NIH’s Scientific Approach to Inclusive Excellence

Health Research Alliance Presentation
September 22nd, 2020
Hannah A. Valantine, M.D.
NIH Chief Officer for 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

Percent Representation in Biological/Biomedical Sciences and Medicine, 2017 - 2018

Women - Underrepresented  Women - Well-represented
Men - Underrepresented  Men - Well-represented

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


** 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
• 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)
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

- **2013**
  - American Indian/Alaska Native: 22%
  - Black or African-American: 22%
  - Hispanic or Latino: 30%
  - Asian: 27%
  - White: 34%

- **2018**
  - American Indian/Alaska Native: 36%
  - Black or African-American: 34%
  - Hispanic or Latino: 28%
  - Asian: 30%
  - White: 37%

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

Number of Applicants

<table>
<thead>
<tr>
<th>Year</th>
<th>AI/AN</th>
<th>AA/B</th>
<th>NH/PI</th>
<th>Hispanic</th>
<th>Asian</th>
<th>White</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>51</td>
<td>425</td>
<td>18</td>
<td>1,034</td>
<td>68</td>
<td>548</td>
</tr>
<tr>
<td>2018</td>
<td></td>
<td></td>
<td>18</td>
<td>1,362</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

28.9% increase AA/B applicants

Funding Rates

<table>
<thead>
<tr>
<th>Year</th>
<th>AI/AN</th>
<th>AA/B</th>
<th>NH/PI</th>
<th>Hispanic</th>
<th>Asian</th>
<th>White</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>19.6%</td>
<td>12.2%</td>
<td>0.0%</td>
<td>17.7%</td>
<td>18.1%</td>
<td></td>
</tr>
<tr>
<td>2018</td>
<td>21.8%</td>
<td>22.1%</td>
<td>20.6%</td>
<td>22.2%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

68.9% increase AA/B funding rate

* 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

Submissions
- Institution
- Topic

Review
- Less discussed
- Lower score
- Fewer re-submissions
- Topic

Funding
- IC Council review
- Paylines, select pay
- Topic
<table>
<thead>
<tr>
<th></th>
<th>Grant writing/coaching programs (GCPs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Investigator participants in all GCPs</td>
</tr>
<tr>
<td>546</td>
<td>NIH awards (71% URG, 73% Women)</td>
</tr>
<tr>
<td>89</td>
<td>Awards (NIH + non-NIH)</td>
</tr>
<tr>
<td>152</td>
<td>Total NIH funds across GCPs</td>
</tr>
<tr>
<td>$65M</td>
<td></td>
</tr>
</tbody>
</table>

NRMN Grant writing/Coaching Program: 
*By the Numbers*
“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 107,669 R01 Applications 2014-2018

- 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.

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

www.diversity.nih.gov
• 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 …

@NIH_COSWD