

What is the *All of Us* Research Program and How Can I Get Started?



8 November 2023

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Science Communications Lead
Division of Communications
All of Us Research Program



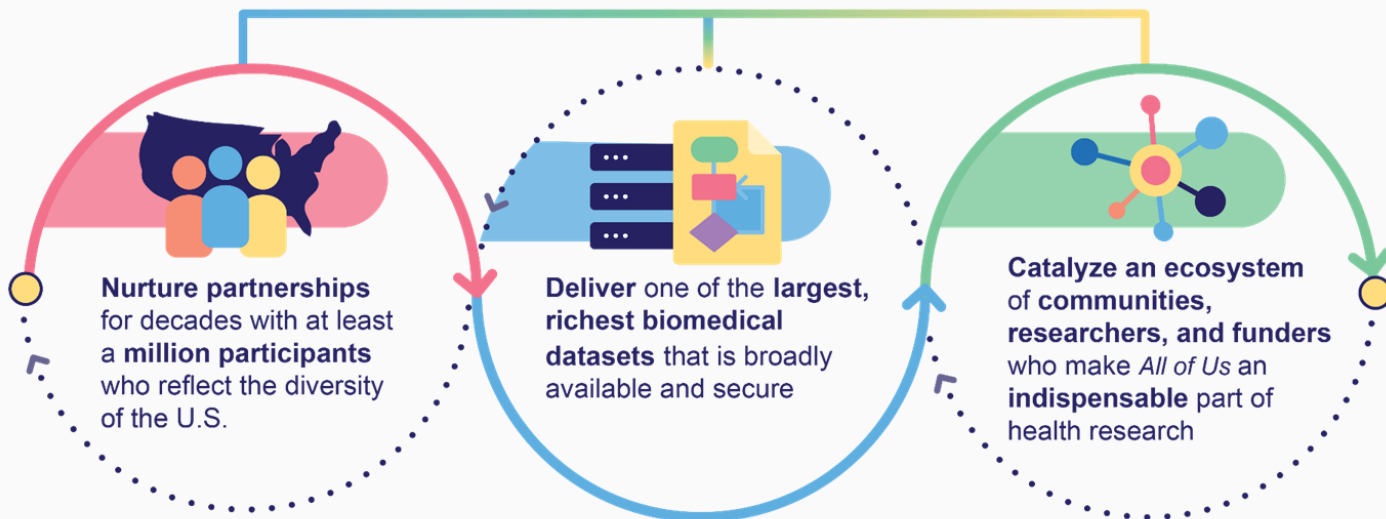
At the end of this presentation, you will be able to

- Tell others about the *All of Us* Research Program
- Describe some of the research underway
- Imagine possibilities for your research questions
- Know how to register and get started

What is the *All of Us* Research Program?

The *All of Us* Research Program Mission

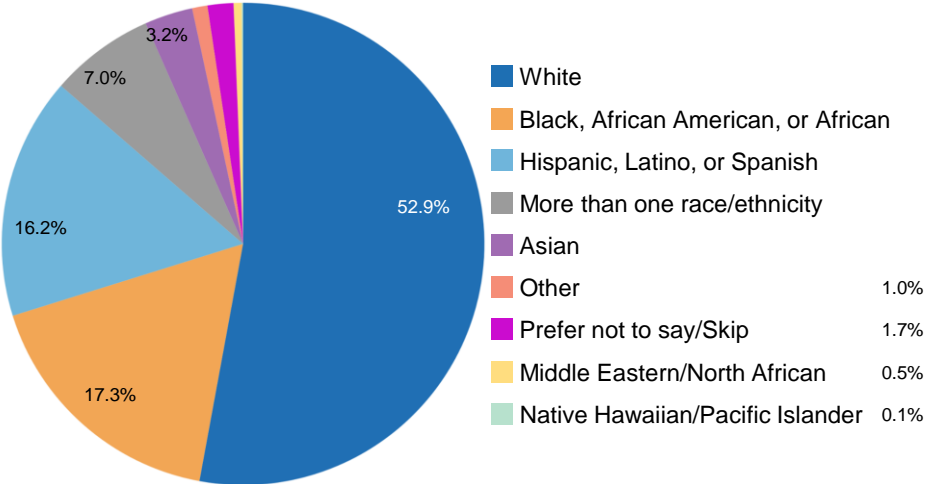
Accelerate health research and medical breakthroughs,
enabling individualized prevention, treatment, and care for all of us



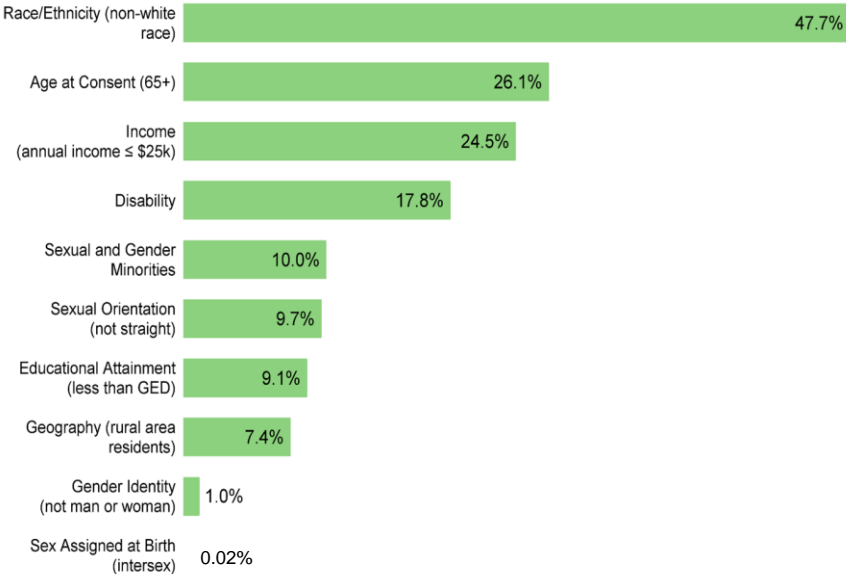
Made possible by a team that maintains a culture built around the program's core values

Participant Diversity

Race & Ethnicity of Participants



UBR Category



Over 80% of *All of Us* participants are underrepresented in biomedical research

Numbers current as of November 3, 2023

Our participants generously contribute a variety of data



Electronic Health Records

Data types collected from EHR include:

- Demographics
- Vital signs
- Diagnoses
- Procedures
- Medications
- Doctor and Laboratory Visits



Participant Surveys

The Basics

Overall Health
Lifestyle

Health Care Access & Utilization

Personal and Family Medical History
Social Determinants of Health



Physical Measurements

- Blood pressure
- Heart rate
- Height
- Weight
- BMI
- Hip circumference
- Waist circumference



Biosamples

- Blood
- Saliva
- Urine



Wearable Data

Fitbit data, including:

- Heart Rate
- Activity (Daily Summary)
- Activity Intraday Steps
- Sleep data

The Basics

- Collect data on home and work locations

Social Determinants of Health

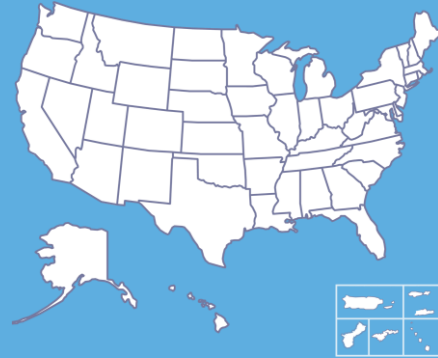
- Neighborhood Safety & Environment
- Social Support, Discrimination, Loneliness, Stress
- Health Care Discrimination
- Housing, Food Security
- Spiritual Experiences, Religious Attendance
- English Proficiency

What makes the *All of Us* dataset unique?

