

NIH's Scientific Approach to Inclusive Excellence

Health Research Alliance Presentation

September 22nd, 2020

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National Institutes of Health

Office of the Director

Scientific Workforce Diversity

Presentation Outline

- Why diversity and inclusion matters
 - Scientific workforce diversity data
- NIH institutional approaches toward inclusive excellence
 - Accountability and Transparency
 - Culture change: Hiring, promotion, mentoring
- Address Implicit and systemic racism
- Close the racial gap in funding

Why Diversity Matters: Capitalizing on the Opportunity



**Excellence, Creativity,
Innovation**



**Broadening Scope of
Inquiry: Health Disparities**



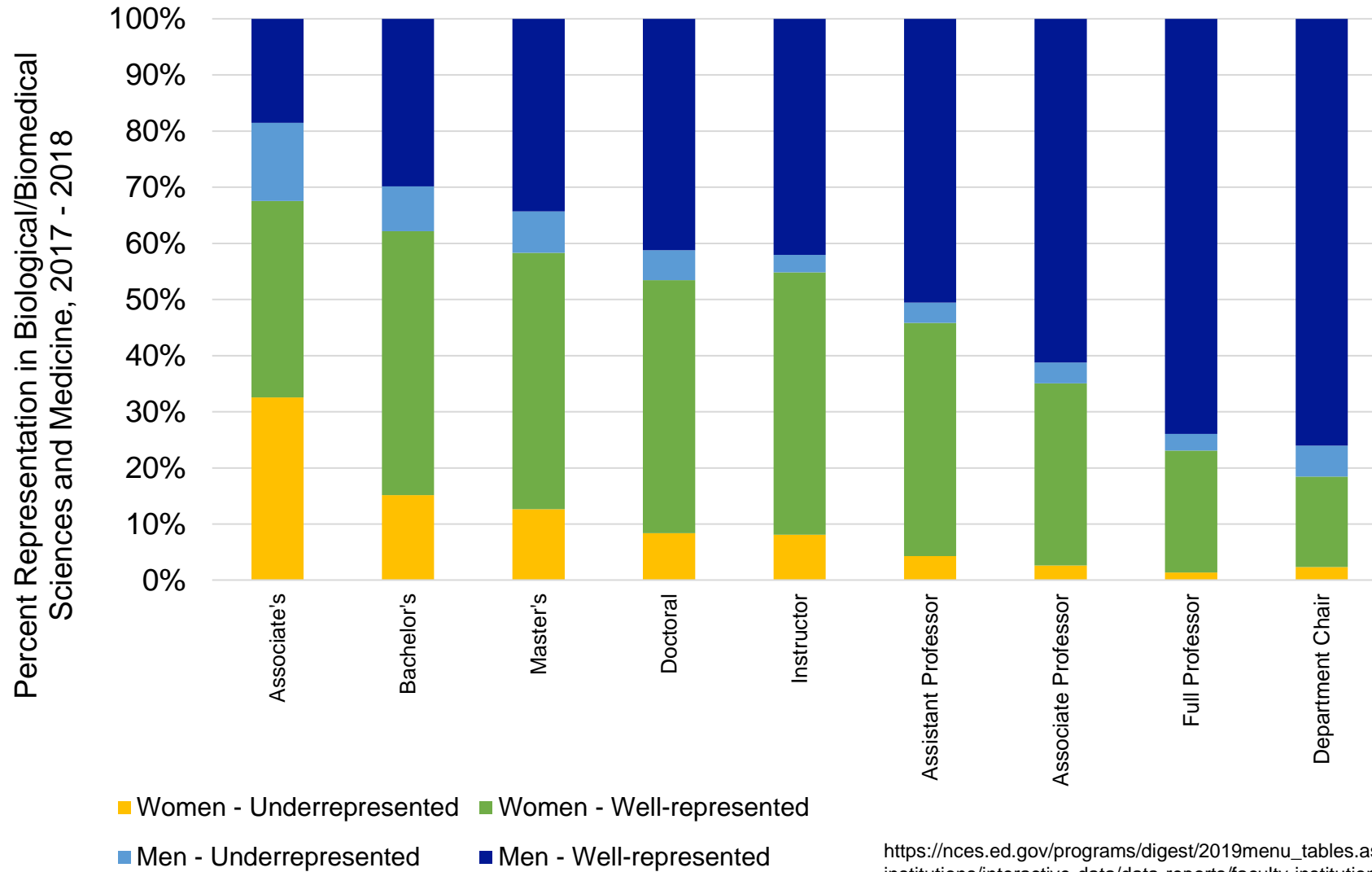
**Changing Demographics:
Types of Diversity**



