

Bias Reduction in Scientific Peer Review (BRISPR)

Webinar for the Health Research Alliance

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Underlying premise

- Peer review to determine what research gets funded is valuable
- The goal of peer review within HRA organizations is to recognize great, transformative science that will lead to improvements in human health
- Question: So what's the problem?
- Answer: We're all human

Reviewers have explicit scientific biases

- Believe certain methods are better than others
- Prefer some measurement or analytic techniques
- Like some randomization schemes better than others
- Hold opinions about the value of discovery vs. clinical research

BRISPR addresses implicit biases

1. Stereotypes about any group exist and we know them even if we don't believe them; e.g., ***race, ethnicity, gender, academic institution, geographic location***
2. Just knowing stereotypes creates ***bias habits*** that ***distort perception of objective information*** and can influence the review of a grant application
3. A ***trivial piece of information*** activates the entire stereotype
4. It takes more than good intentions to break ***bias habits***

Bias habits distort perceptions of objective data...

- Judges heard music played by men and women differently until musicians' identities were obscured *Goldin & Rouse, 2000*
- When listening to same recording, students heard more accented English when viewing picture of Asian vs. White instructor *Rubin, 1992*
- 23 experimental studies found male applicants evaluated more positively for employment in high status positions than identical female applicants *Isaac et al., 2009*
- Identical research text was rated lower, found to have more errors, and generated more negative comments when participants thought the author was Black vs. White *Reeves, 2014*

BRISPR study research questions:

- Does participating in a bias habit-reducing intervention influence reviewers':
 - Awareness of personal bias
 - Proximal measures of behavioral change (motivation, self-efficacy, outcome expectations)
 - Self-reported action (using bias-reducing strategies during grant review)
- Are virtually delivered in person sessions comparable to asynchronous passively delivered content?

General approach

BRISPR is based on the only strategy proven effective in helping change ***behavior*** in response to bias habits

- “Motivated self-regulation” – social psychology
- “Intuitive override” – judicial reasoning
- “Breaking the bias habit” – our research team

BRISPR training session design

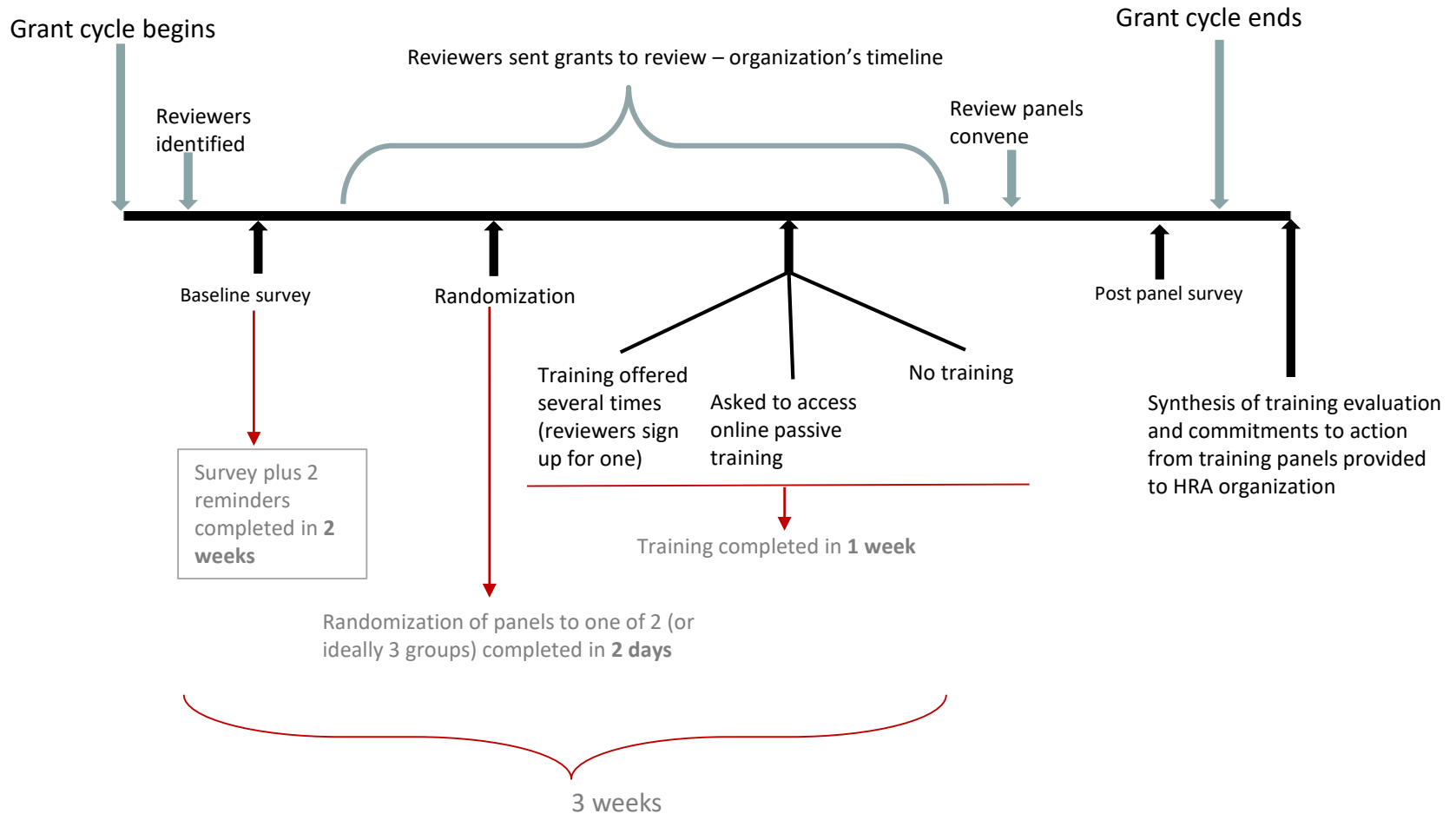
Relevant to reviewing grant applications:

- Research on stereotypes and implicit bias (i.e., bias habits)
- Concepts to foster bias literacy (“if you name it, you can tame it!”) (e.g., expectancy bias)
- Evidence-based strategies to practice to break the bias habit (e.g., growth mindset)

Considerations in study design

- Preliminary HRA survey (24 respondents):
 - Size and no. of panels, and no. of cycles vary widely
- Unit of randomization = panel
- Outcome measure = survey responses
- To detect an effect size of 0.2:
 - 90 review panels for 2 arms (i.e., virtual vs. passive)
 - 135 review panels for 3 arms (i.e., add a no treatment control group = ideal)
- Participant burden vs. effective intervention
 - Trying for 60 min
 - Realistically may be 90 min
- Match research to organization's timeline

Proposed study design (thank you AHA)




Timeline

- BRISPR educational session has been developed
- Training will be piloted this month with UW-Madison reviewers of local grants
- BRISPR session will be revised based on feedback
- Begin recruiting organizations under current R35
Feb, 2021
- R35 renewal to NIH Jan, 2021

Summary

1. Just knowing common stereotypes causes bias habits that might introduce unintended bias in reviewing grants
2. It requires active practice of bias reducing strategies to break these bias habits
3. We are all working hard to fund research to improve human health and support the careers of talented investigators = Growth mindset!

Questions?

Please raise the “hand icon”  or use the chat window to ask a question.