One of the world's largest, most diverse biomedical datasets of its kind

Inviting at least

1 Million people from across the United States



Data available from **413,450+** participants

75%

identify with communities underrepresented in biomedical research



45%

are from racial and ethnic minority groups



As of CDRv7 Data Release April 2023

Summary of Data Available in the Researcher Workbench



413,350+

Survey Responses



337,500+

Physical Measurements



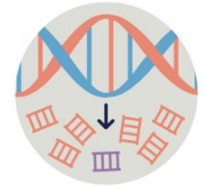
312,900+

Genotyping Arrays



287,000+

Electronic Health Records



245,350+

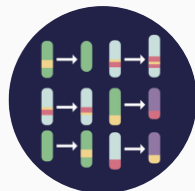
Whole Genome Sequences



15,600+

Fitbit Records

NEW! Sleep Data



11,350+

Structural Variants

NEW! In 2023



1,000+

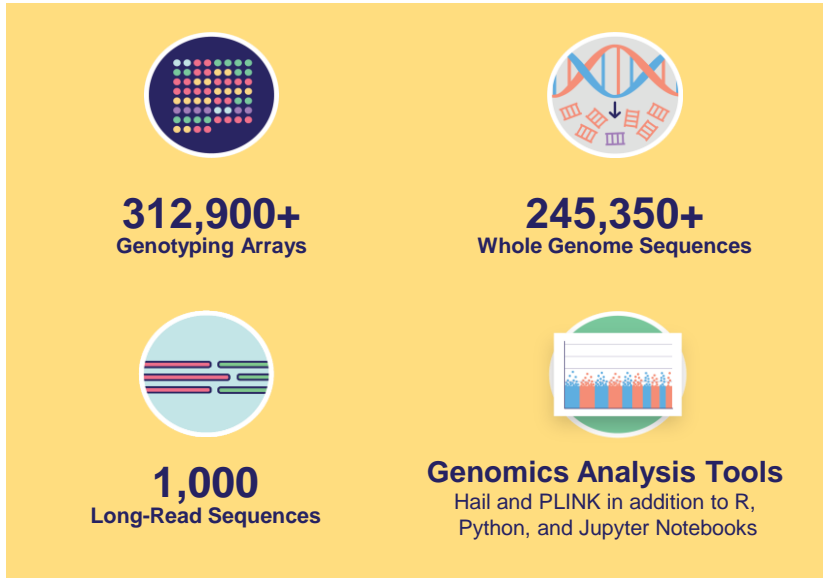
Long-Read Sequences

NEW! In 2023

Data as of CDRv7 Release, April 2023

Including genomic data

As of April 2023, the *All of Us* Researcher Workbench contains the **largest set of whole genome sequences widely available for research**.* The whole genome sequence dataset includes variation at more than **1 billion** locations, which is nearly **one-third** of the entire human genome.



*Only available in the Controlled Tier

Genomic Data Is Paired With Rich Phenotypic Data



206,100+

Have Whole Genome Sequences + Electronic Health Records + Physical Measurements + Survey Responses



245,100+

Have Whole Genome Sequences + Physical Measurements + Survey Responses



206,150+

Have Whole Genome Sequences + Electronic Health Records



8,800+

Have Whole Genome Sequences + Fitbit Records
Fitbit data may include physical activity, step counts, heart rate, and sleep data

Data as of April 2023

All of Us Data Can Power Research Across Range of Diseases

Conditions	Domain	Participants
Heart Disease	Heart	73,100
Obesity	Endocrine	65,740
Type 1 Diabetes	Endocrine	5,620
Type 2 Diabetes	Endocrine	45,360
Any cancer	Cancer	42,080
Asthma	Pulmonary	40,560
Chronic Obstructive Pulmonary Disorder	Pulmonary	19,740
Epilepsy	Neuro	7,440
Stroke	Neuro	640
Rheumatoid Arthritis	Autoimmune	6,980
Osteoarthritis	Autoimmune	81,980

Conditions	Domain	Participants
Depressive Disorder	Mental Health	67,380
Bipolar Disorder	Mental Health	12,820
Dementia	Mental Health	4,760
Human Immunodeficiency Virus	Infectious Disease	4,640
COVID-19*	Infectious Disease	58,000*
Alcohol Abuse (AUDIT-C)	Abuse	84,000
Opioid Usage	Medication	155,000
Age-Related Macular Degeneration	Eye	4,740
Hearing loss	Hearing	30,400
Falls	Aging/Nursing	4,860

*using combination of diagnosis code, lab test, and COVID survey answers

What research is underway?

Researcher Workbench Usage and Diversity (data as of November 1, 2023)



7,550+
Registered
Researchers



7,650+
Active
Projects



210+
Publications
using *All of Us*
data



600+
Organizations
40 Historically Black
Colleges & Universities
57 Hispanic Serving
Institutions



