Advancing Cross-NIH Science Through Shared Genomic and Real-World Data Infrastructure:

Updates on *All of Us* and coordination
with the ECHO Program and across NIH

NIH Council of Councils
May 14, 2026

Josh Denny, M.D., M.S.
Chief Executive Officer

All of Us Advisory Panel Members

Learn more here!



Aaron Abend, MBA



Naomi Allen, D.Phil., MSc, BSc



Former Council of Councils Representative

Rhonda Robinson Beale, MD



Participant Ambassador

Christina C. Bell Andrews, JD, MPH, MBA, MA



Russ B. Altman, MD, PhD



Wendy K. Chung, MD, PhD



James Lu, MD, PhD



Gary W. Miller, PhD



Chris O'Donnell, MD, MPH



Elizabeth O. Ofili, MD, MPH, FACC



Jesus Ramirez-Valles, PhD, MPH



Former Council of Councils Representative

Scout, PhD, MA



Roberto Vargas, MD, MPH



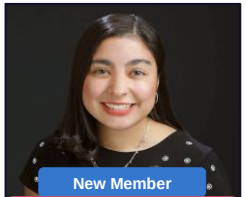
Xiaobin Wang, MD, MPH, ScD



Prashant Shah, MS



Marylyn DeRiggi Ritchie, PhD



New Member

Participant Ambassador

Adriana C. Mares, MS



New Member

Participant Ambassador

Michelle Anderson, BSN, RN



Working Group Report

2026 Focus:

- Scaling Partnered Research Studies
- New data releases
- 2027 Strategic Plan

The *All of Us* Research Program: Our Progress So Far



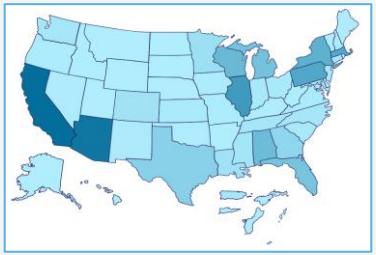
All of Us: From Data to Impact

What Goes in…



Data from **880,000+** Participants from all 50 states including:

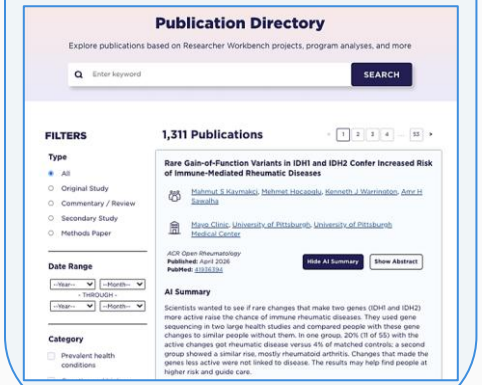
14.7 million Biosample aliquots
499,000+ EHRs
2.9 million Survey Responses



Research is Growing Exponentially…

From **22,580+** Registered Researchers from **1,360+** Organizations

1,350+ Publications (>500 in 2025), now with LLM-based summarization



Examples of Health Information Returned to Participants

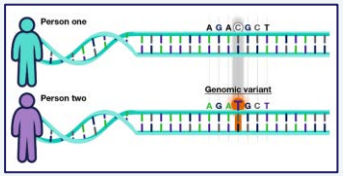


733,000+ Individual DNA Results Returned to **277,000+** Participants, including:

5,490+ with potentially life-saving genetic variants in 59 genes

145,000+ that could impact how their body processes 50+ medicines

& Translation of Findings into Clinical Care

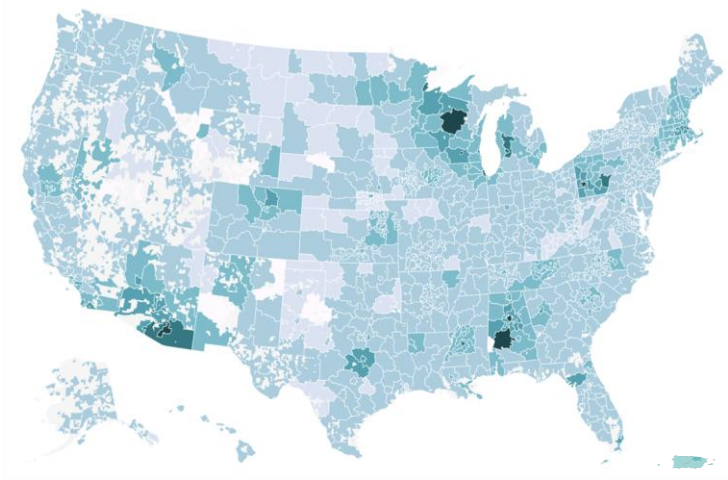


Broad Clinical Labs & Mass General Brigham have developed a **clinical test looking at an individual's risk of 8 cardiovascular conditions** based on *All of Us*

Use the *All of Us* Dataset to Study Diseases with High Economic Impact from Participants Across the Country

From Researcher Workbench V8 data release in 2025:

Map of Consented Participants



US map of *All of Us* participant density; covers 98.1% of US zip3 codes

Conditions	Domain	Participants
Heart Disease	Heart	119,000
Obesity	Endocrine	111,560
Type 1 Diabetes	Endocrine	8,260
Type 2 Diabetes	Endocrine	74,920
Any cancer	Cancer	65,980
Asthma	Pulmonary	65,180
Chronic Obstructive Pulmonary Disorder	Pulmonary	32,020
Epilepsy	Neuro	11,680
Stroke	Neuro	1,460
Rheumatoid Arthritis	Autoimmune	11,380
Osteoarthritis	Autoimmune	132,800

Conditions	Domain	Participants
Depressive Disorder	Mental Health	112,440
Bipolar Disorder	Mental Health	20,540
Dementia	Mental Health	8,160
Human Immunodeficiency Virus	Infectious Disease	6,400
Alcoholism	Abuse	25,680
Substance abuse	Medication	57,920
Age Related Macular Degeneration	Eye	7,980
Hearing loss	Hearing	52,120
Falls	Aging/Nursing	9,180

All of Us RESEARCH PROGRAM | The Future of Health Begins With You

Program Priorities for 2026

Reassess, Reactivate, and Re-engage the Cohort



Through cohort reassessment, meaningful return of value, and new activities, **achieve more than 300,000 actively engaged participants** to strengthen long-term retention and ongoing participant engagement.

