

NIH's Scientific Approach to Inclusive Excellence: Bridging the Racial Gap in Funding

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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
- Bridging the racial gap in research grants and K awards

Why Diversity Matters: Capitalizing on the Opportunity



**Excellence, Creativity,
Innovation**



**Broadening Scope of
Inquiry: Health Disparities**



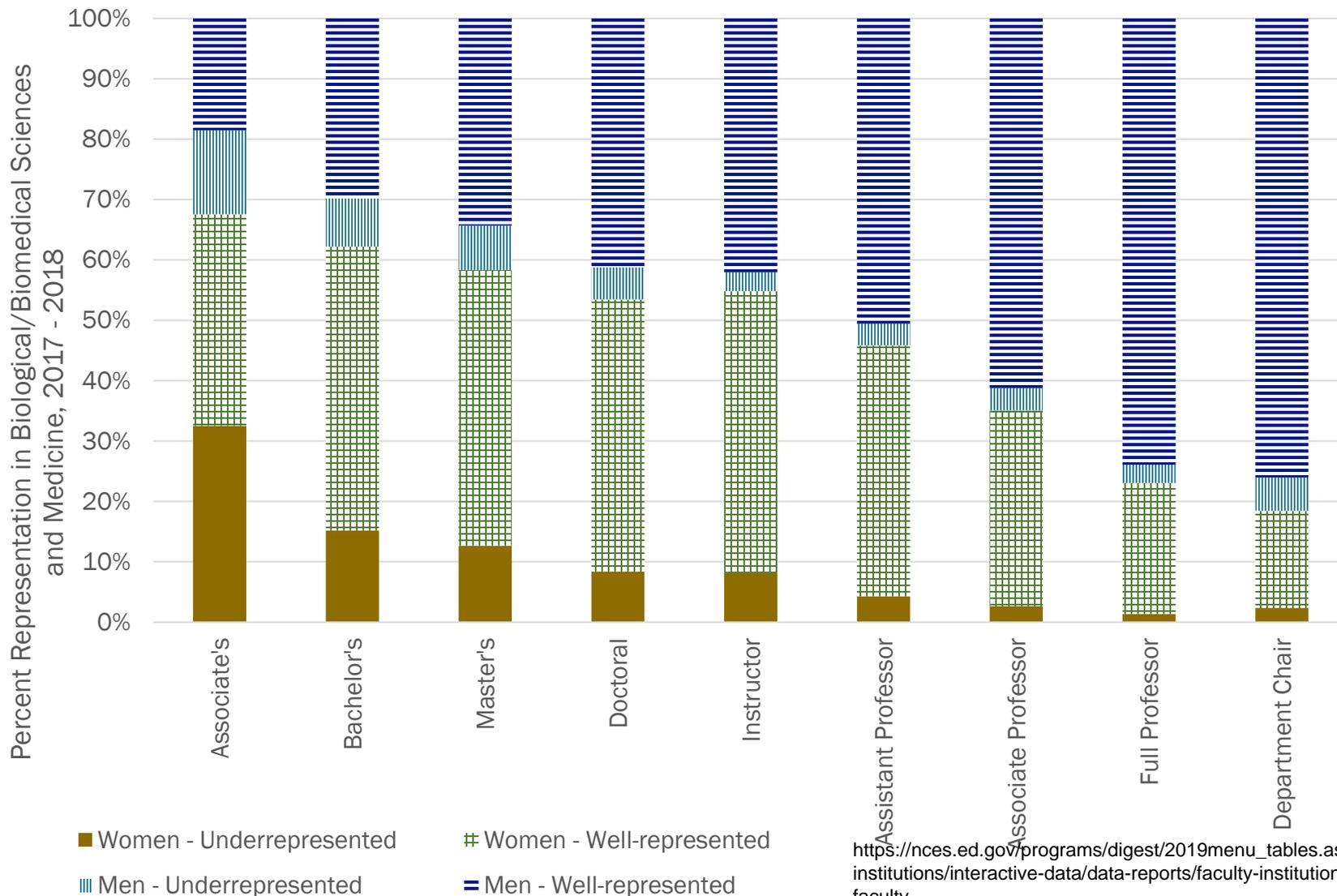
**Changing Demographics:
Types of Diversity**