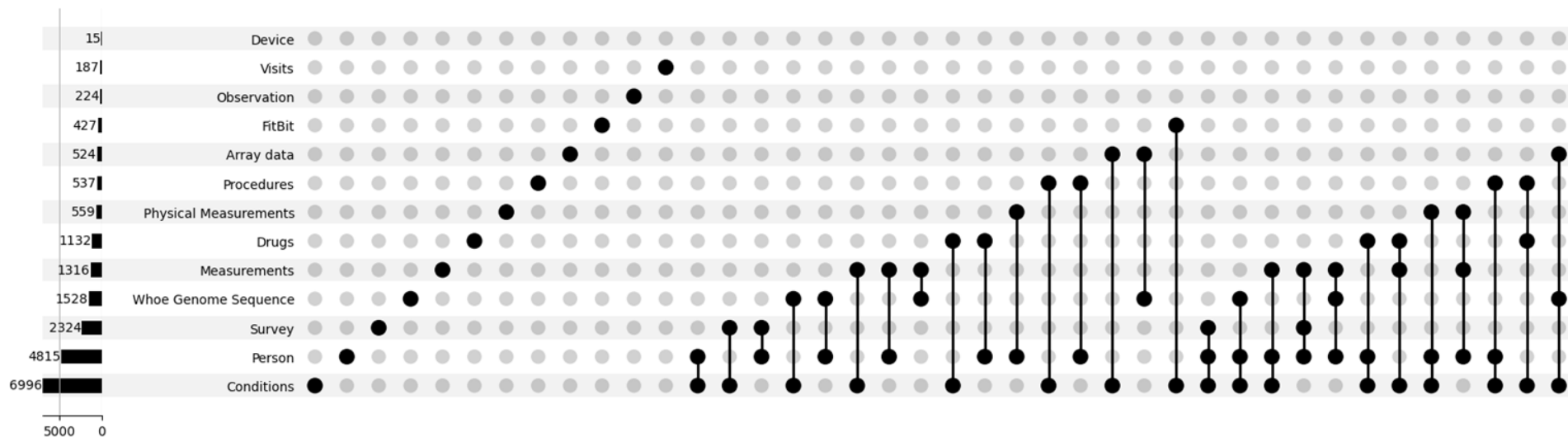
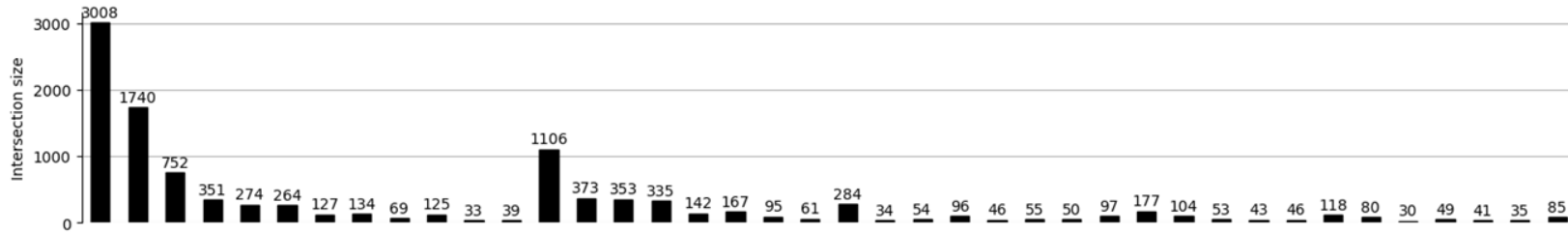
Top Conditions
studied in the Researcher
Workbench include:
Cardiovascular disease,
Hypertension, Mental Health,
Cancer, Diabetes

- **Creating a diverse researcher cohort** that promotes responsible and ethical use of data, returns value to participant communities, and accelerates research impact.
- **Encouraging student assemblies and early-stage investigators** to bring fresh, creative perspectives & innovative research outcomes.
- **Ensuring access for researchers from various institutions/ organizations** to establish a truly equitable resource for all.



Over 72% of our researchers are underrepresented in the biomedical workforce - including over 27% diverse by race and ethnicity

Most Research Projects Draw From Several Data Types



More than 210 Publications Detail the Scientific Impact of *All of Us*

Article | [Open Access](#) | Published: 10 October 2022

Association of step counts over time with the risk of chronic disease in the *All of Us* Research Program

Hiral Master, Jeffrey Annis, Shi Huang, Joshua A. Beckman, Francis Ratsimbazafy, Kayla Marginean, Robert Carroll, Karthik Natarajan, Frank E. Harrell, Dan M. Roden, Paul Harris & Evan L. Brittain

Nature Medicine 28, 2301–2308 (2022) | [Cite this article](#)

[Open Access](#) | Article

Race, Ethnicity, and Pharmacogenomic Variation in the United States and the United Kingdom

by Shivam Sharma 1,2, Leonardo Mariño-Ramírez 2, and I. King Jordan 1*

Pharmaceutics 2023, 15(7), 1923; <https://doi.org/10.3390/pharmaceutics15071923>

Received: 12 June 2023 / Revised: 30 June 2023 / Accepted: 5 July 2023 / Published: 11 July 2023

Research Square | Search preprints

Brief Communication

Quantifying physical activity needed to mitigate genetic risk for obesity

lide Han, Jeffrey Annis, Hiral Master, Andrew Hughes, Dan Roden, and 3 more

Otolaryngology—Head and Neck Surgery



Original Research

Hearing Loss and Sociodemographic Barriers to Health Care Access Using the *All of Us* Research Program

Luis E. Cortina BS, Andrew Amini BS, Jalen Benson BS, Victoria W. Huang MD, James G. Naples MD

International Journal of Dermatology



Correspondence

The association of cutaneous squamous cell carcinoma and basal cell carcinoma with solid organ transplantation: a cross-sectional study of the *All of Us* Research Program

Annika Belzer BS, Audrey C. Leasure MD, MHS, Jeffrey M. Cohen MD, Sara H. Perkins MD

First published: 05 May 2023 | <https://doi.org/10.1111/jid.16700>

PLOS ONE

Family and personal history of cancer in the *All of Us* research program for precision medicine

Lauryn Keeler Bruce, Paulina Paul, Katherine K. Kim, Jihoon Kim, Theresa H. M. Keegan, Robert A. Hiatt, Lucia Ohno-Machado, On behalf of the *All of Us* Research Program Investigators

Published: July 17, 2023 | <https://doi.org/10.1371/journal.pone.0288496>

medRxiv | CSH | Cold Spring Harbor Laboratory | BMJ | Yale

THE PREPRINT SERVER FOR HEALTH SCIENCES

Multi-ancestry genome-wide study in >2.5 million individuals reveals heterogeneity in mechanistic pathways of type 2 diabetes and complications

Ken Suzuki, Konstantinos Hatzikotoulas, Lorraine Southam, Henry J. Taylor, Xiayang Yin, Kim M. Lorenz, Ravi Mandla, Alicia Huerta-Chagoya, Nigel W. Rayner, Ozvan Bocher, S.V. Arruda Ana Luiza de, Kyuto Sonehara, Shinichi Namba, Simon S. K. Lee, Michael H. Preuss, Lauren E. Pety, Philip Schroeder, Brett Vanderwerf, Mart Kals.

Research article | [Open Access](#) | Published: 11 June 2023

Using machine learning to develop a clinical prediction model for SSRI-associated bleeding: a feasibility study

Jatin Goyal, Ding Quan Ng, Kevin Zhang, Alexandre Chan, Joyce Lee, Kai Zheng, Keri Hurler-Kim, Lee Nguyen, Lu He, Megan Nguyen, Sarah McBane, Wei Li & Christine Luu Cadiz

BMC Medical Informatics and Decision Making 23, Article number: 105 (2023) | [Cite this article](#)

Original Investigation | Oncology

JAMA Network

August 10, 2023

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

Mengyao Shi, MBBS, MPH¹, Chongliang Luo, PhD¹, Oluseye K. Oduyale, MD¹, et al.

Clinical Pharmacology & Therapeutics

Article

Drug-Induced Liver Injury with Commonly Used Antibiotics in the *All of Us* Research Program

Shaopeng Gu, Govarthanan Rajendiran, Kennedy Forest, Tam C. Tran, Joshua C. Denny, Eric A. Larson, Russell A. Wilke

First published: 07 May 2023 | <https://doi.org/10.1002/cpt.2930>

AJHG | ASHG | Supports open access

ARTICLE | VOLUME 110, ISSUE 2, FEBRUARY 02, 2023 | [Download Full Issue](#)

Functional interpretation, cataloging, and analysis of 1,341 glucose-6-phosphate dehydrogenase variants

Renee C. Geck, Nicholas R. Powell, Maitreya J. Durham, et al.

