AHA Peer Review Training

Unconscious Bias

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To be a relentless force for a world of longer, healthier lives.

2024 IMPACT GOAL

Every person deserves the opportunity for a full, healthy life. As champions for health equity, by 2024, the American Heart Association will advance cardiovascular health for all, including identifying and removing barriers to health care access and quality.

Addressing the drivers of health disparities, including the social determinants of health and structural racism, is the only way to truly achieve equitable health and well-being for all.
Learning Objectives

• Unconscious biases are social stereotypes about certain groups of people that individuals form outside their own conscious awareness

• Recognize that biases are human, and everyone has biases they must work on

• Develop strategies to become more aware of and mitigate our biases

• Be an effective ally when observing potential structural bias and unconscious bias in AHA peer review

• Commit to practices that will advance a diverse investigator workforce and health equity in AHA and our institutions
Why are we concerned about unconscious bias in peer review?

Peer review decisions award an estimated >95% of academic medical research funding, so it is crucial to understand how well the process works and where it could be improved.
There are MANY kinds of biases
ALL humans have them

AFFINITY BIAS
HALO EFFECT
HORN EFFECT
ANCHORING BIAS
AGEISM
NAME BIAS
Types of Bias That Can Impact Peer Review

- Confirmation
- Conformity
- Conservatism
- Expertise
- Institutional
- Gender
- Racial

Also consider more broadly:

- False correlations
- Cultural preconceptions
- Geographic boundaries
- Language presumptions

https://www.sciencemag.org/careers/2017/01/consciously-combating-unconscious-bias
Confirmation Bias

Examples of Confirmation Bias

- Not seeking out objective facts
- Interpreting information to support your existing belief
- Only remembering details that uphold your belief
- Ignoring information that challenges your belief

https://www.verywellmind.com/what-is-a-confirmation-bias-2795024
Conformity Bias

THE ASCH PARADIGM
A SWARTHMORE COLLEGE EXPERIMENT

I guess it must be A?

A!
Conservatism Bias

- Conservatism or low support for innovative research is another form of bias which reviewers need to be cognizant of.
- According to Guthrie et al., the peer review process leans more strongly towards incremental research and discourages research into unexplored approaches.


https://www.businessinsider.com/cognitive-biases-that-affect-decisions-2015-8
Check Your Expertise Bias

Check if you are giving more credits to investigators who are similar to you (e.g., attended similar training program or institution)

Use and stick to the same set of criteria for every person under consideration

If the benefit of the doubt is given to one person, make sure that it is given to ALL

Bias is more likely to occur when there is a high level of discretion and ambiguity - if the group has to make frequent discretionary decisions, it is a good sign that we – the AHA – need to revisit the criteria

Institutional Bias

Reviewers are to adhere to the criteria stated and not assume that more popular, well-known institutions are likely to equate to an applicant being successful/having access to various resources or that an applicant from a smaller institution will not be as successful due to a perceived (and unproven) lack of resources.

Relying on assumptions of an institution from personal experience is not aligned with designated peer review criteria.

Gender Bias: Who is a “Scientist”?

(N=1504)

By the age of 6, young girls are less likely than boys to view their own gender as “brilliant” and already believe boys are more suited to ‘really, really smart’ activities as compared to their own gender

Gender Bias

Lower productivity
Less visibility & impact

Lower academic position
No leader role
Less research money

Gender bias in decisions
Gender stereotypes

Women in STEM

24% WOMEN IN STEM JOBS
76% MEN IN STEM JOBS

1 IN 7 ENGINEERS JOBS
IN COMPUTER SCIENCE & MATH
27%
IN PHYSICAL & LIFE SCIENCES
40%

DISPROPORTIONATELY LOW SHARE OF UNDERGRADUATE DEGREES

https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0183301
https://nature.berkeley.edu/garbelottoat/?p=1192
Gender Bias: Evaluations in Academic Science

A nationwide sample of biology, chemistry, and physics professors (n=127) evaluated application materials of an undergraduate science student (female or male) for a lab manager position.