**Global Research
Preeminence**

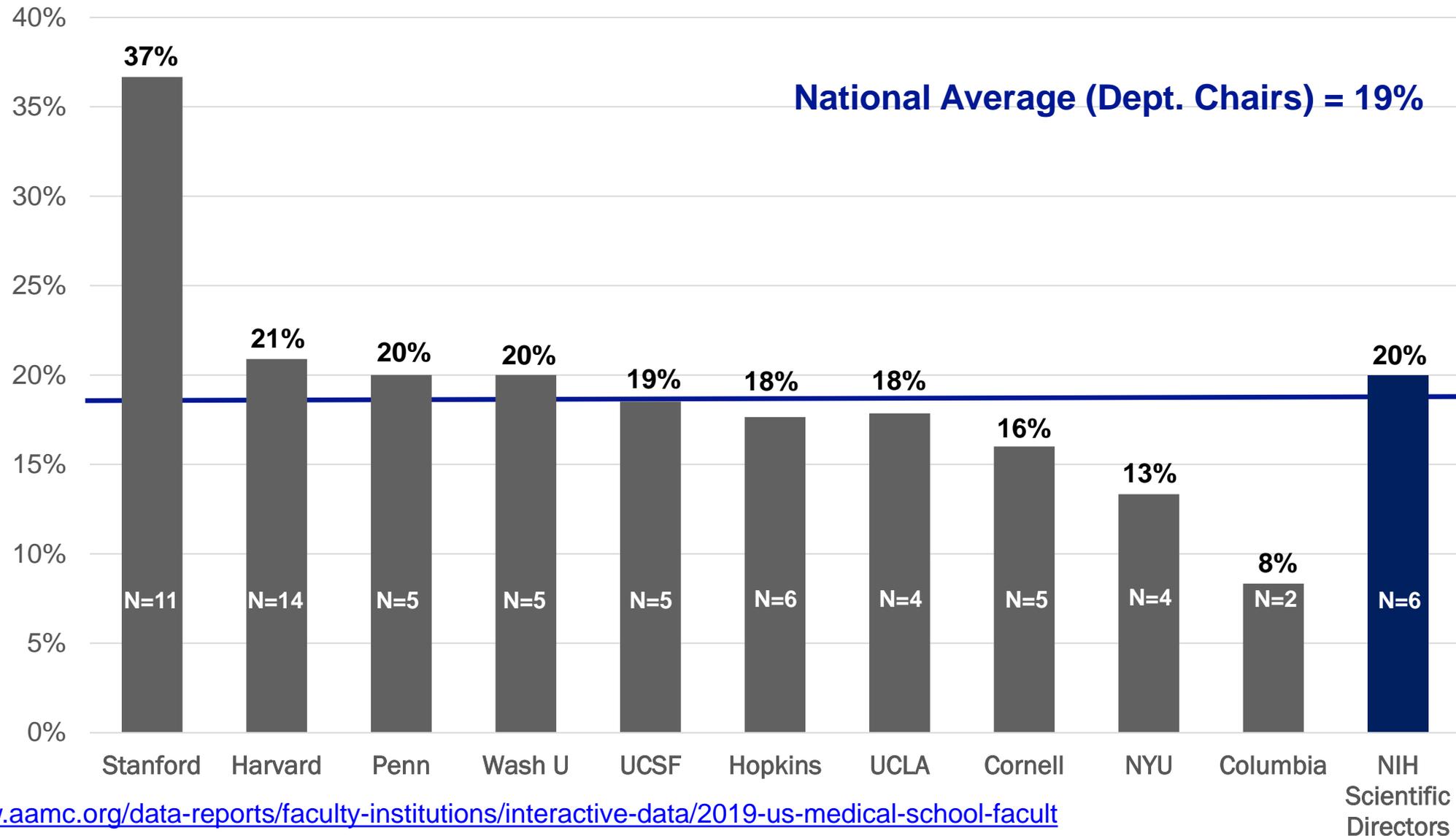
Scientific Workforce Diversity Data

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>

Top Research Institutions: Women Department Chairs 2019 (%)