Grow and Scale Partnered Research Studies



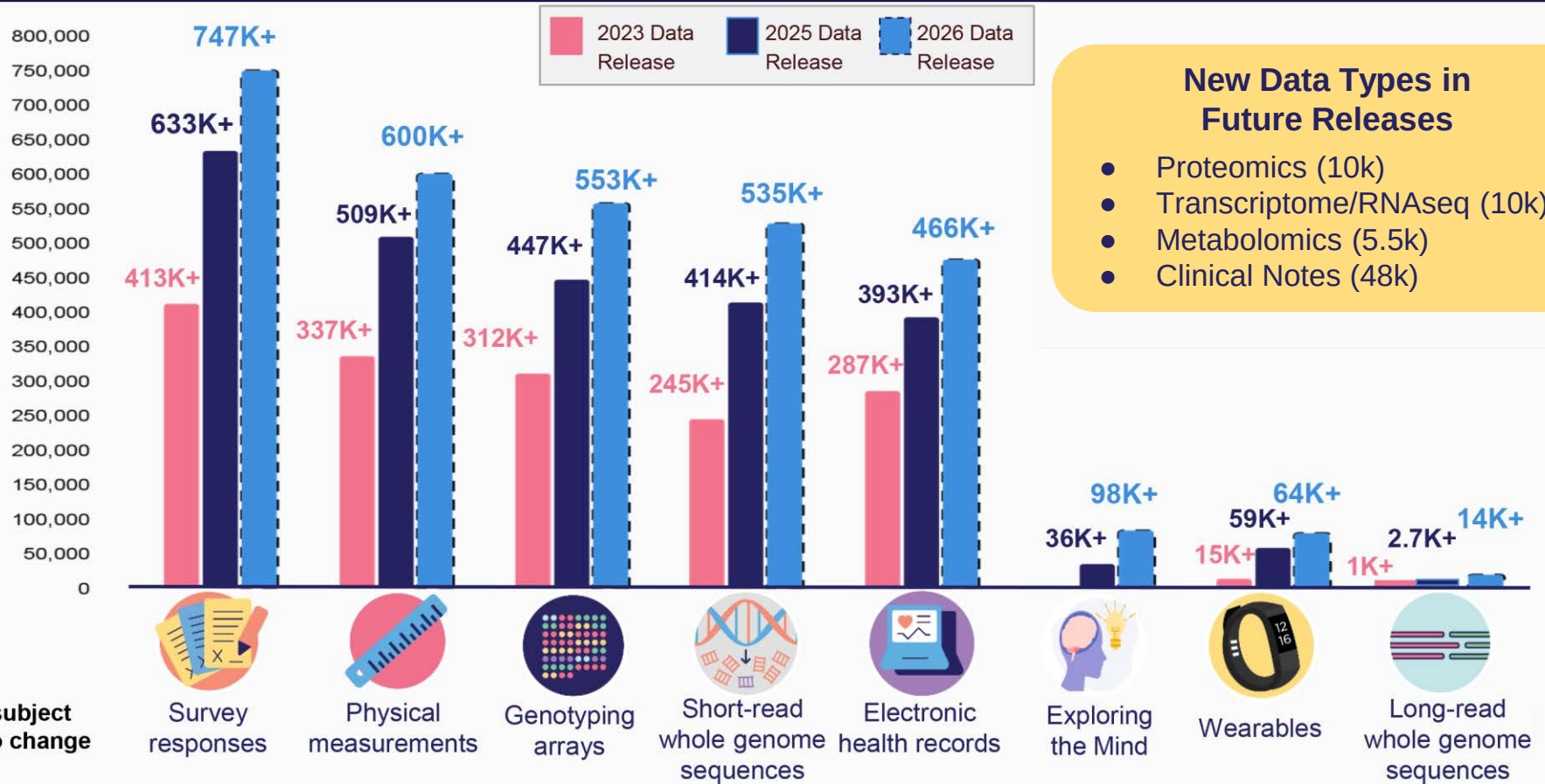
Launch 3 new partnered research studies with supporting lab and technology infrastructure. **Launch a major biospecimen partnership** and a **new process for external investigators to propose partnered research studies** by late 2026.

Innovative Data for the Future



Deliver Curated Data Repository Version 9 to the Researcher Workbench as the world's largest genomic + EHR dataset. Build toward the future with world-leading innovative data types.

Becoming the World's Largest Accessible Dataset with Whole Genomes & EHRs in 2026



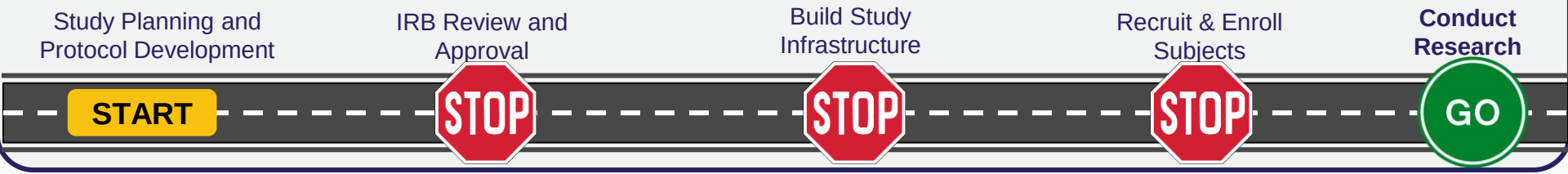
New Data Types in Future Releases

- Proteomics (10k)
- Transcriptome/RNAseq (10k)
- Metabolomics (5.5k)
- Clinical Notes (48k)

