The Impact of Racial Inequities in NIH Grant Funding On Faculty Retention

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Overview / Goals

*Educate* on a NIH grant funding disparity suffered by Black PIs and the topics that are of interest to them

*Discuss* the implications for DEI hiring initiatives
Does the Bias in NIH Grant Award matter?

Yes.

Retention of new hires in the biomedical sciences depends on grant awards.

NIH Grants matter for UCSD Promotion

Research Publications, Creative and Scholarly Activities

Associate Prof: Active research grant support, Independence, continued impactful research/publication productivity

Acceleration (any stage): Exceptional research productivity, quality and/or quantity of research publications, research grants. Acceleration in the service area could include earlier than usual appointment to a prestigious society (e.g., ACNP)
NIH Grants matter… to Kent State University

Chemical Physics Faculty Handbook
Indicators of the quality of a faculty member’s research record include the quality and quantity of published work as well as the faculty member’s success in obtaining extramural funds.

Excellent Scholarship: Demonstrated record of publications and grants*
Very Good Scholarship: Demonstrated record of publications and “seed” grants*

*For NIH grants, this includes R01s, AREA grants, and others of sufficient magnitude as described herein. “Seed Grants” are extramural grants that are not of sufficient magnitude to fully support doctoral students or are intramural grants.

NIH Grants matter… to Tulane University School of Medicine

Promotion to Associate Professor
Candidate must be nationally recognized at minimum. Evidence of this includes...Record of current funding

Research productivity is the most important ...Candidates must be actively publishing ...being cited as lead or senior author ...Impact factor will be considered.

Funding should be from NIH or equivalent agencies

Promotion to Professor
Candidate must have current funding with record of renewal of funding

Kent State University Chemical Physics Faculty Handbook;
https://www.kent.edu/cpip-faculty-handbook/criteria-tenure-and-promotion

Tulane University SOM; Guidelines and Criteria for Faculty Tenure:
https://medicine.tulane.edu/appointment-promotion/tenure-track/guidelines
NIH Grants matter…

to Duke University School of Medicine

It is expected that non-clinical faculty on the Faculty Tenure Track receive a majority of their research salary and research support from externally peer-reviewed grants, laboratory service agreements, collaborative research projects, or as independent principal investigators. ...a pattern and expectation of sustained career funding of an independent research or educational program must be established for ...[tenure].

Associate Professor with tenure
Sustained success in the procurement and management of external funding is typical at this level.
Receipt of multiple external federal grants (NIH K, P, R, or U mechanisms and / or renewals), or other national granting agencies such as the NSF, DOD or VA, will contribute toward the requirement for scholarship

Professor
Faculty at this rank will typically have an established record of sustained funding through peer-reviewed grants (e.g., NIH, NSF, DOD, VA, foundations, industry)

Duke University SOM; Faculty Tenure Track:
https://medschool.duke.edu/sites/medschool.duke.edu/files/field/attachment/faculty_tenure_track.pdf

NIH Grants matter…

to the University of Nebraska, Lincoln

Promotion in Rank:

Associate Professor: To attain the rank of associate professor, the candidate should be an accomplished teacher, where teaching is an assigned responsibility, and have a significant record of scholarly and creative work in teaching, research, and service in keeping with the individual's job responsibilities.

Research Statement Examples:

Sciences: “This research is supported by the NSF...$490.5K”; “...by NSF CAREER...$538.5K”

Social Sciences: “I obtained grants from the NIH totaling over $739,000”; “NIH grant application...two recent NIH grant applications...”

https://executivevc.unl.edu/faculty/evaluation-recognition/guidelines
https://cas.unl.edu/p-t-candidate-file-preparation
Does the Bias in NIH Grant Award matter?

Yes. Obtaining major funding, often specified as NIH major funding and even the R01 specifically, is essentially a requirement for Associate Professor / tenure.

A sustained pattern of funding with NIH awards is an expectation for Full Professor.

Efforts to diversify Universities and academic research will fail if we do not fix account for the “Ginther Gap”.
Ginther et al., 2011

NIH Type 1 (new) R01 (FY2000-FY2006)

17.1% AA/B PI vs 29.3% white PI success rate
(25.5% for Asian PIs)

58.4% of the chance, for Black PIs
1.7-fold advantage for white PIs

Hoppe et al., 2019

NIH Type 1&2 R01 (FY2011-FY2015)

10.7% AA/B PI vs 17.7% white PI success rate

60.5% of the chance, for Black PIs
1.65-fold advantage for white PIs
**Hoppe et al., 2019 : Topic Choice**

NIH Type 1&2 R01 (FY2011-FY2015)

10.7% AA/B PI vs 17.7% white PI success rate

“we used word2vec, an informatics approach that uses word embedding of text to build document vectors suitable for grouping applications into clusters based on the similarity of their content...150 topic-based clusters”

“37.5% of applications from AA/B PIs mapped to 8 of the 150 topic clusters. Of those eight, six had award rates that were significantly below the NIH average”

“WH applicants also experienced lower award rates in these clusters, but the disparate outcomes between AA/B and WH applicants remained”

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**Lauer, et al. 2021**

“ICs have widely varying award rates (the ratio of funded applications to all applications). These marked variations (from 9.1% to 26.9%)”

“five of the six ICs that received a higher than average proportion of applications from African American and Black PIs – Minority Health Disparities, Nursing Research, Child Health and Human Development, Environmental Health Sciences, and Allergy and Infectious Diseases – had an R01 award rate that is below the NIH average”

“...received 19% of all R01 applications for FY2011-2015, but they accounted for 35% of applications from AAB PIs”
NIH Grant Disparity matters…
to Black Faculty

Probability of at least one award:
9 AA/B applications to equal 5 Wh applications.
(18/10; 25/18)

NIH Cycles: Oct/Nov; Feb/Mar; Jun/Jul

Reviews often not returned in time for sequential sub-
missions.

One revision, then proposals must be “new”. Unwise to have multiple proposals in one study section

Preliminary data are required for all R01 proposals. This takes time and precious startup money to generate.

Lessons for Institutional DEI efforts
(Cluster hiring or other)

If Black Assistant Professors are to succeed, they need:
- more time to write proposals, revise/resubmit proposals
- more startup money to devote to preliminary studies
- more trainees (program support, T32 support, SURF programs, etc.)
- more runway to sustain initial laboratory growth for extra years
- non-exploitative collaborations with established faculty
- recognition of the higher grant funding hurdles at the tenure decision.

Ginther et al. (2011, 2018) showed that the disparity still exists for Full Professors and those with grant experience. Hoppe et al. (2019) showed it exists across all topic domains, regardless of fundability.
The same standard for UN-Lincoln-Promotion

From: Elizabeth Spiller, Executive Vice Chancellor
Re: Promotion and/or Tenure in 2021-22
Date: (March 9, 2021):

Every tenure or promotion decision should be judged against the same standard: a proven record of achievement that suggests a sustained career typified by true excellence and distinction.

https://executivevc.unl.edu/faculty/Promotion-and-Tenure-Memo-2021-22.pdf

Thank you for attending
Commentary: Fund Black Scientists

**Action for the National Institutes of Health**

- Explicitly state that racism persists in the US research enterprise and that it must be expelled
- Institute policies to immediately achieve racial funding equity
- Make diversity score-driving criteria, prioritize diverse teams for funding, and diversify review panels
- Train and empower NIH leadership, staff, and grant reviewers and recipients to recognize and stop racism

Stevens et al., Fund Black scientists, Cell (2021),
https://doi.org/10.1016/j.cell.2021.01.011
NIH Grant Proposals With African-American/Black PIs Are Less Likely to Be Funded


