Health Research Alliance Members Meeting Effective Approaches to Increase Diversity and Inclusion in the Biomedical Research Workforce

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Scientific Workforce Diversity Officer

Office of Extramural Programs

National Institutes of Health

September 25, 2019

- What does diversity and inclusion mean?
- NIH *workplace and workforce*
- The importance of organizational leadership and strategic planning (2008-2015)
- Programs not supported by an organizational commitment will not achieve long-term goals

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General Definition of Diversity

- The spectrum of human similarities and differences

Inclusion

- The way that an organization configures opportunity, interaction, communication, information and decision-making to utilize the potential of diversity

The Workplace Diversity Network, *A Framework for Building Organizational Inclusion*, National Conference for Community & Justice and Cornell ILR, 1999

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Diversity and Inclusion-- NIH *Workplace*

- Rooted in EEO/AA concepts (anti-discrimination and representation)

- Diversity is broadly defined (being "invited to the party"*)

- Dimensions of diversity: race, color, national origin, religion, gender, age, disability, sex (including gender identity), parental status, marital status, genetic information, sexual orientation, or political affiliation

- Inclusion puts diversity into action (being "asked to dance")

Diversity Doesn't Stick Without Inclusion, Harvard Business Review (2017)

Diversity in Extramural Programs-- *Workforce*

- Underrepresentation driven, using an evidence-based process (NSF):

- underrepresented racial and ethnic groups*

- persons with disabilities;

- persons from disadvantaged backgrounds; and
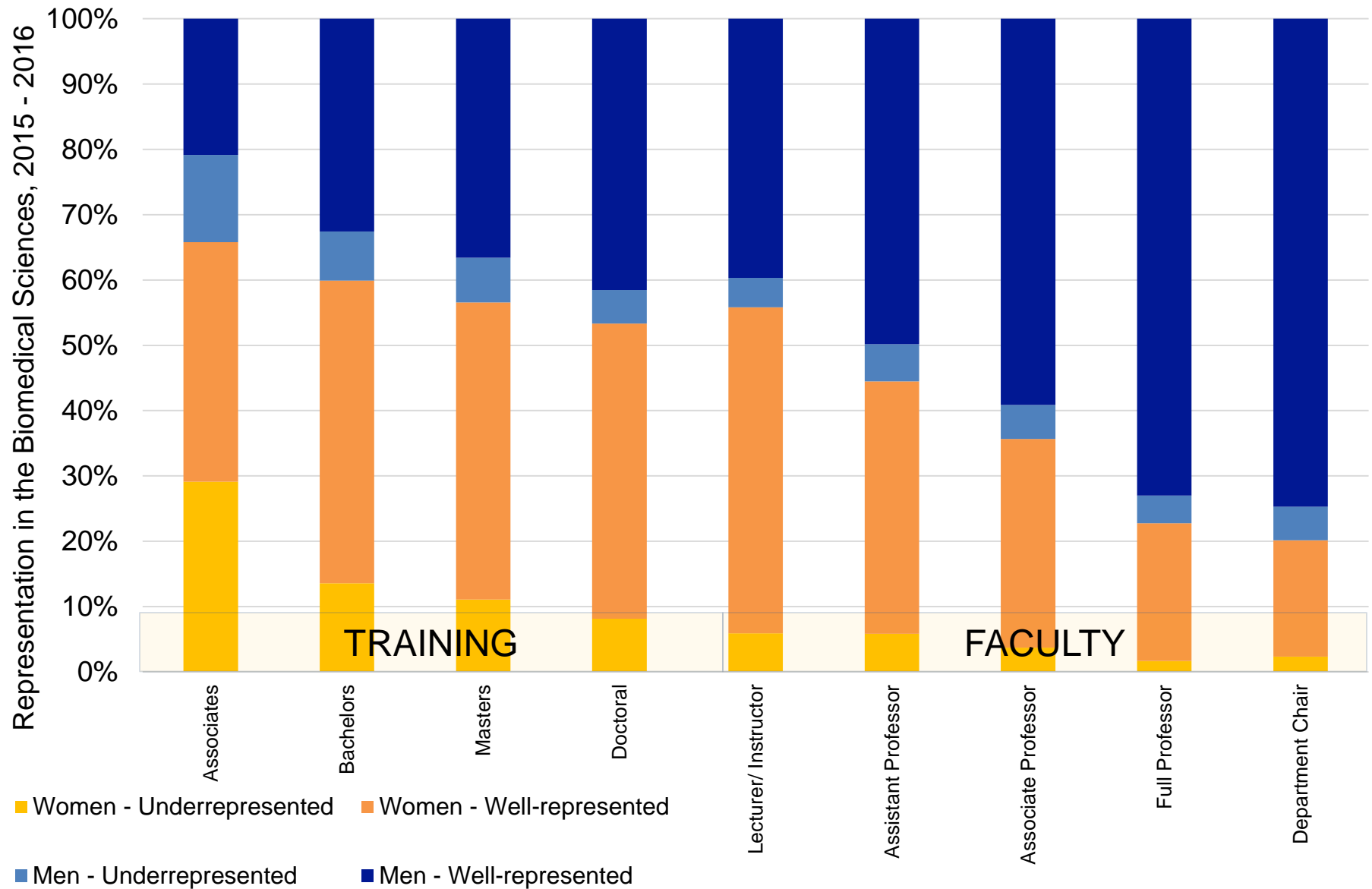
- Women at the faculty and above level