***subject to change**

A New Biomedical Research Paradigm: Start Your Research in Hours

The traditional research process can take years



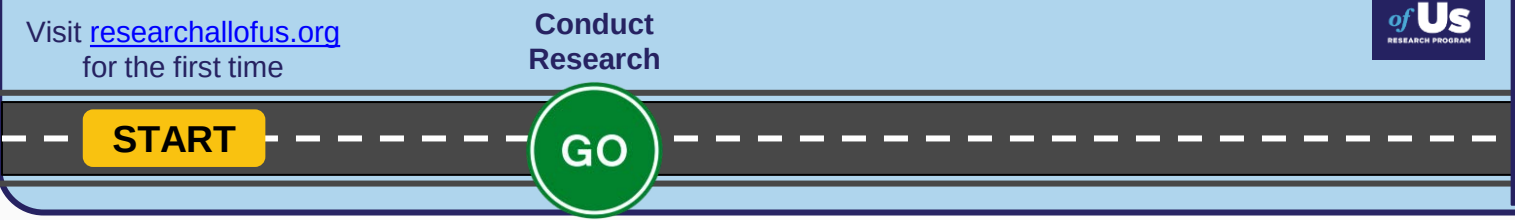
Other Large Cohorts can take 9-12 months to get access

23andMe Genomics england biobank



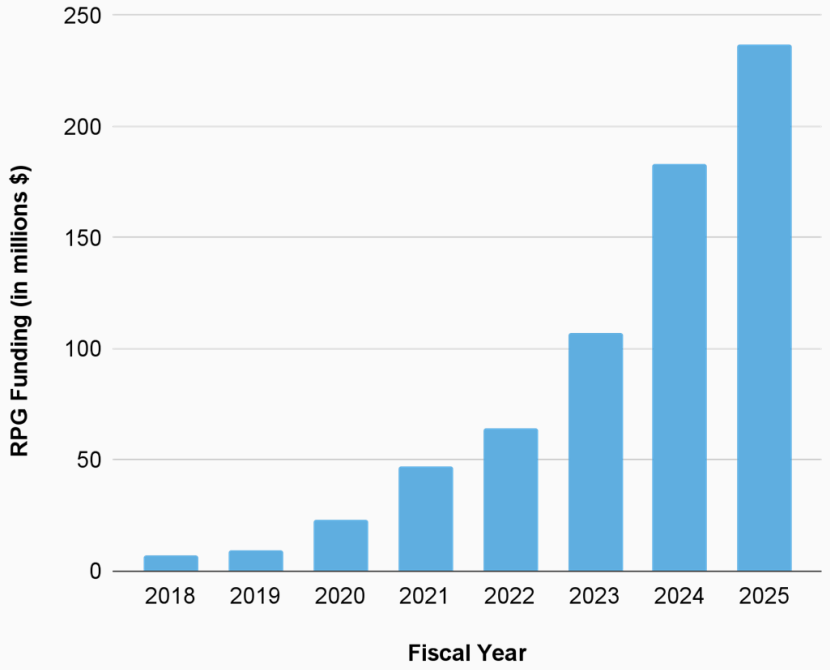
Research and Replication Studies on *All of Us* can begin in <2 hours

All of Us RESEARCH PROGRAM



Learn more!

308 IC-funded Research Project Grants Powered by *All of Us*



NIH ICOs funded 308 competitive peer-reviewed research project grants (>$608M) using *All of Us* data to enable faster science.

All of Us Data Supporting Peer-Reviewed NIH Studies on:

- Genetics (257)
- Neuroscience and Brain Disorders (79)
- Social Determinants of Health (60)
- Aging (57)
- Cancer (45)
- Rare Diseases (41)
- Cardiovascular and Heart Disease (40)
- Mental Health (33)

Advancing Science Careers

- Funded PIs: 465
- Early Stage Investigators: 56
- New Investigators: 15
- Intramural NIH Researchers: 388 (21 ICs)

LLM-Powered Publication Directory

1,350+ total *All of Us* Publications and growing

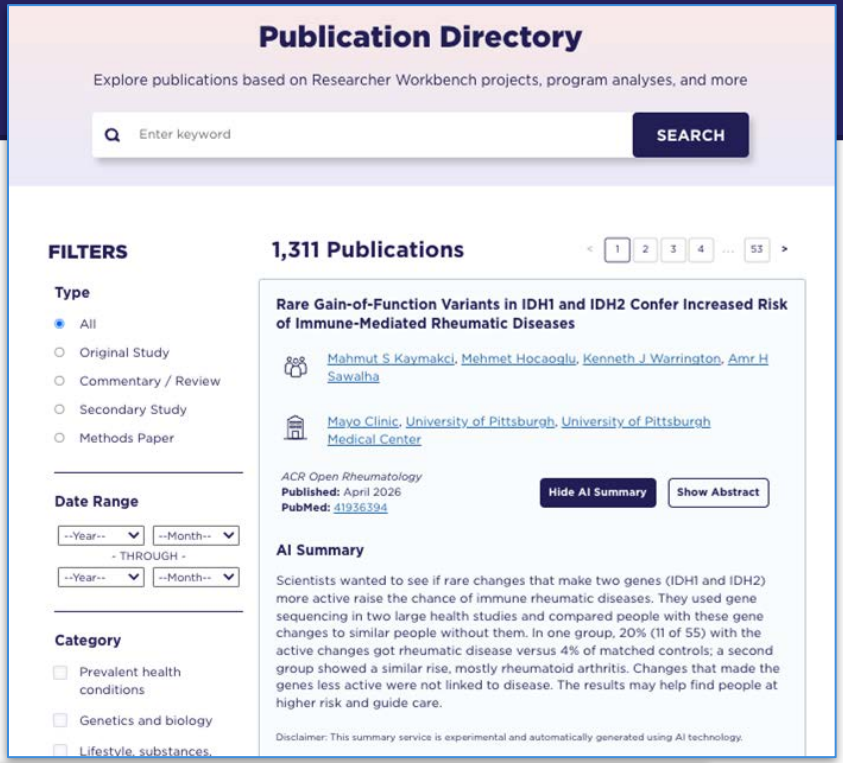
- Over 500 in 2025 alone
- 10+ new publications per week