[Open Access](#) • Published: January 20, 2023 • DOI: <https://doi.org/10.1093/ajhg/abab001>

Original Investigation | Equity, Diversity, and Inclusion

July 31, 2023

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

Nguyen K. Tran, PhD, MPH^{1,2}, Mitchell R. Lunn, MD, MA^{1,2,3}, Claire E. Schullkey, PhD⁴, Samantha Tesfaye, BA; Siddhartha Nambiar, PhD⁵; Snigdhanu Chatterjee, PhD⁶; Dawn Kozlowski, MD⁷; Paula Lozano, PhD^{8,9}; Fomessa T. Randal, MCR^{8,9}; Vicklum Mo, MSW^{8,9}; Siya Qi, MS^{8,9}; Eli Hundertmark, BS¹⁰; Chloe Eastburn, BA¹¹; Anthony T. Pih, PhD^{1,2}; Zubin Dastur, MS, MPH^{1,10}; Michal E. Lubensky, PhD^{1,12}; Annesa Flentge, PhD^{1,13,13}; Juno Obedin-Maliver, MD, MPH, MA^{1,3,10}

Nuclear genetic control of mtDNA copy number and heteroplasmy in humans

Rahul Gupta, Masahiro Kanai, Timothy J. Durham, Kristin Tsuo, Jason G. McCoy, Anna V. Kotrys, Wei Zhou, Patrick F. Chinner, Konrad J. Karczewski, Sarah E. Calvo, Benjamin M. Neale & Vamsi K. Mootha

Nature 620, 839–848 (2023) | [Cite this article](#)

nature

Higher Hospital Frailty Risk Score Is Associated With Increased Risk of Stroke: Observational and Genetic Analyses

Daniela Renedo, Julián N. Acosta, Andrew B. Koo, Cyprien Rivier, Nanthiya Sujjantarant, Adam de Havenon, Richa Sharma, Thomas M. Gill, Kevin N. Sheth, Guido J. Falcone and Charles C. Matouk

Originally published 22 May 2023 | <https://doi.org/10.1161/STROKEAHA.122.041891> | Stroke. 2023;54:1538–1547



researchallofus.org/publications/

Publications Detail Not Only How *All of Us* is Poised to Drive New Discoveries...

Functional interpretation, cataloging, and analysis of 1,341 glucose-6-phosphate dehydrogenase variants

AJHG

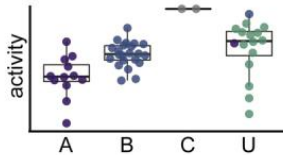


systematic literature review

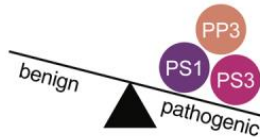


database analysis

1,341 *G6PD* variants



analysis of classification systems



interpretation of 268 variants




All of Us
RESEARCH PROGRAM

118

newly identified genetic variants, some of which may cause a type of anemia.

Reference: Geck, R. C., Powell, N. R., & Dunham, M. J. (2023). Functional interpretation, cataloging, and analysis of 1,341 glucose-6-phosphate dehydrogenase variants. *American Journal of Human Genetics*, 110(2), 228–239.

But Also, How *All of Us* is Stimulating Research With Communities Traditionally Underrepresented in Biomedical Research...

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

Nayernik, Tran, PhD, MPH; Mitchell B. Lunn, MD, MSc; Claire E. Schulkey, PhD; Samantha Terfay, BA; Siddhartha Nambari, PhD; Grigoriy Chatterjee, PhD; Dawn Kozlowski, MEd; Paula Lozano, PhD; Francesca T. Randall, MCRP; Vickian Mo, MSc; Sreyas D., MS; Eli Handwerker, BS; Chloe Eastburn, BA; Anthony T. Pho, PhD; Zubin Dastur, MS, MPH; Michal E. Lubensky, PhD; Anissa Flerje, PhD; Juno Obadin-Malver, MD, MPH, MAS

Abstract

IMPORTANCE Limited data describe the health status of sexual or gender minority (SGM) people due to inaccurate and inconsistent ascertainment of gender identity, sex assigned at birth, and sexual orientation.

OBJECTIVE To evaluate whether the prevalence of 12 health conditions is higher among SGM adults in the All of Us Research Program data compared with cisgender heterosexual (non-SGM) people.

DESIGN, SETTING, AND PARTICIPANTS This cross-sectional study used data from a multidisciplinary research consortium, the All of Us Research Program, that links participant-reported survey information to electronic health records (EHR) and physical measurements. In total, 372 082 US adults recruited and enrolled at an All of Us health care provider organization or by directly visiting the enrollment website from May 31, 2017, to January 1, 2022, and were assessed for study eligibility.

EXPOSURES Self-identified gender identity and sexual orientation group.

MAIN OUTCOMES AND MEASURES Twelve health conditions were evaluated: 11 using EHR data and 1 body mass index (BMI), calculated as weight in kilograms divided by height in meters squared, using participants' physical measurements. Logistic regression (adjusting for age, income, and employment, enrollment year, and US Census division) was used to obtain adjusted odds ratios (AORs) for the associations between each SGM group and health condition compared with a non-SGM reference group.

RESULTS The analytic sample included 346 868 participants (median [IQR] age, 55 [39-68] years; 30 763 [8.9%] self-identified as SGM). Among participants with available BMI (80.2%) and EHR data (69.4%), SGM groups had higher odds of anxiety, depression, HIV diagnosis, and tobacco use disorder but lower odds of cardiovascular disease, kidney disease, diabetes, and hypertension. Estimated associations for asthma (AOR, 0.39 [95% CI, 0.24-0.63] for gender diverse people assigned male at birth; AOR, 0.51 [95% CI, 0.38-0.69] for transgender women), a BMI of 25 or higher (AOR, 1.65 [95% CI, 1.38-1.96] for transgender men), cancer (AOR, 1.15 [95% CI, 1.07-1.23] for cisgender sexual minority men; AOR, 0.88 [95% CI, 0.81-0.95] for cisgender sexual minority women), and substance use disorder (AOR, 0.35 [95% CI, 0.24-0.52] for gender diverse people assigned female at birth; AOR, 0.65 [95% CI, 0.49-0.87] for transgender men) varied substantially across SGM groups compared with non-SGM groups.

Key Points

Question Is the prevalence of certain health conditions higher among sexual and gender minority (SGM) people in the US compared with cisgender and heterosexual (non-SGM) people?

Findings In this cross-sectional study of 30 763 SGM and 316 105 non-SGM adults enrolled in the All of Us Research Program, the odds of 8 health conditions were significantly higher in at least 1 of 6 SGM groups compared with their non-SGM counterparts.

Meaning The findings of this study suggest that there are disparities for certain health conditions among SGM adults compared with their non-SGM counterparts.













