

# *All of Us* Research Hub

Presented to the National Hispanic Medical  
Association

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# Key Definitions & Acknowledgement

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- **Researcher Engagement:** Intentional, bidirectional relationship and capacity building with researchers and their communities across all career stages, institution types, and demographics, emphasizing researchers underrepresented in the biomedical workforce (UBW) through ongoing information sharing, collaboration, consultation, empowerment, and support.
- **Outreach:** Unidirectional interaction, such as providing materials and information to an audience.
- **Researcher diversity:** Defined across multiple dimensions, including demographics (inclusive of self-reported race/ethnicity, sex, gender, and SGM status, and disability), career stage, and institution type.

Source: *All of Us* Research Program protocol

Acknowledgement: This event is funded by the Division of Engagement and Outreach, *All of Us* Research Program, National Institutes of Health. Award Number [Pyxis Partners: OD028404]

## WHO WE ARE

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Established in 1994 in Washington, DC, NHMA is a nonprofit association representing 50,000 licensed Hispanic physicians in the U.S.

## PRESIDENT & CEO



Elena Rios, MD, MSPH, MACP

## VISION

NHMA's vision is to be the national leader in improving the health of Hispanic populations.

## MISSION

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NHMA's mission is to empower Hispanic physicians to lead efforts to improve the health of Hispanic and other underserved populations in collaboration with Hispanic state medical societies, residents, medical students, and other public and private sector partners.

## Today's Objectives

During today's presentation, we will

- Learn about the *All of Us* Research Program and the data we offer
- Explore the public-facing Research Hub and its tools
- Examine the steps for registration
- See how to start a research project on the Workbench

# All of Us community and provider partner network (as of November 2023)



# All of Us consortium members *(beyond community partners, as of November 2023)*

## The Participant Center



## Communications & Engagement



## HPO Network

(Health Care Provider Organizations)

### All of Us New England

Mass General Brigham



### All of Us Wisconsin



## Participant Technology Systems Center (PTSC)



## Biobank



## Illinois Precision Medicine Consortium



### All of Us Pennsylvania



## Trans America Consortium



## University of Arizona and Banner Health



## New York City Consortium



## FQHCs (Federally Qualified Health Centers)



## All of Us Southern Network



## VA Medical Centers



## All of Us Southeast Enrollment Center



## All of Us Puerto Rico



# All of Us consortium members (Continued) *(beyond community partners, as of November 2023)*

## Nutrition for Precision Health (NPH)

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# 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%**  
are from  
communities  
underrepresented  
in biomedical  
research



**45%**  
are from racial  
and ethnic  
minority groups

Data as of April 2023



# Enabling research discoveries that drive more precise approaches to care

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

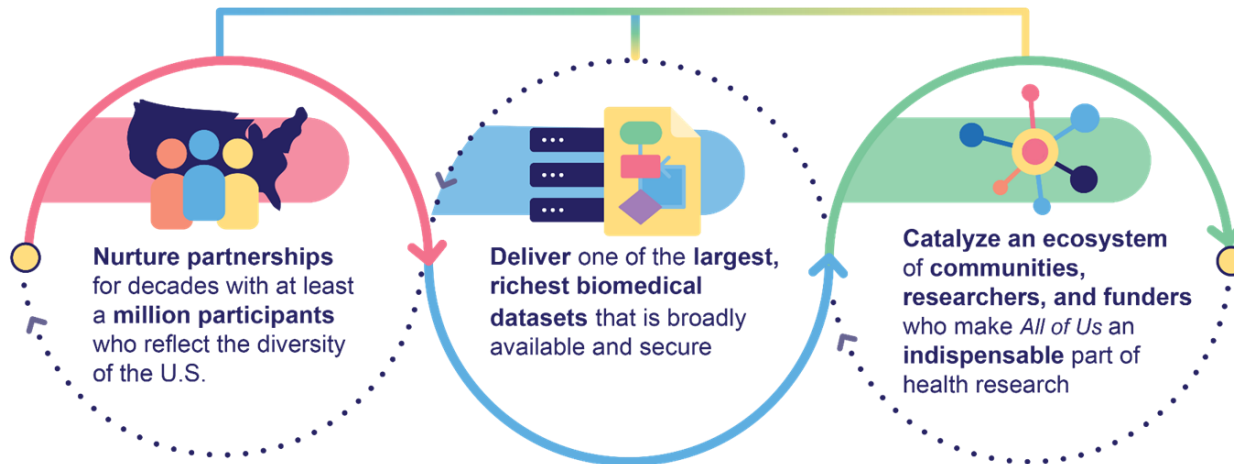


**Follows participants** as they move, age, and grow



## Our 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

# Participants included in All of Us research data are diverse.

Underrepresented in Biomedical Research (UBR) Categories	Curated Data (% out of 413,457 participants)
At least one UBR	74%
Non-white race or Hispanic/Latino ethnicity	43%
Age >= 65	24%
Less than GED	9%
Annual Income <=\$25k	25%
Sexual and Gender Minorities	10%
Disability	10%



# Summary of Data Available in the Researcher Workbench



**413,350+**

Survey Responses



**337,500+**

Physical Measurements



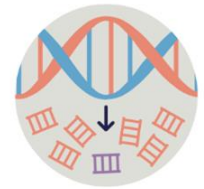
**312,900+**

Genotyping Arrays



**287,000+**

Electronic Health Records



**245,350+**

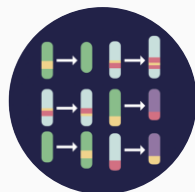
Whole Genome Sequences



**15,600+**

Fitbit Records

NEW! Sleep Data



**11,350+**

Structural Variants

NEW! In 2023



**1,000+**

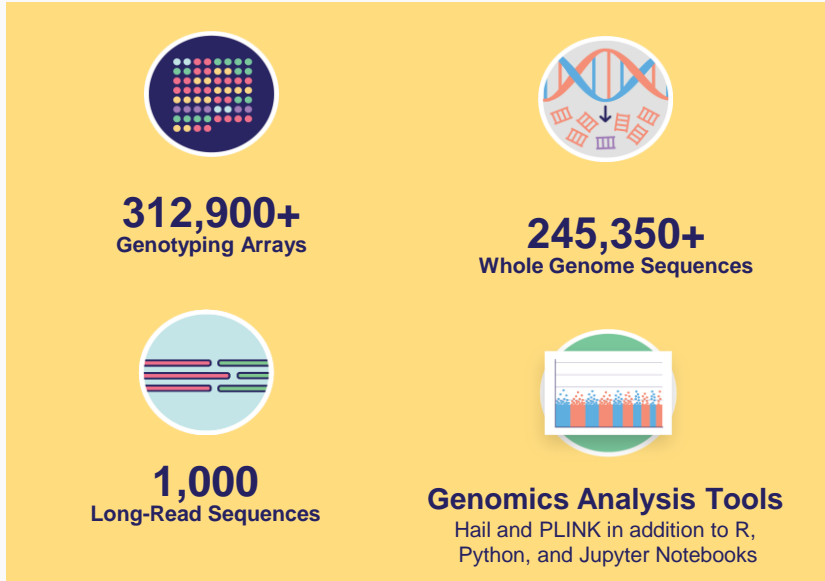
Long-Read Sequences

NEW! In 2023

Data as of April 2023

# Including genomic data

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: Surveys



1. The Basics



2. Overall Health



3. Lifestyle



4. Health Care Access & Utilization



5. Personal Health History and Family Medical History (Revised)



6. Social Determinants of Health (SDOH)



7. COVID-19 Participant Experience (COPE)



8. COVID-19 Vaccines Minute Surveys



# Data: Social Determinants of Health Survey

By connecting biological and social determinants of health data on a large, inclusive scale and following participants as they move, age, and grow the *All of Us* dataset is driving new insights into health and disease

## Social Determinants of Health (SDOH) Survey data



from 117,750+ responses

# Data: Cope Survey

All of Us released its recurring COVID-19 Participant Experience (COPE) survey to learn more about changes in participants' daily life, health, and well-being throughout the pandemic. Registered researchers can access the data in the Researcher Workbench and use it as part of an integrated dataset to explore potential associations across a variety of factors, from genetics to geography to mental health.