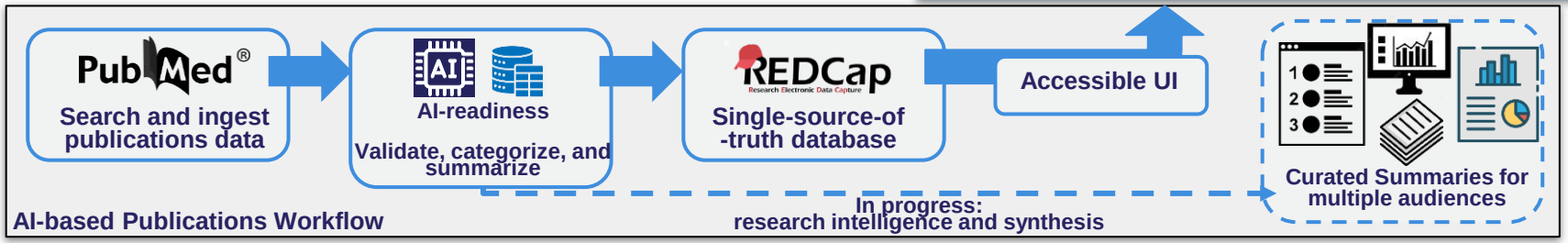
The new webpage features:

- **Automated ingestion** from PubMed
- **An LLM pipeline** to authenticate and categorize publications
- Expanded **search and filter** options
- **AI Summaries** and abstracts

In progress for 2026:

- Adding more ingestion sources (PMC and Google Scholar)
- Automated flagging and synthesis of interesting publications for participant and professional audiences
- Dashboard to illuminate what's being studied and how *All of Us* data are impacting science



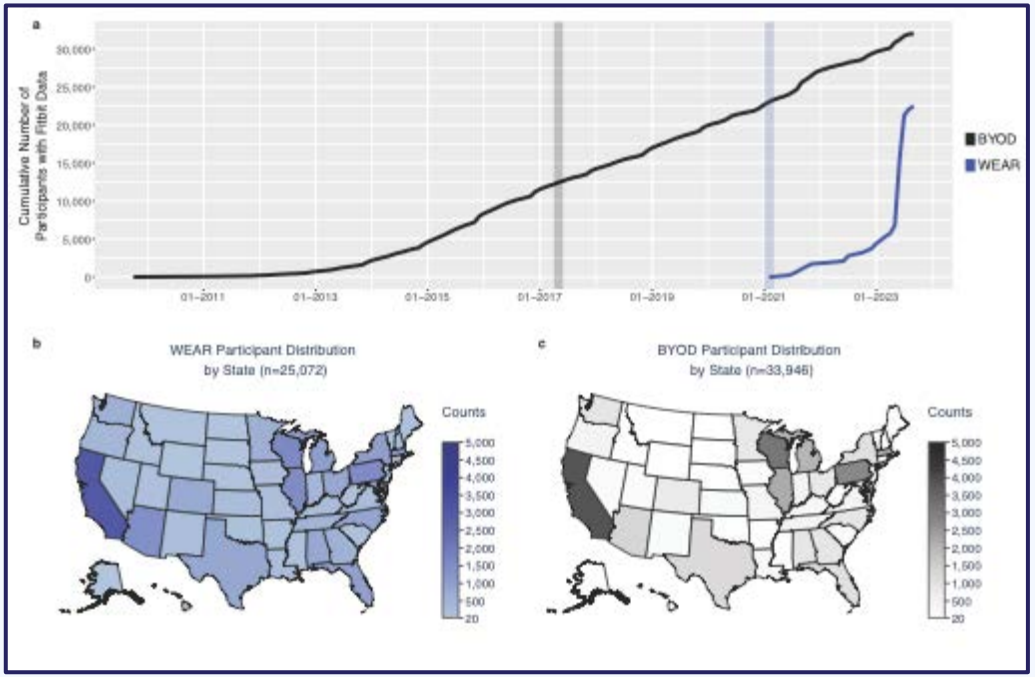


From *Nature Medicine*:
Access One of the Largest Wearables Dataset for Biomedical Research TODAY



- More than 59,000 participants have shared wearables data spanning up to 14 years
- Nearly half of wearables data is linked to EHRs, genomics, and surveys
- 39 million step counts and 31 million nights of sleep

Learn more about this dataset, available for researchers, from our new publication in *Nature Medicine*



Adjemian et al., 2026, *Nature Medicine.*
https://www.nature.com/articles/s41591-026-04352-3

All of Us Science Day 2026 — Watch on Demand!

Missed the live event on April 15?

