NIA's Division of Behavioral and Social Research (BSR) research priorities

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Integrating Genetics and Social Science Conference

CU Boulder

Friday, October 20, 2023

National Institute on Aging

Outline

- NIA funding environment
- NIA/BSR research priorities
- What's next for (Gen)Omics research?
- Applying for NIA funds

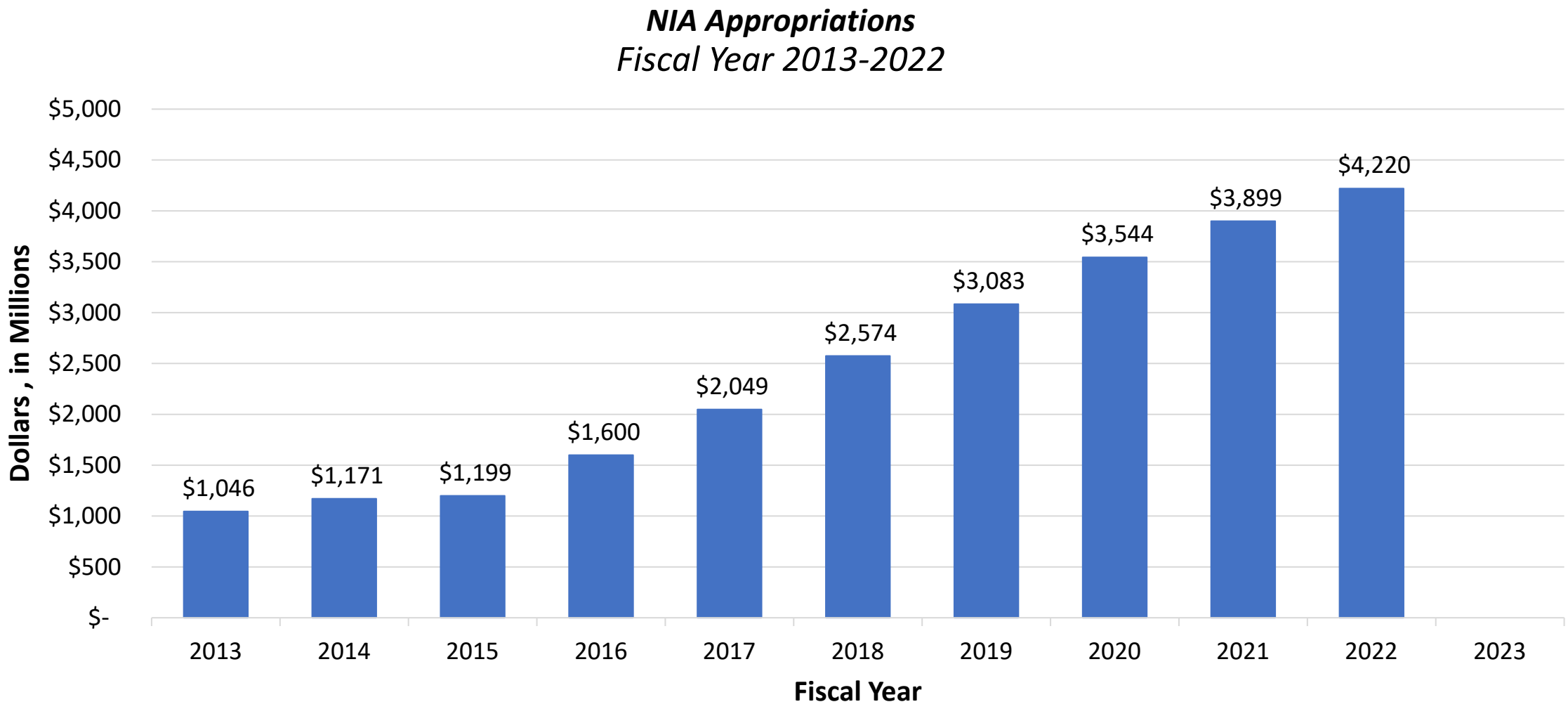
NIH Terminology

- IC = NIH Institute or Center (e.g., National Institute on Aging, Fogarty International Center)
- Mechanism = grant (most relevant), cooperative agreement, contract
- Activity Code = R01, R21, K01, K99/R00—different codes have different budgets, project periods, purposes (research v. training)
- FOA = Funding Opportunity Announcement (PA, PAR, PAS, RFA, NOSI)

NIH Application and Funding Process (9 months at least!)

