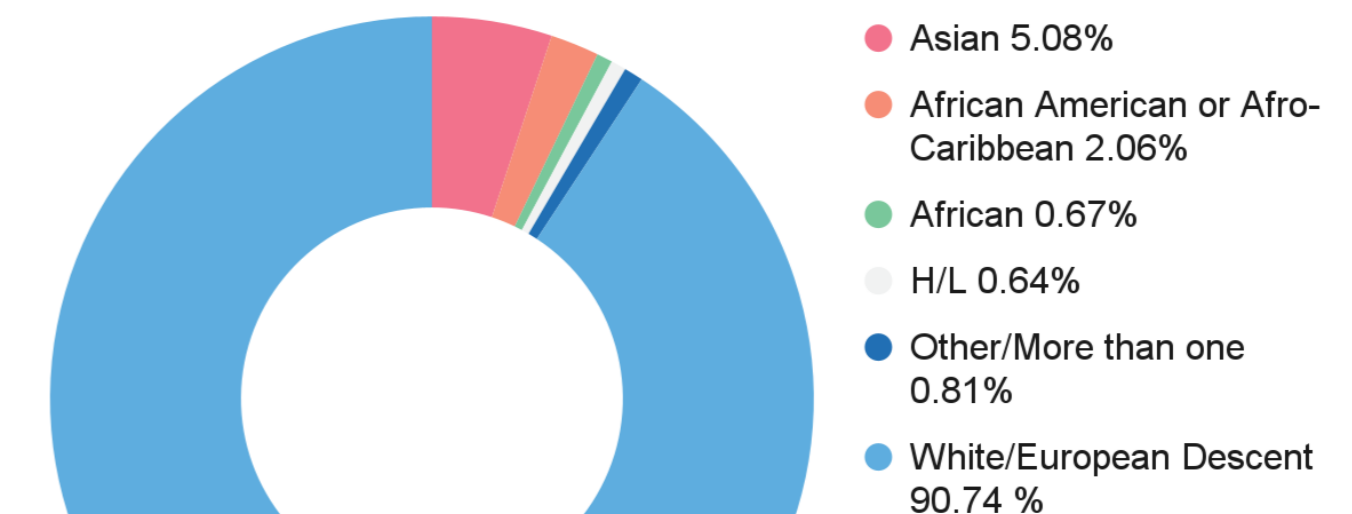
All of Us Research Program

- Asian 3.10%
- BAA 17.5%
- H/L 16.1%
- MENA, NHPI, or None fully describe me 2.7%
- White 51.8%
- Prefer not to say 0.60%
- More than one race 6.8%



Source: [All of Us Research Program Data Snapshots, Race and Ethnicity](#) (Updated July 3, 2023)

Other Genomic Studies



Source: CY2022 [Global Genome Wide Association Studies \(GWAS\)](#) (Updated June 14, 2023)

Data Roadmap

In the coming years, *All of Us* expects to enroll **at least one million people** from across the United States, adding new data and data types to the Workbench.

Data availability and access timelines are estimates and subject to change.



<https://allof-us.org/DataRoadmap>

	Available end of 2022	Early 2023 additions	2023 and beyond
Electronic Health Records (EHRs)	<ul style="list-style-type: none"> EHRs >	
Surveys	<ul style="list-style-type: none"> The Basics Overall Health Lifestyle Health Care Access and Utilization Personal and Family Medical History Social Determinants of Health COVID-19 Participant Experience (COPE) COVID-19 Vaccines Minute Surveys 1-3 	<ul style="list-style-type: none"> Combined Personal and Family Health History COVID-19 Vaccines Minute Survey 4 	<ul style="list-style-type: none"> Life Functioning
Physical Measurements	<ul style="list-style-type: none"> Physical Measurements >	<ul style="list-style-type: none"> Participant-reported height and weight
Genomics	<ul style="list-style-type: none"> 165K+ genotyping arrays 98K+ whole genome sequences (WGS) 	<ul style="list-style-type: none"> 245K+ WGS 312K+ Arrays CRAM files 1,000 long-read sequences >
Data Linkages	<ul style="list-style-type: none"> American Community Survey (ACS) 3-digit zip code >	<ul style="list-style-type: none"> ACS 5-digit zip code
Digital Health Technologies	Fitbit: <ul style="list-style-type: none"> Heart rate by zone summary and minute-level Activity (daily summary) Activity intraday steps (minute-level) 	<ul style="list-style-type: none"> Fitbit sleep data 	<ul style="list-style-type: none"> Fitbit device data Vital measurements Apple HealthKit activity data
Assays	<ul style="list-style-type: none"> COVID-19 serology data >	
Ancillary Studies>		<ul style="list-style-type: none"> Exploring the Mind Pilot Nutrition for Precision Health (NPH) modules

Addressing Cancer Disparities & Intersectionality

All of Us Publications



222 Make use of *All of Us* Data



44 Published by the Program



61 Cancer-Focused Publications



>700 citations to 2019 *All of Us* marker paper



researchallofus.org/publications/

Data current as of Aug 25, 2023.