+ Invited Commentary

+ Supplemental content

Author affiliations and article information are listed at the end of this article.

All of Us
RESEARCH PROGRAM

Prevalence of 12 conditions across LGBTQIA+ groups


MORE COMMON	VARIES BY GROUP	LESS COMMON
 Anxiety	 Asthma	 Diabetes
 Depression	 Cancer	 Heart disease
 HIV diagnosis	 Being overweight	 High blood pressure
 Tobacco use disorder	 Substance use disorder	 Kidney disease

Reference: Tran, N. K., Lunn, M. R., Schulkey, C. E., Tesfaye, S., Nambari, S., Chatterjee, S., Kozlowski, D., et al. (2023). Prevalence of 12 common health conditions in sexual and gender minority participants in the All of Us Research Program. *JAMA Network Open*, 6(7), e2324969.

...and Powering New Understandings Within Populations

Concise Research Report | [Published: 03 May 2022](#)

Revisiting the Latino Epidemiologic Paradox: an Analysis of Data from the All of Us Research Program

[Raul Montanez-Valverde MD](#), [Jacob McCauley PhD](#), [Rosario Isasi JD MPH](#), [Stephan Zuchner MD PhD](#) & [Olveen Carrasquillo MD MPH](#)  on behalf of the [SouthEast Enrollment Center Investigators and the All of Us Research Program Demonstration Projects Subcommittee](#)

[Journal of General Internal Medicine](#) 37, 4013–4014 (2022) | [Cite this article](#)

983 Accesses | 1 Citations | 409 Altmetric | [Metrics](#)

INTRODUCTION

Black individuals living in the United States have higher rates of cardiovascular disease (CVD) than non-Hispanic White (NHW) people. Among Hispanic/Latino individuals, the data are more complex. Despite higher rates and/or poorer control of CVD risk factors and multiple other social and economic disadvantages, age-adjusted CVD mortality rates are one-third lower in Latino than NHW individuals.^{1,2} Similarly, age-adjusted self-reported rates of CVD are about ten percent lower.¹ To date, the reasons for this “Latino Epidemiologic Paradox” remain unclear.^{3,4} Explanatory hypotheses such as misclassification and immigration-related factors have been refuted. Many also question whether the paradox actually exists. In this study, we analyze data from a diverse national cohort which includes > 40,000 self-reported Hispanic/Latino people to detect for evidence of this Paradox.

METHODS

Created under the National Institutes of Health’s Precision Medicine Initiative, the All of Us Research Program (AoURP) has enrolled over 280,000 core participants of which 80% are from groups historically under-represented in research.⁵ Data sources include survey data, electronic medical records, as well as laboratory and genetic data collected at over 280



Reference: Montanez-Valverde, R., et al. (2022). Revisiting the Latino Epidemiologic Paradox: An analysis of data from the All of Us Research Program. *Journal of General Internal Medicine*, 37(15), 4013-4014.

“More to come”: More data and more data types from more participants

2019

Data Browser

(launched May 2019)

Interactive tool available to the public that provides summary statistics from the program’s growing database, allowing researchers to understand the characteristics of our participant population, **explore the data types available and plan research questions**

2020

Researcher Workbench

(launched May 2020)

Released of the first version of the *All of Us* dataset and the first set of researcher tools for beta testing

- Survey data
- **Physical measurement** data
- EHR data

2021

Expansion of data and tools

(throughout 2021)

Expanded of the *All of Us* dataset with additional survey, measurement, and EHR data.

- **Start of genotyping** and whole genome sequencing
- **Initial return of results** to participants

>1,000K researchers registered

2022

Controlled Tier & Genomics

(ongoing)

Launch our Controlled tier, available to approved researchers who have taken additional steps and training to access:

- **Genomics** data
- **Individual and granular-level** information

Available in Registered and Controlled tiers, with basic information available via our public data browser:

- **ACS data linkage**
- **New surveys**

2023
and
beyond

Additional data types and tools

(ongoing)

Expect to enroll 1M participants within 5-7 years of launch and continue to expand the *All of Us* dataset with new data releases, including over time:

- **Assay data**
- **Additional wearables data**
 - o Fitbit sleep data
 - o Apple Healthkit
- **New surveys** (e.g., Mental Health & Wellbeing)
- **New Linkages to external data sources**
- **Expanded researcher access**
- **Ancillary study data**

Release new versions of the
Researcher Workbench

How can you get started?

First: Is *All of Us* right for you? Will you find the data you need?

ResearchAll of Us.org

Welcome to the *All of Us* Research Hub

The National Institutes of Health's *All of Us* Research Program is building one of the largest biomedical data resources of its kind. The *All of Us* Research Hub stores health data from a diverse group of participants from across the United States.

Register for the Researcher Workbench to access data and tools to conduct health research and improve understanding of health and disease.

REGISTER FOR ACCESS

Data Snapshots

Data Snapshots showcase the breadth and depth of the *All of Us* Research Program dataset. The snapshots provide participant demographics, geographic distribution, and more. We update the snapshots daily.


713,000+
Participants


399,000+
Electronic Health Records


508,000+
Biosamples Received

VIEW MORE DATA SNAPSHOTS

Search Across Data Types

Keyword Search ×

Data includes 409,420 participants as of 2/15/2023.



FAQs



Introductory
Videos



User Guide

EHR Domains

Conditions

25,638
medical concepts

254,700 participants

View Conditions

Drug Exposures

29,865
medical concepts

239,740 participants

View Drug Exposures

Labs & Measurements

16,216
medical concepts

252,980 participants

View Labs & Measurements

Procedures

30,328
medical concepts

242,580 participants

View Procedures

Genomics

SNP/Indel Variants

245,400

Participants in Short-Read
Whole Genome Sequencing
(WGS) dataset

1,074,881,214
SNP/Indel Variants

View SNP/Indel Variants

Genomic data only in
Researcher Workbench

1,040 participants in the
Long-Read WGS dataset

11,400 participants in the
Short-Read WGS Structural
Variants dataset

312,940 participants in the
Genotyping Arrays dataset

Register for access

Measurements and Wearables

Physical Measurements

8

Physical Measurements

337,540 participants

Participants have the option to provide
a standard set of physical
measurements.

View Physical Measurements

Fitbit

6

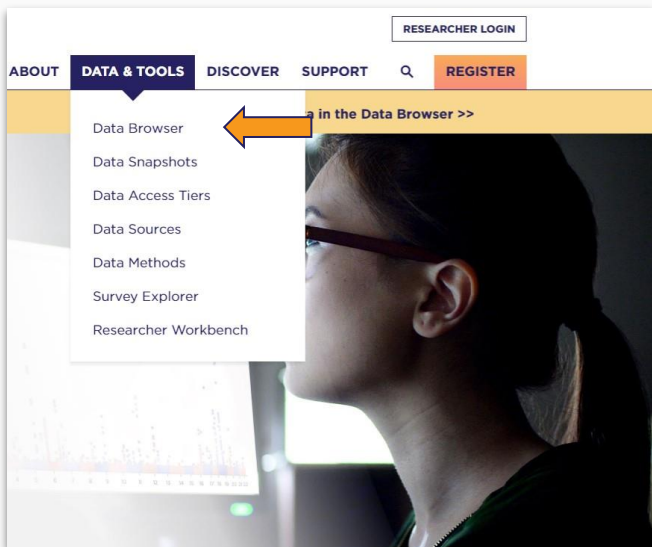
Fitbit Measurements

15,620 participants

Fitbit data includes heart rate and
activity summaries.