- All applications submitted to FOA
- Application goes to CSR, Center for Receipt and Referral which decides on IC and study section
  - You can request IC, study section on Assignment Request Form, but CSR ultimately decides
- Study sections
  - Central at CSR or at IC (e.g., Over the Cap requests)
- Application goes to Scientific Review Officer, assigns to Reviewers 1-3
  - (Usually) Top half of applications discussed in study section
  - All members in study section not in conflict score, only 3 read carefully
- Summary statement issued, includes (if discussed) Impact Score/Percentile
- Funding likelihood determined mainly by funding line/allocation, Summary Statement comments (and adequacy with which addressed)
- After Study Section review, applications on funding lists go to Advisory Council for second review
- Approval at Advisory Council generally “en bloc”
- Post Advisory Council funding meeting
- JIT documents (some time after Summary Statement issued)
- Notice of Award—time to celebrate

NIA funding has increased dramatically in recent years



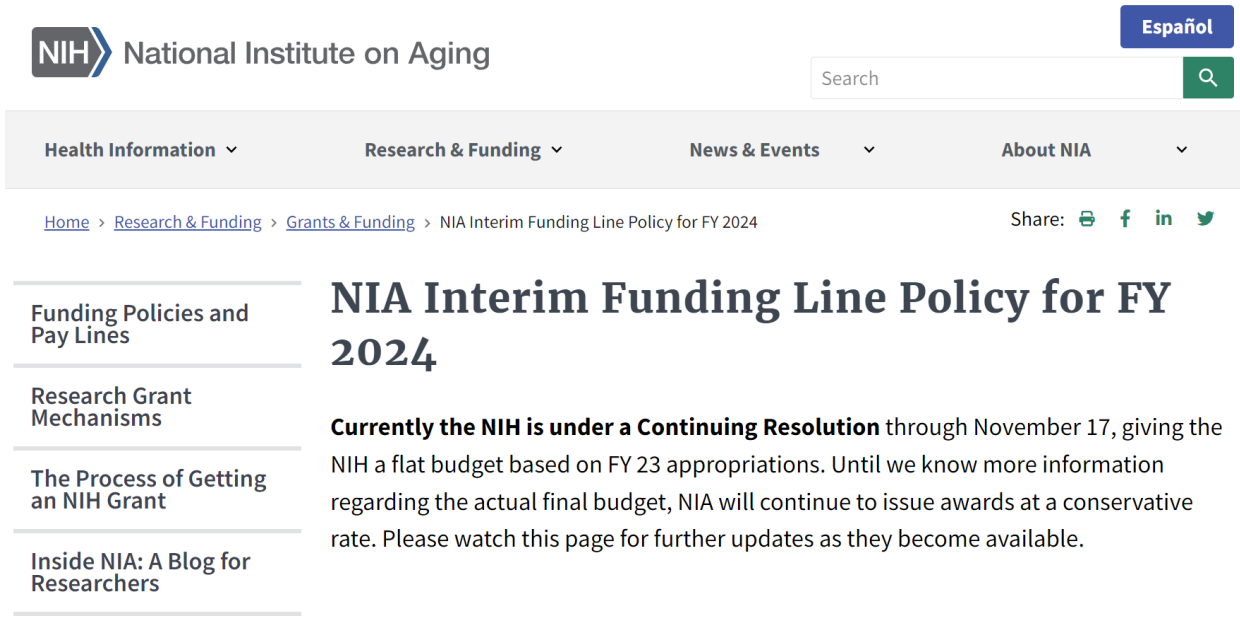
Much of this growth is due to the increase in NIA Alzheimer's Disease and Related Dementias (AD/ADRD) Appropriations