Both male and female faculty participants rated the female student as:

- Less competent
- Lower hireability
- Offered lower salary ($3.7K)
- Less mentoring

Even though the female was rated more likeable
Gender Bias: Doris Duke Clinical Scientist Development Award 2013-2016

Is there bias in our peer review?

**Success rate**

*Women*

16/312 proposals; 5% funded

*Men*

52/413 proposals; 13% funded

**Components of applications that could elicit bias remarks**

Some words only used for applicants of a specific gender:

*Men*  
- Scientific, creative, top, best, able

*Women*  
- Personal, active, remarkable, perfect, tremendous, protected

Gender Bias: Doris Duke Clinical Scientist Development Award 2013-2016

Change: Provide guidance to those providing recommendations

Please address:

• Why the applicant’s record & accomplishments merit CSDA support
• Why you have taken a mentorship role for this applicant
• How you and mentorship team, will use your professional influence and scientific knowledge to promote research & career advancement of the applicant

Please AVOID referring to personal circumstances or attributes of the applicant such as: marital status, age or gender (e.g. young, woman, man), juggling of work-life balance such as childcare responsibilities or illness, and roles of the applicant outside of the professional setting (e.g. mother, husband, father)

AHA has removed gender biased terms from program descriptions, proposal instructions, peer review criteria include training materials, and third-party materials including reference reports, training plans, etc.

Recent study examined how intersecting stereotypes about gender and race influence faculty perceptions of post-doctoral candidates in STEM fields in the United States

Physics faculty rated:
- Asian and White candidates as more competent and hirable than Black and Latinx candidates
- Black women and Latinx women and men candidates were rated the lowest in hireability compared to all others.

Biology faculty rated:
- Asian candidates as more competent and hirable than Black candidates, and as more hirable than Latinx candidates.

Evidence for lower rating and funding levels for Black and Asian vs. White applicants

Race, Ethnicity, & NIH Research Awards

Compared with NIH R01 applications from white investigators, applications from black investigators were 13.2 percentage points less likely to be awarded, and those from Asian investigators were 3.9 percentage points less likely to be awarded.

For the entire research project grants (RPG) pool, if blacks had the same award probabilities as whites (36.4% for RPGs and 29.3% for R01s) one would expect to see 1,071 RPG awards instead of 585, and 337 R01 awards instead of 185 in the analysis sample.

Race, Ethnicity, & NIH Research Awards

Apps from AA/B investigators

Apps from WH investigators

% discussed 44.0% 57.4%**
% of funded if discussed 24.2% 30.8%**
% funded overall 10.7% 17.7%**

Difference at each step:

83.7%

76.6%

78.6%

Cumulative difference: 50.4%
(2.0x disparity)

Hoppe, Travis; Litovitz, Aviva; Willis, Kristine; Meseroll, Rebecca; Perkins, Matthew; Hutchins, B. Ian; Davis, Alison; Lauer, Michael; Valantine, Hannah; Anderson, James; Santangelo, George (October 9, 2019). "Topic choice contributes to the lower rate of NIH awards to African-American/black scientists". Science Advances. 5 (10).
Mitigating unconscious bias in peer review

Take the Implicit Association Test (IAT) – all results are anonymous, and this is an evidence-based approach to mitigate biases in decision making:

https://implicit.harvard.edu/implicit/takeatest.html

Additional tips for minimizing the influence of bias and assumptions:

• Periodically evaluate your judgments and consider whether unconscious biases may influence your decisions.
• Spend sufficient time evaluating each application.
• Maintain your standard and apply the criteria consistently to all applications throughout the review process.
• Evaluate everyone's entire application. Don't rely too heavily on only one element of the application to evaluate an applicant.
Thank You.


References


Hare, Holly Elizabeth. Service Work of Underrepresented Faculty. Diss. UCLA, 2018.


Platt, M.O. We exist. We are your peers.. Nat Rev Mater 5, 783–784 (2020). https://doi.org/10.1038/s41578-020-00248-x

