

Under-represented Minorities in the Scientific Workforce:

National Dental Association Annual Convention
July 20, 2017

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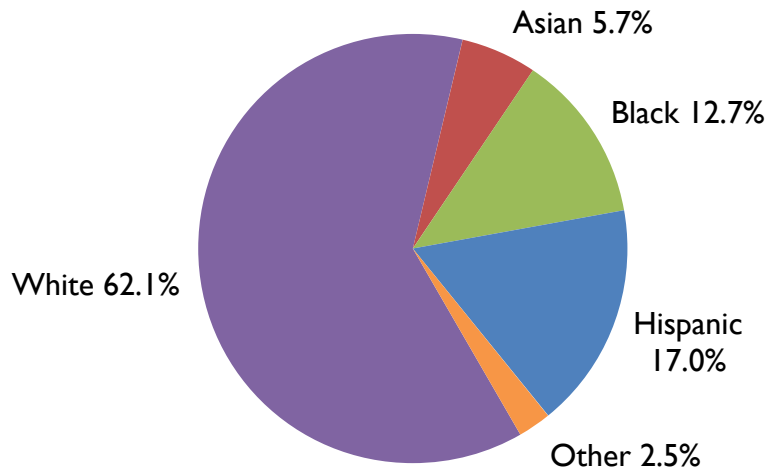
The authors have no financial disclosures or conflicts of interests to declare.

Learning Objectives

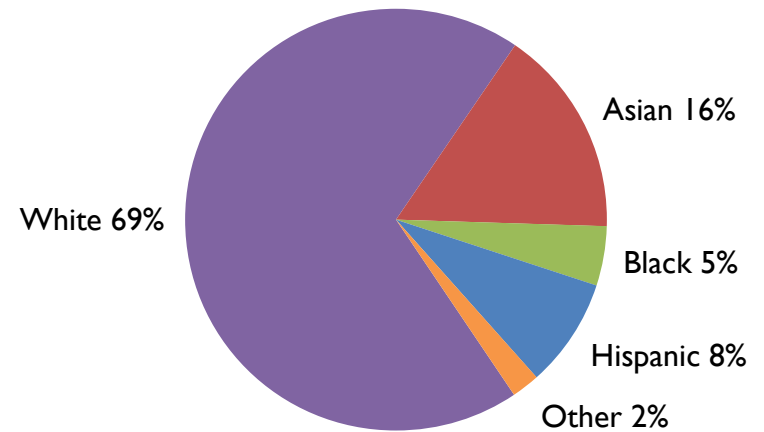
- Understand national trends related to URM^s in the scientific workforce.
- Identify resources to assist in increasing URM^s in the scientific workforce.

Underrepresentation in Biomedical Research

Noninstitutionalized resident population of the United States ages 18-64 by race: 2014