## COPE Survey Data Currently Available in the Researcher Workbench



Nearly **100,200**  
participants responded to



one or more of the **six** COPE surveys administered between May 2020 and February 2021

### Topics Covered



Social Distancing Experiences



COVID-19 Related Impact



Mood



Substance Use



COVID-19 Related Symptoms



General Well-Being



Stress



Resilience



COVID-19 Related Testing



Social Support



Physical Activity



Discrimination



COVID-19 Related Treatment



Anxiety



Loneliness



Vaccine Perceptions

## Mental Health

The COPE data represents the biggest infusion of mental health data into the Researcher Workbench so far. Insights include:



**62%**

felt bothered by sleeping problems



**53%**

felt nervous and anxious



**94%**

have someone to love and make them feel wanted



**95%**

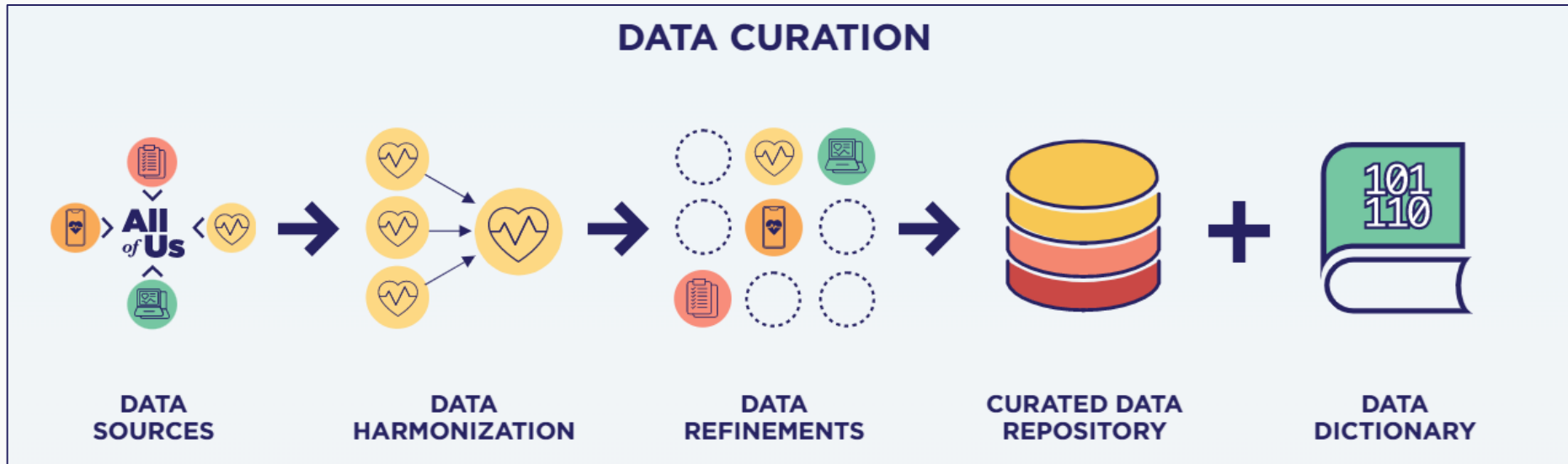
have someone to have a good time with

Embedded in the survey were resources for participants struggling with emotional distress, including suicide prevention tools.

\*Participants could select multiple symptoms.



# All of Us Research Data Pipeline



# Data: Access Flowchart and Tools

## Public Tier

Anyone can visit [ResearchAllofUs.org](https://ResearchAllofUs.org) (the *All of Us* Research Hub) to learn more about the data available for research and explore aggregated participant data and summary statistics, with participant identifiers removed. Public resources include:

- **Data Snapshots:** Aggregated, public-facing overviews of participant characteristics and data types
- **Data Browser:** Interactive preview into the *All of Us* dataset through public-facing aggregate data
  - Currently includes participant-provided survey responses, physical measurements, data from EHRs and wearables, and genomic data
- **Survey Explorer:** Details the questions included in each of the surveys
- **Research Projects Directory:** Descriptions of each research project within the Researcher Workbench

## Registered Tier

**Registered researchers** can access in-depth data and a variety of research tools to conduct a range of studies.



Surveys



Electronic Health Records



Physical Measurements



Wearables

*Data have been processed to protect participant privacy.*

## Controlled Tier

**Registered researchers with amended institutional agreements** can access all of the data in the Registered Tier plus additional and expanded data types, including genomic data, real dates of health events, ICD codes, more granular demographic data, and more.



Genomics



Health and Lifestyle surveys

## Researcher Workbench

Counts in the Public, Registered, and Controlled Tiers may vary based on the lag time associated with the data curation process under the program's rigorous privacy protections.

# Data release timeline

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)

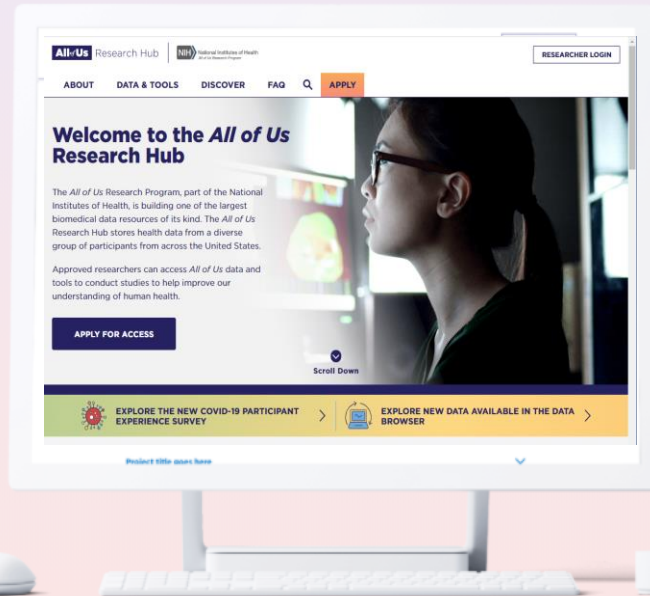
Expect to enroll 1M participants within 5-7 years of launch and continue to expand the *All of Us* dataset with new data releases, including over time:

- **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

# The Research Hub

# The *All of Us* Research Hub



<https://www.ResearchAllOfUs.org/>

[Researchallofus.org](https://Researchallofus.org) is home to *All of Us* data, research tools, & projects.

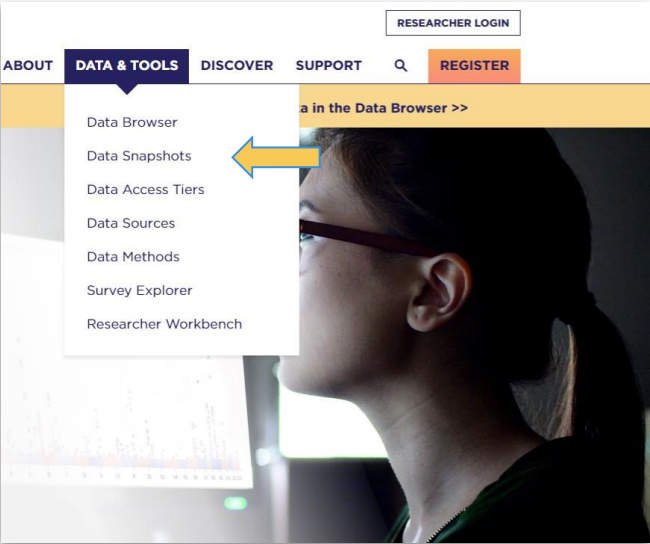


“The Public Website”



“The Workbench”

# Data Snapshot provide an overview of participant data.



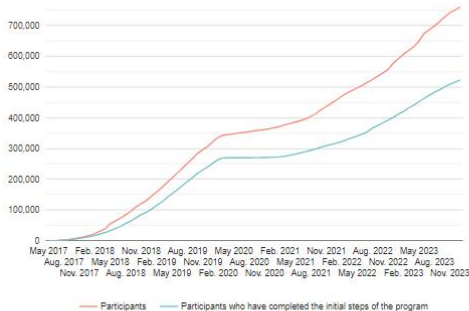
## Participants at a Glance



### Enrollment Numbers

This graph represents participants who have consented to join the program and those who have completed all initial steps of the program. The initial steps are consenting, agreeing to share electronic health records, completing the first three surveys, providing physical measurements, and donating at least one biospecimen to be stored at the biobank.

*The following numbers are approximated to protect participants' privacy. Numbers are updated as of February 4, 2024.*



**100+**

Funded Partner Organizations

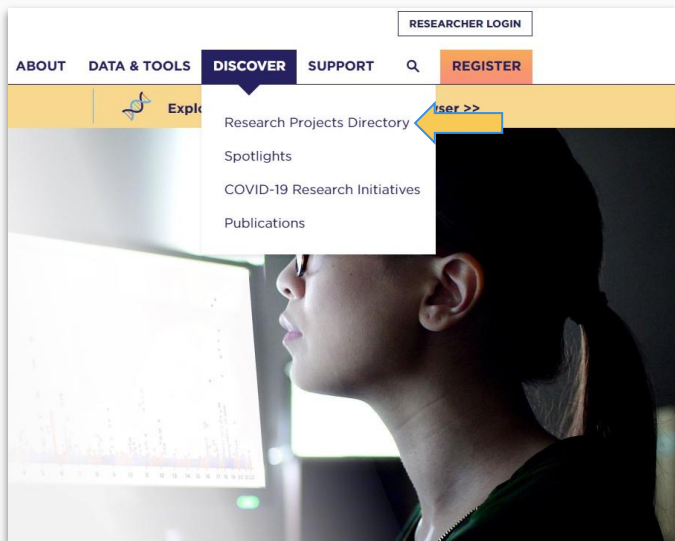
**860+**

Sites Collecting Samples and Measurements

### Outreach

These counts represent the number of program partner awardees and enrollment sites launched. These numbers are updated on an as-needed basis.

# Use the Project Directory to view all active projects.



## Research Projects Directory

8,984 ACTIVE PROJECTS

*This information was updated 2/5/2024*

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.nih.gov](https://allofus.nih.gov) in compliance with the 21st Century Cures Act.*

Search By:

49 projects have 'hispanic' in the project title

[Go back to All Projects View](#) or enter a new search query

### Interdisciplinary approach to understanding obesity in Hispanic populations

We plan to explore the data to formalize a research question about the correlations between obesity and the gut microbiome in Hispanic populations. I also want to formalize a research question about the correlations between obesity, polycystic ovarian syndrome, and...