Notice of NIH's Interest in Diversity, NOT-OD-18-210 (includes "setting" based assessment of institutional demographics)

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The Landscape:

Biomedical Research Workforce

URM Scientists Decline Along Career Path

Representation in the Biomedical Sciences, 2015 - 2016

TRAINING: Associates, Bachelors, Masters, Doctoral

FACULTY: Lecturer/ Instructor, Assistant Professor, Associate Professor, Full Professor, Department Chair

Legend:
- Women - Underrepresented
- Women - Well-represented
- Men - Underrepresented
- Men - Well-represented

Applications from AA/B Scientists Constitute Only 1.5% of the Pool
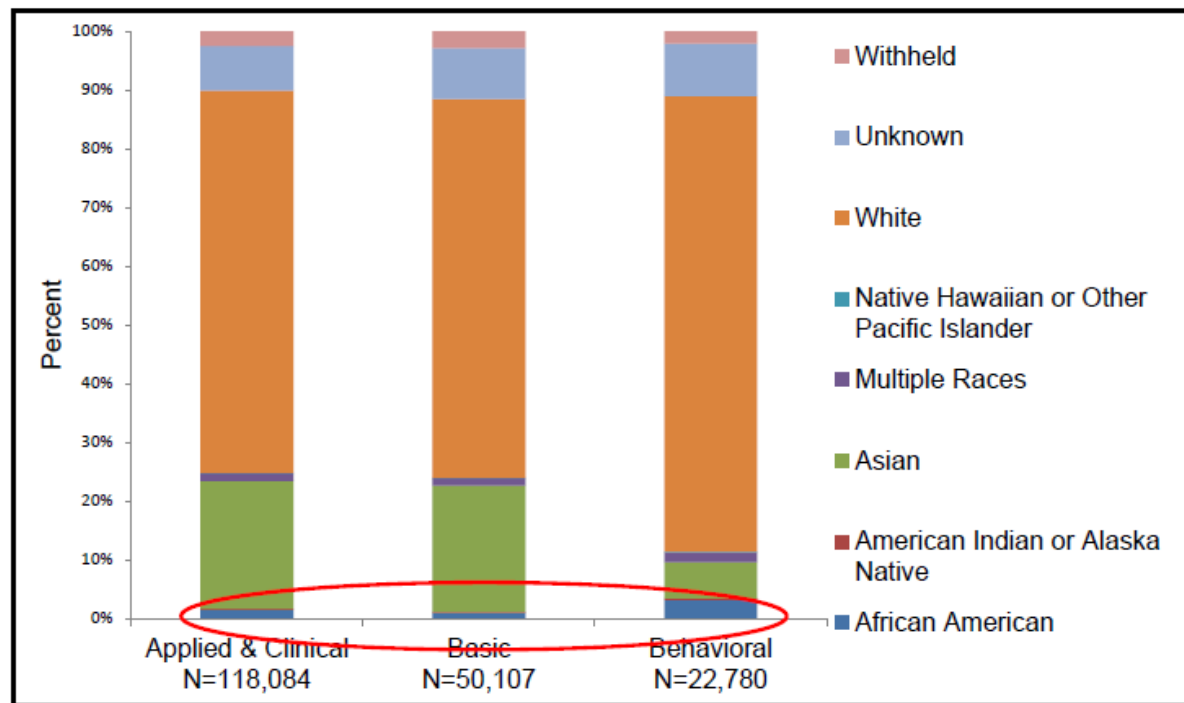
Racial and Ethnic Funding Disparities FY 2000-FY 2015

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; $p < 0.0001$

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Federal Context:
Enhancing Diversity in the
Biomedical Research Workforce

- Administration priorities
- Interpretation of case law and Supreme Court decisions
- Interpretation of Congressional directives
- Career level commitments
- Leadership commitment to diversity

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What has Congress directed NIH to do?

