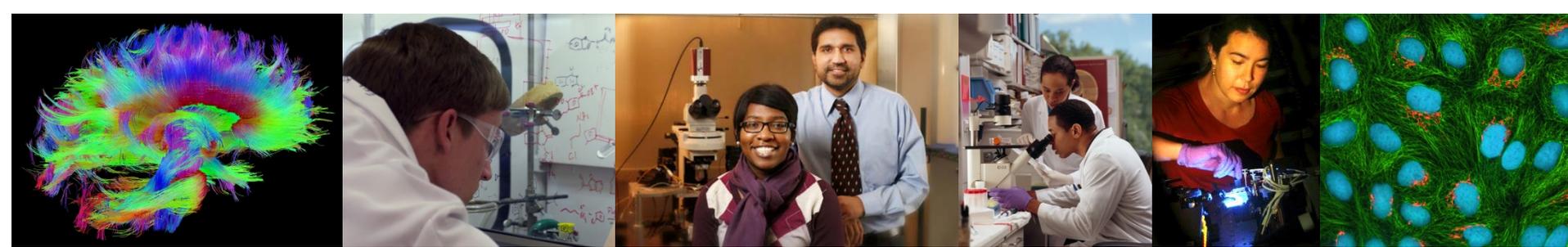


NIH AA/B Funding Disparity Working Group: Findings and Recommendations

Hannah A. Valantine, M.D.

NIH Chief Officer for Scientific Workforce Diversity

NIH ACD Meeting | June 9, 2016



National Institutes of Health

Office of the Director

Scientific Workforce Diversity

AA/B Funding Disparity Working Group

- Hannah Valantine, MD*
- James Anderson, MD, PhD*
- Bruce Cuthbert, PhD
- Matthew Fenton, PhD
- Gary Gibbons, MD
- Kenneth Gibbs, PhD*
- Stephen Katz, MD
- Michael Lauer, MD*
- Jon Lorsch, PhD
- Douglas Lowy, MD
- David Murray, PhD
- Richard Nakamura, PhD *
- Eliseo Pérez-Stable, MD
- Roderic Pettigrew, PhD, MD
- William Riley, PhD
- Griffin Rodgers, MD
- George Santangelo, PhD*
- Nora Volkow, MD
- Alison Davis, PhD*
- Janetta Lun, PhD*
- Luci Roberts, PhD*

R01 Funding Disparity for AA/B Scientists

Key Findings and Next Steps

- Submissions
 - Low applicant pools
 - Fewer applications per applicant
- Re-submission
 - Review score
 - Topic choice
- Recommendations
 - Interventions
 - Ongoing analyses
- Discussion

AA/B Funding Disparity

- Ginther: (FY2001-2006) AA/B applicants less likely to be awarded R01 grant compared to WH applicants
 - Controlling for demographics; education and training; employer characteristics; NIH experience; research productivity
- AA/B Funding Disparity Working Group (WG) follow-up analysis with more recent data (FY2008-2014)
 - Multifactorial
 - Disparity at each stage in the process
 - Initial applications, re-submissions, review outcome (score), number of applications discussed, funded
 - Cumulative disparity
 - Odds of AA/B scientist being funded 35% less than for WH scientist funded
 - Background facts to frame interventions

Analysis of R01 Success Rates in the Era of Declining Pay Lines: Disparity Persists

Success rate for:
FY 2000 – 2006

African American applicants: 17%

White applicants: 29%

Differential success (AA:W)

0.59

*

Ginther, 2011

FY 2010 - 2015

African American applicants: 11%

White applicants: 17%

Differential success (AA:W)