JAMA Network | **Open**

Original Investigation | Equity, Diversity, and Inclusion

Prevalence of 12 Common Health Conditions in Sexual and Gender Minority Participants in the All of Us Research Program

Nguyen K. Tran, PhD, MPH; Mitchell R. Lunn, MD, MAS; Claire E. Schulkey, PhD; Samantha Tesfaye, BA; Siddhartha Nambiar, PhD; Snigdhasu Chatterjee, PhD; Dawn Kozlowski, MEd; Paula Lozano, PhD; Fornessa T. Randal, MCRP; Yicklun Mo, MSW; Siya Qi, MS; Eli Hundertmark, BS; Chloe Eastburn, BA; Anthony T. Pho, PhD; Zubin Dastur, MS, MPH; Micah E. Lubensky, PhD; Annesa Flentje, PhD; Juno Obedin-Maliver, MD, MPH, MAS

PLOS ONE

RESEARCH ARTICLE

An Overview of Cancer in the First 315,000 *All of Us* Participants

Briseis Aschebrook-Kilfoy^{1,2,3*}, Paul Zakin^{1,2}, Andrew Craver^{1,2}, Sameep Shah^{1,2}, Muhammad G. Kibriya^{1,2}, Elizabeth Stepniak^{1,2}, Andrea Ramirez⁴, Cheryl Clark⁵, Elizabeth Cohn⁶, Lucila Ohno-Machado⁷, Mine Cicek⁸, Eric Boerwinkle⁹, Sheri D. Schully¹⁰, Stephen Mockrin¹¹, Kelly Gebo¹², Kelsey Mayo¹⁰, Francis Ratsimbazafy¹⁰, Alan Sanders¹³, Raj C. Shah¹⁴, Maria Argos¹⁵, Joyce Ho¹⁶, Karen Kim^{3,17}, Martha Daviglius¹⁸, Phillip Greenland¹⁶, Habibul Ahsan^{1,2,3}, On behalf of the *All of Us* Research Program Investigators¹¹

scientific reports

OPEN **A comprehensive analysis of lung cancer highlighting epidemiological factors and psychiatric comorbidities from the All of Us Research Program**

Vikram R. Shaw¹, Jinyoung Byun^{1,2,3}, Rowland W. Pettit¹, Younghun Han^{1,2}, David A. Hsiou⁴, Luke A. Nordstrom⁴ & Christopher I. Amos^{1,2,3}