**Global Research
Preeminence**

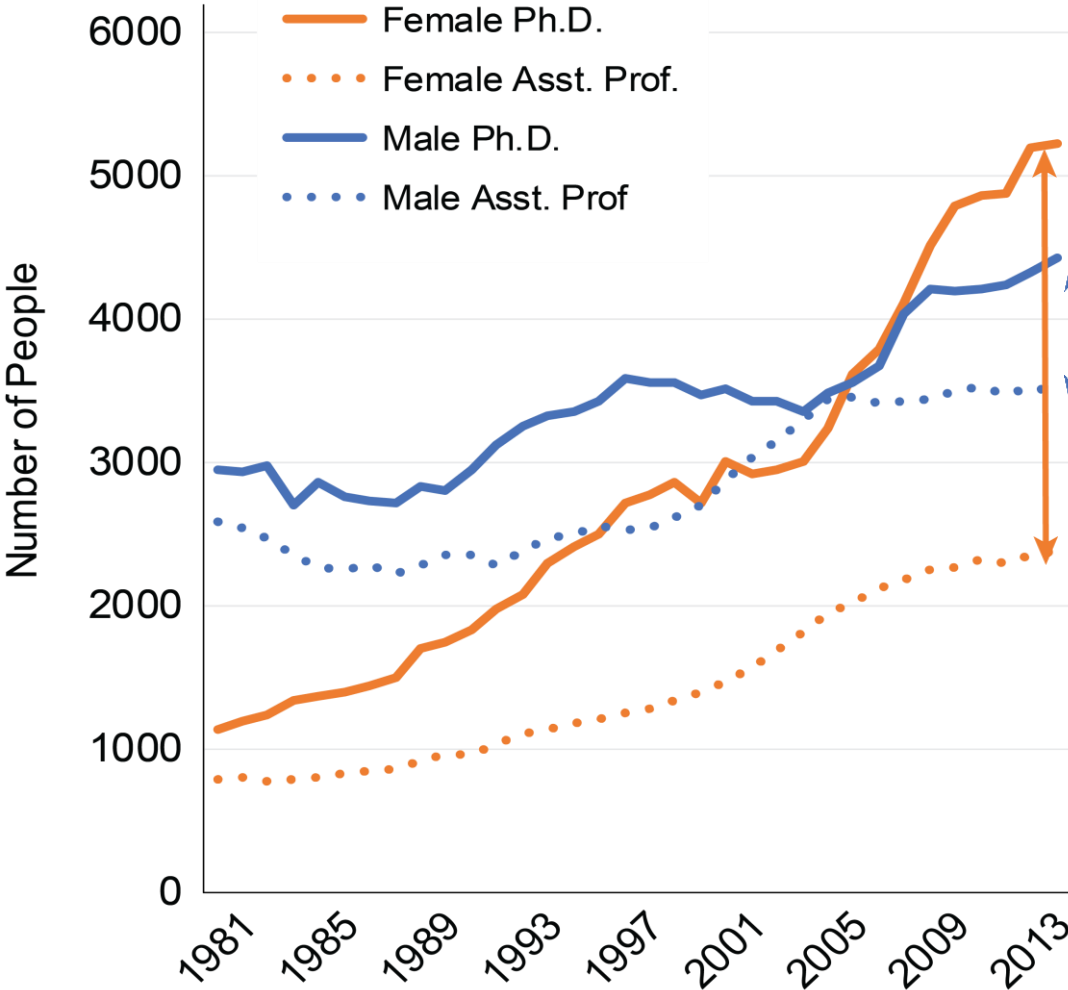
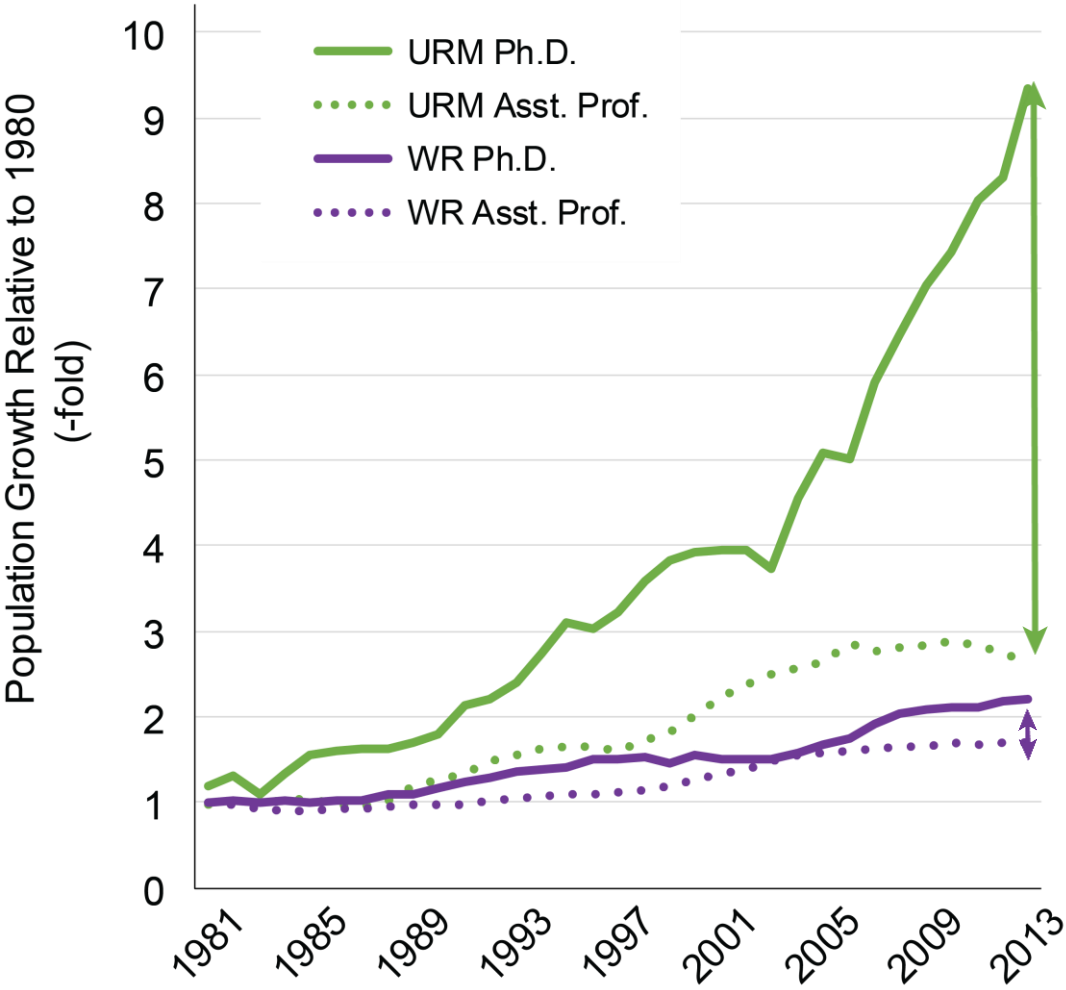
Scientific Workforce Diversity Data