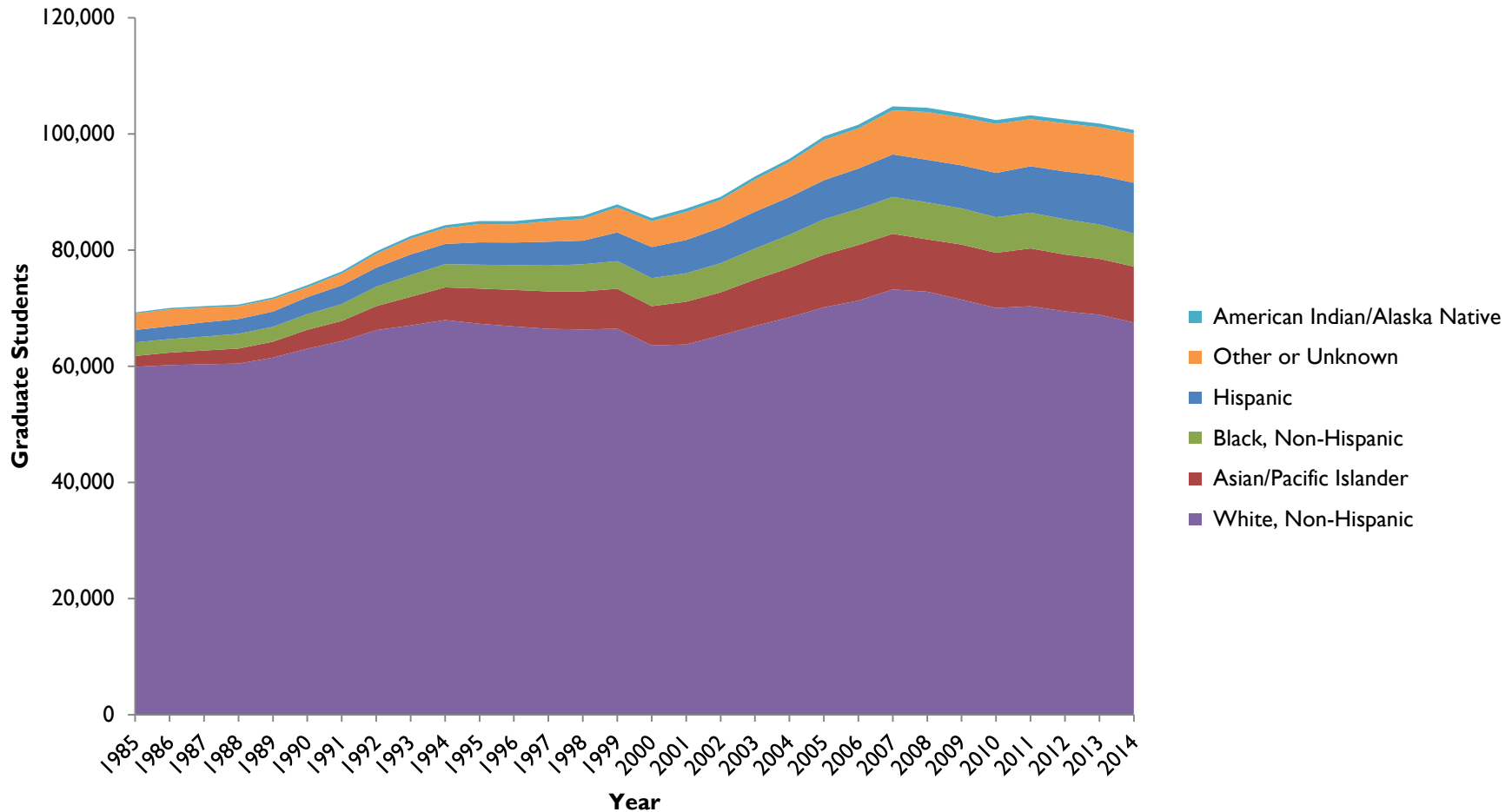
Biomedical research workforce (all degrees), 2015



NIH considers Blacks or African Americans, Hispanics or Latinos, American Indians or Alaska Natives, Native Hawaiians and other Pacific Islanders underrepresented.

Other: American Indian/Alaskan Native, Native Hawaiian/Other Pacific Islander and Multiracial