<https://www.aamc.org/data-reports/faculty-institutions/interactive-data/2019-us-medical-school-facult>

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

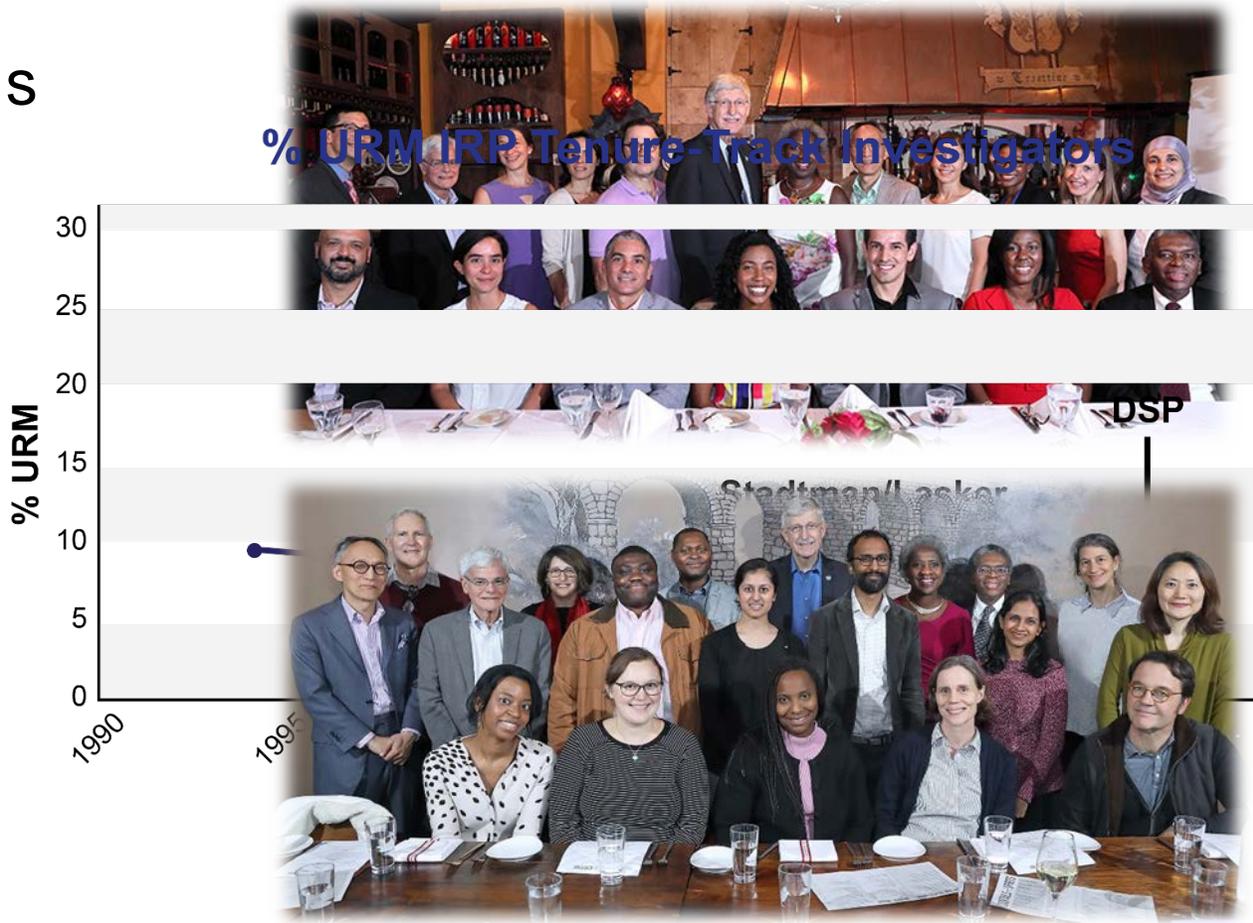
Transparency: collect and publicize aggregate diversity metrics