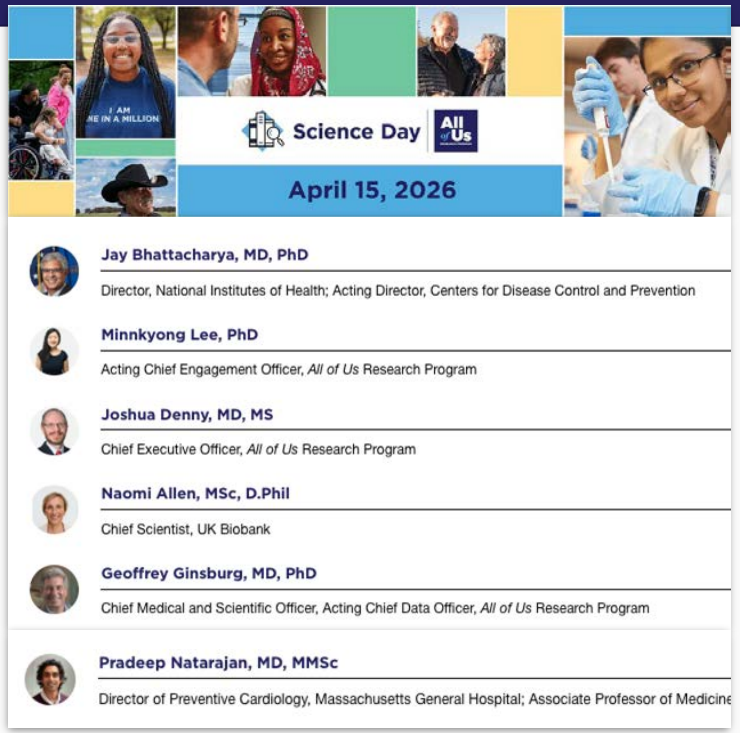
There's still time to register and watch sessions

Over 2,000 attendees watched live how *All of Us* research is driving real-world health impact for all communities, and >500 have watched on demand after the event. ***(as of 4/24)***

19 Scientific Sessions, 42 Presenters

This was the first *All of Us* event to intentionally bring researchers and participants together

The sessions are free, virtual, and open to everyone!

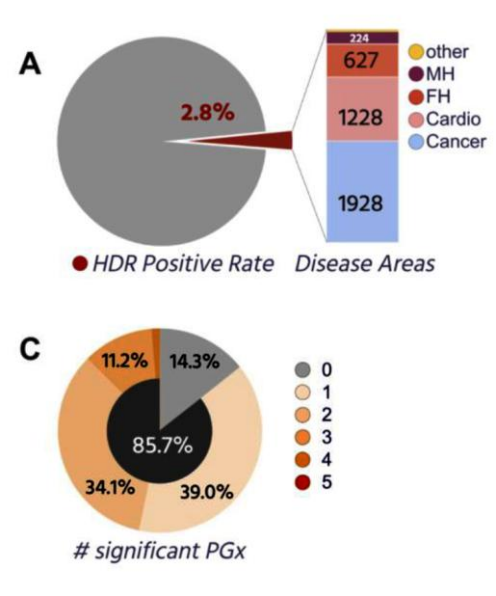


Register now to access all sessions *(available until July 14)*

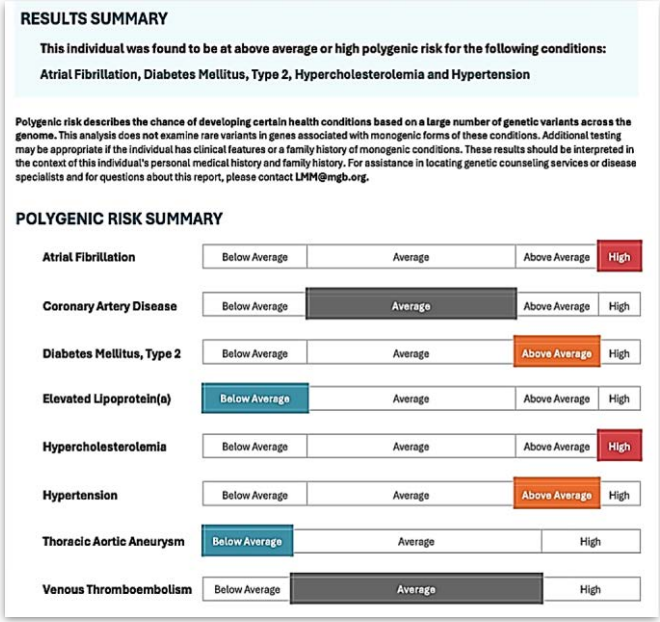
From an attendee:
"Hello from a physician and participant: The data I contribute today will outlive me, eventually shared by a researcher not yet born, using technology not yet imagined, at a conference not yet planned."

Translating Genetic Results to Value to Participants
Return of DNA Results to >270,000 Individuals: What Happened Next?

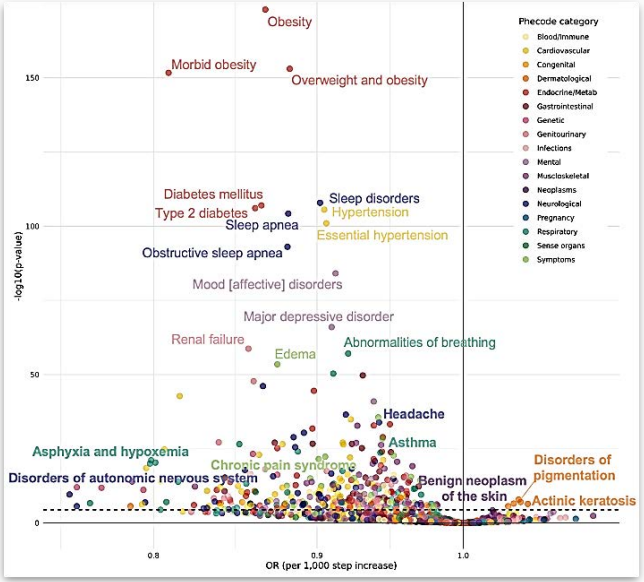
Health-related DNA results



New Clinical DNA test developed



Clinical Insights from Wearables



All of Us is having a real health impact for participants and their families

Preventing Thyroid Cancer

A participant in his 60s with no relevant family history learned of a pathogenic variant in *RET*, which is associated with multiple endocrine neoplasia type 2 (MEN2). Clinical evaluation noted markedly elevated calcitonin level. Thyroid ultrasonography and biopsy revealed a 1.5-cm medullary thyroid carcinoma. He underwent total thyroidectomy with lymph node dissection; pathology confirmed stage I medullary thyroid carcinoma in the right thyroid lobe. The same pathogenic *RET* variant was identified in his sibling, who also had an elevated calcitonin level and is being followed with ongoing surveillance.