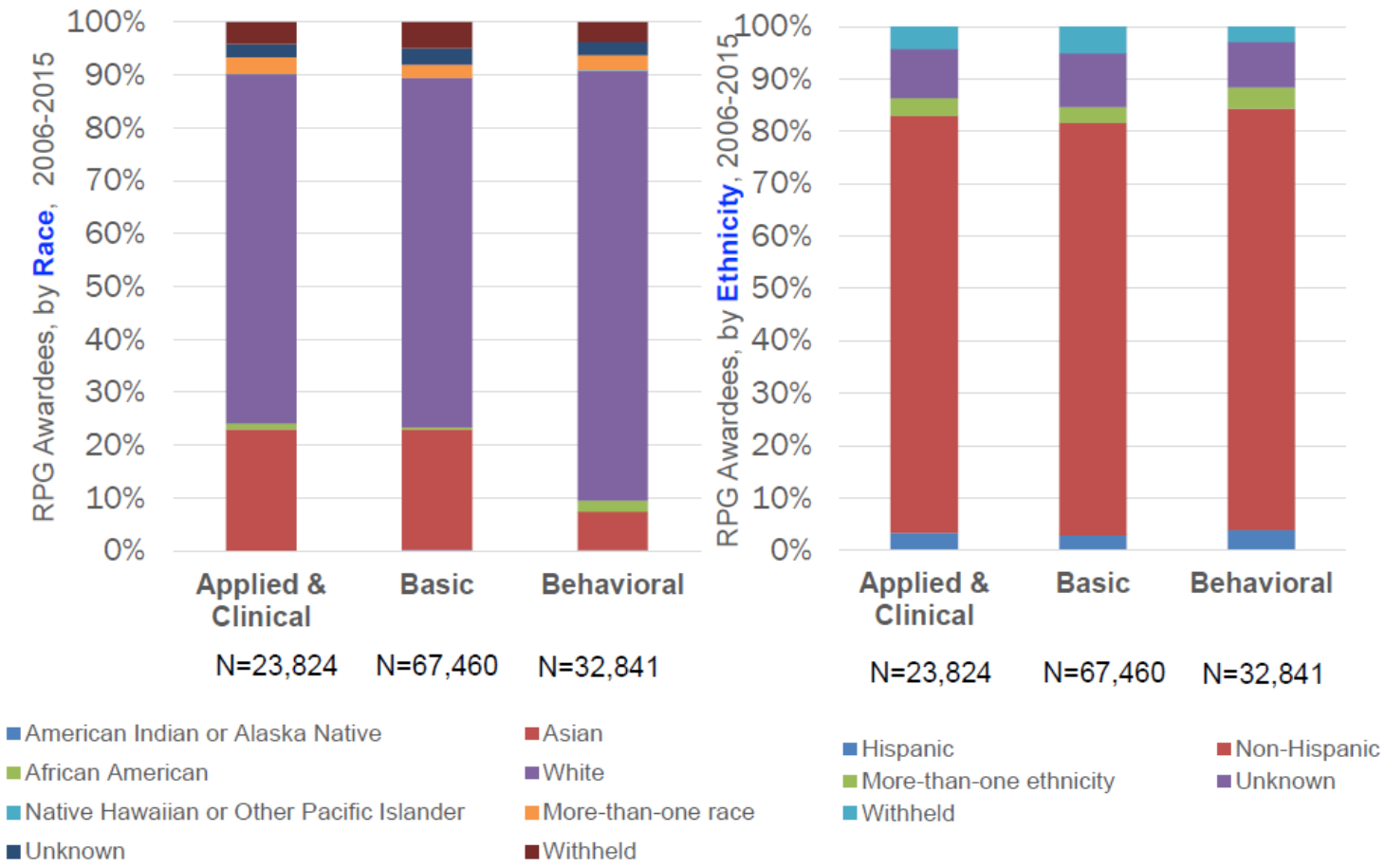
Graduate enrollment among U.S. citizens and permanent residents, by race/ethnicity



Share of K Awards to African Americans Increased Over Time



RPG Awardees by Race, Ethnicity, and Field of Study 2006-2015



Disparities in NIH R01 Grant Funding

Science AAAS

Home News Journals Topics Careers
 Science Science Advances Science Immunology Science Robotics Science Signaling Science Translational Medicine