Enhance the participation of **underrepresented minorities**, women, and individuals from disadvantaged backgrounds in loan repayment, research training and career development programs.

References:

P.L. 114-255, 21st Century Cures Act of 2016

P.L. 106-525, Minority Health and Health Disparities Research and Education Act of 2000 (Findings)

P.L. 103-43, NIH Revitalization Act of 1993

       Section 402(h) of the Public Health Service (PHS) Act

       Section 487(a)(4) of the PHS Act [Ruth L. Kirschstein National Research Service Awards]

       Section 487D(2) of the PHS Act [Undergraduate Scholarship Program]

       Section 487E(1) of the PHS Act [Loan Repayment Program Regarding Clinical Researchers from Disadvantaged Backgrounds]

Public Health Service Act, 1992 (42 U.S.C. 288)

Federal Agency Goal

P.L. 114-329, American Innovation and Competitiveness Act of 2017 (sets a national goal of addressing historically underrepresented groups in STEM fields)

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If Congress has directed NIH to increase the participation of underrepresented minorities in its programs, why doesn't NIH have *minority programs*?

Regents of the University of California v. Bakke *(1978)*

Adarand Constructors, Inc. v. Pena *(1995)*

Grutter v. Bollinger *(Michigan Case: law school)(2003)*

Gratz v. Bollinger *(Michigan Case: undergraduate)(2003)*

Fischer v. University of Texas *(2016)*

Funders do not face the same constraints…

Early Leadership

Competencies of Diversity Leaders

- Visionary and Strategic Leadership
- Business Acumen
- The Ability to Influence
- Large System Change Skills
- Building and Maintaining Credibility in the Organization
- Integrity
- Results Orientation
- Strategic External Relations

Council Perspectives: Insights from The Conference Board Council on Workforce Diversity
https://www.conference-board.org/pdf_free/councils/TCBCP005.pdf

https://www.nih.gov/about-nih/what-we-do/nih-almanac/nih-directors

Joseph J. Kinyoun[1]	August 1887	April 30, 1899
Milton J. Rosenau	May 1, 1899	September 30, 1909
John F. Anderson	October 1, 1909	November 19, 1915
George W. McCoy[2]	November 20, 1915 May 26, 1930	May 25, 1930 Jan. 31, 1937
Lewis R. Thompson	February 1, 1937	January 31, 1942
Rolla E. Dyer[3]	February 1, 1942 June 16, 1948	June 15, 1948 September 30, 1950
William H. Sebrell, Jr.	October 1, 1950	July 31, 1955
James A. Shannon	August 1, 1955	August 31, 1968
Robert Q. Marston	September 1, 1968	January 21, 1973
Robert S. Stone	May 29, 1973	January 31, 1975
Donald S. Fredrickson	July 1, 1975	June 30, 1981
James B. Wyngaarden	April 29, 1982	July 31, 1989
Bernadine Healy	April 9, 1991	June 30, 1993
Harold E. Varmus	November 23, 1993	December 31, 1999
Elias A. Zerhouni	May 2, 2002	October 31, 2008
Francis S. Collins	August 17, 2009	Present

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Dr. Bernadine Healy became the 13th NIH director in April 1991, appointed by President George H.W. Bush. Shortly after her appointment, she launched the NIH Women's Health Initiative, a $500 million effort to study the causes, prevention, and cures of diseases that affect women. She also established the Shannon Award, grants designed to foster creative, innovative approaches in biomedical research and keep talented scientists in a competitive system.