Preventative Cardiology

"I joined *All of Us* to help contribute to science, and *All of Us* helped me. I learned that I have a *KCNQ1* mutation that makes me more susceptible to long QT syndrome (LQTS), a type of heart rhythm disorder. Thanks to *All of Us*, I was able to speak with a cardiologist, get tested for LQTS, and begin taking a beta blocker that is now protecting me from sudden cardiac death. Without *All of Us*, I might not have known or been able to take protective action until too late."

Understanding Hypercholesterolemia

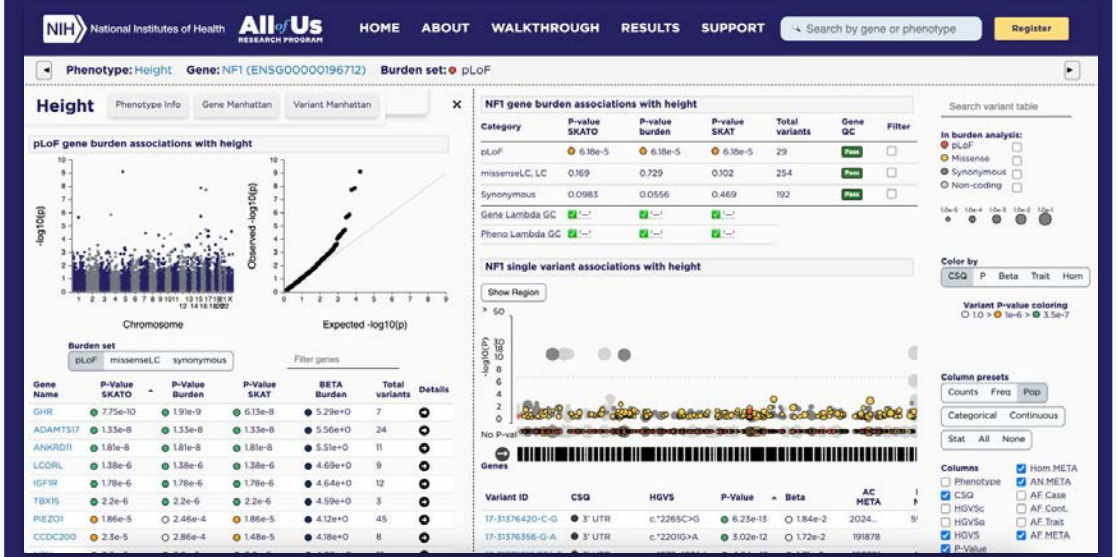
"For my entire life, I've been known to have high cholesterol… I learned from participating in the *All of Us* Research Program that I carry a specific gene that really explains the family history that we've had for years and years. The gene that was identified is called the LDL receptor gene. One of the reasons why I decided to participate in *All of Us* is to learn more about myself and my history, but also the history that I'm carrying forward to my children… Another reason is to contribute towards the larger research that can be carried forward as a result of participating. And so even though I'm an N-of-1, I feel like participating and contributing to the cause. It's meaningful to me as well.

5,490+ participants had potentially life-saving results returned from more than 59 genes.
145,000+ participants received results that could impact the medications they take.

All of Us submitted >40,000 variants to ClinVar, putting us in the top 1% of all clinical labs worldwide.

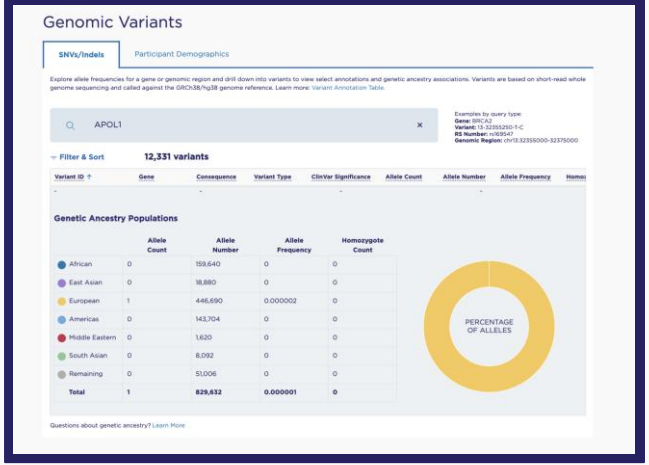
Genomics Data and Tools

All by All Browser

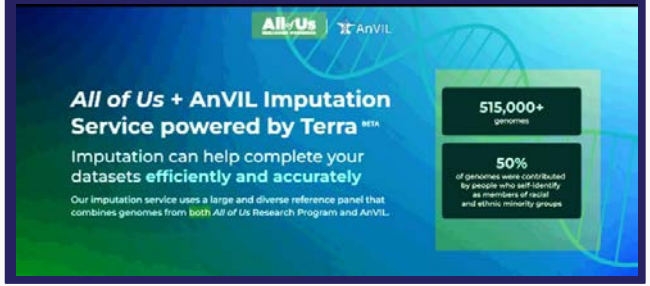


Mapping known and novel associations between genotypes and phenotypes using data contributed by *All of Us* participants.
https://allbyall.researchallofus.org

Variant Browser



Imputation Service (+NHGRI)