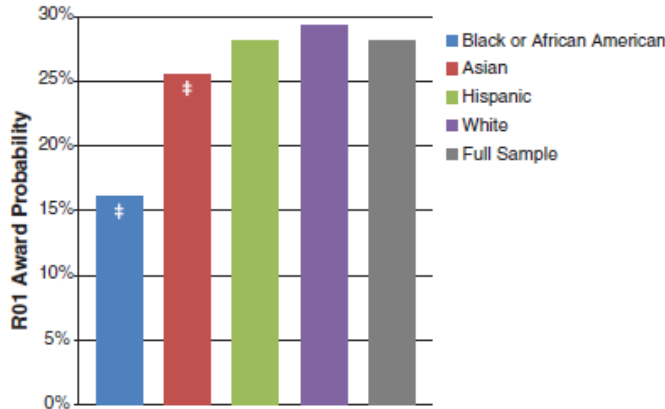
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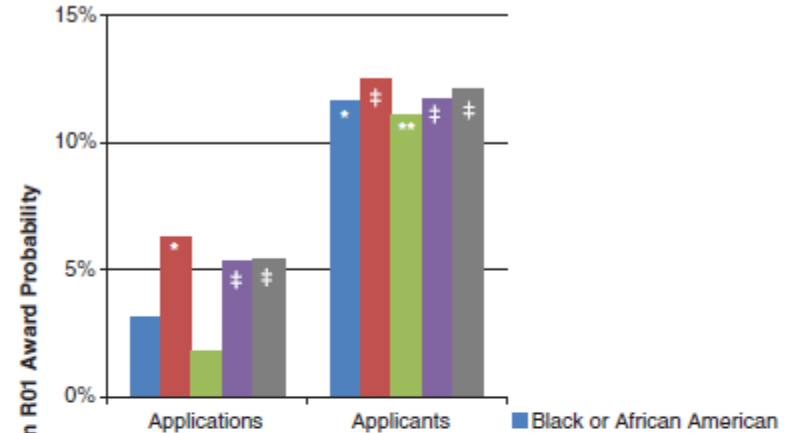
Race, Ethnicity, and NIH Research Awards

Donna K. Ginther^{1,†}, Walter T. Schaffer², Joshua Schnell³, Beth Masimore³, Faye Liu³, Laurel L. Haak³, Raynard Kingto...

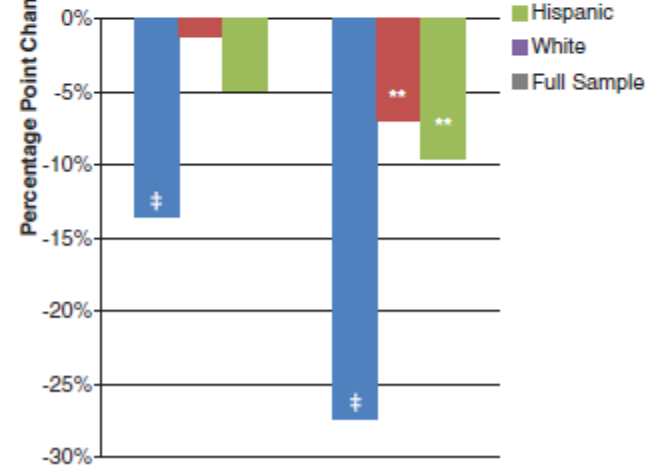
Science 19 Aug 2011.
 Vol. 333, Issue 6045, pp. 1015-1019
 DOI: 10.1126/science.1196783