NIH
Office of Extramural Research

Raynard S. Kington
NIH Director (Acting)
October 31, 2008 to Present

Lawrence A. Tabak,
NIH Deputy
Director (Acting)

Elements of the NIH Extramural Diversity Initiative

Accountability

Staff Engagement

Communication

Education

Measurement

- **Develop an inventory of NIH and other relevant programs**
  - What are we doing now? What are the concepts and what are the strategies?
- **Establish a legal framework for the operation of diversity-related programs**
  - Compelling interest
  - Narrow tailoring
- **Develop NIH-wide commitment**
  - Clarify governance
  - Establish an advisory body
  - Ensure compliance with policies
  - Establish NIH-wide goals & approaches
- **Communicate**
  - Importance of a diverse workforce
  - Goals & approaches
  - Excitement of a career in biomedical research
- **Assess barriers**
  - Describe participation and transition rates in and from feeder populations
  - Identify barriers and attractors
- **Identify interventions to address barriers/attractors**
  - Encourage development of new interventions
- **Asses the value of various strategies/programs/interventions**
  - Collect relevant data
  - Evaluate
- **Expand workable interventions to other environments**
  - Eliminate programs that are not effective
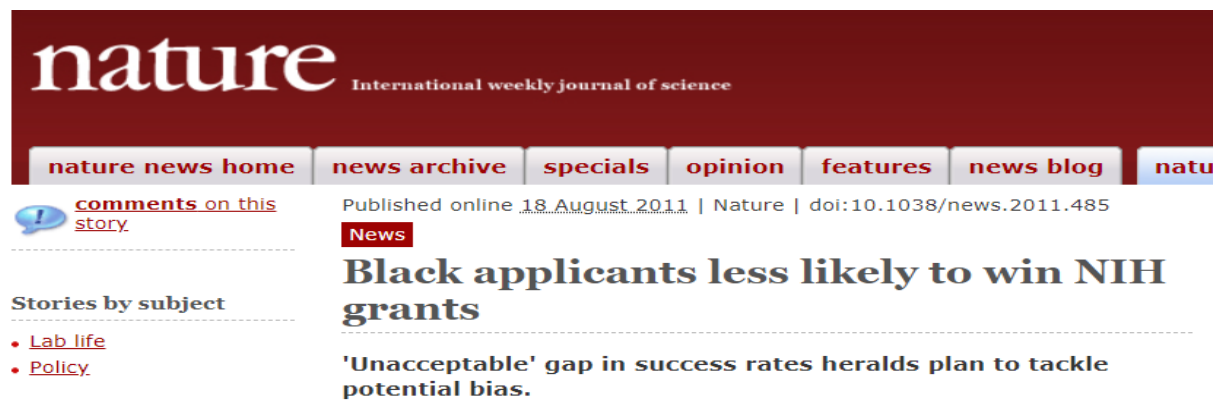- **Modify the approach as needed**

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Race, ethnicity, and NIH research awards.

Ginther DK[1], Schaffer WT, Schnell J, Masimore B, Liu F, Haak LL, Kington R.

⊕ **Author information**

Abstract

We investigated the association between a U.S. National Institutes of Health (NIH) R01 applicant's self-identified race or ethnicity and the probability of receiving an award by using data from the NIH IMPAC II grant database, the Thomson Reuters Web of Science, and other sources. Although proposals with strong priority scores were equally likely to be funded regardless of race, we find that Asians are 4 percentage points and black or African-American applicants are 13 percentage points less likely to receive NIH investigator-initiated research funding compared with whites. After controlling for the applicant's educational background, country of origin, training, previous research awards, publication record, and employer characteristics, we find that black applicants remain 10 percentage points less likely than whites to be awarded NIH research funding. Our results suggest some leverage points for policy intervention.

nature
International weekly journal of science

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News

Stories by subject

- Lab life
- Policy

Black applicants less likely to win NIH grants

'Unacceptable' gap in success rates heralds plan to tackle potential bias.

POLICYFORUM

SOCIOLOGY

Weaving a Richer Tapestry in Biomedical Science

NIH leadership discusses the need for renewed efforts to increase diversity in the U.S. biomedical research workforce.