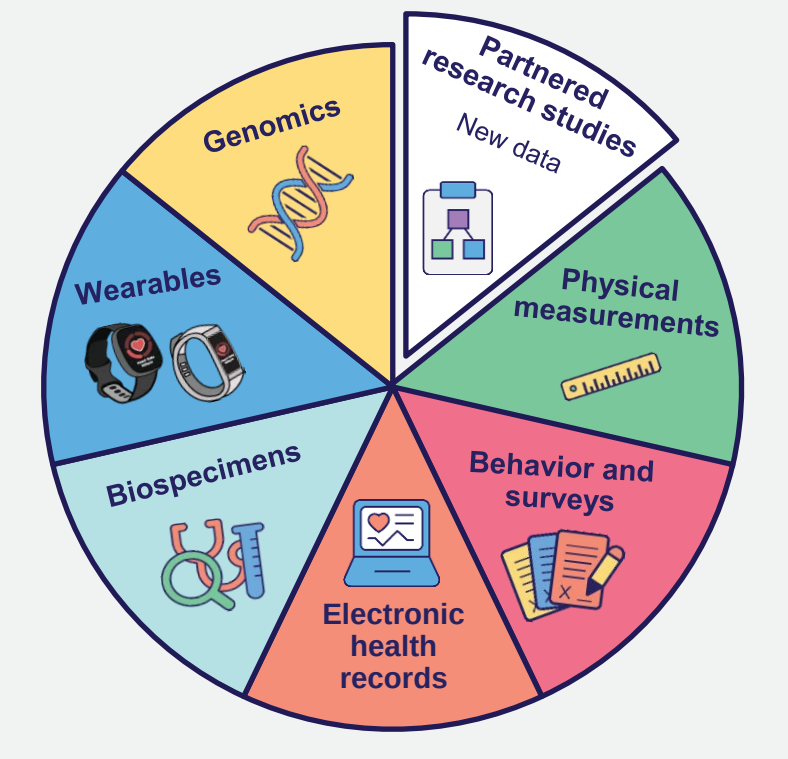
Partnered Research Studies are Important Drivers of Discovery

These initiatives allow researchers to leverage program resources to drive discovery by collecting and adding new data to the *All of Us* dataset.

- Partnered research studies align with the program's core values
- Studies support new data collection or generation and return additional value to participants
- New data will be made available through the Workbench
- Partnered research studies are externally funded

All of Us built capacity to support partnered research studies by collaborating first with NIH Institutes, Centers, and Offices. Soon, researchers outside of NIH will be able to propose studies too.

allof-us.org/PartneredResearchStudies



All of Us Partnered Research Studies

Supports Key NIH Initiatives–Partnerships across 21 Institutes, Centers, and Offices

Learn More!

Partnered Research Studies

7 ongoing
2 completed
14 in the pipeline

8,000 participants

NPH: Studying how the body responds to changes in daily nutrition

5,600 participants

Environmental Health and Exposomics: Studying environmental risk factors for type 2 diabetes

5,000 participants

Eyes on Health: Studying how retinal images uncover early signs of disease

84,000 completions

Exploring the Mind:
Cognitive assessments on response time, decision-making, attention span, and more

New Studies Coming 2026

Soft Launch: 58,700 completions

Your Whole Health:
Studying participants' perceptions of their health and resilience factors

Inviting hundreds of participants to the NIH Clinical Center

Genotype to Phenotype: Inviting participants with rare variants for deep phenotyping for diagnosis and discovery

28% of participants have self-reported a disability

Disability Health and Functioning:
Survey adults of all abilities on daily lived experience and assistive technology

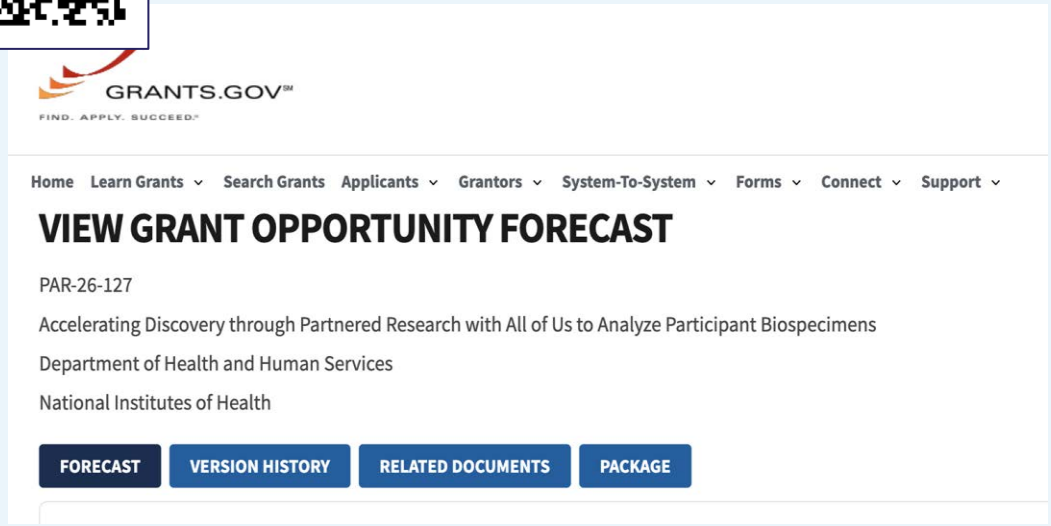
+ External investigator access
via open and transparent process
coming in 2026

All of Us enables fast access to research-ready participants, supporting new studies at up to 80% cost savings
Centralized cloud platform **saves at least $3.8B in data storage alone** (vs. storage at 1,350 institutions)

Notice of Intent: Partner with *All of Us* to Analyze Participant Biospecimens

NOFO for X01 Anticipated Soon

Accelerating Discovery through Partnered Research with *All of Us* to Analyze Participant Biospecimens



All of Us will leverage the **X01 mechanism** and the program's collected plasma, serum, and DNA to:

- **Enable cost-effective new research** that will add valuable data back to the *All of Us* resource for broad use
- **Return value** to participants
- **Ensure fairness and transparency**

***All of Us* Biospecimens at the Biobank** *as of 4/1/2026*	
4,034,609 Total Primary Biospecimens Blood: DNA, RNA, cfDNA, serum, plasma	*Blood: 3,421,344* *Urine: 491,896* *Saliva: 121,919*
14,726,871 Total Aliquots Stored	

For more information: Council of Councils presentation 9/11/25 https://videocast.nih.gov/watch=56984 starts at 3:08:00

Participant Privacy and Security: A Top Priority at *All of Us*

Data Security



Data Refinements

Participant data are encrypted.