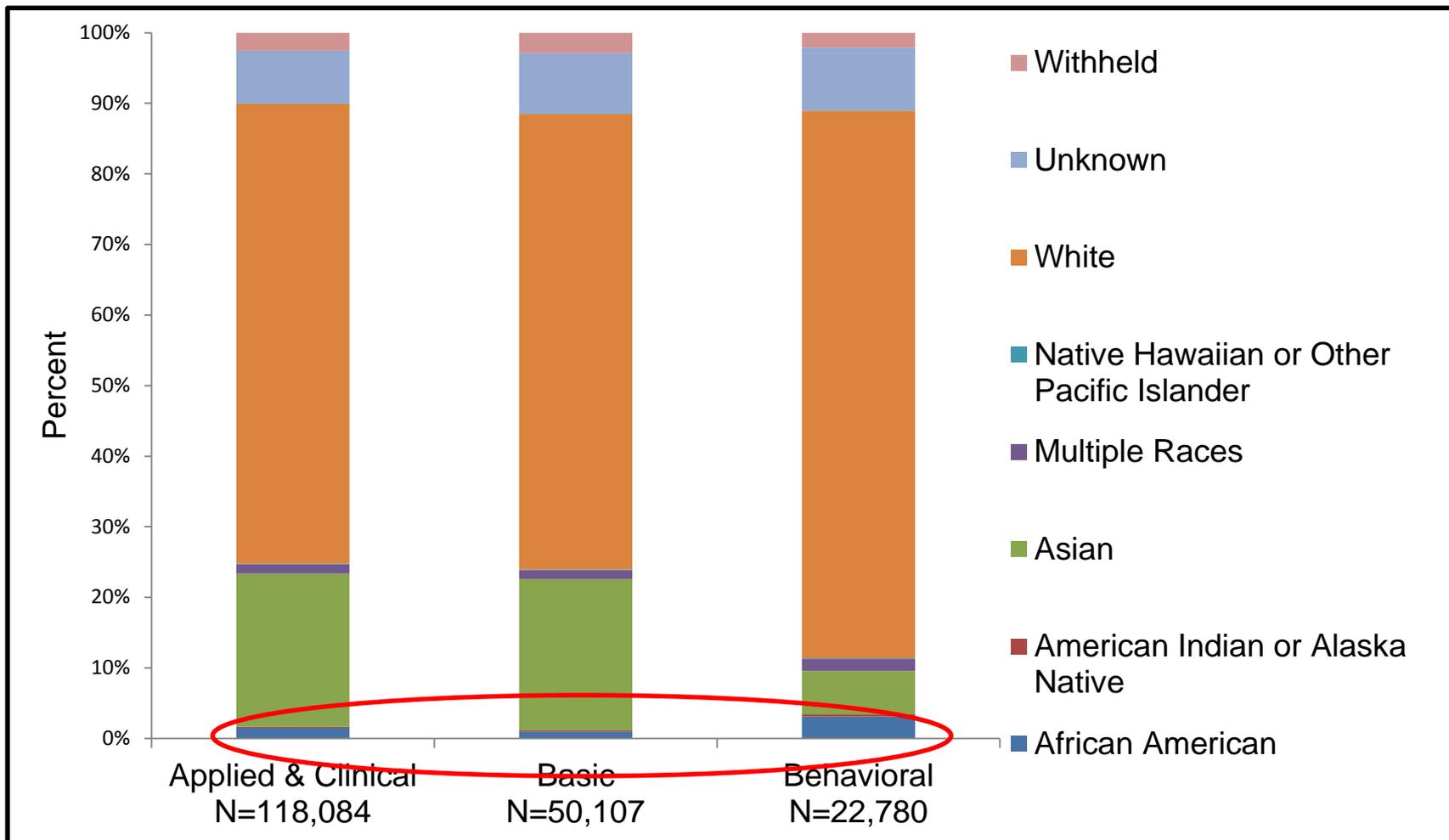
0.65

OER, 2016

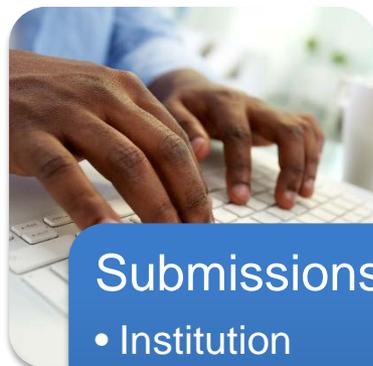
* Cochran-Mantel-Haenszel statistics
Effect of race adjusted for time period: 154.40; $p < 0.0001$

Applications from AA/B Scientists Constitute Only 1.5% of the Pool

Source: NIH Office of Extramural Research



New Data: R01 Funding Disparity Spans Submission to Funding



Submissions

- Institution
- Topic



Review

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



Funding

- IC Council review
- Paylines, select pay
- Topic

- AA/B 1.5% total applicant pool
- More AA/B are NIs
- Fewer applications per AA/B PI
- Resources, protected time
- AA/B-preferred topics: lower funding success

- When compared directly, 45% AA/B vs. 53% WH discussed
- Score drives re-submission
- Study topics similar in citation metrics
- WH > AA/B funding in all study topics

- Topic preference for IC select pay
- Pool of discussed, unfunded AA/B applications
- Low-success topics ~ IC priorities?