### Asthma genetics in Hispanic and Latino individuals

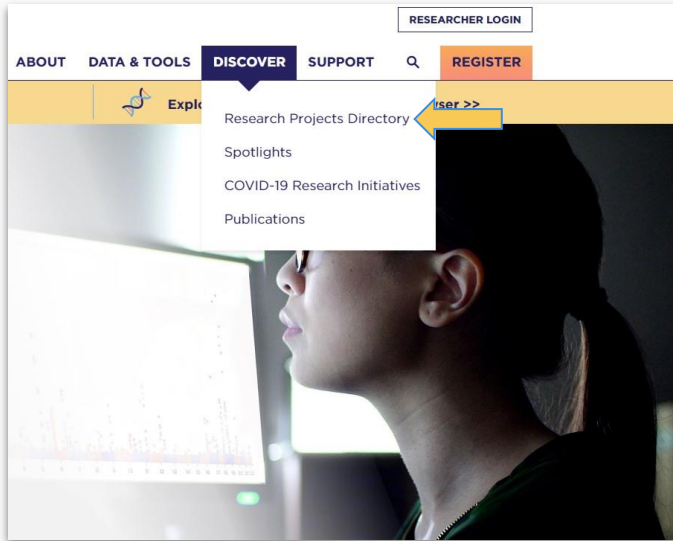
We will apply population genetics methods such as admixture and IBD mapping to identify genomic regions, and ultimately, genetic variants, that are associated with asthma in Hispanic and Latino individuals in the U.S. Hispanic and Latino individuals are admixed, and...

### Hispanic/AMR Workspace

What are the genetic determinants of Alzheimer's disease in individuals identifying as Hispanic, compared to those who



# Use the Project Directory to view all active projects.



## Asthma and Social Stressors 2

### SCIENTIFIC QUESTIONS BEING STUDIED

I hope to explore associations between asthma severity (categorized as intermittent or persistent) and exposure to environmental and psychosocial stressors, such as community violence, discrimination, and perceived stress. An understanding of this can aid in health promotion for marginalized populations who are often exposed to these stressors, and assist in assessing appropriate interventions (mental health-focused or otherwise).

### PROJECT PURPOSE(S)

- Disease Focused Research (asthma)
- Population Health
- Social / Behavioral

### SCIENTIFIC APPROACHES

We hope to analyze data from the Social Determinants of Health survey as they relate to the condition of interest (asthma; in the Conditions domain), while potentially controlling for certain demographic variables.

### ANTICIPATED FINDINGS

We hope to assess whether there is an association between these adverse social/environmental exposures and experiences with asthma. This will support an understanding of how environmental factors may influence the severity of this disease.

### DEMOGRAPHIC CATEGORIES OF INTEREST

This study will not center on underrepresented populations.

### DATA SET USED

Registered Tier

### RESEARCH TEAM

#### Owner:

- [Prudny Bonnaire Fils](#) - Undergraduate Student, University of Florida

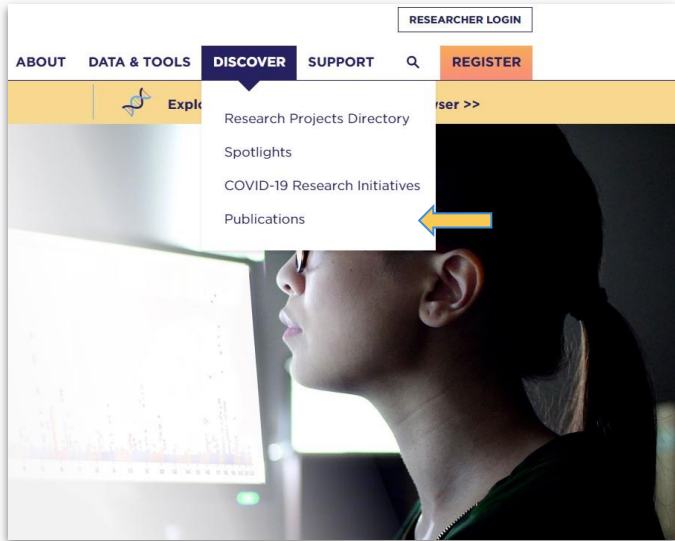
#### Collaborators:

- Ruina He - Project Personnel, University of Florida



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

# Read researchers' peer-reviewed *All of Us* publications



## *All of Us* Publications

There are currently **221 publications** and counting

Inclusion on this list does not constitute endorsement by *All of Us*

### Featured Publications



**Hypertension prevalence in the *All of Us* Research Program among groups traditionally underrepresented in medical research**

[Hypertension prevalence in the \*All of Us\* Research Program among groups traditionally underrepresented in medical research.](#)

Chandler PD, Clark CR, Zhou G, Noel NL, Achilike C, Mendez L, Ramirez AH, Loperena-Cortes R, Mayo K, Cohn E, Ohno-Machado L, Boerwinkle E, Cicek M,

Gian J, Schully S, Ratsimbazafy F, Mockrin S, Gebo K, Dedier JJ, Murphy SN, Smoller JW, Karlson EW; All of Us Research Program Investigators.

Sci Rep. 2021 Jun 22;11(1):12849. doi: 10.1038/s41598-021-92143-w. PMID: 34158555; PMCID: PMC8219813.

### Browse or Search all Publications

SEARCH by TITLE

SEARCH

SORT BY: DATE ↓ TITLE ↑

### Reconstruction of private genomes through reference-based genotype imputation

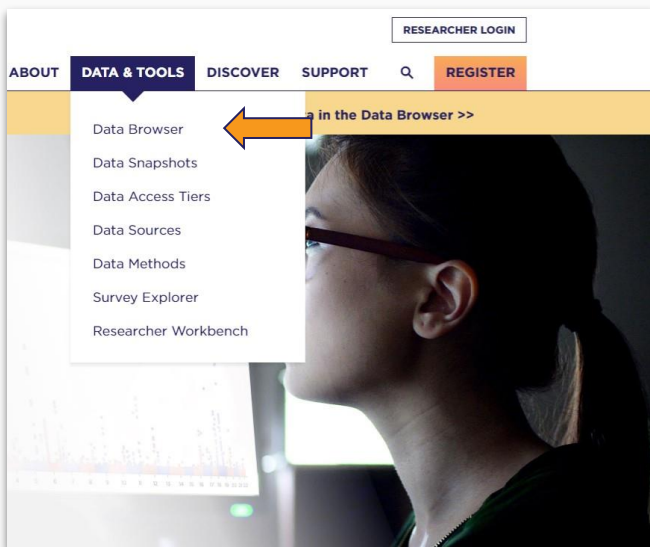
[Reconstruction of private genomes through reference-based genotype imputation](#)

Mosca MJ, Cho H. Genome Biol. 2023 Dec 6;24(1):271. doi: 10.1186/s13059-023-03105-6. PMID: 38053191; PMCID: PMC10698978.

# Exploring the Data - The Data Browser & Survey Explorer

Follow along: <https://DataBrowser.ResearchAllOfUs.org>

# The Data Browser is an interactive way to view the data.



A screenshot of the Data Browser search results page. The page features a search bar at the top with the text 'Search Across Data Types' and a search icon. Below the search bar, there is a search input field with the text 'Keyword Search' and a search icon. An orange arrow points to the search bar. Below the search bar, there is a search results section with the text 'Data includes 409,420 participants as of 2/16/2023.' The search results are organized into several categories: EHR Domains, Genomics, Measurements and Wearables, and Survey Questions. Each category contains a grid of data cards. The 'EHR Domains' category includes cards for Conditions (25,638 medical concepts, 254,700 participants), Drug Exposures (29,865 medical concepts, 239,740 participants), Labs & Measurements (16,216 medical concepts, 252,980 participants), and Procedures (30,328 medical concepts, 242,580 participants). The 'Genomics' category includes cards for SNP/indel Variants (245,400 participants in Short-Read Whole Genome Sequencing (WGS) dataset, 1,074,881,214 SNP/indel Variants) and 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). The 'Measurements and Wearables' category includes cards for Physical Measurements (8 Physical Measurements, 342,840 participants) and Fitbit (6 Fitbit Measurements, 15,620 participants). The 'Survey Questions' category includes cards for The Basics (28 questions available, 409,420 participants), Overall Health (21 questions available, 400,760 participants), Lifestyle (26 questions available, 398,200 participants), Health Care Access & Utilization (57 questions available, 190,220 participants), Personal and Family Health History (614 questions available, 185,240 participants), COVID-19 Participant Experience (COPE) (191 questions available, 100,220 participants), COPE Minute Survey (141 questions available, 127,240 participants), and Social Determinants of Health (80 questions available, 117,800 participants). Each card includes a 'View' or 'Register for access' link. The page also features icons for FAQs, Introductory Videos, and User Guide.

Search Across Data Types

Keyword Search

Data includes 409,420 participants as of 2/16/2023.