Lawrence A. Tabak* and Francis S. Collins*

As much as the U.S. scientific community may wish to view itself as a single garment of many diverse and colorful threads, an unflinching consideration of actual data reminds us that our nation's biomedical research workforce remains nowhere near as rich as it could be. An analysis, performed by a team of researchers primarily supported by the National Institutes of Health (NIH) and published in this issue of *Science*, reveals that from 2000 to 2006, black (*1*) grant applicants were significantly less likely to receive NIH research funding than were white applicants. The gap in success rates amounted to 10 percentage points, even after controlling for education, country of origin, training, employer characteristics, previous research awards, and publication record (*2*). Their analysis also showed a gap of 4.2 percentage points for Asians; however, the differences between Asian and white award probabilities were explained by exclusion of noncitizens from the analysis.

observations of Ginther *et al.* (*2*) suggest the presence of an "inverse Matthew effect," that

of underrepresented minorities who had previously been recipients of either the National

NIH Diversity Programs: Developing Logic Models to Guide Program Evaluation
Office of Extramural Programs
National Institutes of Health

May 25, 2012

Notice of NIH's Interest in Diversity

Notice Number: NOT-OD-15-053

Key Dates
Release Date: January 12, 2015

Related Announcements
NOT-OD-15-089

Issued by
National Institutes of Health (NIH)

Purpose

NIH's mission is to seek fundamental knowledge about the nature and behavior of living systems and to apply that knowledge to enhance health, lengthen life, and reduce illness and disability. To achieve this mission, NIH substantially invests in research to improve public health; it also devotes substantial resources to identify, develop, support and maintain the quality of its scientific resources, including human capital.

The purpose of this notice is to provide an updated diversity statement that describes NIH's interest in the diversity of the NIH-funded workforce. This diversity statement was informed by a literature review, the reports and deliberations of several internal NIH committees, as well as input from Institute and Center officials, program staff and external stakeholders.

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National Institutes of Health addresses the science of diversity.

Valantine HA[1], Collins FS[2].