View Fitbit

Quick case study: Driving research around asthma



Search Across Data Types

Search for **asthma**

Data includes 409,420 participants as of 12/15/2023

EHR Domains

Conditions

68
matching medical concepts

254,700 participants

[View Conditions](#)

Survey Questions

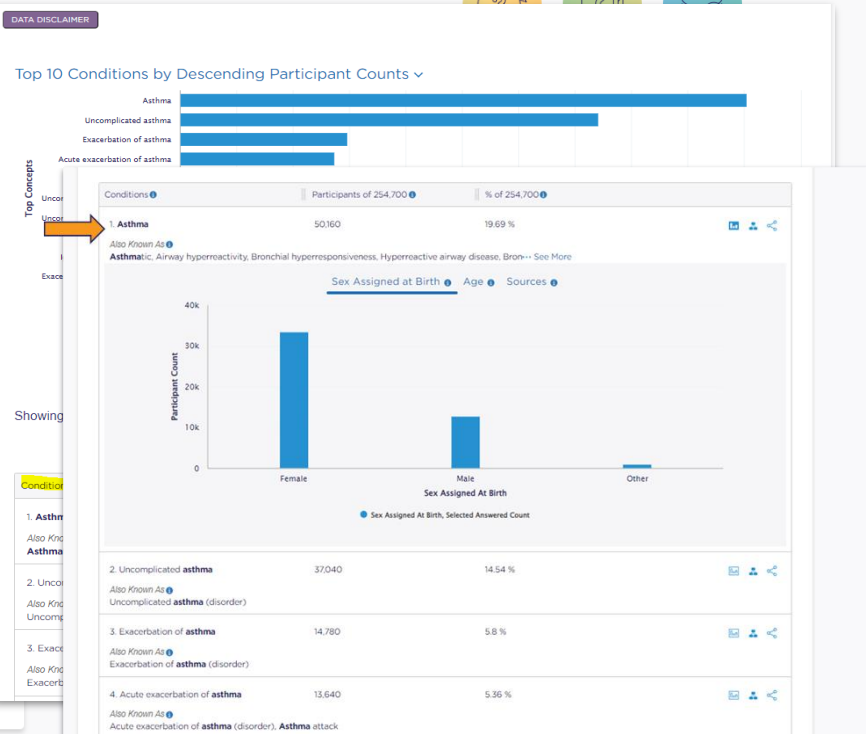
Personal and Family Health History

1
matching survey questions

185,240 participants

Survey includes information about the medical history of a participant and their immediate family members.

[View Complete Survey](#)



Use the Research Project Directory to Explore Work Underway

The screenshot shows the top navigation bar with 'ABOUT', 'DATA & TOOLS', 'DISCOVER', 'SUPPORT', and 'REGISTER'. A 'RESEARCHER LOGIN' button is visible. A dropdown menu under 'DISCOVER' highlights 'Research Projects Directory'. The main content area features a project detail for 'Air pollution sensitivity and asthma incidence'. The project description includes sections for 'SCIENTIFIC QUESTIONS BEING STUDIED', 'PROJECT PURPOSE(S)', 'SCIENTIFIC APPROACHES', 'ANTICIPATED FINDINGS', 'DEMOGRAPHIC CATEGORIES OF INTEREST', 'DATA SET USED', and 'RESEARCH TEAM'. A 'PAD Preliminary Data' label is at the bottom.

Research Projects Directory

7,750 ACTIVE PROJECTS

This information was updated 11/9/2023

includes information about all projects that currently exist in the Researcher Workbench about how the Workbench is being used. Each project specifies [fled Tier](#) data are used.

formation about their research projects independently. Views expressed in the Research Projects not necessarily represent those of the All of Us Research Program. Information in the Research Project in compliance with the 21st Century Cures Act.

tions being studied: asthma

ems data to achieve health equity in the US

JS with different racial and ethnic backgrounds. Our knowledge accumulated through ed toward European ancestry. The disease risk of an individual is affected by their

ascular Disease Primordial Prevention

scular diseases like BMI, blood pressure using Transformers (Deep Learning se risk factors and thus prevent cardio vascular diseases

scular diseases like BMI, blood pressure using Transformers (Deep Learning se risk factors and thus prevent cardio vascular diseases

ep Disorders in Women with Menopause

estradiol levels in women with menopause and the development of sleep disorders. the levels of estradiol in women with menopause differ between ethnic-racial group

Research Projects Directory

7,750 ACTIVE PROJECTS

This information was updated 11/9/2023

The Research Projects Directory includes information about all projects that currently exist in the Researcher Workbench to help provide transparency about how the Workbench is being used. Each project specifies whether [Registered Tier](#) or [Controlled Tier](#) data are used.

Note: Researcher Workbench users provide information about their research projects independently. Views expressed in the Research Projects Directory belong to the relevant users and do not necessarily represent those of the All of Us Research Program. Information in the Research Projects Directory is also cross posted on [All of Us](#) in compliance with the 21st Century Cures Act.

Search By: Scientific questions being studied: caregiver

69 projects have 'asthma' in the scientific questions being studied description

< Go back to All Projects View or enter a new search query

Air pollution sensitivity and asthma incidence

Previous studies have shown that living somewhere with high levels of air pollution makes it more likely that a person will develop asthma. While in the long term we need to decrease air pollution levels nationwide, we urgently need ways...

Multi-ethnic genome wide association study of asthma

Asthma affects 339 million people worldwide and the total is expected to reach 400 million by 2025. Further, asthma disproportionately affects certain racial and ethnic groups, with higher prevalence and more severe outcomes among Black, Hispanic, and Native American populations...

Duplicate of Demo - Polygenic_Risk_Score_Genetic_Ancestry_Calibration

Polygenic risk scores (PRS) are available for a wide array of traits and conditions, offering many potential applications including preventative medicine. There is, however, a serious concern that clinical use of PRS could contribute to health disparities due to the...

Asthma Attack Prediction: Machine Learning Approach

Despite progress in therapeutic approaches, according to CDC about 50% of individuals with asthma continue to experience asthma attack (asthma exacerbation) every year. Asthma attack is an acute episode of progressively worsening of asthma symptoms. Uncontrolled asthma (episodes of asthma...

Institutions Must Have a Data Use and Registration Agreement with *All of Us*

RESEARCHER LOGIN

ABOUT DATA & TOOLS DISCOVER SUPPORT Q REGISTER

Genomic Data in the Data Browser >>

- About the Research Hub
- Registered Institutions
- Privacy & Security Protocols
- Research Hub Updates
- FAQ

Registered Institutions

Access to the Researcher Workbench is available only to registered researchers with an institutional Data Use and Registration Agreement (DURA). Academic, not-for-profit, and health care institutions can enter into a DURA. Search or browse the list below to confirm if your institution has a DURA in place.