Diminishing Representation for Women and URG Scientists



https://nces.ed.gov/programs/digest/2019menu_tables.asp; <https://www.aamc.org/data-reports/faculty-institutions/interactive-data/data-reports/faculty-institutions/interactive-data/2018-us-medical-school-faculty>

Myth: Diverse Talent Doesn't Exist



Gibbs, K. D., et al. (2016). *Decoupling the minority PhD talent pool and assistant professor hiring in the medical school basic science departments in the US.*

NIH Institutional Approaches Toward Inclusive Excellence

Institutional Transformation and Culture Change

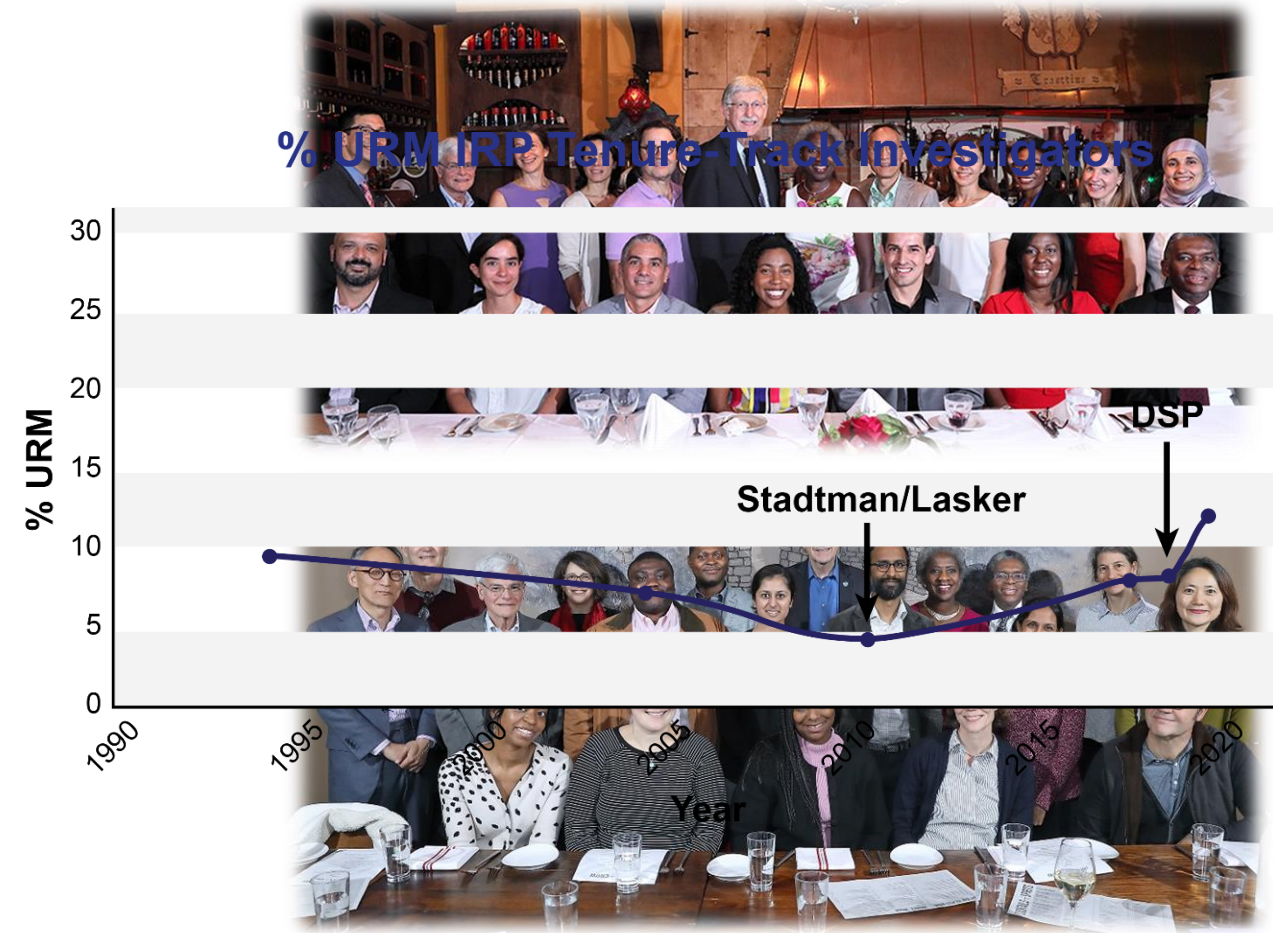
Promote Transparency and Accountability

Link to Institutional Values and Reward Systems

- Systematic review and transparency of hiring and promotion procedures, policies
- Transparency: collect and publicize aggregate diversity metrics
- Provide tools to Divisions, Departments for enhancing recruitment and retention
- Evaluation of impact

NIH Approaches to Inclusive Excellence

- Distinguished Scholars Program
 - PIs committed to diversity and inclusion
- Faculty Institutional Recruitment for Sustainable Transformation (FIRST)
- Trans-NIH searches for tenure track
- Implicit-bias mitigation
 - NIH SWD Interactive Toolkit
- Address systemic racism
- NIH Equity Committee
 - Transparency and accountability
- National Research Mentoring Network



Reducing Impacts of Implicit Bias and Racism in Science

Debiasing: How to Reduce Cognitive Biases in Yourself and in Others

Research suggests that cognitive debiasing does work in some cases, and proper training and interventions can help reduce certain biases*

- Raise awareness (Devine et al. 2017) **