### EHR Domains

Conditions	Drug Exposures	Labs & Measurements	Procedures
25,638 medical concepts 254,700 participants	29,865 medical concepts 239,740 participants	16,216 medical concepts 252,980 participants	30,328 medical concepts 242,580 participants

### Genomics

SNP/indel Variants	Genomic data only in Researcher Workbench
245,400 Participants in Short-Read Whole Genome Sequencing (WGS) dataset 1,074,881,214 SNP/indel Variants	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

### Measurements and Wearables

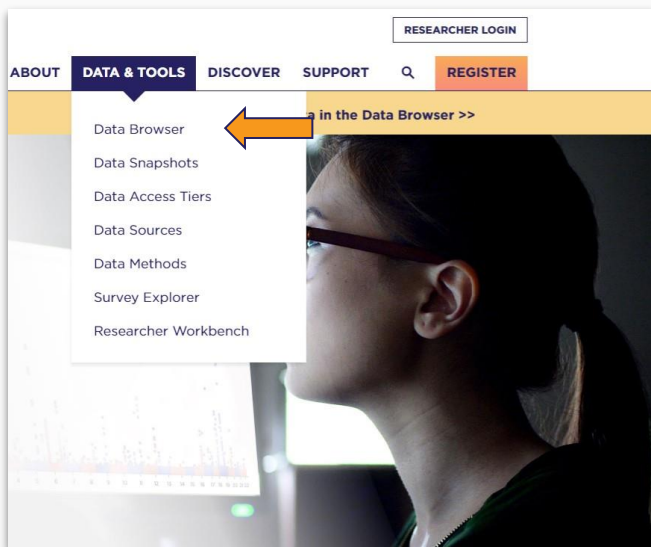
Physical Measurements	Fitbit
8 Physical Measurements 342,840 participants	6 Fitbit Measurements 15,620 participants

### Survey Questions

The Basics	Overall Health	Lifestyle	Health Care Access & Utilization
28 questions available 409,420 participants	21 questions available 400,760 participants	26 questions available 398,200 participants	57 questions available 190,220 participants

Personal and Family Health History	COVID-19 Participant Experience (COPE)	COPE Minute Survey	Social Determinants of Health
614 questions available 185,240 participants	191 questions available 100,220 participants	141 questions available 127,240 participants	80 questions available 117,800 participants

# Explore the Data: The Data Browser



## Search Across Data Types

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



FAQs



Introductory  
Videos



User Guide



## EHR Domains

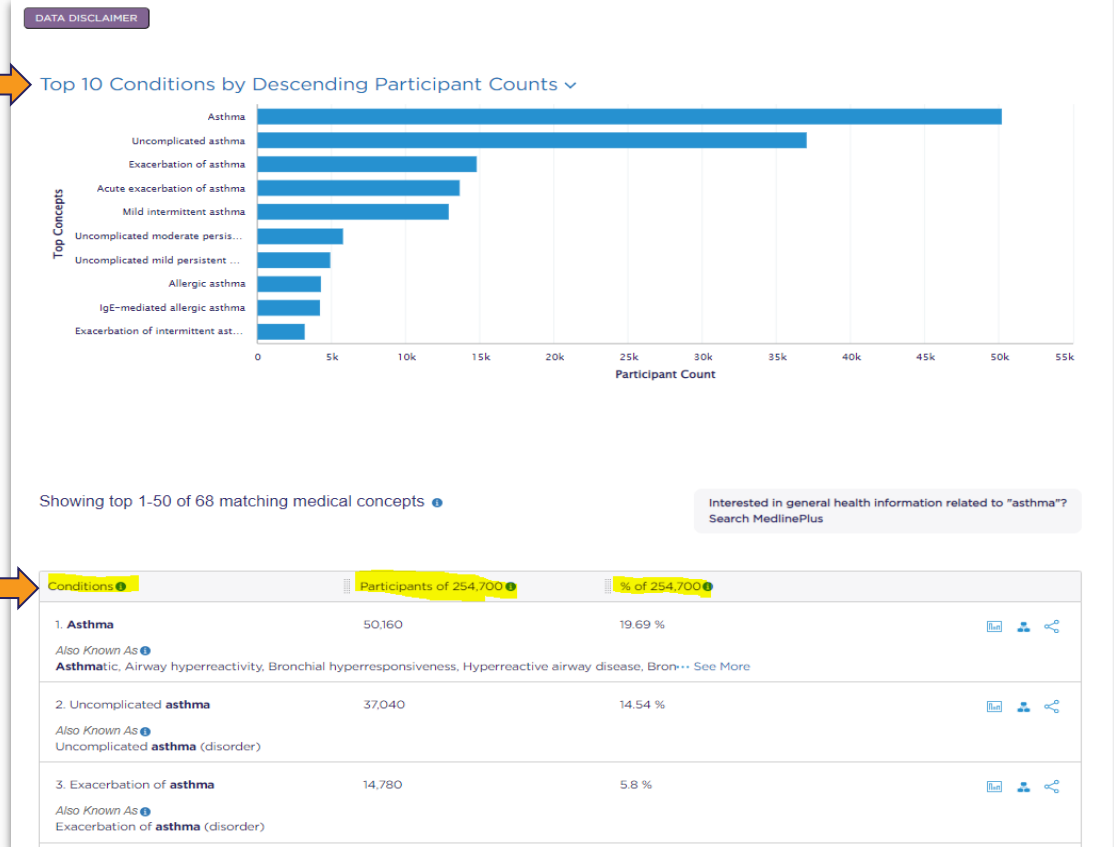
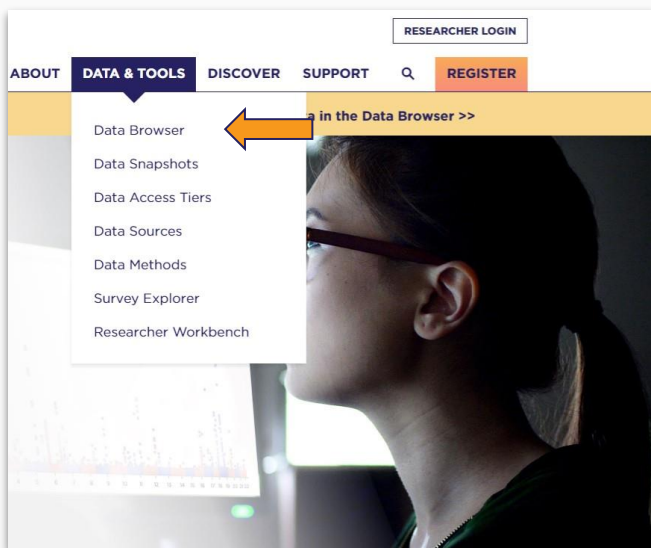
<b>Conditions</b>	<b>Procedures</b>
68 matching medical concepts	4 matching medical concepts
254,700 participants	242,580 participants
<a href="#">View Conditions</a>	<a href="#">View Procedures</a>



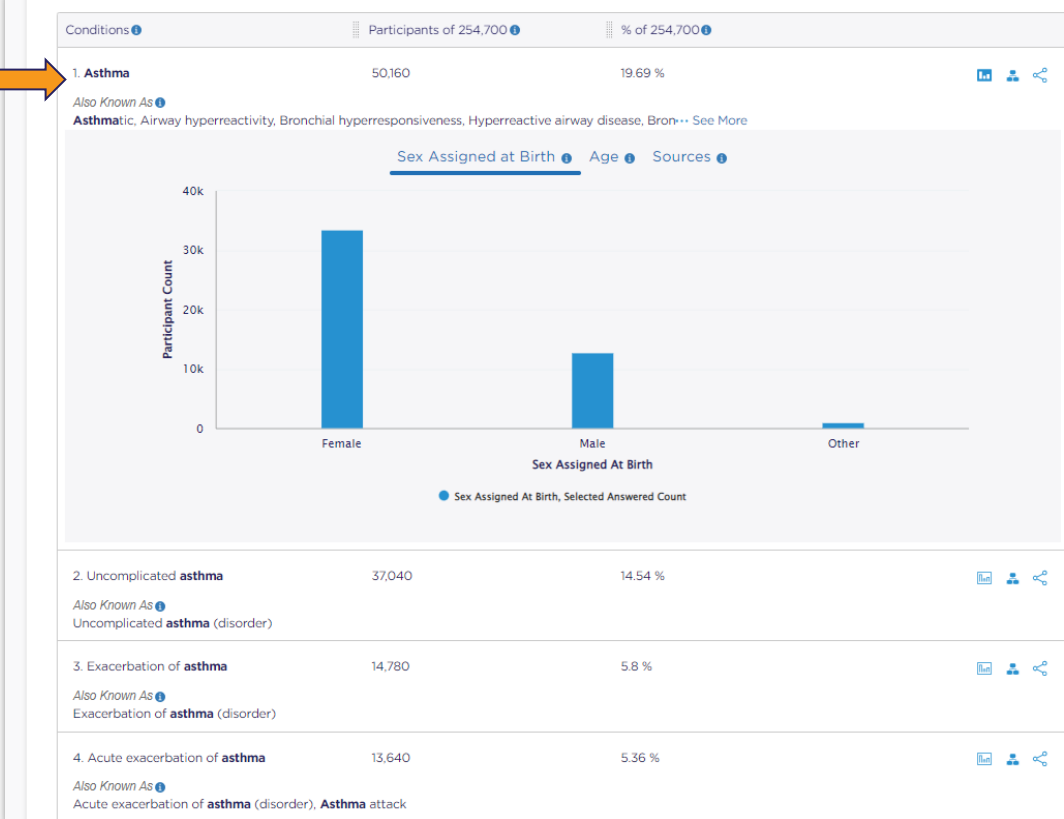
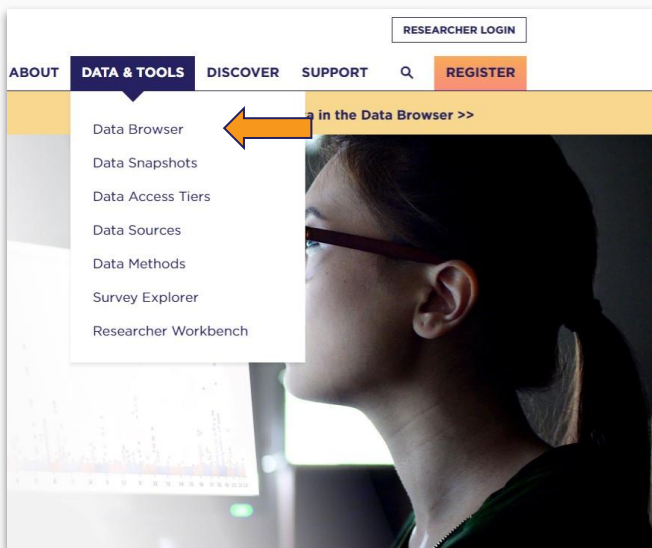
## Survey Questions