2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
National Alzheimer's Project Act (NAPA)	**$50 M*** redirected within NIH budget	**$40 M*** redirected within NIH budget	**$100 M** additional approp.	**$25 M** additional approp.	**$350 M** additional approp.	**$400 M** additional approp.	**$414 M** additional approp.	**$425 M** additional approp.	**$350 M** additional approp.

2021	2022
$300 M additional approp.	**$289 M** additional approp.

*One-year money; years displayed are fiscal years.

Bracing for a cloudy NIA budget forecast – see Ken Santora's blog here



NIH National Institute on Aging

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Funding Policies and Pay Lines

Research Grant Mechanisms

The Process of Getting an NIH Grant

Inside NIA: A Blog for Researchers

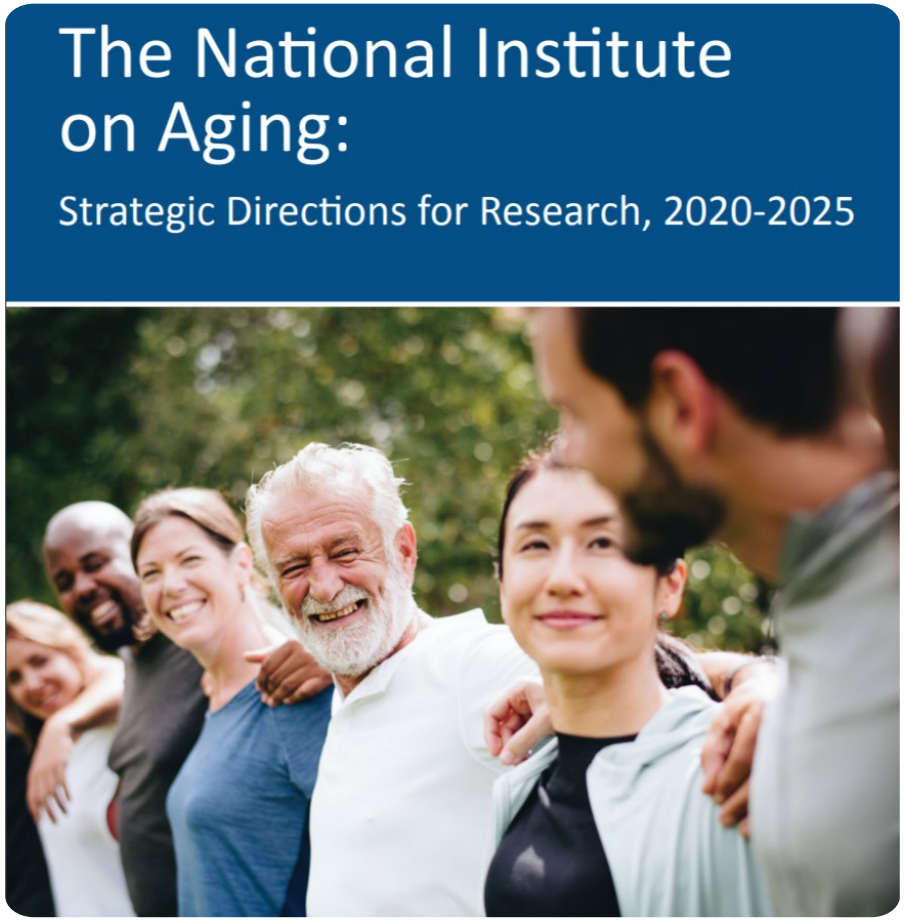
NIA Interim Funding Line Policy for FY 2024