⊕ Author information
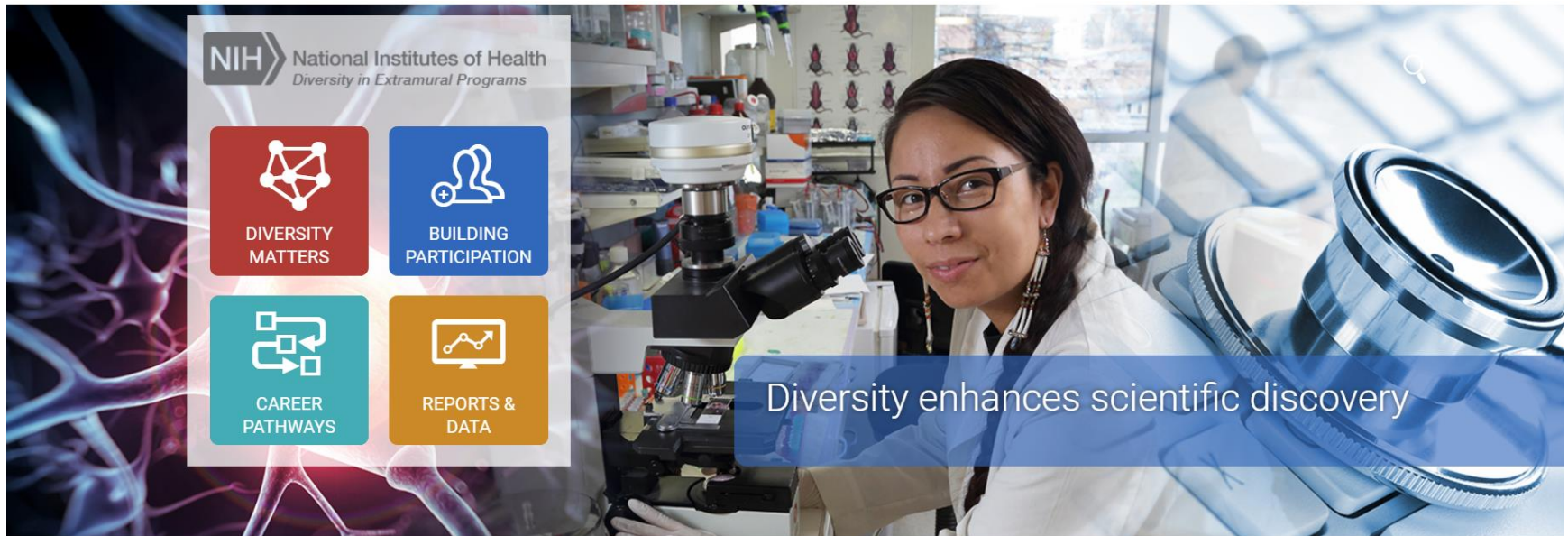
Abstract

The US biomedical research workforce does not currently mirror the nation's population demographically, despite numerous attempts to increase diversity. This imbalance is limiting the promise of our biomedical enterprise for building knowledge and improving the nation's health. Beyond ensuring fairness in scientific workforce representation, recruiting and retaining a diverse set of minds and approaches is vital to harnessing the complete intellectual capital of the nation. The complexity inherent in diversifying the research workforce underscores the need for a rigorous scientific approach, consistent with the ways we address the challenges of science discovery and translation to human health. Herein, we identify four cross-cutting diversity challenges ripe for scientific exploration and opportunity: research evidence for diversity's impact on the quality and outputs of science; evidence-based approaches to recruitment and training; individual and institutional barriers to workforce diversity; and a national strategy for eliminating barriers to career transition, with scientifically based approaches for scaling and dissemination. Evidence-based data for each of these challenges should provide an integrated, stepwise approach to programs that enhance diversity rapidly within the biomedical research workforce.

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NASEM Report, The Next Generation of Biomedical and Behavioral Sciences Researchers: Breaking Through (2018)

Recommendation 3.2

All stakeholders in the biomedical research enterprise—universities, research institutions, government laboratories, and biomedical industries—should promote, document, and disseminate their existing and planned efforts to reduce the barriers to recruiting and retaining diverse researchers at all stages of career development.

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Barriers include:

- Pipeline/pathway issues

- Lack of tracking, and dedicated (sustained) funding

- Culturally competent training, mentorship and *sponsorship*

- Implicit bias in review of applications

  "Glass house" reviews can shed light on underlying workplace issues

- Strategic planning and partnerships
- Document, disseminate and promote findings
- Well-executed recruitment and retention plans in *all programs (not just diversity programs)*
- NIH student development and summer research programs
- National meetings, societies and organizations

Build diversity in leadership positions

https://extramural-diversity.nih.gov/building-participation/recruitment-retention

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Successful *workforce* and *workplace* diversity initiatives require:

- Strong, consistent leadership commitment and engagement

- Business acumen, skillful ongoing programmatic planning* engagement and resources

- Measurement and accountability

Why Diversity Programs Fail, Harvard Business Review (2016)

- Comments/Questions?

Office of the Director

Scientific Workforce Diversity Office

http://acd.od.nih.gov/Biomedical_research_wgreport.pdf

- Chief Officer for Scientific Workforce Diversity Appointed in 2013

- Enhance data collection, evaluation, and systematic tracking of outcomes
  - Coordination and Evaluation Center (CEC)

- Mentoring, career preparation, and retention
  - Building Infrastructure Leading to Diversity (BUILD)

- Mentorship networks and partnerships
  - National Research Mentoring Network (NRMN)

https://diversity.nih.gov/

Develop, maintain, enhance & assess NIH **policies & programs** that support innovative research training, career development & diversity of the biomedical research workforce

Director DBRW
P. Kay Lund, PhD

Research and economic analyses related to biomedical research workforce & the associated career options & labor market.

- Scientific Workforce Diversity Officer
  Lisa Evans, JD
- Training Program Policy Officer
  Vacant
- Training Program Policy and Evaluation Officer
  Jennifer Sutton, MS

- Labor Economist/Modeling
  Silda Nikaj, PhD
- AAAS Policy Fellow
  Marguerite Mathews, PhD
- Program Analyst
  Kristen Kirkham
- Collaborator/Advisor
  Walter Schaffer, PhD

http://acd.od.nih.gov/Biomedical_research_wgreport.pdf 'NIH should create a permanent unit in the Office of the Director that works with the extramural research community, the NSF and the NIH ICs to coordinate data collection activities and provide ongoing analysis of the workforce and evaluation of NIH policies so that they better align with the workforce needs'.

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American Innovation and Competitiveness Act of 2017 (P.L. 114-329) Title III, Section 305

Sense of Congress:

--*Historically underrepresented populations* are the largest untapped STEM talent pools in the United States; and

-- the United States should encourage full participation of individuals from *underrepresented populations* in STEM fields.

American Innovation and Competitiveness Act of 2017 (P.L. 114-329) Title III, Section 305

Coordination:

--In carrying out this section, the [NSF Director] shall consult and coordinate with the **programs** and **policies** of **other relevant Federal agencies** to avoid duplication with and enhance the effectiveness of the programs under this section.