JAMA Network | **Open**

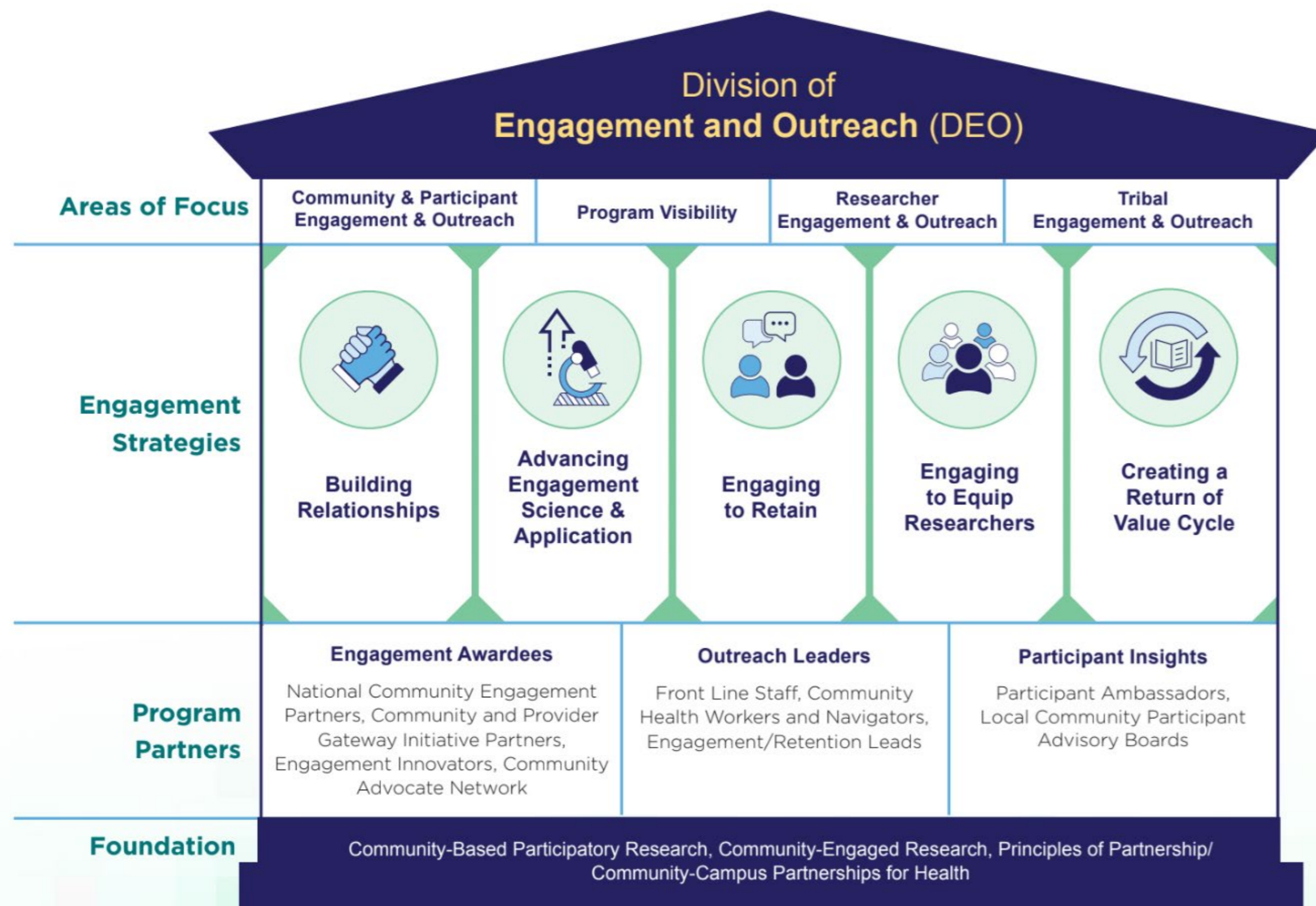
Original Investigation | Oncology

Alcohol Consumption Among Adults With a Cancer Diagnosis in the All of Us Research Program