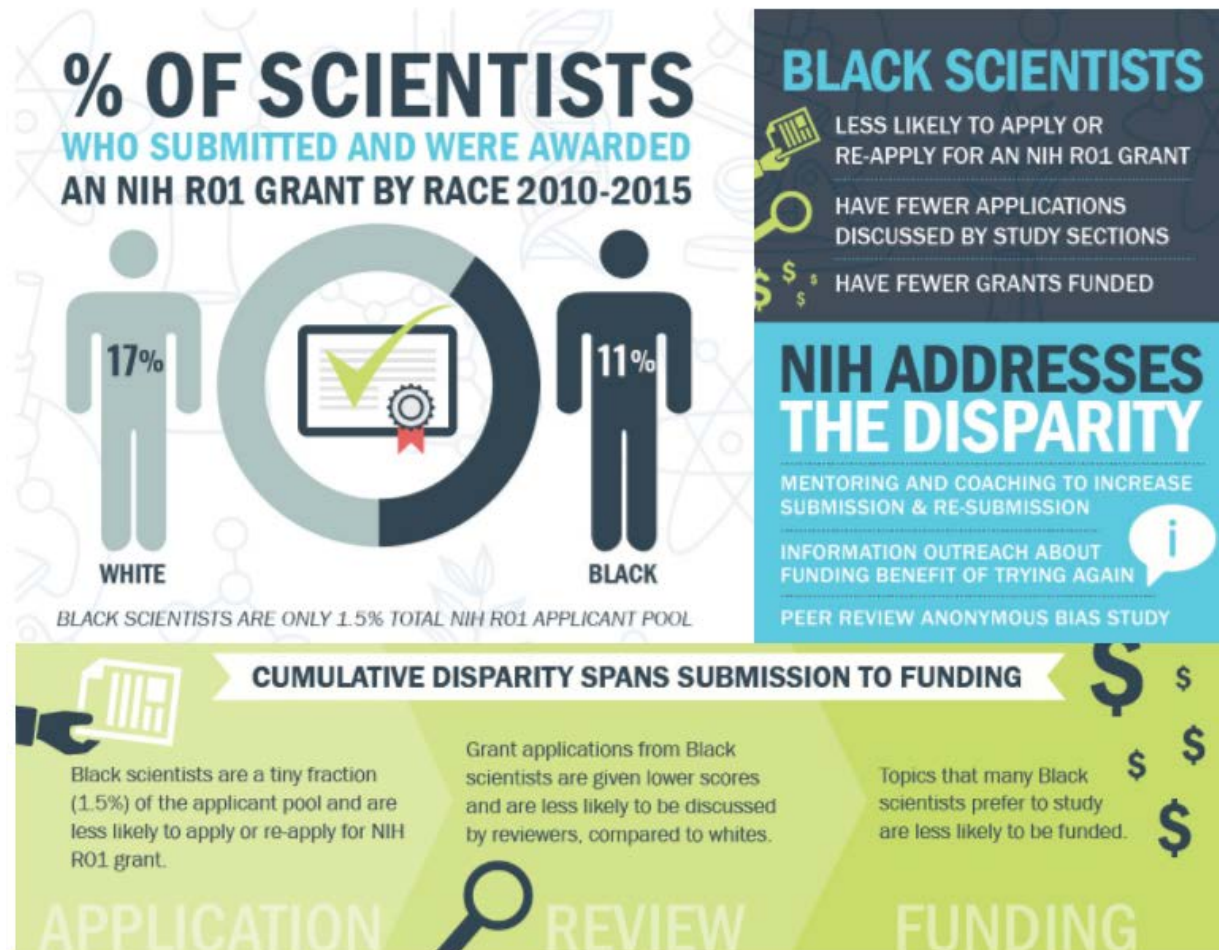
A Trained vs. Untrained, by Race and Ethnicity



B Trained vs. White Trained



Disparities in NIH R01 Grant Funding



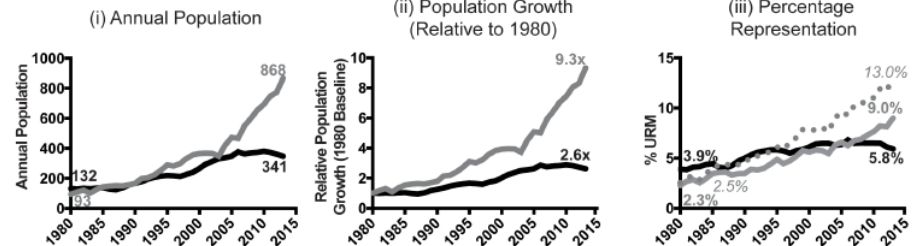
Addressing Bias in Peer Review

- Early Career Reviewer Program
 - Participation in NIH review committee correlates with success in grant application
- America COMPETES Challenges (what's going on now?)
 - Methods to Detect Bias in Peer Review
 - Strategies to Strengthen Fairness and Impartiality in Peer Review
- Effect of Anonymization of Peer Review Process Study
- More information: <https://acd.od.nih.gov/meetings.html>