- Broaden images of success (Goćłowska et. al, 2013) ***
- Consistency in judgment and evaluation criteria
- Avoid ambiguity and time pressure
- Practice speaking up when bias perceived

* Lutz Kaufmann et al., Journal of Business Logistics. 2009

** A Gender Bias Habit-Breaking Intervention Led to Increased Hiring of Female Faculty in STEMM Departments.


*** Counter-stereotypic thinking decreases stereotyping and increases creative ideas

Best Practices to Enhance Faculty Diversity

Taking Bias Out of the Hiring Process

- Use tools to identify candidates from diverse backgrounds
 - Recruitment begins before position available
 - Job descriptions might influence who apply
 - Identify female and minority candidates
 - Implicit-bias education
- Diverse perspectives, background: *Committee*
 - Criteria before applicant evaluation
 - Adequate time for evaluation: *Avoid stereotyping*
 - Articulate the reasons for decisions
 - Structured interviews

NIH Equity Committee – Accountability and Transparency Metrics for Annual Evaluation

- Tenured and tenure-track investigators analyzed separately
 - ❖ Demographic data,
 - ❖ Salaries, resources for hiring
 - Equity of review practices
 - ❖ BSC and ad hoc reviewers, promotion, and tenure committees
 - Efforts to correct identified problems
- 
- Efforts to promote diversity, equity, inclusion
 - ❖ Diversity of speakers at seminars hosted by the IC
 - ❖ Promote awareness of implicit bias
 - ❖ Best practices for search committees and outreach
 - ❖ Award nominations
 - Input on how Office of Intramural Research and SWD can support the ICs

Closing the Racial Gap in Research Grants (R01-eq) and Career Development Awards (K)