Currently the NIH is under a Continuing Resolution through November 17, giving the NIH a flat budget based on FY 23 appropriations. Until we know more information regarding the actual final budget, NIA will continue to issue awards at a conservative rate. Please watch this page for further updates as they become available.

https://www.nia.nih.gov/research/grants-funding/nia-interim-funding-line-policy-fy-2024

- AD pay lines are likely to be tighter in FY 2024
- May need to revisit strategy of funding new HRS/HCAP studies
- Please contact me asap if you plan to apply

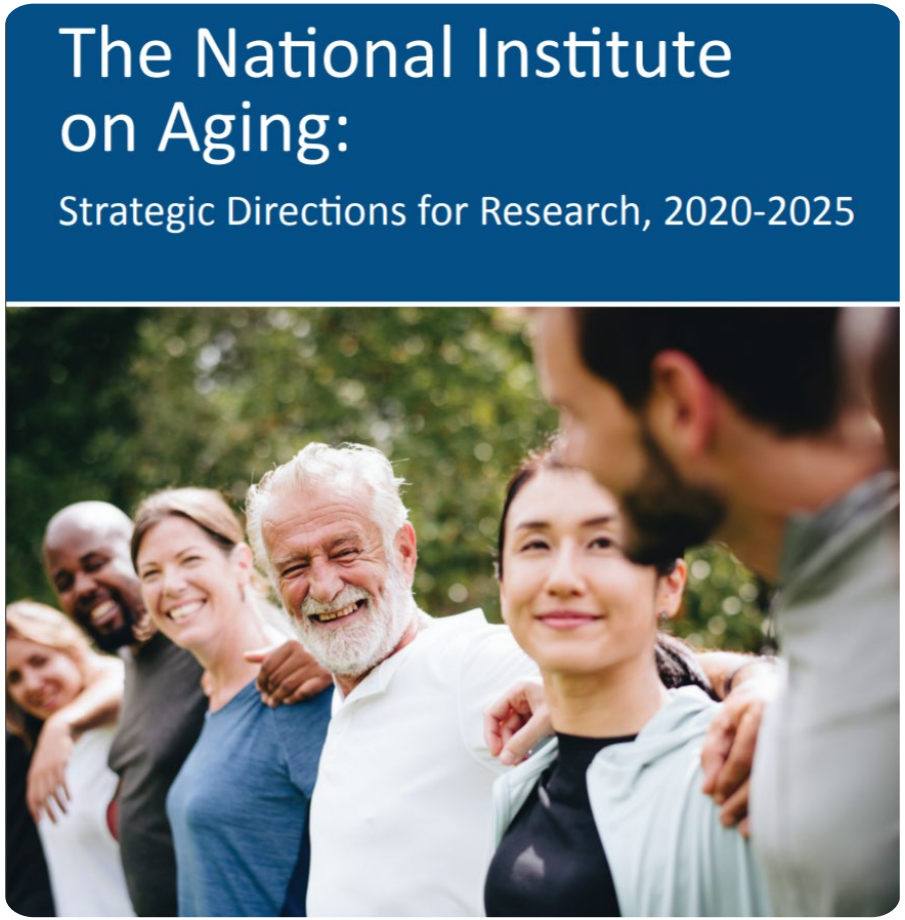
NIA Strategic Directions



Understanding the Dynamics of the Aging Process

- **Goal A**: Better understand the biology of aging and its impact on the prevention, progression, and prognosis of disease and disability
- **Goal B**: Better understand the effects of personal, interpersonal, and societal factors on aging, including the mechanisms through which these factors exert their effects

NIA Strategic Directions



Improving the Health, Well-Being, and Independence of Adults as They Age

- **Goal F**: Understand health disparities related to aging and develop strategies to improve the health status of older adults in diverse populations

NACA 2019 BSR Review: Selected Priorities

- Improve understanding of health disparities in aging.
- Study influences of macro-social trends on aging.
- Incorporate a range of approaches to understanding behavioral and social aging.
- Enhance research on cognitive aging.
- Study aging earlier in the life course.
- Reduce barriers to accessing data for research.