<b>Personal and Family Health History</b>
1 matching survey questions
185,240 participants
Survey includes information about the medical history of a participant and their immediate family members.
<a href="#">View Complete Survey</a>

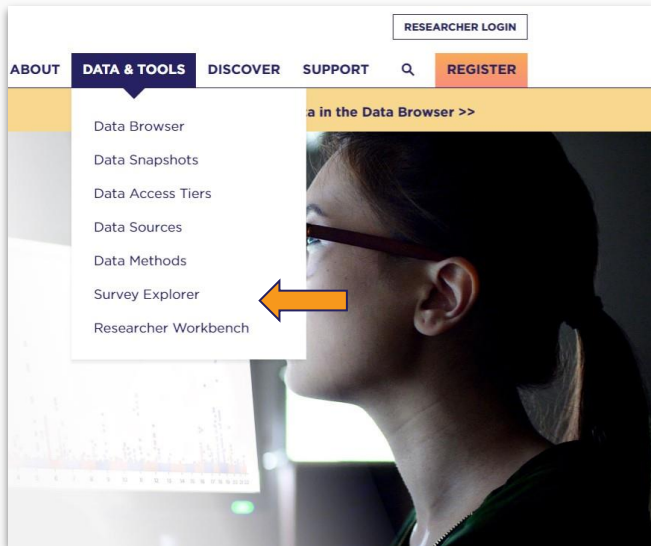
# Explore the Data: The Data Browser



# Explore the Data: The Data Browser



# The Survey Explorer hosts all surveys available to participants.



## The Basics

This core survey asks basic demographic questions, including questions about a participant's work and home. Participants must complete this survey before responding to additional surveys.

[> View English version](#)  
[> View Spanish version](#)

EXPLORE SOURCE MATERIAL

## Lifestyle

This survey asks about a participant's use of tobacco, alcohol, and recreational drugs.

[> View English version](#)  
[> View Spanish version](#)

EXPLORE SOURCE MATERIAL

## Overall Health

This survey collects information about a participant's overall health including general health, daily activities, and women's health topics.

[> View English version](#)  
[> View Spanish version](#)

EXPLORE SOURCE MATERIAL

## Personal/Family Health History

This survey collects information about past medical history, including medical conditions and approximate age of diagnosis.

[> View English version](#)  
[> View Spanish version](#)

EXPLORE SOURCE MATERIAL

## Health Care Access & Utilization

This survey asks questions about a participant's access to and use of health care.

[> View English version](#)  
[> View Spanish version](#)

EXPLORE SOURCE MATERIAL

## Social Determinants of Health

This survey asks about the social determinants of health, including a participant's neighborhood, social life, stress, and feelings about everyday life.

[> View English version](#)  
[> View Spanish version](#)

EXPLORE SOURCE MATERIAL

## COVID-19 Participant Experience (COPE) Survey

This survey asks about the impact of COVID-19 on a participant's mental health, well-being, and everyday life. This survey was administered to participants multiple times from May 2020 to March 2021.

[> View English version](#)  
[> View Spanish version](#)

EXPLORE SOURCE MATERIAL

## Minute Survey on COVID-19 Vaccines

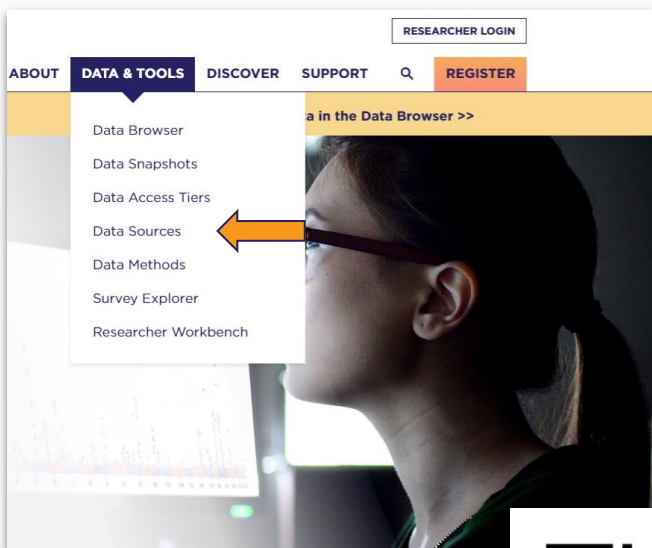
This survey collects information regarding a participant's COVID-19 vaccination experience. This survey was administered to participants multiple times from June 2021 to March 2022.

[> View English version](#)  
[> View Spanish version](#)

EXPLORE SOURCE MATERIAL



# Visit the data roadmap for more information about upcoming data types



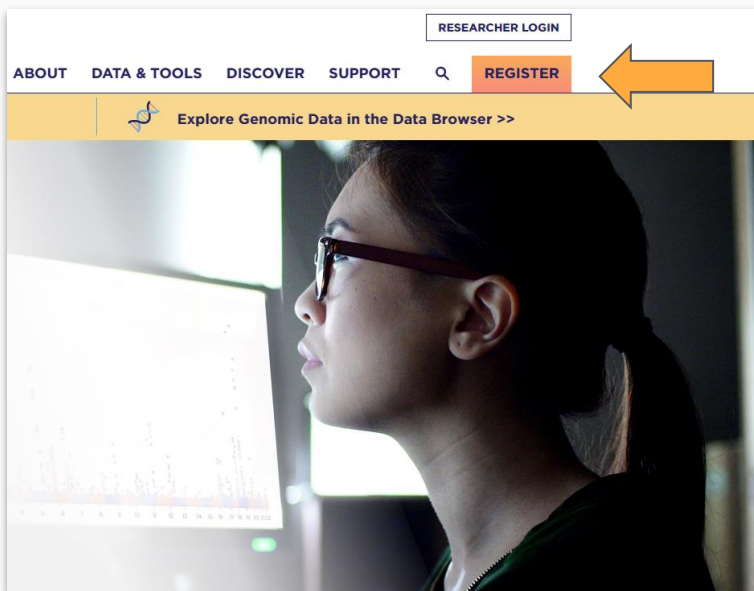
<https://allofus.org/Roadmap>



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

# How to Register

# Registration is easy!



[allof-us.org/Register](https://allof-us.org/Register)



## How to Register

STEP  
1

### CONFIRM YOUR INSTITUTION'S AGREEMENT

Before you can create an account, your institution must have a Data Use and Registration Agreement (DURA) in place with *All of Us*. [Confirm DURA](#).

STEP  
2

### CREATE AN ACCOUNT AND VERIFY IDENTITY

After creating your Researcher Workbench account, you will be asked to verify your identity through Login.gov or ID.me. [Learn more](#).

STEP  
3

### COMPLETE THE MANDATORY TRAINING

The training focuses on conducting responsible and ethical research using the Researcher Workbench. Additional training is required to access the Controlled Tier. [Learn more](#).

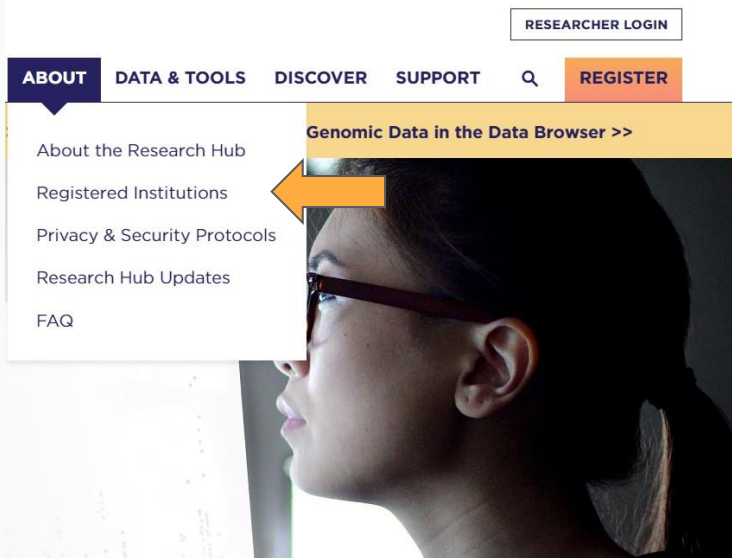
STEP  
4

### SIGN THE DATA USER CODE OF CONDUCT (DUCC)

This agreement outlines the program's expectations for researchers who use the Researcher Workbench and describes how program data may be used. [View the DUCC](#).

[CREATE AN ACCOUNT](#)

# See if your institution has an agreement with us for access.



## 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.

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

**685** Institutions Have Agreements in Place

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

Quick search - enter your institution's name

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

Institution	Access Level	Contact at Institution
A.T. Still University of Health Sciences	<b>R</b> <b>C</b>	Gayla Sublette
Abigail Wexner Research Institute at Nationwide Children's Hospital	<b>R</b> <b>C</b>	Nichole Michaels
Above and Beyond Family Recovery Center	<b>R</b> <b>C</b>	Daniel Hostetler
Access Care Anywhere	<b>R</b> <b>C</b>	Carissa Bishop
Acton-Boxborough Regional School District	<b>R</b> <b>C</b>	Deborah Bookis
Adams State University	<b>R</b> <b>C</b>	Benita Brink
AI LA Community, Inc	<b>R</b> <b>C</b>	Todd Terrazas

# Benefits of Registration



Available to  
all registered  
users

## Resources

*All of Us* offers data and more.