New Data: R01 Funding Disparity Spans Submission to Funding



Regardless of race, certain topics are less likely to be funded NIH-wide (“low-success”), for example:

- Community
- Women
- Health disparities
- African American
- Kidney disease

AA/B scientists prefer these topics but produce far fewer applications overall than do WH scientists, and AA/B scientists are less likely to be funded even in these topics

Factors Contributing to R01 Application Outcomes

- Discussed
 - Re-submission application
 - Race other than AA/B
 - Continuation application
 - Early-stage investigator
- Funded if discussed
 - Re-submission application
 - Continuation application

Factors Contributing to R01 Application Outcomes

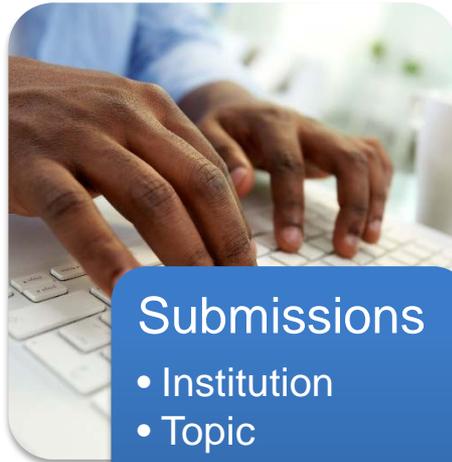
- Discussed

- Re-submission and application type (renewal vs new):
 - More likely to be discussed
 - More likely to be funded, if discussed
- Race
 - AA/B less likely than WH to be discussed
 - AA/B just as likely to be funded (of those discussed)

- Funded if discussed

- Re-submission application
- Continuation application

Intervention Targets



Submissions

- Institution
- Topic



Review

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



Funding

- IC Council review
- Paylines, select pay
- Topic

Mentoring/coaching pilot to enhance submission and re-submission

- Information on re-submission outreach
- Anonymized application review study

- IC select pay analysis
- Topic further analyses
- Health disparities
- Minority health research

Experimental Intervention #1: Mentoring/Coaching Pilot for Application Preparation