Provide tools to Divisions, Departments for enhancing recruitment and retention

Evaluation of impact

NIH Approaches to Inclusive Excellence

- Distinguished Scholars Program
 - Build a self-reinforcing community of PIs committed to diversity and inclusion
- Faculty Institutional Recruitment for Sustainable Transformation (FIRST)
- Trans-NIH searches for tenure-track positions
- Implicit-bias mitigation
 - NIH SWD Interactive Toolkit
- NIH Equity Committee
 - Transparency and accountability
- National Research Mentoring Network (NRMN)



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 (Gołowska et. al, 2013) ***
- Consistency in judgment and evaluation criteria
- Avoid ambiguity and time pressure
- Practice speaking up when bias is perceived

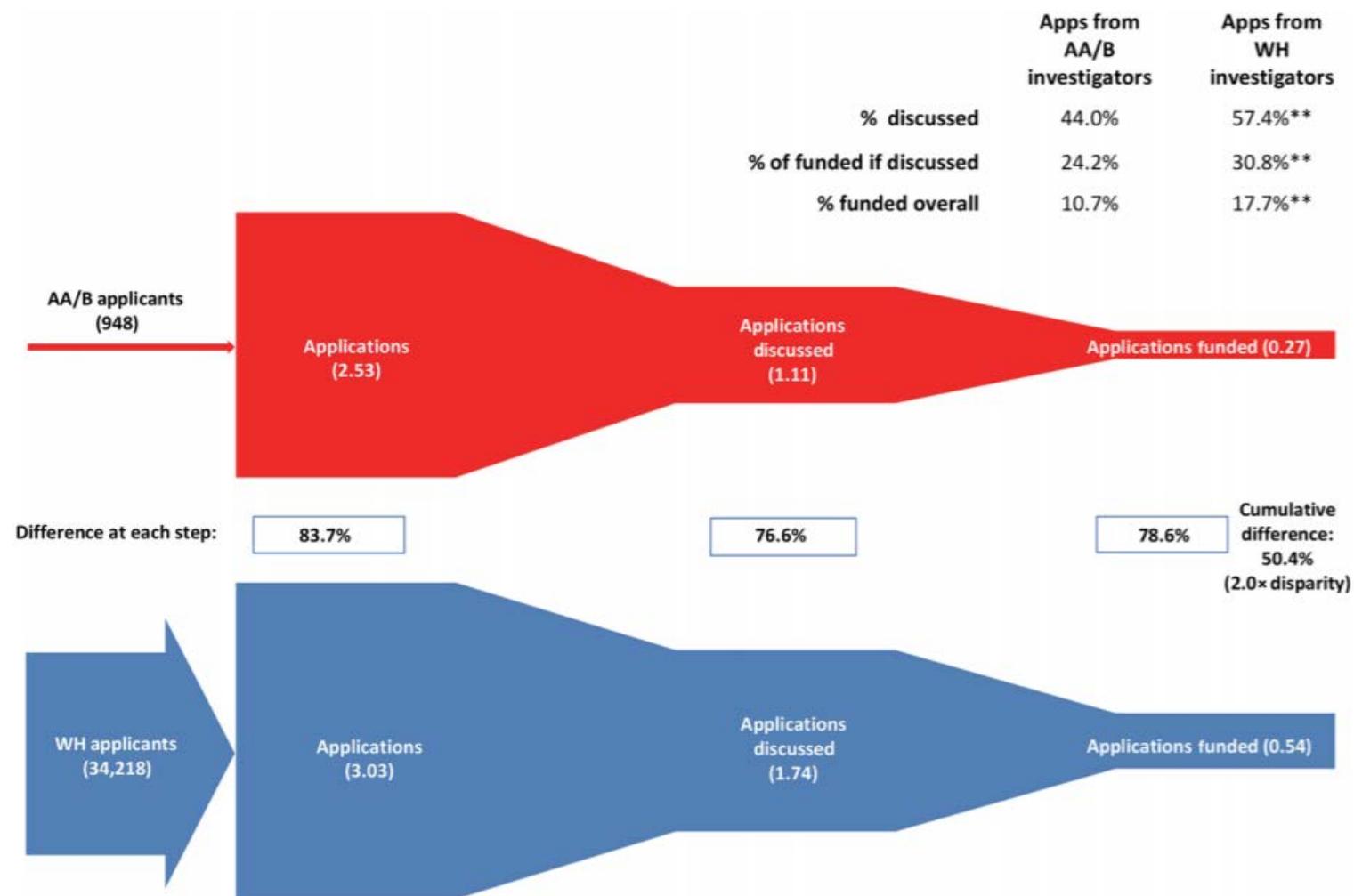
* Lutz Kaufmann et al., Journal of Business Logistics. 2009

