Scientists from Minority-Serving Institutions and Their Participation in Grant Peer Review

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Institutional and Individual Discrepancies in Research Funding

- Large disparities in NIH funding success across racial groups (Ginther et al. 2011, Hoppe et al., 2019)
- Large disparities in NIH funding between Traditionally White Institutions (TWIs) and Minority-Serving Institutions (MSIs):
  - Total 2014 funding of 4 TWIs was more than that for 89 HBCUs combined (Toldson 2016, 2019).
- One potential source of these discrepancies in funding is the peer review process.
- Participation levels, motivations and barriers to engage in grant review are relatively understudied
Gender/Racial Bias in Grant Review Feedback Appropriateness and Usefulness:

- “Reviewers these days are often quite biased towards specific methodologies, often the ones they use.”

- “It takes just one biased or not knowledgeable reviewer to sink a grant application.”

- “There is too much personal bias in grant review. Reviewers seem to have the people they want to champion and shoot down others they do not know.”

- “I believe there is too much in the way of politics and also bias against women in the peer review process.”

“Feedback Fair and Unbiased”
64% Whites
49% non-Whites

Gallo et al., Sci Eng Ethics. 2021; 27(2):18
Manual online search of MSI scientists from Biology departments (4 year, active research)

~230 full responses to 16 question survey (multiple choice and open text)
### Demographics of Survey Respondents

#### Table 1. Respondent demographics for minority-serving institution groups.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Historically Black colleges and universities</th>
<th>Tribal colleges and universities</th>
<th>Hispanic-serving institutions</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Percentage</td>
<td>Number</td>
<td>Percentage</td>
<td>Number</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>57</td>
<td>26</td>
<td>46</td>
<td>5</td>
</tr>
<tr>
<td>Male</td>
<td>43</td>
<td>20</td>
<td>55</td>
<td>6</td>
</tr>
<tr>
<td>Nonbinary</td>
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<td>0</td>
<td>0</td>
</tr>
<tr>
<td>No answer</td>
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<td>0</td>
<td>0</td>
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<tr>
<td>Race or ethnicity</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>African American or African origin</td>
<td>57</td>
<td>26</td>
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<td>American Indian or Alaska Native origin</td>
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<td>0</td>
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<td>Caucasian or European origin</td>
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<td>11</td>
<td>82</td>
<td>9</td>
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<td>Hispanic, Latino or Spanish origin</td>
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<td>0</td>
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<tr>
<td>Middle Eastern or North African origin</td>
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<td>2</td>
<td>0</td>
<td>0</td>
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<td>4</td>
<td>2</td>
<td>0</td>
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<tr>
<td>Years since degree</td>
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<td></td>
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<tr>
<td>Less than 10 years</td>
<td>22</td>
<td>10</td>
<td>27</td>
<td>3</td>
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<tr>
<td>10–20 years</td>
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<td>22</td>
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<td>20–30 years</td>
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<td>8</td>
<td>18</td>
<td>2</td>
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<tr>
<td>More than 30 years</td>
<td>13</td>
<td>6</td>
<td>9</td>
<td>1</td>
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<tr>
<td>No answer</td>
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<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Gallo et al., Bioscience. 2022; 72(3):289-299
MSI Scientist Grant Submission and Peer Review Participation Levels vs Interest

**A**

<table>
<thead>
<tr>
<th>Institution</th>
<th>Grant Submission in Last 3 yrs</th>
<th>Wanted to Submit More Grants</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>±100</td>
<td>±25</td>
</tr>
<tr>
<td>HBCU</td>
<td>±75</td>
<td>±50</td>
</tr>
<tr>
<td>HSI</td>
<td>±75</td>
<td>±75</td>
</tr>
<tr>
<td>TCU</td>
<td>±75</td>
<td>±75</td>
</tr>
</tbody>
</table>

**B**

<table>
<thead>
<tr>
<th>Institution</th>
<th>Grant Reviewed in Last 3 yrs</th>
<th>Wanted to Grant Review</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>±100</td>
<td>±25</td>
</tr>
<tr>
<td>HBCU</td>
<td>±75</td>
<td>±50</td>
</tr>
<tr>
<td>HSI</td>
<td>±75</td>
<td>±75</td>
</tr>
<tr>
<td>TCU</td>
<td>±75</td>
<td>±75</td>
</tr>
</tbody>
</table>

76% of TWI Scientists Reviewed in Last 3 years*

*Gallo et al., Sci Eng Ethics. 2020; 26(2):761-782
Barriers to Grant Submission

A. Multiple Choice

B. Comments
“As junior faculty, there has not been much training on how to successfully submit grant applications for large funders such as NSF, NIH, etc. Also, as a faculty member at an HBCU, time is very limited. Our teaching load is relatively high (12–15 hours) and we are also responsible for advising and service to the university. This leaves very little time for writing effective grants.”
Grant Review Motivation

A. Multiple Choice

B. Comments
“I have served on a variety of panels, not just restricted to minority programs over the past 20 years. I have often encountered an amazement that faculty at an HBCU would be engaged in substantial and nationally (internationally) competitive research. I feel that my presence on research panels educates other panelists and often also review officers. It also gives me the opportunity to advocate for investigators from institutions such as mine and for URM investigators.”
Barriers to Grant Review Participation

A. Multiple Choice

B. Comments
“I do not believe the peer review facilitators make an effort to reach a more diverse population. It would be a very easy decision to specifically reach out to HBCU communities. While I do not have this issue, I'm sure some other faculty members may have difficulty finding time to participate on peer review boards. Additionally, if the board does not pay for travel, some faculty at HBCUs may find it difficult to participate.”
Interest in Grant Writing and Peer Review Training

Popularity of training

- HBCU
- TCU
- HSI

*peer review experience / training to junior URM scientists?*

*grant writing experience / training to junior URM scientists?*
Model of Relationship of Grant Submission and Grant Review

Reviewer Bias Training
Review Blinding

Bias in Grant Review

Bias in Review Recruitment

Disparities in Grant Funding

Reduced Eligibility to Review Grants

Inclusive Recruitment
Diversity Goals
Greater Transparency

Intervention

Improve Access to Funding Networks
Grant Writing Training
Reduce Administrative Burdens
Expanded Collaborative Networks

More Inclusive Eligibility
Outreach to MSIs
Training in Review Process
AIBS Diversity Initiatives

AIBS is committed to increasing diversity, equity, and inclusion (DEI) in the biological sciences. Our efforts focus on developing programs that center around our core activities of assessment, training, and communication.

**Assessment**
- Reviewer Diversity
- Personnel Practices
- Member Societies

**Communication**
- *BioScience*
- Internally Generated Papers
- URM Reviewer Recruitment

**Training**
- DEIA Training
- Minority Policy Fellowship
- Minority Peer Review Training
Grant Review Motivation vs Institution Type

- Honorarium
- Other
- Expectation from the funding agency
- Enhancing your career/resume
- Networking opportunities
- Gaining exposure to new and innovative scientific areas
- Informing your own grantsmanship
- Desire to give back to the scientific community

Proportion Indicated Specific Motivation

Institution
- HBCU
- HSI
- TCU
Barriers to Grant Review Participation vs Institution Type

- No interest/incentive
- Other
- Administrative hurdles at your institution
- Not having expertise in area of application
- No bandwidth to travel
- No time
- Not being invited

Institution:
- HBCU
- HSI
- TCU

Proportion Indicated Specific Barrier