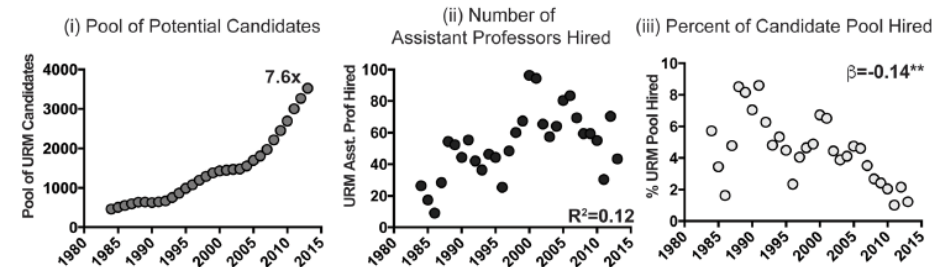
Decoupling of the minority PhD talent pool and assistant professor hiring in medical school basic science departments in the US

KENNETH D GIBBS JR*, JACOB BASSON, IMAM M XIERALI AND DAVID A BRONIATOWSKI

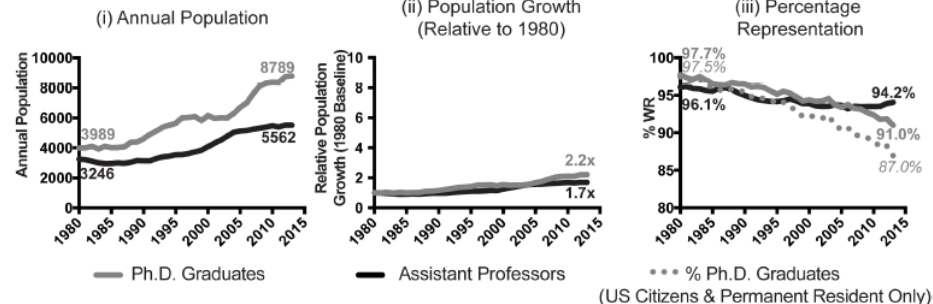
(A) Under Represented Minority (URM) Participation: 1980-2014



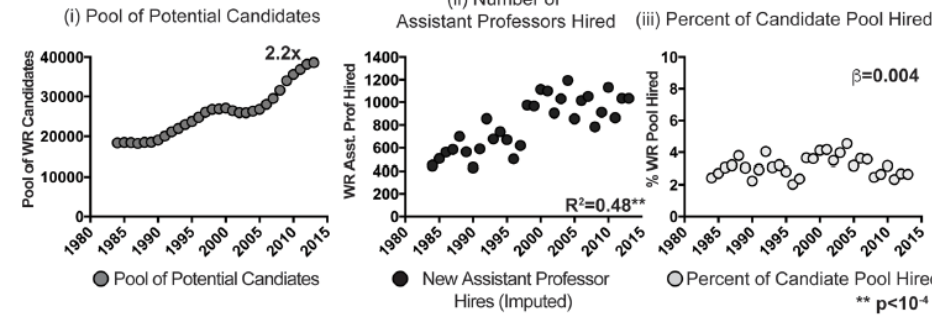
(A) URM Assistant Professor Hiring Dynamics



(B) Well-Represented (WR) Participation: 1980-2014



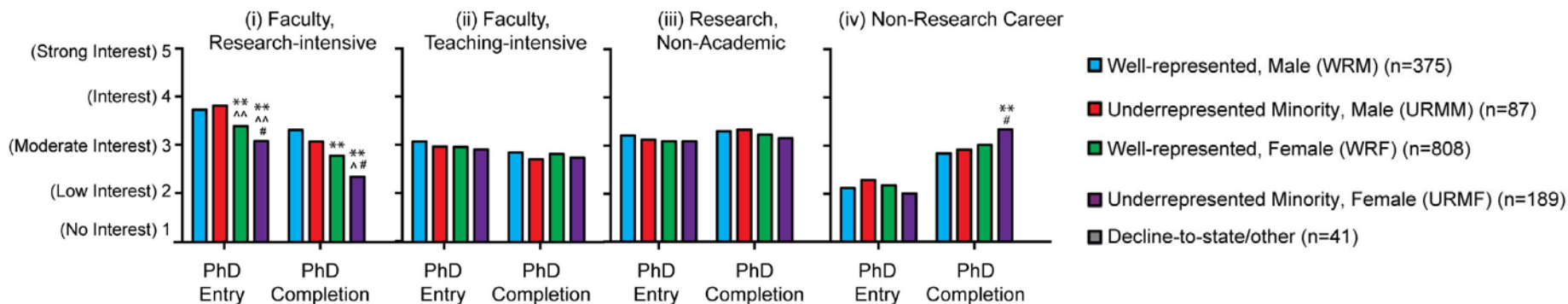
(B) WR Assistant Professor Hiring Dynamics