What’s next for (Gen)omics Research

NASEM Recommended Approaches for Population Descriptors by Study Type

GENOMICS STUDY TYPE	Race	Ethnicity/ Indigeneity	Geography	Genetic Ancestry	Genetic Similarity	Notes
1: Gene Discovery - Mendelian Traits	−	?	?	?	+	Similarity suffices as a genetic measure; at fine-scale, other variables may be useful
2: Trait Prediction - Mendelian Traits	−	E	E	?	+	No population descriptors may be necessary for analysis
3: Gene Discovery - Complex Traits	−	E	E	?	+	Similarity suffices as a genetic measure
4: Trait Prediction - Complex Traits	−	E	E	?	+	Similarity suffices as a genetic measure

LEGEND

+ Preferred population descriptor(s)

− Should not be used

? In some cases; refer to Ch. 5 text and the decision tree in Appendix D

E Descriptors could be used if appropriate proxies for environmental, not genetic, effects

NASEM Recommended Approaches for Population Descriptors by Study Type

GENOMICS STUDY TYPE	Race	Ethnicity/ Indigeneity	Geography	Genetic Ancestry	Genetic Similarity	Notes
5: Cellular and Physiological Mechanisms	−	E	E	−	?	No population descriptors may be necessary for analysis
6: Health Disparities with Genomic Data	E	E	E	?	+	Not all health disparities studies rely on descent-associated population groupings, so none may be necessary for analysis
7: Human Evolutionary History	−	?	+	+	+	Reconstructing genetic ancestry may be of central interest