613
Institutions Have Agreements in Place

If your institution is listed below, **AND** includes your preferred data tier, **AND** doesn't require individual agreements

If your institution is not listed below, **OR** doesn't include your preferred data tier, **OR** requires individual agreements

[CREATE AN ACCOUNT](#) [SUBMIT A REQUEST](#)

Q X

Key: R Registered Tier C Controlled Tier I Individual agreements required by institution U eRA Commons required by institution

Institution	Access Level	Contact at Institution
Texas A&M University	R C I	LaTie Wilson
Texas A&M University, Corpus Christi	R C	Kimberly Hawkenson
Texas A&M University, Kingsville	R C	Diana P. Luna
Texas Christian University	R C	LoAnn Forsberg
Texas Heart Institute	R C	Jennifer Chambers
Texas Kidney Foundation	R C	Tiffany Jones-Smith
Texas Southern University, College of Pharmacy and Health Sciences	R C	Omonike Olatoye

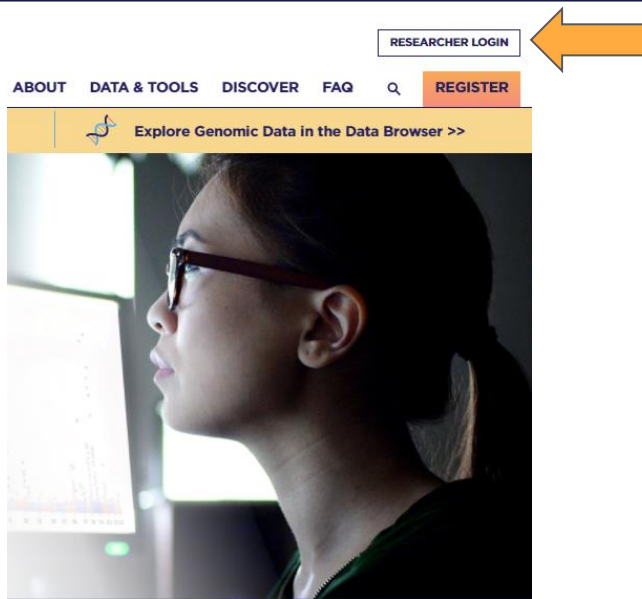
<https://allof-us.org/DURAForm>



All 8 Texas public health institutions and half of the public general academic universities have these agreements in place




With the DURA in hand, registration is straightforward



All of Us
RESEARCHER WORKBENCH

Already have a Researcher Workbench account?

 [Sign In](#)

[Trouble Signing In?](#)


Don't have an account?

[CREATE ACCOUNT](#)

WARNING NOTICE
You are accessing a web site created by the All of Us Research Program, funded by the National Institutes of Health.

Unauthorized attempts to upload information, change information, or use of this web site may result in disciplinary action, civil, and/or criminal penalties. Unauthorized users of this website should have no expectation of privacy regarding any communications or data processed by this website.

By continuing to log in, anyone accessing this website expressly consents to monitoring of their actions and all communications or data transferring or stored on related to this website and is advised that if such monitoring reveals possible evidence of criminal activity, NIH may provide that evidence to law enforcement officials.



Within the workbench, you can leverage collaborative workspaces, cohort building tools, interactive notebooks, and more



Welcome to the
RESEARCHER WORKBENCH

The secure platform to analyze All of Us data



Workspaces +

[See all workspaces](#)

Genetic Causation of Asthma

OWNER

Last Changed: 05/21/22, 05:24 PM

Asthma Demo

OWNER

Last Changed: 05/21/22, 03:34 PM

Genomics Undergrad Lesson Plan Exemplar (v6)

OWNER

Last Changed: 01/21/23, 08:15 AM

Recently Accessed Items

Item type ⌵	Name ⌵	Workspace name ⌵	Last Modified Date ⌵	Dataset	Last Modified By
	<input type="text" value="Search Name"/>				
Concept Set	Asthma_concept1	Asthma Demo	Feb 17, 2023	All of Us Registered Tier Dataset v3	ashley.e.green@researchallofus.org
Cohort	asthma_cohort1	Asthma Demo	Feb 17, 2023	All of Us Registered Tier Dataset v3	ashley.e.green@researchallofus.org
Cohort	Array + asthma	Genetic Causation of Asthma	Jun 8, 2022	All of Us Controlled Tier Dataset v5	
Cohort	wgs age asthma	Genetic Causation of Asthma	Apr 8, 2022	All of Us Controlled Tier Dataset v5	
Concept Set	Asthma concept	Genetic Causation of Asthma	Apr 7, 2022	All of Us Controlled Tier Dataset v5	
Cohort	WCS + Age	Genetic Causation of Asthma	Apr 7, 2022	All of Us Controlled Tier Dataset v5	
Cohort	Age + BMI	Genetic Causation of Asthma	Apr 7, 2022	All of Us Controlled Tier Dataset v5	

Quick Tour and Videos



All of Us employs a data passport model; transparency is a core value

All of Us
RESEARCHER WORKBENCH

Create a new workspace (Required)

Workspace name

Data access tier **Registered Tier**

Dataset version **All of Us Registered Tier Dataset v5**

All of Us billing account
The All of Us Research Program provides \$300 in initial credits per user. Please refer to this article to learn more about the initial credit program and how it can be used. Once you have used up your initial credits, you can either select a shared billing account or create a new one using either Google Cloud Platform or a Google billing partner.
Please note: If creating a billing account via a Google billing partner, it may take a few days to show up in the **Select account** dropdown.

Select a current billing account
Use All of Us initial credits - \$284.90 left **CREATE BILLING ACCOUNT**

Research Use Statement Questions Best practices for Research Use Statement questions

The All of Us Research Program requires each data user of the All of Us data to provide a meaningful description of the intended purpose of data use for each workspace they create. To provide transparency to All of Us Research Program participants, your answers below will be made available publicly in the Research Hub Directory on our public website. **Your responses will not be used to make decisions about data access.**

Note that you are required to create separate workspaces for each project for which you access All of Us data, hence the responses below are expected to be specific to the project for which you are creating this particular workspace.

1. What is the primary purpose of your project? Publicly displayed

Research purpose

Educational Purpose
The data will be used for education purposes (e.g. for a college research methods course, to educate students on population-based research approaches).

For-Profit Purpose
The data will be used by a for-profit entity for research or product or service development (e.g. for understanding drug responses as part of a pharmaceutical company's drug development or market research efforts).

Other Purpose
If your purpose of use is different from the options listed above, please select "Other Purpose" and provide details regarding your purpose of data use here (500 character limit).