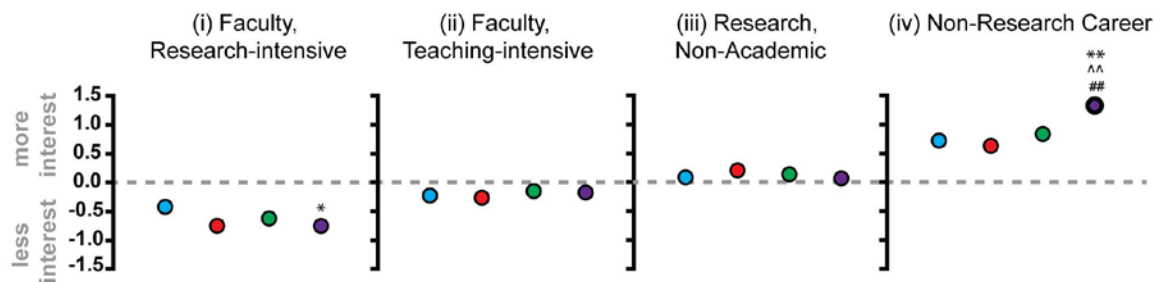
Biomedical Science Ph.D. Career Interest Patterns by Race/Ethnicity and Gender

Kenneth D. Gibbs Jr.^{1,2*}, John McGready³, Jessica C. Bennett⁴, Kimberly Griffin^{4*}

(C) Average Career Pathway Interest (Social Identity Group)



(D) Average, Individual Change (Ph.D. Completion - Ph.D. Entry) in Career Pathway Interest