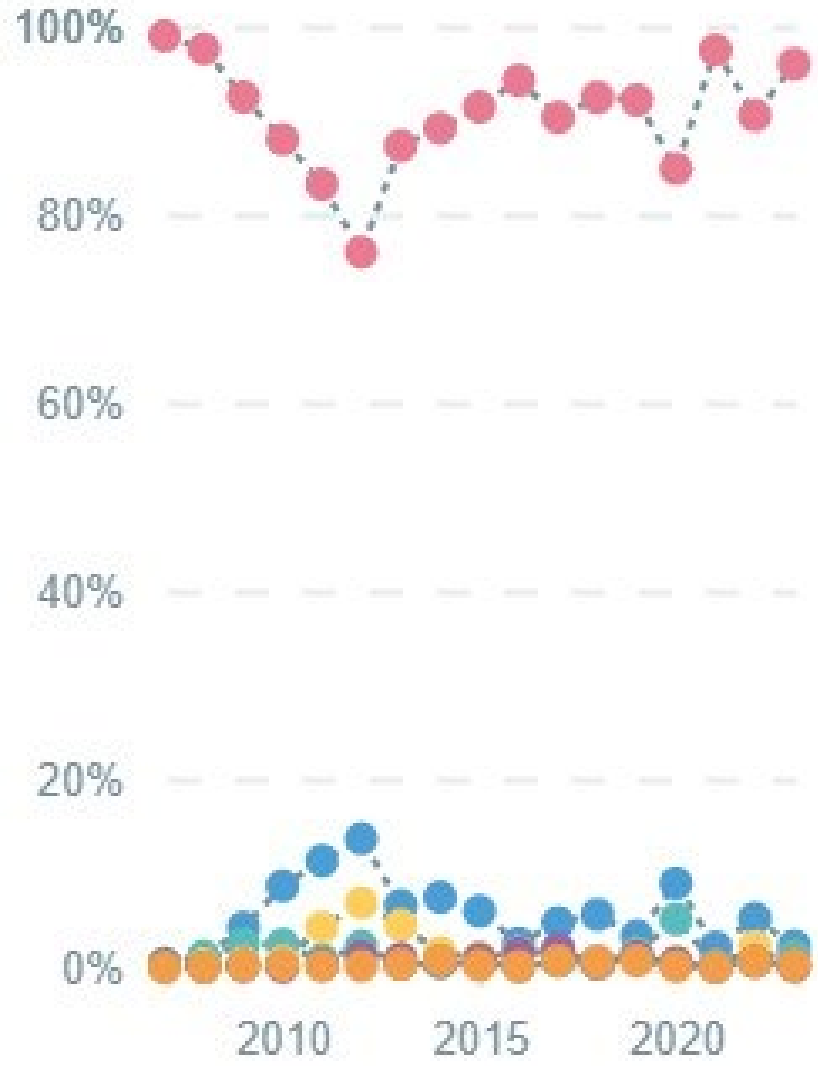
LEGEND

+ Preferred population descriptor(s)	− Should not be used
? In some cases; refer to Ch. 5 text and the decision tree in Appendix D	E Descriptors could be used if appropriate proxies for environmental, not genetic, effects

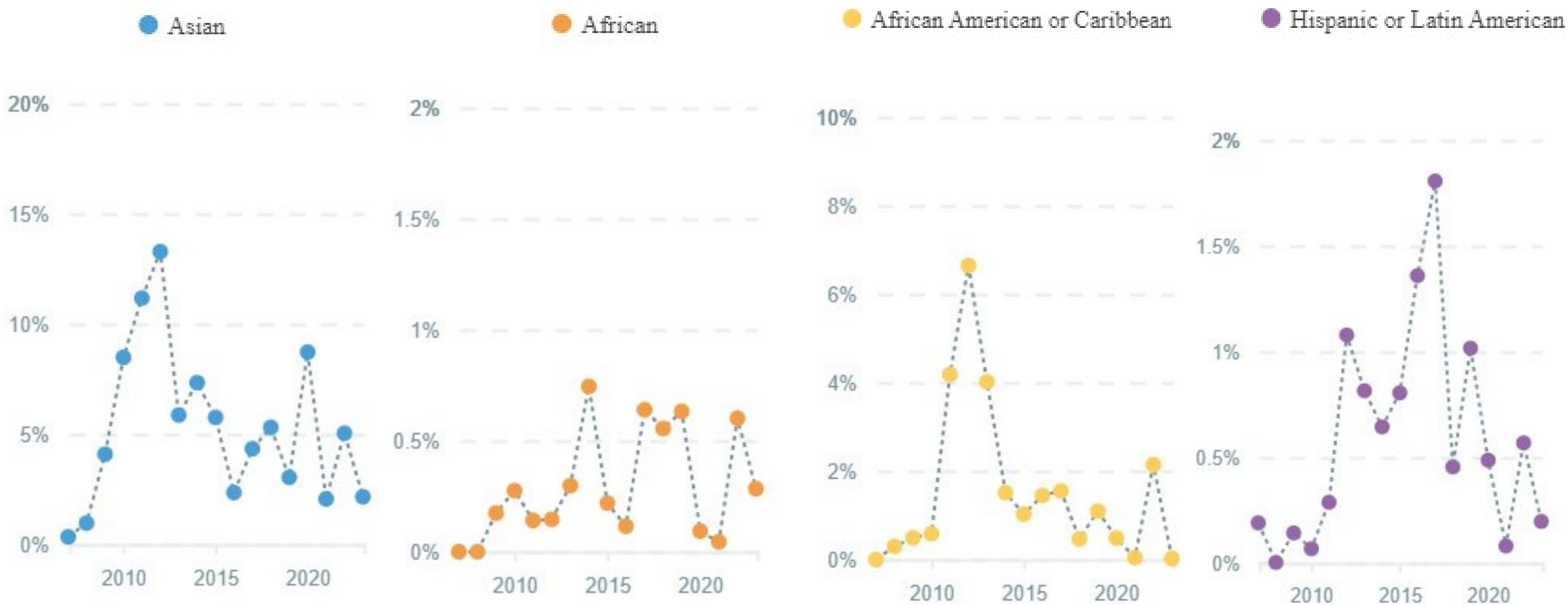
GWAS
Diversity Monitor

Participants across all parent terms

Discovery Stage



Source: Mills, M.C and Rahal, C., (2020). 'The GWAS Diversity Monitor Tracks diversity by disease in real time'. Nature Genetics, 52, 242-243. doi: 10.1038/s41588-020-0580-y [accessed 10/05/2023]