** 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

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

R01 Funding Gap Between AA/B and WH Scientists by Stage Submission > Review > IC Funding Decisions (FY11–15)



Funding Gap Contributors

- More AA/B submit from lower-resourced institutions (less submissions linked to institution)
- AA/B: higher numbers of early-stage investigators (i.e., lower career age)
- Lower: submission rates, average discussion rates, and impact scores
- Topic Choice: 21% funding gap*
- AA/B receive R01 funding at half the rate of WH scientists

*Hoppe et al., *Sci. Adv.* 2019

Intervention Targets to Close Racial Gap in R01 Funding

Recommendations Taskforce: 2016

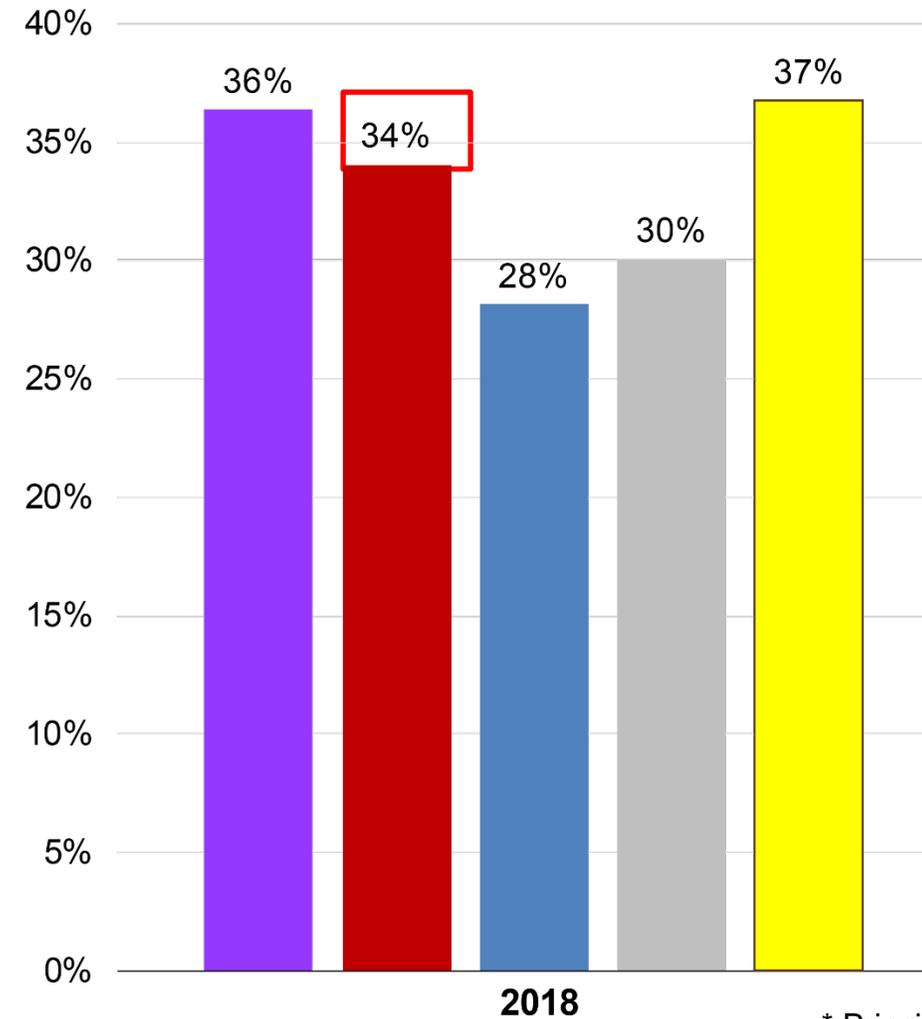
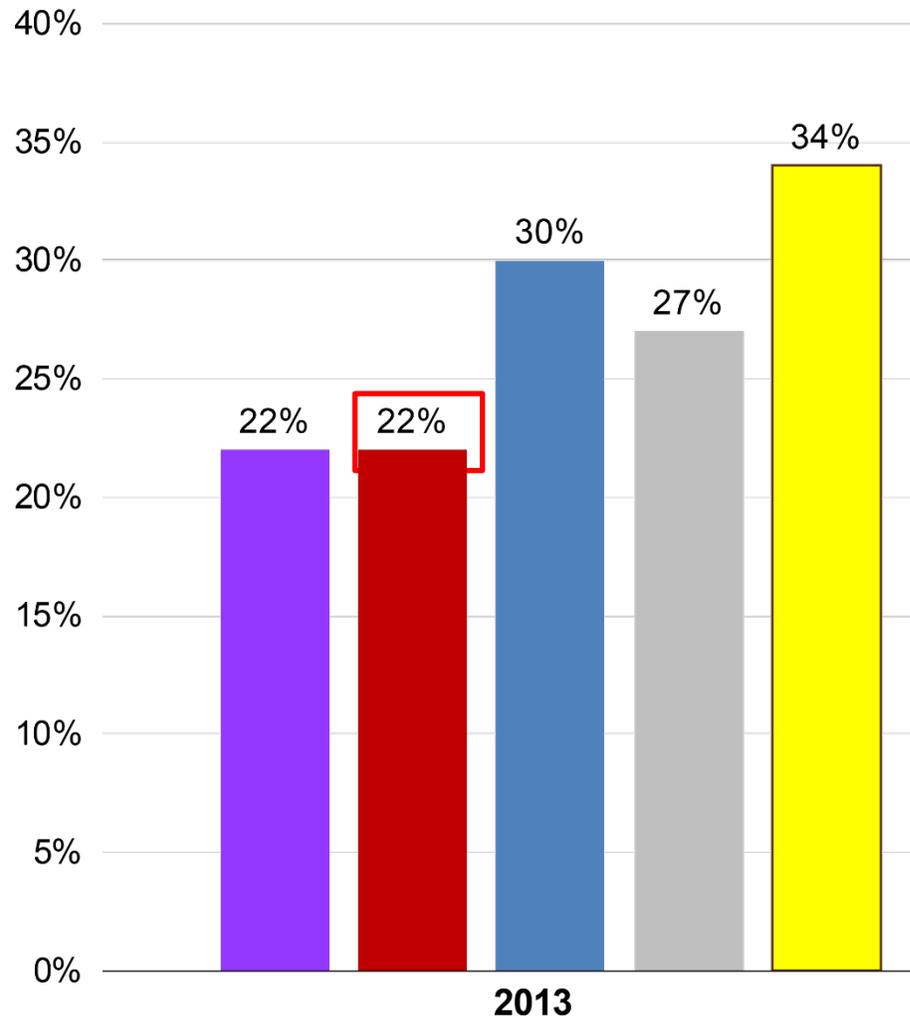