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21st Century Cures Act

"The Director of the National Institutes of Health shall … develop, modify, or prioritize policies, as needed … to promote opportunities for new researchers and earlier research independence, such as policies to increase opportunities for new researchers to receive funding, enhance training and mentorship programs for researchers, and **enhance workforce diversity**."

NIH National Institutes of Health
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Congress found a ***national need*** for minority scientists in biomedical, clinical, behavioral and health services research, and stated that increasing the number of **underrepresented minorities and women** in the scientific workforce would enable society to address its emerging workforce needs.

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Mandated NIH to "provide for an increase in the number of **women** and individuals from **disadvantaged backgrounds** (*including racial and ethnic minorities*) in the fields of biomedical and behavioral research"

– Does not mandate <u>how</u> to meet the objective or conduct programs

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The Secretary shall carry out paragraph (1) in a manner that will result in the recruitment of ***women and individuals from disadvantaged backgrounds (including racial and ethnic minorities) in the fields of biomedical and behavioral research and in the provision of research training to women and such individuals***.

Legislative Source: NIH Revitalization Act of 1993

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Why Focus on Underrepresented Groups?

- Federal STEM Education 5-Year Strategic Plan (2013) priority investment area: Better Serve Groups Historically Underrepresented in STEM Fields

- Legislation (as recent as January 2017) has instructed federal science agencies to coordinate their STEM *policies* and *programs*

- Legislation has directed NIH to address underrepresented groups in its programs

- NSF data provides an evidence base for the identified groups

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1 Change Management

Organizational Development
- Understands and facilitates the change process through completion
- Gains leadership involvement and line ownership

Corporate Communication:
- Communicates the full spectrum of inclusion
- Utilizes multiple communication vehicles such as web sites, brochures, talking points, and more
- Maintains a balanced global perspective that offers flexibility and variations for use at the local level
- Keeps what is best for the business at the forefront
- Elaborates on benefits of D&I
- Acknowledges and addresses possible unfavorable impact
- Tracks and communicates strategy progress and setbacks
- Acknowledges and addresses challenges / obstacles / opportunities

Critical Interventions
- Offers useful and timely interventions in cases where progress is impeded due to a diversity-related issue

2 Diversity, Inclusion, and Global Perspective

Cultural Competence
- Understands multiple cultural frameworks, values, and norms
- Demonstrates an ability to flex style when faced with myriad dimensions of culture in order to be effective across cultural contexts
- Understands the dynamics of cross-cultural and inclusion-related conflicts, tensions, misunderstandings, or opportunities
- Understands the history, context, geography, religions, and languages of the regions in which the organization does business
- Is fluent in more than one, and ideally several, languages

Negotiation and Facilitation
- Negotiates and facilitates through cultural differences, conflicts, tensions, or misunderstandings

Continuous Learning
- Recognizes and addresses one's filters, privileges, biases, and cultural preferences
- Commits to continuous learning / improvement in diversity, inclusion, and cultural competence
- Seeks and utilizes feedback from diverse sources

Complex Group Dynamics
- Understands and effectively manages complex group dynamics and ambiguity

Judgment
- Is able to discern when to inquire, advocate, drive, or resolve more decisively

Subject Matter Expertise
- Knows and applies best practices in diversity and inclusion practices, strategies, systems, policies, etc.
- Understands subtle and complex diversity and inclusion issues as they relate specifically to marginalized groups (while these vary by region, they often include women, people with disabilities, older people, and racial, ethnic or religious minorities)
- Establishes and manages D&I councils effectively

3 Business Acumen

External Market Knowledge
- Understands and is current on global and local trends/ changes and how they inform and influence D&I
- Gathers and uses competitive intelligence
- Understands diverse customer/client needs
- Understands and is current with global socio-political environments
- Understands context and lessons learned

Holistic Business Knowledge
- Understands the impact of the financial, economic, and market drivers on bottom line results
- Understands core business strategies
- Possesses solid financial acumen
- Uses information from multiple disciplines and sources to offer integrated ideas and solutions on issues important to the organization

Diversity and Inclusion ROI (Return on Investment)
- Determines and communicates how D&I contributes to core business strategy and results
- Creates insights on how D&I contributes both to people and HR strategies as well as business results
- Designs and develops D&I metrics that exhibit the ROI impact