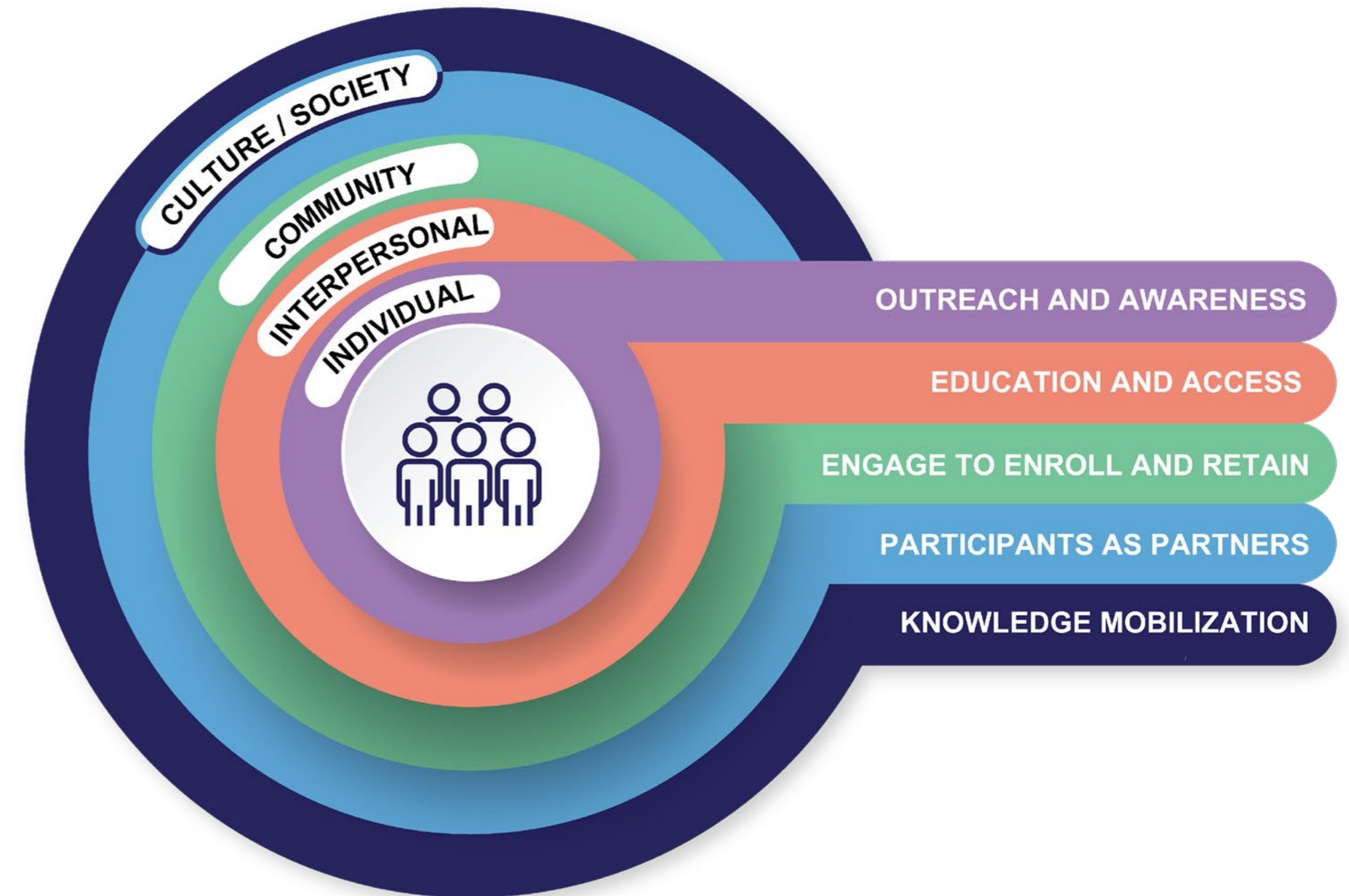
Mengyao Shi, MBBS, MPH; Chongliang Luo, PhD; Oluseye K. Oduyale, MD; Xiaoyu Zong, MPH; Noelle K. LoConte, MD; Yin Cao, ScD, MPH

The *All of Us* Engagement and Outreach Ecosystem

The Division of Engagement and Outreach Ecosystem



The Community and Participant Engagement Framework



Knowledge Mobilization: Five Priority Researcher Audiences

In collaboration with Engagement Partners and other ICOs, we engage researchers across **5 priority audiences**:



K-12 AUDIENCES, INCLUDING TEACHERS

- University of Utah Data Browser Institute
- Co-funded NHGRI U24



UNDERGRADUATE, GRADUATE, AND MEDICAL STUDENTS

- Researchers Convention
- Co-funded NHGRI U24



POST-DOCTORAL STUDENTS AND EARLY- STAGE INVESTIGATORS

- NIMHD - RCMI Administrative Supplements U54
- RTI *All of Us* Researcher Academy
- BCM BR Faculty Summit
- PRIDEnet Researcher Basecamp



ESTABLISHED INVESTIGATORS

- R21 & R01 funding opportunities
- RTI *All of Us* Researcher Academy



COMMUNITY AND CITIZEN SCIENTISTS

- IGNITE Program
- National Library of Medicine
- Asian Health Coalition
- PRIDEnet Researcher Basecamp

Current Funding Opportunities

For more information, go to allofus.nih.gov



ROA

DUE FEB. 2024

All of Us Engagement,
Communications, and
Enrollment
Partnerships OTA-22-
006



FOA

DUE FEB. 2024

New Investigators to
Promote Workforce
Diversity in Genomics,
Bioinformatics, or
Bioengineering and
Biomedical Imaging
Research (R01 Clinical
Trial Optional) RFA-HG-21-
041



NOFO

DUE NOV. 2023

NHGRI Investigator-
Initiated Research in
Genomics and Health
Equity **R21** RFA-HG-
23-018



NOFO

DUE NOV. 2023

NHGRI Investigator-
Initiated Research in
Genomics and Health
Equity **R01** RFA-HG-
23-017

Partner with *All of Us*, Drive Forward the Future of Health Equity



- Contribute to *All of Us* as a participant and researcher
- Learn more about and register for the *All of Us* Research Workbench
- Keep up with *All of Us* research announcements to stay on top of the latest biomedical research news





Get Connected to *All of Us*

Karriem S. Watson, DHSc, MS, MPH

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karriem.watson@nih.gov

[Allofus.nih.gov](https://allofus.nih.gov)

<https://www.researchallofus.org/explore>



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