Mentoring/coaching to enhance submission and re-submission: NRMN

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

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

Funding Rates Mentored Career-Development (K) Awardees* FY13 and FY18

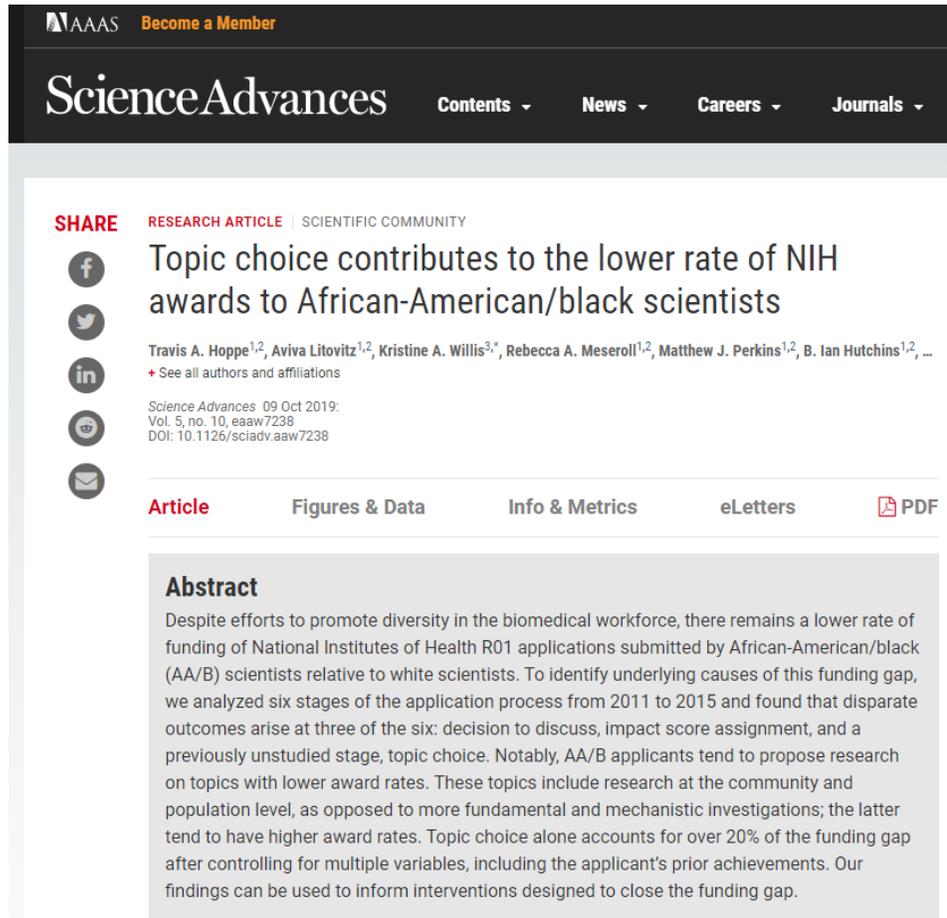


* Principal Investigators

American Indian/ Alaska Native Black or African-American Hispanic or Latino Asian White

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

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Article Figures & Data Info & Metrics eLetters PDF