Registered users have access to:

- Platform and tools
- \$300 in initial credit
- User support materials and staff
- Opportunities to showcase work

## Platform Uses

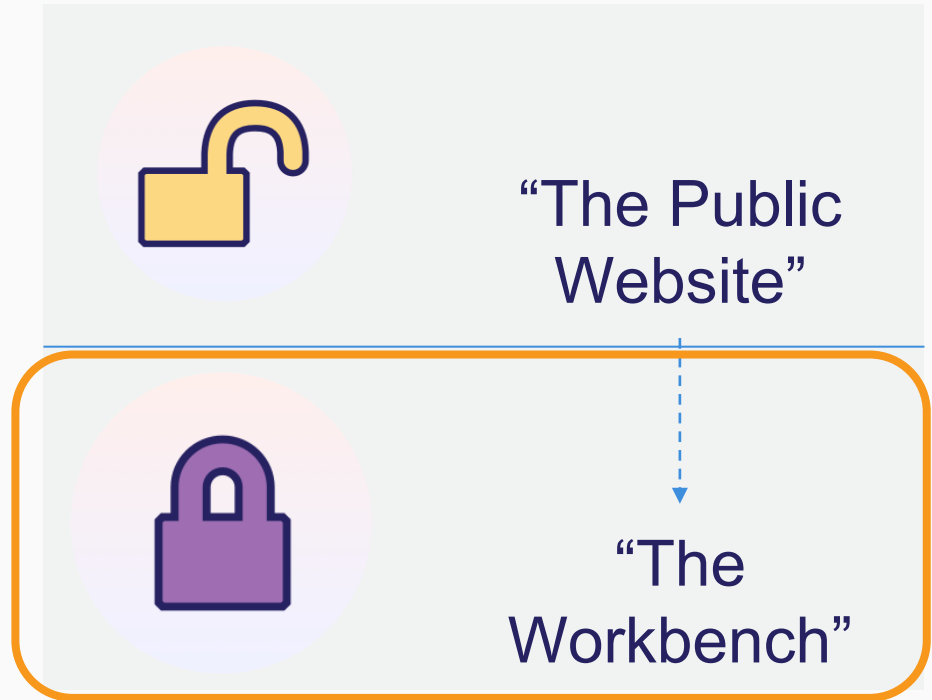
*All of Us* is for publishing and more.

- Team science
- Dissertation
- Thesis
- Poster presentations
- Class projects
- Self-practice (especially data science)

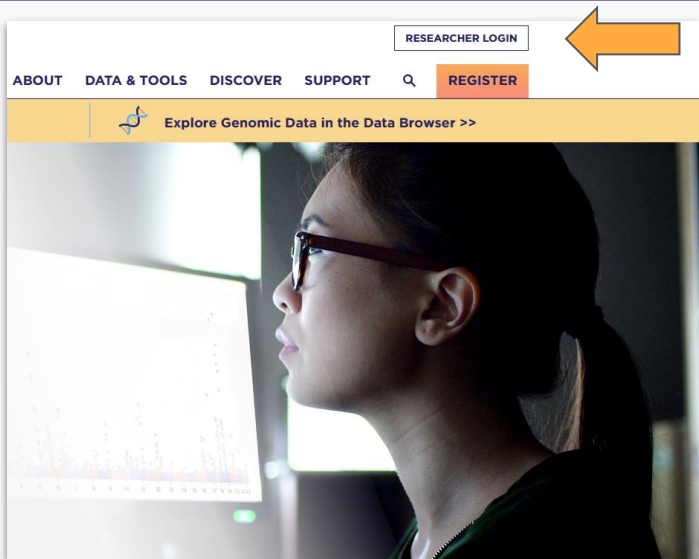
# **The Researcher Workbench** and how to start a research project

# The Researcher Workbench

A secure enclave where researchers access & analyze All of Us data.



# Login from the Hub to access your Workspaces.



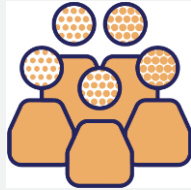
The image shows the login page for the All of Us Researcher Workbench. The page features the 'All of Us RESEARCHER WORKBENCH' logo at the top left. The main heading is 'Already have a Researcher Workbench account?' followed by a 'Sign In' button with the Google logo. Below this is a link for 'Trouble Signing In?'. The second heading is 'Don't have an account?' followed by a 'CREATE ACCOUNT' button. A 'WARNING NOTICE' section follows, stating that the site is created by the All of Us Research Program, funded by the National Institutes of Health, and that unauthorized attempts to upload, change, or use information may result in disciplinary action, civil, and/or criminal penalties. A final paragraph states that by continuing to log in, users expressly consent 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. On the right side of the page is a large, diverse group of people of various ages and ethnicities.



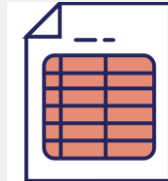
# The Researcher Workbench = secure cloud analysis platform



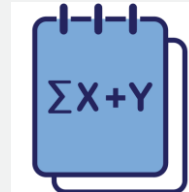
WORKSPACES



COHORT  
BUILDER



DATASET  
BUILDER



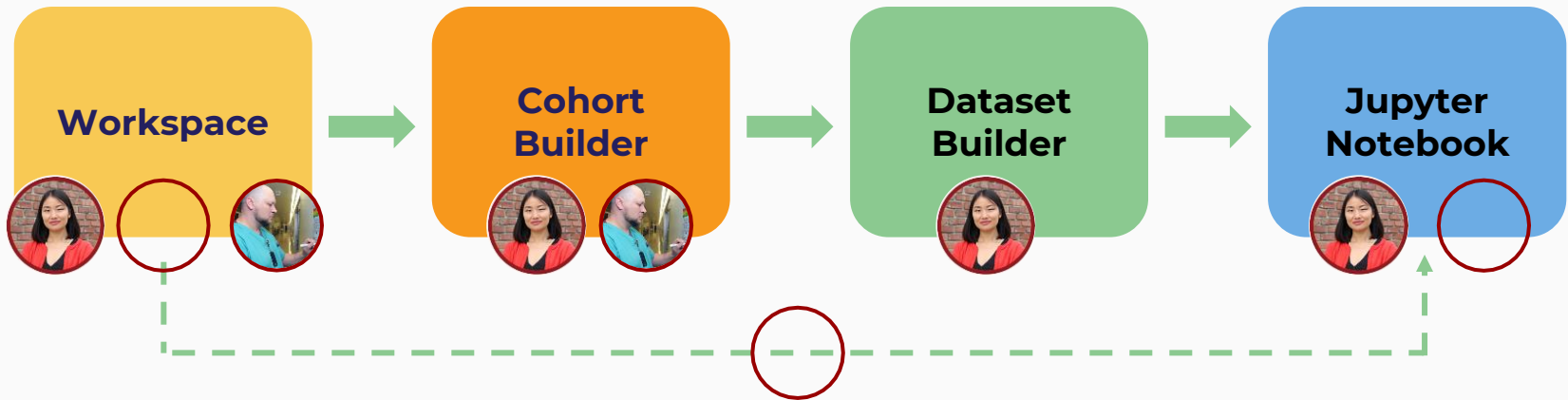
NOTEBOOKS



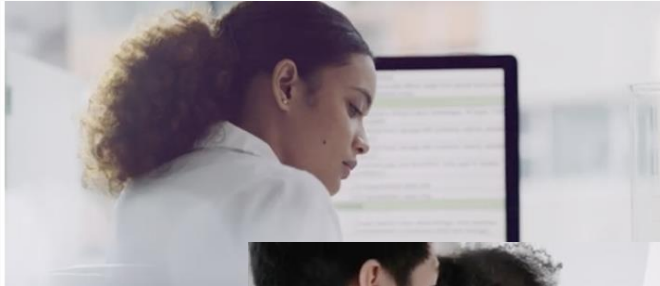
WORKBENCH USER  
SUPPORT HUB

# The Workbench is Collaborative

Within the Researcher Workbench, a researcher (and their research team) collaborate in “workspaces.” The workflow is flexible & collaborative.



No IRB approval needed.



We use a **passport model** and approve the **researcher**



# The Workbench landing page





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: 05/31/22, 05:24 PM 

 Asthma Demo  
**OWNER**  
Last Changed: 05/31/22, 03:54 PM

 Adults Who Developed Asthma as Adults - Shared Conditions and Habits  
**OWNER**  
Last Changed: 05/31/22, 03:40 PM

 Duplicate of How to Get Started with Registered Tier D  
**OWNER**  
Last Changed: 05/31/22, 05:06 PM

## Recently Accessed Items


Item type	Name	Workspace name	Last changed	Dataset
 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	WGS + 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
 Cohort	asthma cohort 3	Asthma Demo	Sep 1, 2021	All of Us Registered Tier Dataset v3
 Notebook	Asthma Demo 2	Asthma Demo	Sep 1, 2021	All of Us Registered Tier Dataset v3
 Notebook	Asthma Dataset	Asthma Demo	Sep 1, 2021	All of Us Registered Tier Dataset v3

Showing 8 most recent items

## Quick Tour and Videos



# Answer questions about your Workspace.



### Create a new workspace (Required)

Workspace name

Data access tier

Dataset version

**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  
 [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](#)

# The Researcher Workbench



Workspaces >  
Asthma Demo

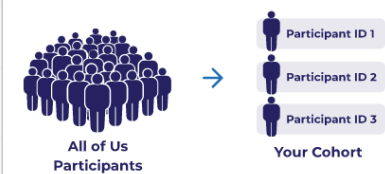
All of Us Registered Tier Dataset v3

DATA
ANALYSIS
ABOUT

⌵ ⌵ ⌵ ⌵ ⌵


### Cohorts +

A cohort is a group of participants based on specific criteria.