Asian
20%
15%
10%
5%
0%
2010
2015
2020
African
2%
1.5%
1%
0.5%
0%
2010
2015
2020
African American or Caribbean
10%
8%
6%
4%
2%
0%
2010
2015
2020
Hispanic or Latin American
2%
1.5%
1%
0.5%
0%
2010
2015
2020

Sample Inequities from GWAS don't stay with GWAS

- "Unfortunately, GWASs of sufficient sample size in other ancestry groups were not available to perform these analyses outside of European samples" (p.813).

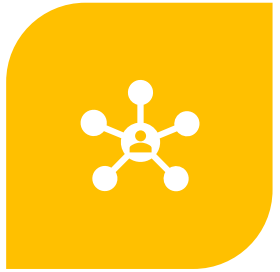
  - **Source:** Grotzinger, Singh, Miller-Fleming, et al. 2023. "Transcriptome-Wide Structural Equation Modeling of 13 Major Psychiatric Disorders for Cross-Disorder Risk and Drug Repurposing." JAMA Psychiatry 80(8):811-821. doi:10.1001/jamapsychiatry.2023.1808

Applying for NIA funds

Three ways to obtain funding from NIA/BSR

APPLY FOR A NEW GRANT

APPLY FOR AN ADMINISTRATIVE SUPPLEMENT FOR A GRANT THAT YOU ALREADY HAVE



INTERACT WITH THE HRS ATW AND/OR HCAP NETWORKS AND CONDUCT A PILOT STUDY

P30 CENTERS FOR DEMOGRAPHY AND ECONOMICS OF AGING

How to secure NIA support

- Contact a Program Officer as early in the process as possible
- Address NIA's and the **Division's priorities** in your project
- Ensure that you have **sufficient power** and a **data sharing plan**
- **Focus your aims**/do not be overly ambitious
- **Learn from** the experience of **others** who have successfully obtained NIH grants
- Look at the abstract and aims of similar projects in **NIH RePORTER** https://reporter.nih.gov/

Submit a one-page draft aims

- Prepare a **1-page aims page**
  - The more well-formed your idea is, the better advice I can give
  - POs do not review full grants pre-submission
- What should be included?
  - **Study Goals:** What do you want to do?
  - **Problem/Significance:** Why is this question important? What gap does it fill?
  - **Research Question:** What hypotheses will you test?
    - Tied to extant theory and/or results
  - **Design/Analysis:** What data, study design, and methods do you plan on using?
  - **Team:** Who are the key participants and collaborators?

Helpful Links

- NIA Training and Career Development Portal: https://www.nia.nih.gov/research/training
- NIA FAQs: https://www.nia.nih.gov/research/research-and-funding-frequently-asked-questions
- NIA BSR: https://www.nia.nih.gov/research/dbsr
- NIAID Tips on Preparing Application and Sample Applications: https://www.niaid.nih.gov/grants-contracts/prepare-your-application
- NIH Guide: https://grants.nih.gov/funding/searchguide/index.html#/
- NIH RePORTER—what has been funded: https://projectreporter.nih.gov/reporter.cfm
- "Open Mike" Blog—info for applying, NIH policies: https://nexus.od.nih.gov/all/category/blog/
- NIH/CSR Assisted Referral Tool (ART)—study section matchmaker: https://public.csr.nih.gov/ForApplicants/ArtHome

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