COPE Covid-19 Mitigation Behaviors

PROJECT PURPOSE(S)

- Population Health

SCIENTIFIC QUESTIONS BEING STUDIED

Answers to COPE survey questions regarding adherence to COVID-19 mitigation recommendations will be used to answer the following questions:

- Do responses vary by demographic characteristics including age, gender, race/ethnicity, household characteristics, employment status, and geographical variables such as urban/rural and state of residence?
- Are differences in responses by state associated with contemporaneous state mandates regarding COVID-19 mitigation behavior, controlling for other factors identified in #1 above?
- Do mitigation behaviors change over time?

Identification of variables associated with mitigation behaviors during the current pandemic may help improve further mitigation efforts, including for potential future pandemics.

SCIENTIFIC APPROACHES

Using the datasets and tools within the AoURP Research Workbench for cohort creation and statistical analyses (including the R statistical program), we will:

- Generate descriptive statistics on the sample of participants who answered the COPE surveys and compare with those of the overall AoURP cohort to assess generalizability of findings to the cohort and nationally.
- Compare responses re: COVID-19 mitigation behaviors by demographic and geographic characteristics overall and between states, using bivariate statistics appropriate for the variable types.
- Examine responses by level of contemporaneous state mandates regarding mitigation behaviors in multivariable regression models controlling for all other variables found to be associated with these behaviors in 2.
- Perform a longitudinal analysis of changes in mitigation behaviors for individuals answering all 3 COPE surveys.

ANTICIPATED FINDINGS

We expect that mitigation behaviors are associated with many different demographic and geographic areas and change over time. Identification of the associated variables will contribute to the understanding of the effectiveness of public health messages and mandates, within demographic, geographic, and temporal contexts.

DEMOGRAPHIC CATEGORIES OF INTEREST

This study will not center on underrepresented populations.

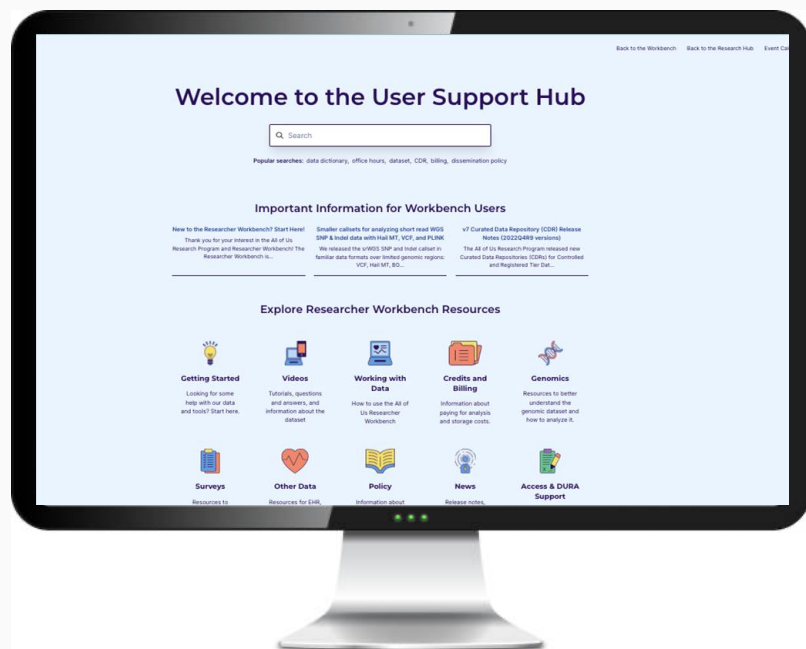
RESEARCH TEAM

Owner:

- Jill Waalen - Mid-career Tenured Researcher, Scripps Research

[Request a Review of this Research Project](#)

Robust support available via the User Support Hub



Find instructional materials about the *All of Us* Researcher Workbench

Includes video tutorials, educational resources, release notes, and more

Search 290+ articles*

Find information about data dictionaries, the Controlled Tier directory, how WGS and array data are organized, and more

Connect with experts during weekly LIVE office hours

Explore our calendar of dedicated office hours where researchers can talk about data types and tools with experts



researchallofus.org/support

*Source: Figure as of November 2023

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allof-us.org/RRSignup

The *All of Us* Program wouldn't be possible without the generosity of our participants and the dedication of our researchers to enable health discoveries.



@AllofUsResearch
@AllofUsCEO
#JoinAllofUs



All of Us Community and Provider Partner Network (as of April 2023)

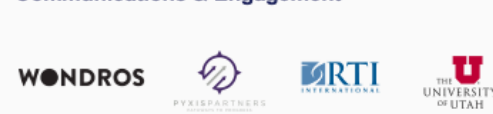


All of Us Consortium Members *(beyond community partners, as of April 2023)*

The Participant Center



Communications & Engagement



HPO Network

(Health Care Provider Organizations)

HPO Lite



RMCs

All of Us California

UC San Diego Health

UCI Health

UC DAVIS HEALTH

UCSF

Cedars Sinai

Keck School of Medicine of USC

Illinois Precision Medicine Consortium

Northwestern Medicine

THE UNIVERSITY OF CHICAGO

NorthShore

RUSH

THE UNIVERSITY OF ILLINOIS COLLEGE OF MEDICINE

UI Health

COOK COUNTY HEALTH

All of Us New England

Mass General Brigham

BOSTON MEDICAL CENTER

University of Arizona and Banner Health

THE UNIVERSITY OF ARIZONA

Banner Health

MARICOPA COUNTY HEALTH SYSTEM

Trans America Consortium

Henry Ford Health System

Spectrum Health

Essentia Health

BaylorScott&White Health

RELIANT MEDICAL GROUP

HealthPartners Institute

FQHCs (Federally Qualified Health Centers)

Cherokee

SAN YSIDRO HEALTH

UNIVERSAL CARE COMMUNITY HEALTH CENTERS

Community Health Center, Inc.

Sun River Health

New York City Consortium

COLUMBIA

Weill Cornell Medicine

NYC HEALTH + HOSPITALS | Harlem

NewYork-Presbyterian

All of Us Southern Network

UAB MEDICINE

UAB HEERSINK

Cooper Green Moore

THE MEDICAL CENTER

Tulane University

VA

U.S. Department of Veterans Affairs

VA

U.S. Department of Veterans Affairs

VA

VA

VA

VA

VA

VA

VA

USA HEALTH

UAB MEDICINE

UAB HEERSINK

Cooper Green Moore

THE MEDICAL CENTER

Tulane University

VA

U.S. Department of Veterans Affairs

VA

VA

VA

VA

VA

VA

VA

VA

All of Us Southeast Enrollment Center

UHealth

EMORY UNIVERSITY

MOOREHOUSE SCHOOL OF MEDICINE

UF FLORIDA

THE UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL

All of Us Puerto Rico

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Participant Technology Systems Center (PTSC)



Biobank



Data & Research Center (DRC)



VANDERBILT UNIVERSITY MEDICAL CENTER



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Thank You!



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#JoinAllofUs

The *All of Us* Research Program

Engages **people & communities who have been left out of medical research** in the past



Combines **biological factors and social determinants** on a large, inclusive scale



Easily accessible to any researcher with a secure internet connection



Follows participants as they move, age, and grow