### Datasets +

A dataset is a table containing data about a cohort that can be exported for analysis.



Show: Show All Cohorts Cohort Reviews Concept Sets Datasets

	Item type <span style="font-size: 0.8em;">↑↓</span>	Name <span style="font-size: 0.8em;">↑↓</span>	Last Modified Date <span style="font-size: 0.8em;">↑↓</span>	Last Modified By
		<input style="width: 80%; border: 1px solid #ccc;" type="text" value="Search Name"/> <span style="font-size: 0.8em;">🔍</span>		
⋮	Cohort	asthma cohort 3	Sep 1, 2021	
⋮	Cohort	asthma_cohort1	Feb 17, 2023	ashley.e.green@researchchall...
⋮	Cohort	Asthma Cohort	Sep 1, 2021	
⋮	Cohort Review	Asthma Cohort	Sep 1, 2021	
⋮	Concept Set	Asthma_concept1	Feb 17, 2023	ashley.e.green@researchchall...
⋮	Dataset	Asthma dataset	Sep 1, 2021	

### Help Tips ✕

#### Cohorts

A "cohort" is a group of participants that a group of researchers are interested in. The cohort builder allows you to create and review cohorts and annotate participants in a researcher's study group.

#### Concept Sets

Concepts describe information in a patient's medical record, such as a condition they have, a prescription they are taking or their physical measurements. Subject areas such as conditions, drugs, measurements, etc. are called "domains." Concept sets are collections of concepts from a particular domain, that users can save and use to create a dataset for analysis.

#### Datasets

Datasets are analysis-ready tables that can be exported to analysis tools such as notebooks. Users can build and preview a dataset for one or more cohorts by selecting the desired concept sets and values for the cohorts.

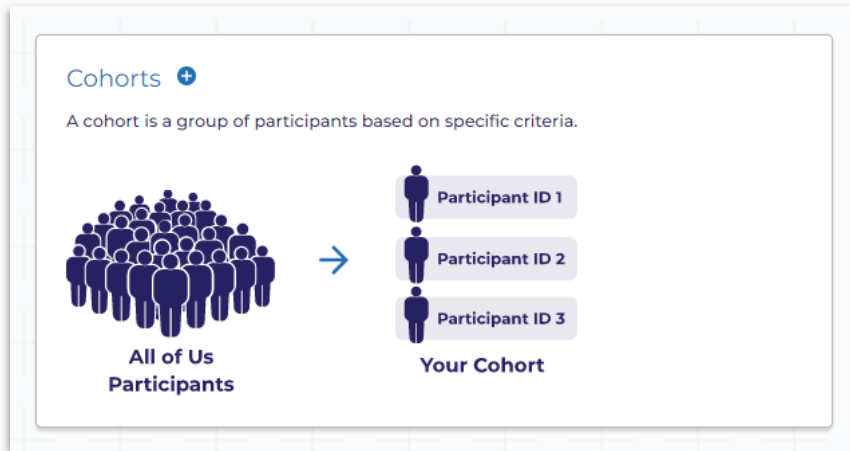
#### Recent Data

This area displays recently opened data types like cohorts, concept sets, or datasets.

#### Data Type

This table displays details about cohorts, concept sets, and datasets within the workspace, including the name, owner and

# The Researcher Workbench



**All of Us RESEARCHER WORKBENCH**

Workspaces > Genetic Causation of Asthma > **Build Cohort Criteria**

DATA ANALYSIS ABOUT

### Include Participants

Group 1

ADD CRITERIA ▾

Search or browse all domains ⓘ

Q X

**Program Data**

- Demographics ▶
- Surveys
- Physical Measurements
- Fitbit
- Whole Genome Sequence
- Global Diversity Array

**Domains**

- Conditions
- Procedures
- Drugs
- Labs and Measurements
- Visits
- Observations
- Devices

**USER SUPPORT HUB**

- Getting Started
- Videos
- Working with Data
- Contact Us
- Policy

U.S. Department of Health and Human Services.  
and does not provide medical advice, diagnosis or treatment. Copyright 2020.

# The Researcher Workbench

## Datasets

Build a dataset by selecting the variables and values for one or more of your cohorts. Then export the completed dataset to Notebooks where you can perform your analysis.

### 1 Select Cohorts (Participants)

#### Prepackaged Cohorts

All Participants

#### Workspace Cohorts

Age + BMI

Array + asthma

### 2 Select Concept Sets (Rows)

#### Prepackaged Concept Sets

Demographics

All Surveys

Fitbit Heart Rate Summary

Fitbit Heart Rate Level

### 3 Select Values (Columns)

Deselect All

### 4 Preview Dataset

A visualization of your data table based on concept sets and values you selected above.  
Once complete, export for analysis

[View Preview Table](#)

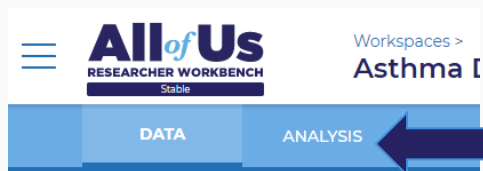
Select cohorts, concept sets, and values above to generate a preview table

CREATE DATASET

ANALYZE



# The Jupyter Notebook is where you will run your analysis.



Cohorts +



Notebooks for analysis

Workspaces > Duplicate of How to Get Started with Registered Tier Data > Notebooks > Data 101 - Data Fundamentals [Python]

jupyter Data 101 - Data Fundamentals [Python]

File Edit View Insert Cell Kernel Navigate Widgets Help Snippets

pit.tight\_layout()

### Count of participants with multiple data types

Category	Count
Survey only	47216
EHR only	286
Phys. Meas. only	0
Fitbit only	228
Survey & EHR	2086
Survey & Phys. Meas.	196709
Survey & Fitbit	60788
EHR & Phys. Meas.	0
EHR & Fitbit	0
Phys. Meas. & Fitbit	0
Survey, EHR, & Phys. Meas.	4631
Survey, EHR, & Fitbit	1297
Survey, Phys. Meas., & Fitbit	101
EHR, Phys. Meas., & Fitbit	0
Survey, EHR, Phys. Meas., & Fitbit	2179

Contents

- 1 Objectives
- 2 Setup
  - 2.1 How to install software packages
  - 2.2 How to import installed software pa
  - 2.3 How to select the Curated Data Re
- 3 Data Availability Part 1
  - 3.1 How many participants have survey
  - 3.2 How many participants have physic
  - 3.3 How many participants have EHR
  - 3.4 How many participants have COPE
  - 3.5 How many participants have Fitbit
  - 3.6 How many participants have more
- 4 Data Availability Part 2
  - 4.1 How many participants have data fr
  - 4.2 How many participants have data f
  - 4.3 How many participants have data f
  - 4.4 How many participants have data f
  - 4.5 How many participants have data f
- 5 Data Organization
  - 5.1 How are participant data organized
  - 5.2 How many rows of data are in each
  - 5.3 How are data from different source
- 6 Example Queries
  - 6.1 Participant count by gender identity
  - 6.2 Participant count by race and ethni
  - 6.3 Participant count by state of resid
  - 6.4 How to interpret PPI responses suc
- 7 Expert Tip - Accessing CDR\_base

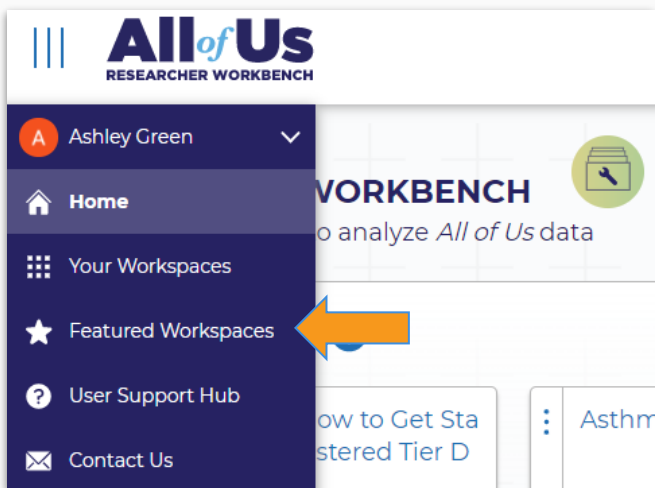
4 Data Availability Part 2

How to delve a little deeper into data availability within each major data type (Modules 1-6, Physical M