Abstract

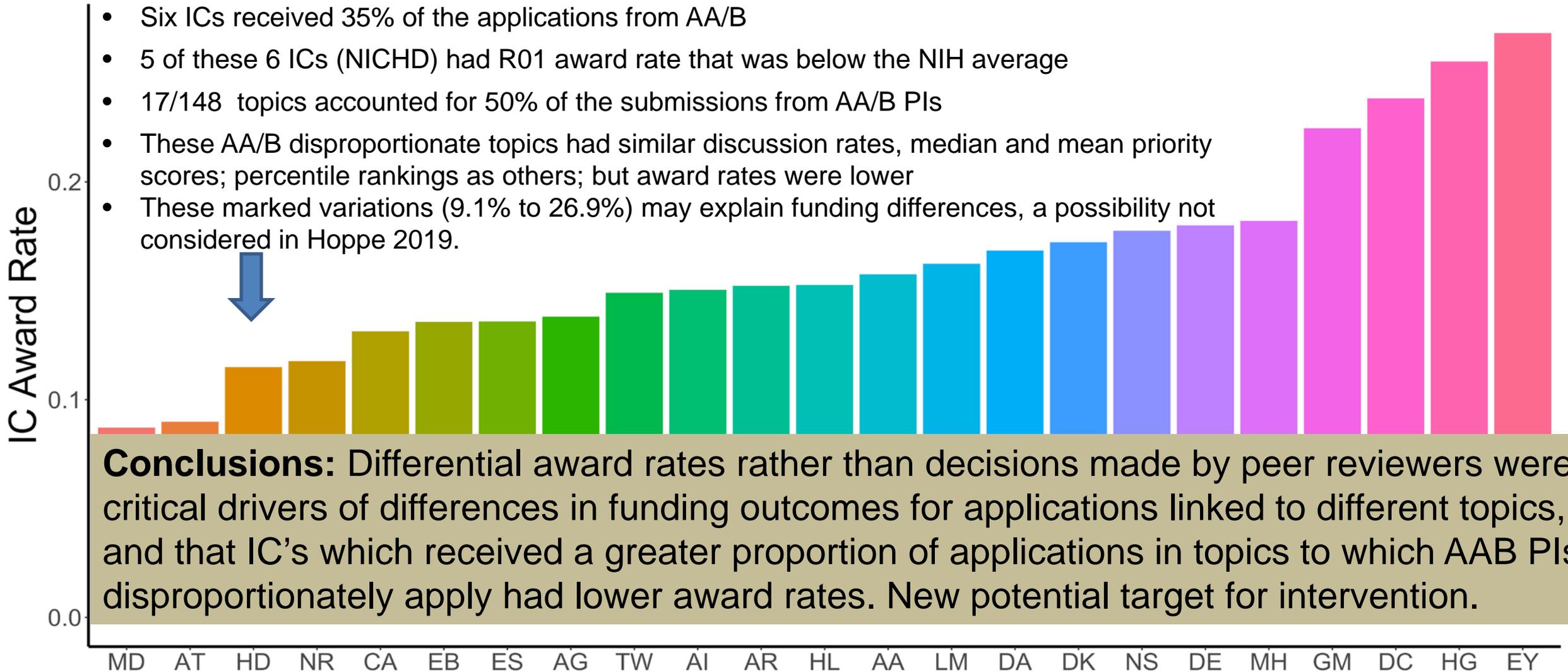
Despite efforts to promote diversity in the biomedical workforce, there remains a lower rate of funding of National Institutes of Health R01 applications submitted by African-American/black (AA/B) scientists relative to white scientists. To identify underlying causes of this funding gap, we analyzed 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 157,405 R01 Applications 2011-2015

- 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.



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

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, $p < 0.0001$

NIH Investigator Funding Gap

R01-Eq Differential Rates (AA/B:White)

Application Success Rate Differentials (FY 2019)						
Race/Ethnicity	Base	Discussed Applications	Awards	Discussion Rate	Success Rate	Funded Rate (Discussed Applications)
African-American/Black Only	515	223	62	43%	12%	28%
White Only	19144	10674	4500	56%	24%	42%

Achieving Parity:

- A substantial number of qualified applicants to fund - 223 discussed
- Parity in both discussion (56%) and funded (42%) rates would result in 121 awards to AA/B applicants (i.e., 59 additional awards)
- Parity in funding among discussed applications (42%) would result in 94 funded applications to AA/B applicants (i.e., 32 additional awards)

Reflections on Impact of Social Injustice on SWD

Suggestions from June 10 ACD WGD Discussion

- **Openly acknowledge the problem of anti-black racism in science**
 - Do not conflate or devalue black individuals' pain – specific issues for black scientists due to U.S. history
- **Promote community-based research focused on external validity**
 - Change the nature of research questions to address the systemic racism that spans many institutional systems
- **Support our black peers during this time of emotional turmoil and feelings of hopelessness**
 - Exacerbated by COVID-19, especially for junior faculty and faculty at HBCUs
 - Diversity tax
- **Adjust the factors that admissions and other selection committees value**
 - Identify the pool of qualified individuals instead of selecting the “top X”
- **Monitor and report acts of racial bias; hold perpetrators accountable**
 - Focus on implicit bias sends the narrative that explicit bias is a thing of the past
 - There is explicit endorsement of procedures that perpetuate systemic racism
 - Stop diminishing acts of aggression and racism as “micro-aggressions” or “*perceived* racism”
- **Empower allies to be actively anti-racist**



Great minds
think differently ...



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