Direct identifiers are removed from data on the Researcher Workbench.



Samples and electronic data are stored separately at Mayo Clinic Biobank and Vanderbilt University Medical Center.



Certificates of Confidentiality provide legal protections to participant data.

Data Access and Privacy Standards



Researchers go through registration process, including trainings and legal agreements.



Workbench usage is monitored, and project descriptions are public.



Researchers analyze *All of Us* data on the our centralized Researcher Workbench platform—they can't download raw data.



Registered Tier data privacy protections include EHR date shifting while preserving temporality of events

Reassessing the Cohort: The *All of Us* Check-In Begins in Spring 2026

Longitudinal Opportunities to Re-share Data

Initial Data Collected

- Survey Data
- Physical Measures
- Biospecimens
- Fitbit Data
- Electronic Health Record Data

New, Ongoing Data Collected Over Time

Reassessment Surveys



With input from NCI, NIDCR, NINDS, NIEHS, and NHLBI

Future Recollection

Funds Permitting

Ongoing Throughout Participants' Time in the Program

Continuous Passive Data Collection



ECHO

Environmental influences on Child Health Outcomes

A program supported by the NIH

All of Us RESEARCH PROGRAM

Collaboration

ECHO Leadership Transition Plan

Thank you, Matt!



Matthew W. Gillman, MD, SM

10 years of service at NIH in as the inaugural director of ECHO

Acting Leadership as of June 1, 2026



Acting Director
Josh Denny, M.D., M.S.
CEO, *All of Us*



***Acting* Senior Advisor**
Sara Van Driest, M.D., Ph.D.
Director of Pediatrics, *All of Us*

NIH will actively search for a new permanent Director

ECHO and *All of Us* are Distinct, with Some Shared Features



ECHO

Environmental influences on Child Health Outcomes

A program supported by the NIH

Longitudinal follow-up, data and biospecimen collection from kids

Enable prevention by understanding etiology

Five child health outcome areas with high public health impact

Enroll before birth

High retention and complete data collection

A shared commitment to understanding and improving health across the lifespan

Improving health for all

Common chronic conditions

National enrollment

Surveys, exams, specimens, digital health technologies

All of Us RESEARCH PROGRAM

Robust active & passive data collection, -omics across all ages

Enable detection and treatment by better prediction

Disease agnostic, including rare conditions

Enrolling adults of all ages, and currently kids 0-6

Longitudinal phenotyping via health records

A First Look at the *All of Us* and ECHO Collaboration

- **Strengths-based collaboration**: complementary synergies and differences between ECHO and *All of Us*
- **Builds a reusable, proof of concept model** to broaden researcher access to data to accelerate discovery and amplify investments across NIH's research infrastructure
- **Phased approach:** Short term and longer-term features maximize value of both cohorts and datasets over time



Initial Focus: Deliver ECHO De-identified Data Through the *All of Us* Ecosystem

Draft Plan



Current Priority

Enable initial release and access of ECHO cohort data on the *All of Us* Researcher Workbench under newly established agreements.



Next Priority

Enable access to ECHO IDeA States pediatric clinical trials network data on RW; expand functionality; align documentation & researcher support.



Long-Term Vision

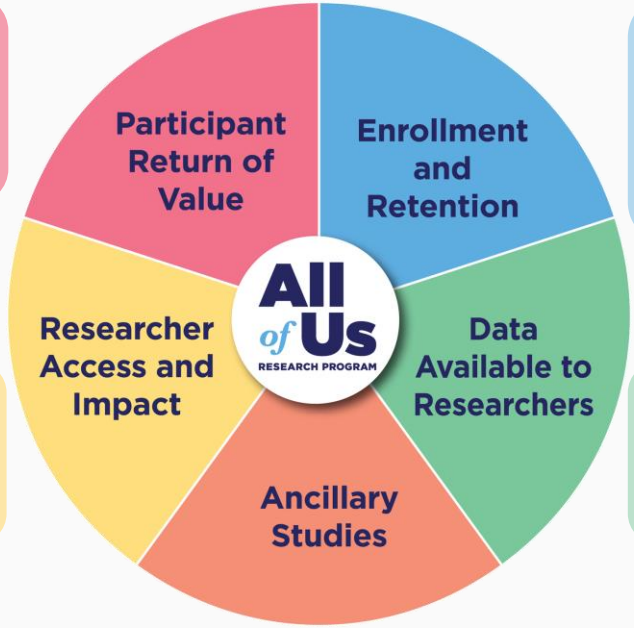
Create a scalable pathway for combined analyses across ECHO and *All of Us*, and support longitudinal follow-up of ECHO graduate participants in *All of Us*.

Plan and build necessary policies, procedures, and technologies to make this approach reusable.

Our Five Year Goals for End of 2026

By end of 2026, we will:

Incorporate participant return of value into data collections and assess its impact, including return of information to participants on genomics and EHR.



Enroll 1 million participants who reflect the diversity of the U.S., cover the lifespan, and have shared all baseline elements. Of these participants, 500,000 participate in ongoing data donation opportunities.

Establish a diverse global community of 10,000 researchers productively using *All of Us* data.

Expand data available for 1 million participants to include survey, health data streams, a whole genome sequence, environmental data, and physical measures.

Launch ancillary studies as a core and scalable capability, expanding the cohort and delivering phenotypic, lifestyle, environmental, and biologic data.

Join *All of Us*–Become a Participant, a Researcher, or Both!



JoinAllofUs.org
(844) 842-2855

Thank you!



Explore the Data
ResearchAllofUs.org