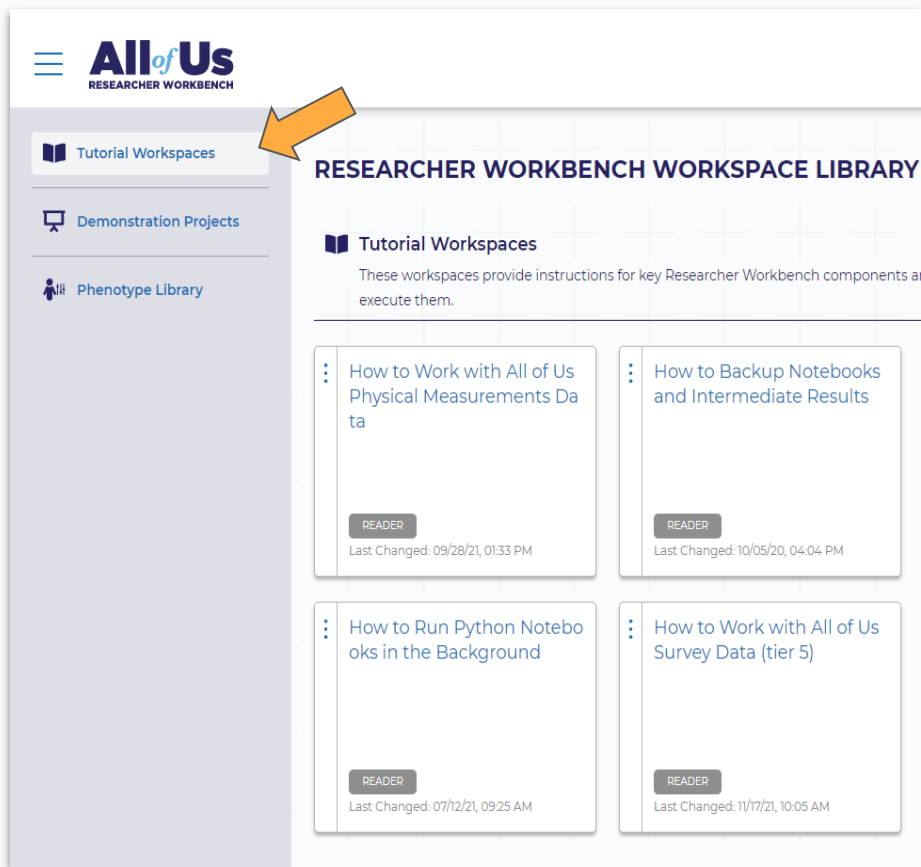
4.1 How many participants have data for each survey?

# Support Resources

# The Featured Workspaces can help you during your research.




The screenshot shows the top navigation bar of the All of Us Researcher Workbench. On the left, a dark blue navigation menu is open, listing several options: Ashley Green (with a dropdown arrow), Home, Your Workspaces, Featured Workspaces (highlighted with an orange arrow), User Support Hub, and Contact Us. The main content area behind the menu shows the 'All of Us RESEARCHER WORKBENCH' logo and a search bar with the text 'to analyze All of Us data'. Below the search bar, there are several workspace cards, including one titled 'How to Get Started Tier D' and another titled 'Asthm'.



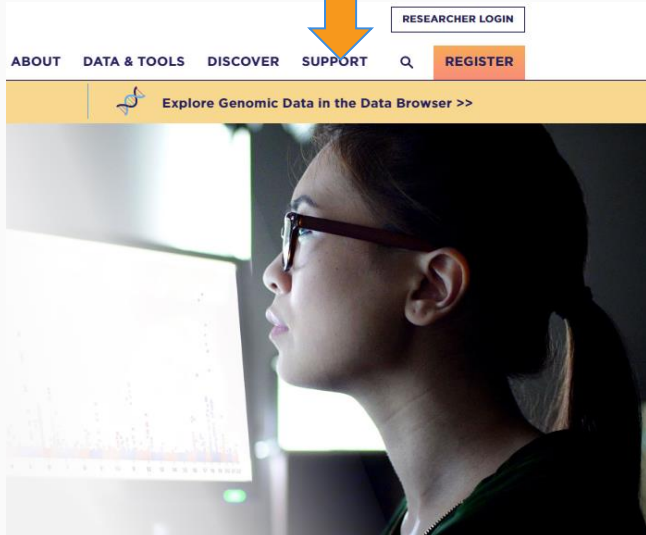
The screenshot displays the 'RESEARCHER WORKBENCH WORKSPACE LIBRARY' page. At the top left, the 'All of Us RESEARCHER WORKBENCH' logo is visible. Below the logo, a sidebar menu lists 'Tutorial Workspaces' (highlighted with an orange arrow), 'Demonstration Projects', and 'Phenotype Library'. The main content area is titled 'RESEARCHER WORKBENCH WORKSPACE LIBRARY' and features a section for 'Tutorial Workspaces' with the text: 'These workspaces provide instructions for key Researcher Workbench components and how to execute them.' Below this, there are four workspace cards, each with a title, a 'READER' button, and a 'Last Changed' timestamp:

- How to Work with All of Us Physical Measurements Data**  
READER  
Last Changed: 09/28/21, 01:33 PM
- How to Backup Notebooks and Intermediate Results**  
READER  
Last Changed: 10/05/20, 04:04 PM
- How to Run Python Notebooks in the Background**  
READER  
Last Changed: 07/12/21, 09:25 AM
- How to Work with All of Us Survey Data (tier 5)**  
READER  
Last Changed: 11/17/21, 10:05 AM

# Our Support Tools

Email us questions anytime at <a href="mailto:support@researchallofus.org">support@researchallofus.org</a> .	Zoom in for our live New User Orientation or Office Hours.	User Support Hub
<p>Email us or use our “Help” icon to</p> <ul style="list-style-type: none"><li>● Resolve technical issues</li><li>● Ask questions about our data or the research program</li><li>● Give us feedback or make suggestions</li><li>● and more....</li></ul> <p><i>Support@ResearchAllOfUs.org</i></p>	<p>Webinar objectives:</p> <ul style="list-style-type: none"><li>● Understand data &amp; data organization</li><li>● Learn how to get started on Researcher Workbench</li><li>● Learn how to utilize the User Support Hub</li><li>● Technical Assistance</li></ul> <p><i>Office Hours - Weekly on Tuesdays; bi-weekly on Fridays New User Orientation - monthly</i></p>	<p>Our User Support Hub provides:</p> <ul style="list-style-type: none"><li>● Articles, videos and tutorials about the Researcher Workbench and <i>All of Us</i> dataset</li><li>● Updates on product offerings and new features</li><li>● <b>Events calendar</b></li></ul> <div data-bbox="1441 764 1754 1078"></div>

# The Support Hub and Team are here to help you!



## Welcome to the User Support Hub

Popular searches: data dictionary, office hours, dataset, CDR, billing

### Important Information for Workbench Users

#### Featured Workspace: Data Wrangling

Our data science team released a featured workspace targeted to new users that covers basic data wrangling in the W...

#### Migration of v5 microarray VCF usage to a versioned manifest system

Recently, the All Of Us Researcher Workbench switched over to a versioned system of CRAM, microarray VCF, and IDAT ...

#### Improvements to the User Support Hub

For those of you who've been here before, you may have noticed the User Support Hub (USH) has undergone some change...

### Explore Researcher Workbench Resources



#### Getting Started

Looking for some help with our data and tools? Start here.



#### Videos

Tutorials, questions and answers, and information about the dataset



#### Working with Data

How to use the All of Us Researcher Workbench



#### Credits and Billing

Information about paying for analysis and storage costs.



#### Genomics

Resources to better understand the genomic dataset and how to analyze it.



#### Surveys

Resources to understand and analyze self-reported participant data.



#### Other Data

Resources for EHR, wearable, physical measurement, and geolocation data.



#### Policy

Information about our user policies and associated procedures.



#### News

Release notes, service notifications, and upcoming events



#### Access & DURA Support

Resources for researchers and institutional admins encompassing the access and DURA process.

Help

Stay in touch to learn more



Sign up for our bimonthly newsletter

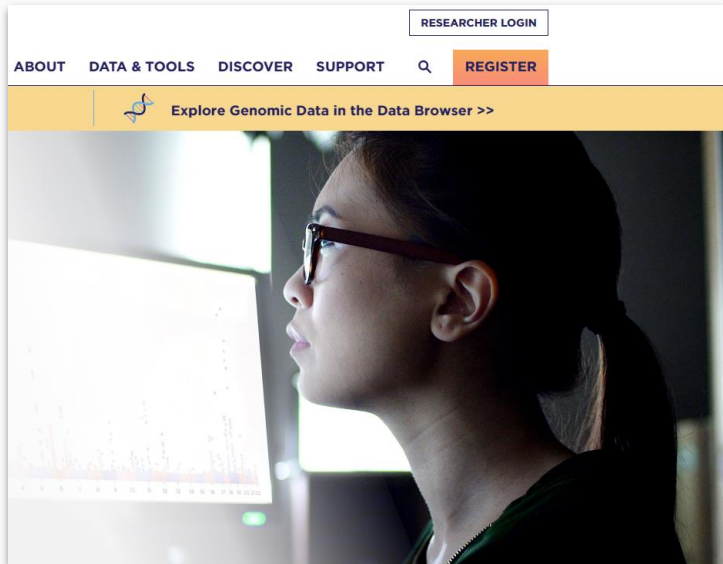
## Subscribe to Research Roundup

Stay up-to-date on the latest news and insights from the *All of Us* Research Hub through our bimonthly email newsletter.



[allof-us.org/RRSignup](https://allof-us.org/RRSignup)

# Join our community of researchers!



Help us connect with other researchers!

Email [ashley.e.green@vumc.org](mailto:ashley.e.green@vumc.org) if you know of others interested in demos or training sessions



Sign up for our newsletter! [allof-us.org/RRSignup](https://allof-us.org/RRSignup)



**@AllofUsResearch**  
**#JoinAllofUs**

# POST SURVEY