Interpreting R01 Success Rates in Context of Decline in Pay Lines

Gap Persists but is Slightly Narrowed

Success rate for Type 1 R01 (Ginther et al. 2011): FY00-06

African-American/Black applicants: 17.1%

White applicants: 29.3%

Differential success (AA/B:W) 0.58

Success rate for Type 1 R01-Equivalent: FY13-19

African-American/Black applicants: 11.3%

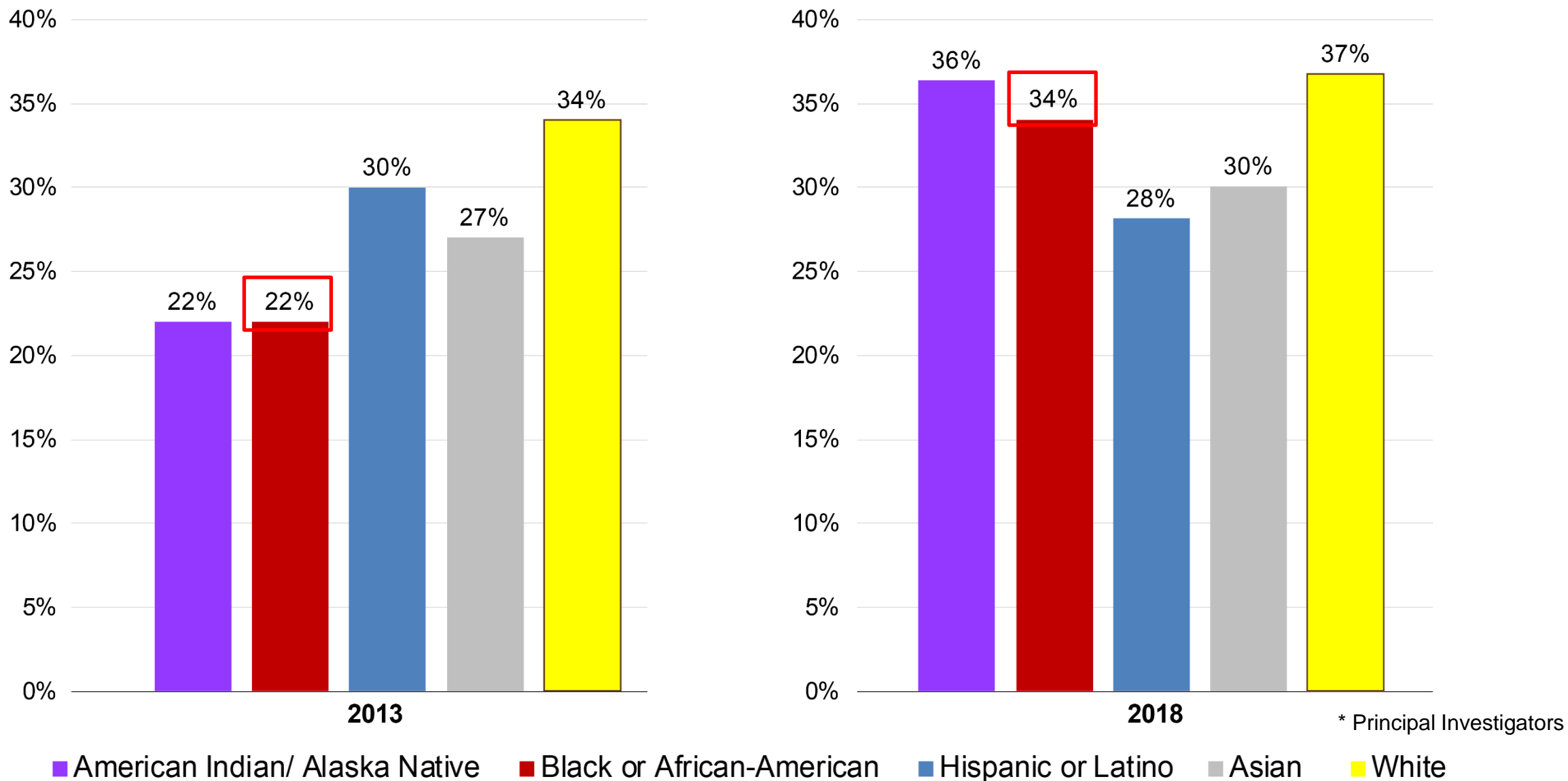
White applicants: 18.1%

Differential success (AA/B:W) 0.63

Cochran-Mantel-Haenszel statistics

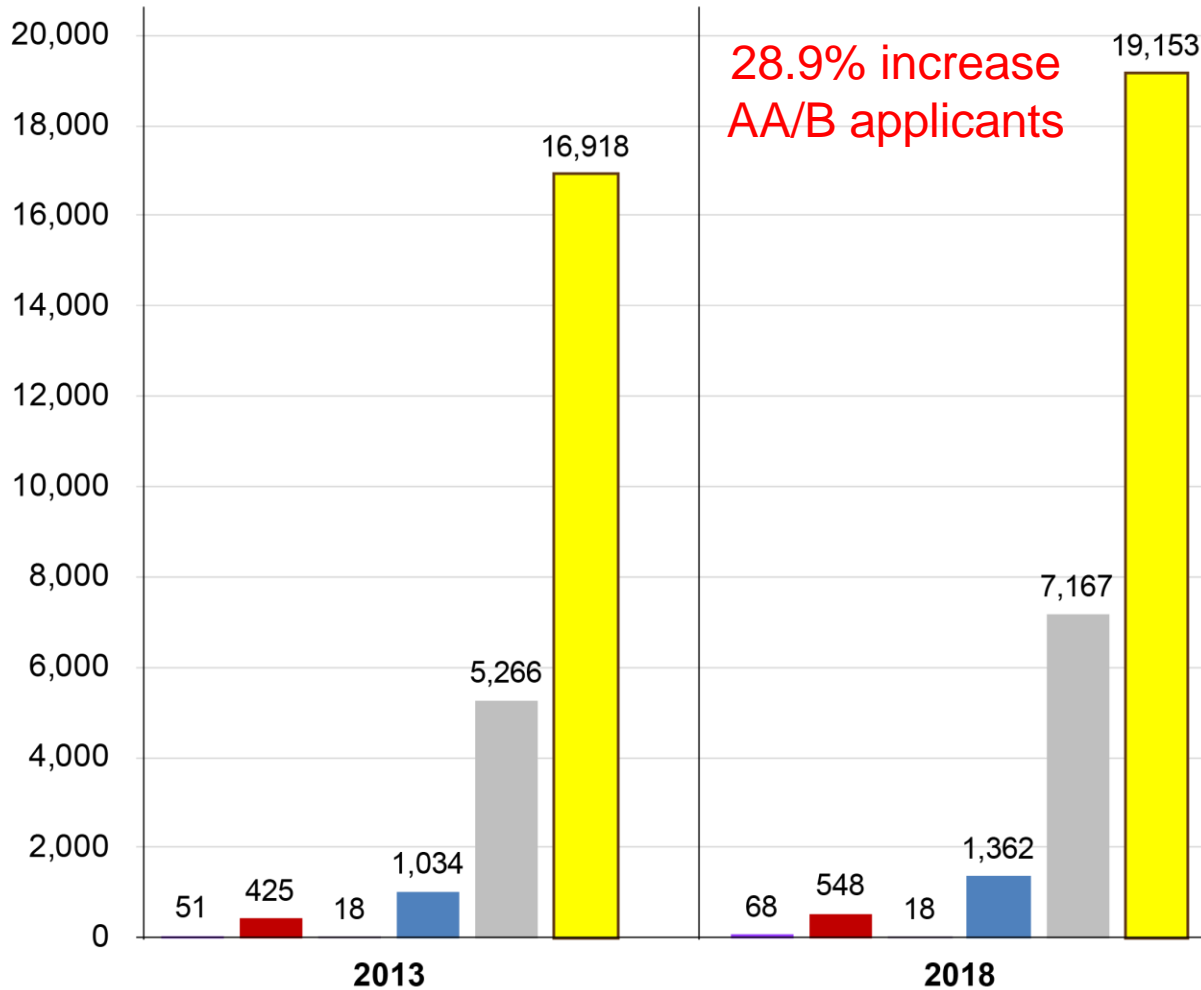
Effect of race adjusted for time period:
184.45, $p < 0.0001$

Funding Rates Mentored Career-Development (K-Series) Awardees* Type 1 and Type 2: FY2013 and FY2018