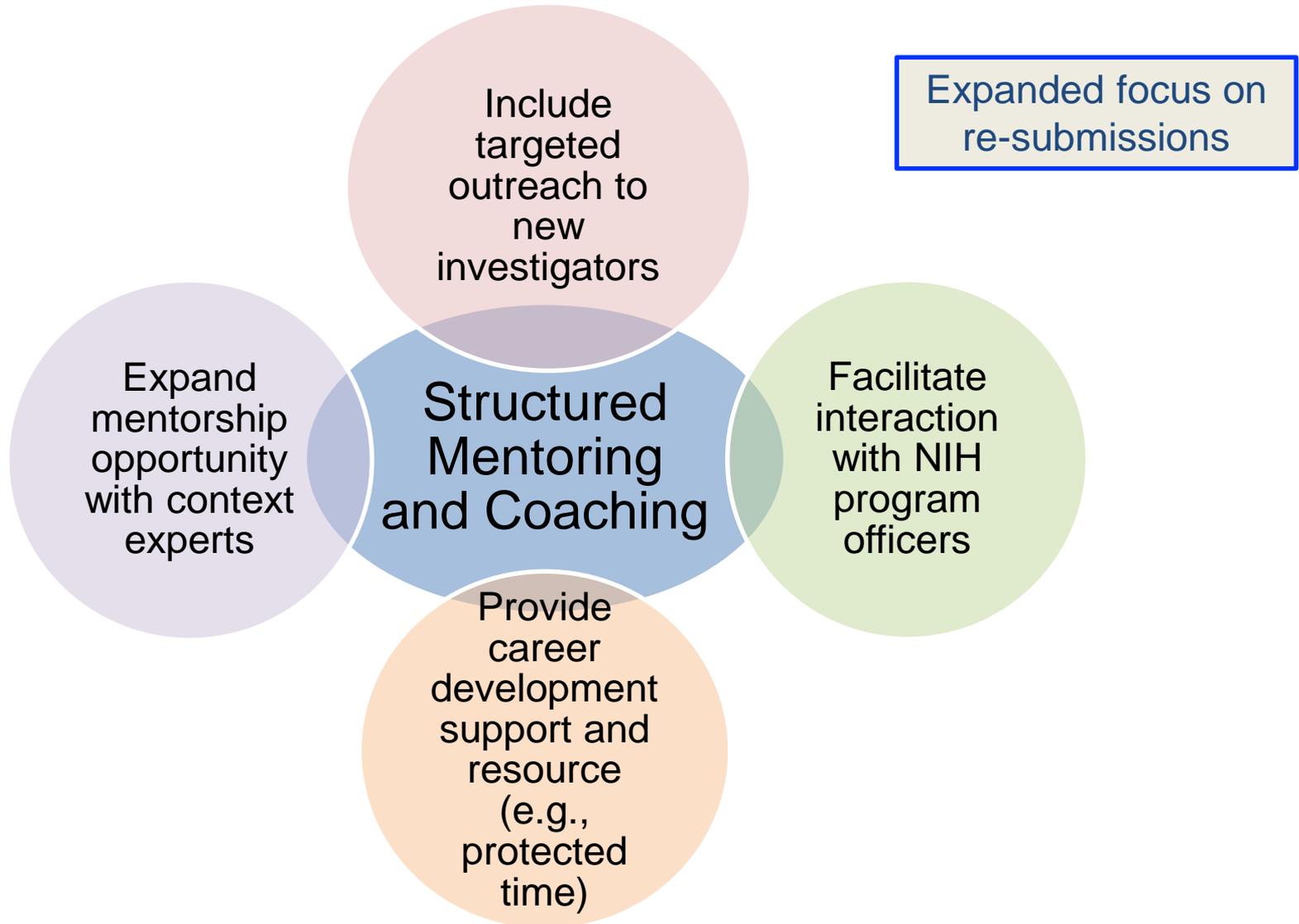
Expanding on existing NRMN Programs*

- Goal: Increase R01 submission and re-submission, thus improving success in obtaining NIH R01 grants
- Participants: Cohort of up to 20 mentees with 2 NRMN professional-development core models
- Method:
 - Targeted invites from IC leadership, pre-submission review (coaches and NIH program officers, review staff)
 - Resources for protected time (administrative supplements)
- Outcome metrics: re-submissions, score, awards made

*National Research Mentoring Network

Mentoring and Coaching Pilot

R01 Grant-Application Preparation



Mentoring and Coaching Pilot

R01 Grant-Application Preparation

Before
re-submission...

10 months

Identify “scored but not funded”
applications (~30-35 AA/B investigators)

8 months

Workshop Preparation /Pre-Review
Pre-workshop applications reviewed by NIH
program officers and assist identify content
experts