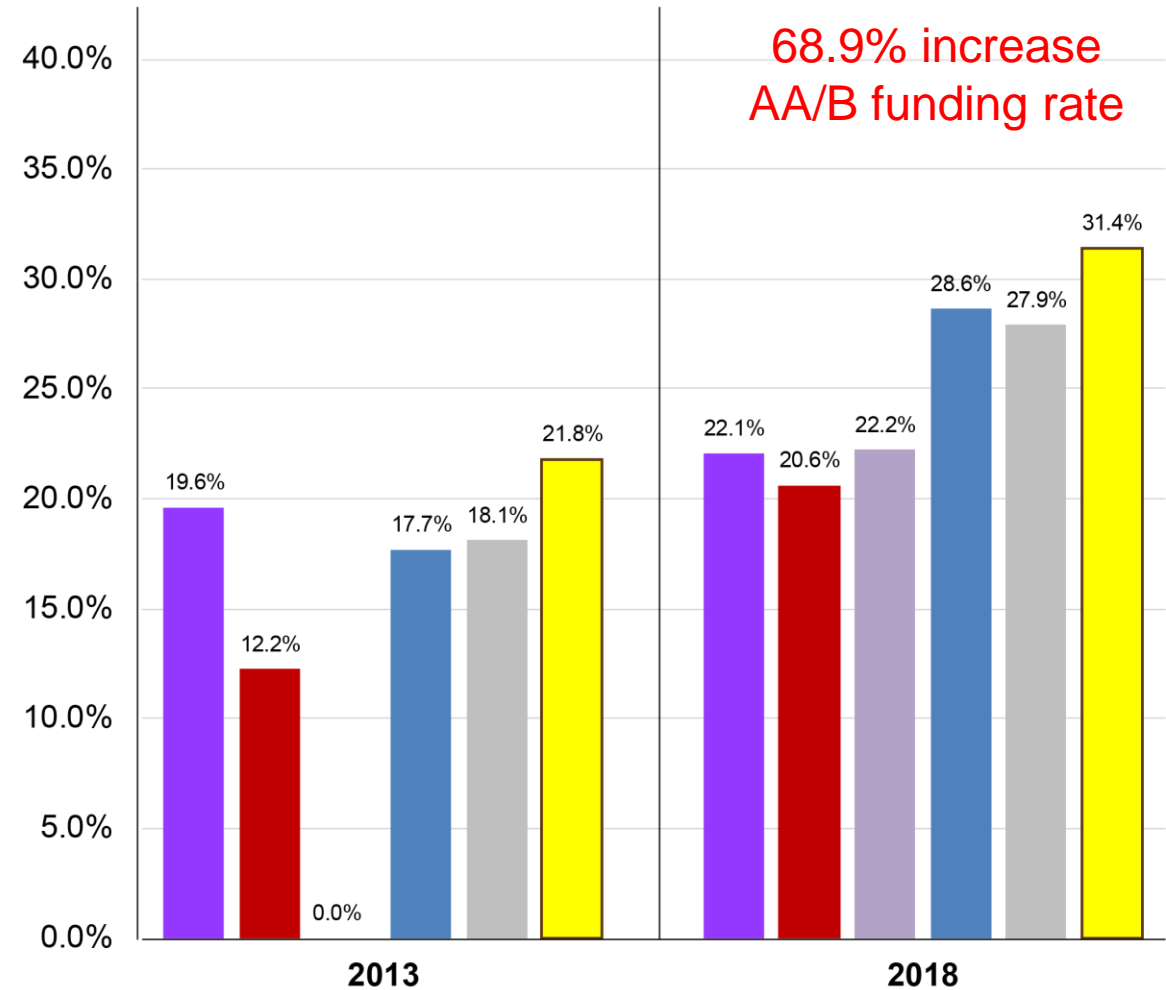


R01eq Applicants* and Funding Rates (Type 1 and 2) Race/Ethnicity FY2013 and FY2018

Number of Applicants



Funding Rates



AI/AN AA/B NH/PI Hispanic Asian White

* Principal Investigators

Intervention Targets to Close Racial Gap in R01 Funding

Recommendations Taskforce: 2016



Mentoring/coaching to enhance submission and re-submission: NRMN

- Information on re-submission outreach
- Anonymized application review study

- IC select pay analysis
- Topic further analyses
 - Health disparities
 - Minority health

NRMN Grant writing/Coaching Program: *By the Numbers*

6

Grant writing/coaching programs (GCPs)

546

Investigator participants in all GCPs

89

NIH awards (71%URG, 73% Women)

152

Awards (NIH + non-NIH)

\$65M

Total NIH funds across GCPs

R01 Funding Gap Between AA/B and WH Scientists Conclusions from Hoppe et al. 2019

AAAS Become a Member

ScienceAdvances Contents News Careers Journals

SHARE RESEARCH ARTICLE | SCIENTIFIC COMMUNITY

Topic choice contributes to the lower rate of NIH awards to African-American/black scientists

Travis A. Hoppe^{1,2}, Aviva Litovitz^{1,2}, Kristine A. Willis^{3,4}, Rebecca A. Meseroll^{1,2}, Matthew J. Perkins^{1,2}, B. Ian Hutchins^{1,2}, ...
+ See all authors and affiliations

Science Advances 09 Oct 2019:
Vol. 5, no. 10, eaaw7238
DOI: 10.1126/sciadv.aaw7238

Article Figures & Data Info & Metrics eLetters PDF

Abstract

Despite efforts to promote diversity in the biomedical workforce, there remains a lower rate of funding of National Institutes of Health R01 applications submitted by African-American/black (AA/B) scientists relative to white scientists. To identify underlying causes of this funding gap, we analyzed six stages of the application process from 2011 to 2015 and found that disparate outcomes arise at three of the six: decision to discuss, impact score assignment, and a previously unstudied stage, topic choice. Notably, AA/B applicants tend to propose research on topics with lower award rates. These topics include research at the community and population level, as opposed to more fundamental and mechanistic investigations; the latter tend to have higher award rates. Topic choice alone accounts for over 20% of the funding gap after controlling for multiple variables, including the applicant's prior achievements. Our findings can be used to inform interventions designed to close the funding gap.