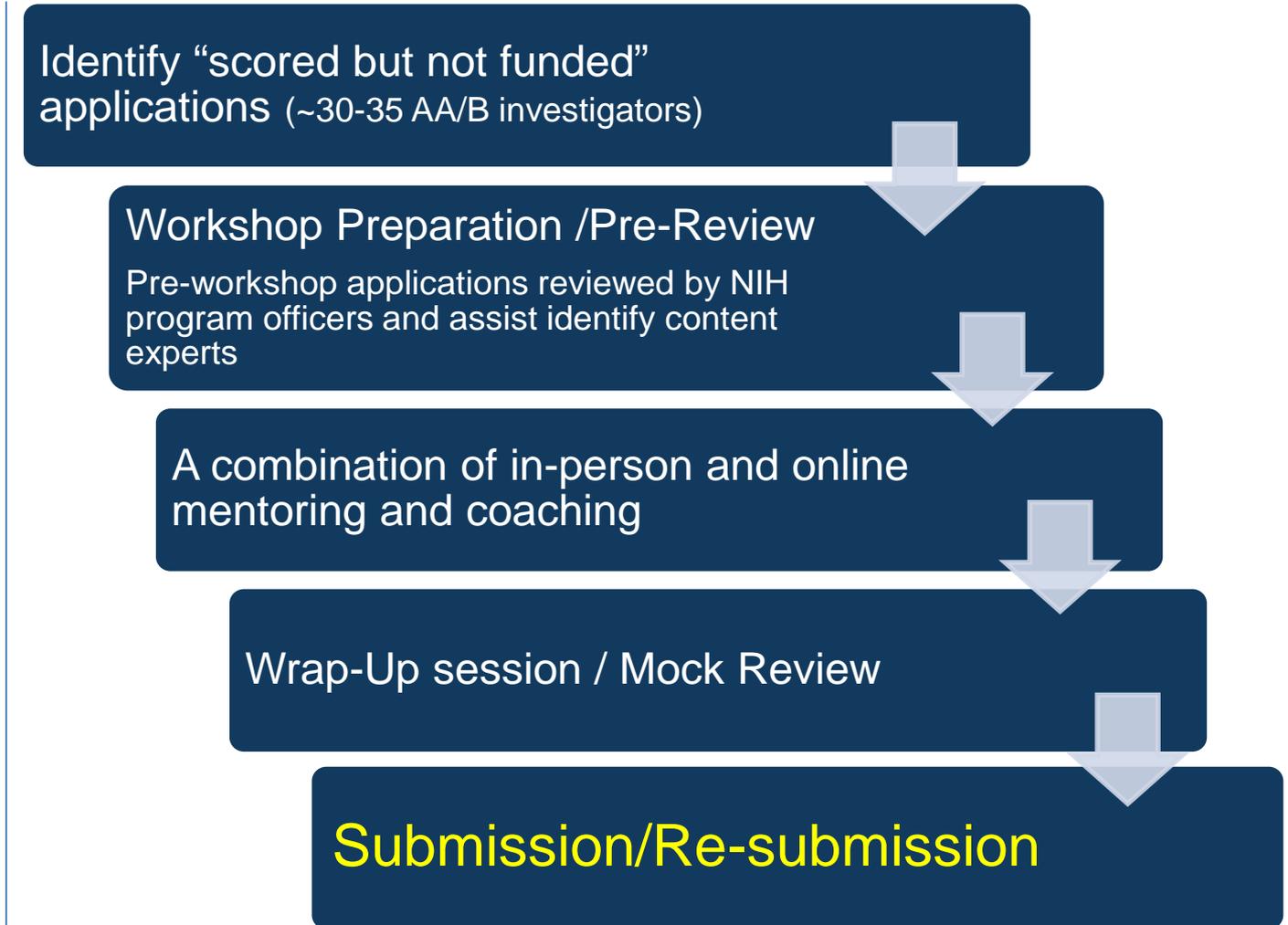
5 months

A combination of in-person and online
mentoring and coaching

2 months

Wrap-Up session / Mock Review

Submission/Re-submission



Experimental Intervention #2: Application Information, Knowledge Trial

- Goal: provide facts about application and review processes that link application score to funding likelihood; raise awareness about increased funding success from re-submissions
- NIs*: stratified samples of AA/B, WH, and Asian scientists whose applications were discussed but not funded (historical controls)
- Method: “Dear Investigator” letter with information that links score to fundability, and action steps
- Companion survey about resources, topic choice
- Outcome measures: number of re-submissions, survey responses

* New R01s and R21s in FY2016-17

Experimental Intervention #3: CSR-Led Anonymous Review Study

- Goal: Assess potential bias in peer review
- 3 cohorts
 - AA/B applicants
 - Matched* sample of WH applicants
 - Randomly selected sample of WH applicants
- Anonymized (personal information redacted)/non-anonymized
- Multiple reviewers per application:
 - Title, specific aims, methods
 - NOT biosketch, budget, bibliography
- Outcome measures: resulting scores for differences that may be due to race awareness, institution reputation, sex, and seniority

*sex, institutional types, and original score range

Ongoing Analyses on Topic Choice

- ✓ Quality of science: comparing high vs. low success topics shows no difference in citation characteristic for funded R01s (FY2010-13)
 - ✓ Disaggregated by grant percentile score:
 - ✓ Grant percentile rankings 15th-30th - no significant differences between high and low success
- ✓ IC Discretionary pay:
 - ✓ Greater use for high-success topics
 - ✓ No difference by race
- Scaled-up topic cluster analysis and co-citation networks

R01 Funding Disparity for AA/B Scientists

Key Findings and Next Steps

- Submissions
 - Low applicant pools
 - Fewer applications per applicant
- Re-submission
 - Review score
 - Topic choice
- Recommendations
 - Interventions
 - Ongoing analyses
- Discussion

Issues and Questions

- NIH R01 is currency of biomedical advancement, long-term academic success
 - Disparity must be resolved
- Shared responsibility: NIH and academia
- Applicant pool: Severe AA/B underrepresentation
- Low success topics:
 - Health disparity and minority health research
 - Outdated methodology, questions, approaches?
- Understand role of bias:
 - Race (review, funding)
 - Topic (review, funding)

DISCUSSION