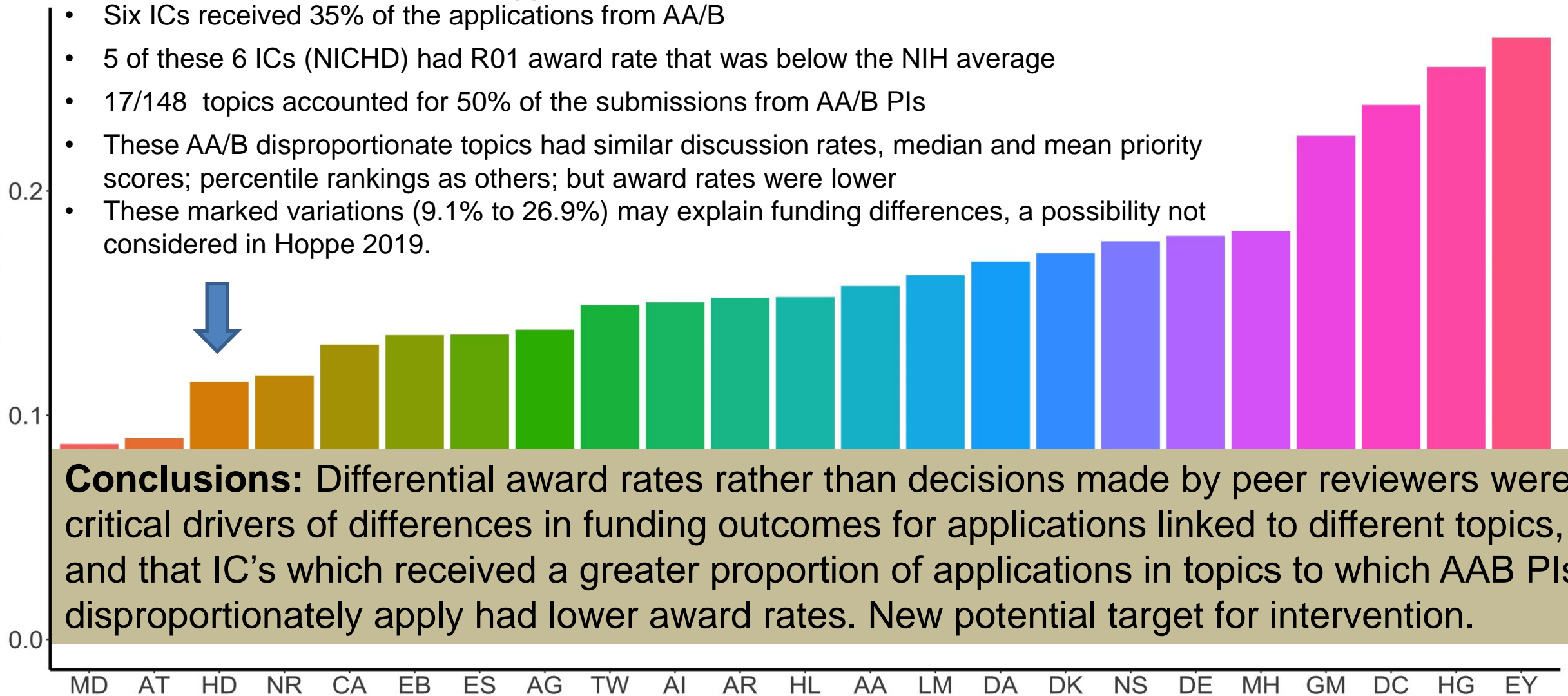
“Our analysis shows that all three of the factors that underlie the funding gap—preference for some topics over others, assignment of poorer scores, and decision to discuss an application—revolve around decisions made by reviewers.”

New Analysis*: ICs Have Widely Varying Award Rates

IC Award Rates for 157,100 R01 Applications 2011-2018

- Six ICs received 35% of the applications from AA/B
- 5 of these 6 ICs (NICHD) had R01 award rate that was below the NIH average
- 17/148 topics accounted for 50% of the submissions from AA/B PIs
- These AA/B disproportionate topics had similar discussion rates, median and mean priority scores; percentile rankings as others; but award rates were lower
- These marked variations (9.1% to 26.9%) may explain funding differences, a possibility not considered in Hoppe 2019.

IC Award Rate



Conclusions: Differential award rates rather than decisions made by peer reviewers were critical drivers of differences in funding outcomes for applications linked to different topics, and that IC's which received a greater proportion of applications in topics to which AAB PIs disproportionately apply had lower award rates. New potential target for intervention.

*New analysis: Mike Lauer - Director OER

Open Mike: Institute and Center Award Rates and Funding Disparities

Recommendations for Funders

- **Assess disparities within portfolios**
 - Gather demographic and scientific topic data on your granting pool (i.e., applicants, short-list, and funded pools)
- **Close racial and ethnicity gaps**
 - Invest in research on health disparities and impact of systemic racism
- **Focus on funding for research areas with diverse scientists**
 - Behavioral, social science, and community based-research tend to have higher populations of URG researchers
- **Expand partnerships and funding efforts to engage institutions with a diverse scientific workforce**
 - Promote and establish connections at HBCU's, MSI's, and Tribal Colleges
- **Expand diversity of reviewer panels and address bias in peer review**
- **Adjust the factors that selection committees value**
 - Broaden portfolio research and researchers to ask new questions and enhance the scientific agenda
- **Monitor and address racial bias at each step of application and review process**



Great minds
think differently ...



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