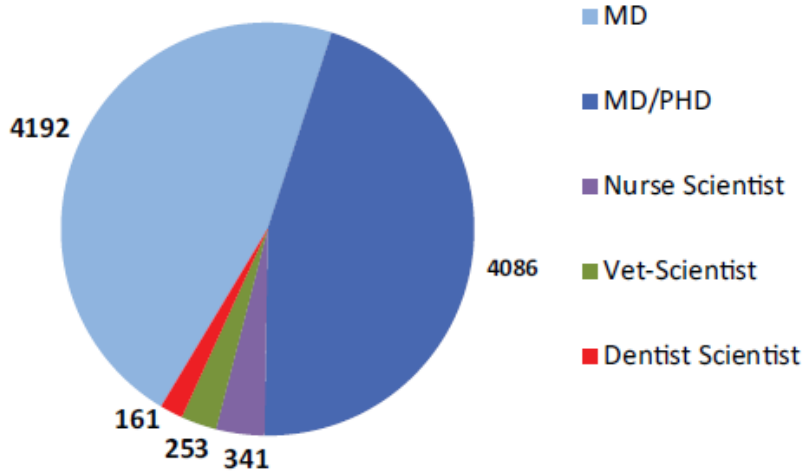


Bonferroni corrected comparisons for panels C & D

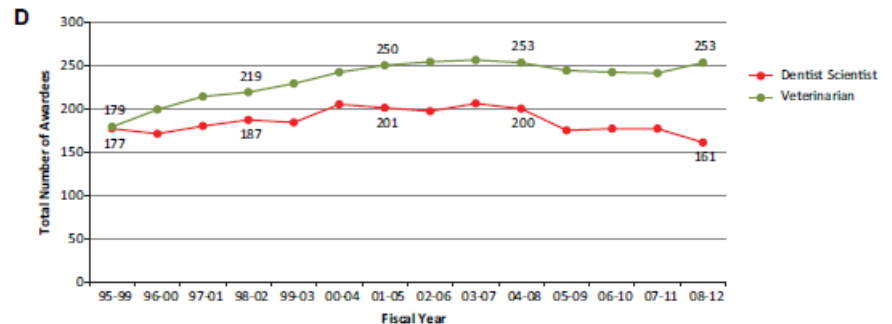
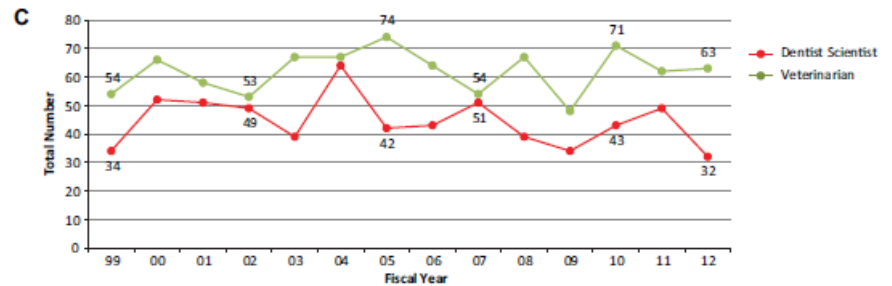
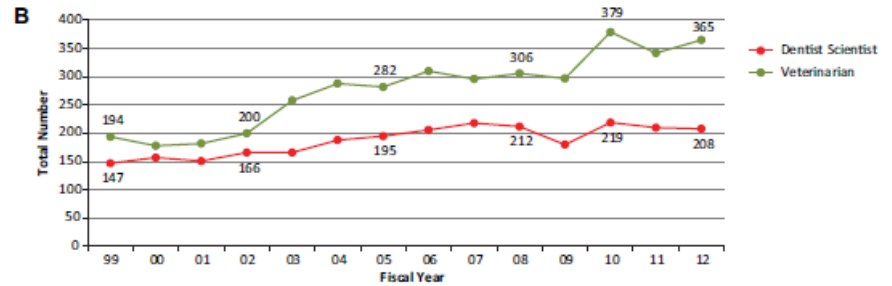
* p < 0.05, cf. WRM	^ p < 0.05, cf. URMM	# p < 0.05, cf. WRF
** p < 0.001, cf. WRM	^^ p < 0.001, cf. URMM	## p < 0.001, cf. WRF

Dentist-scientist workforce

Distribution of NIH-funded clinician-scientist workforce between 2008 and 2012 by professional category.



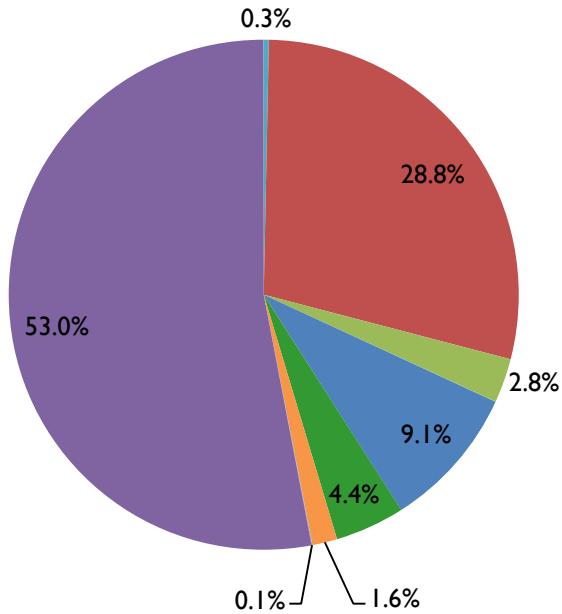
Dentist-scientists include those with DDS or DMD degrees alone, DDS and PhD or DDS/PhD with other degrees.



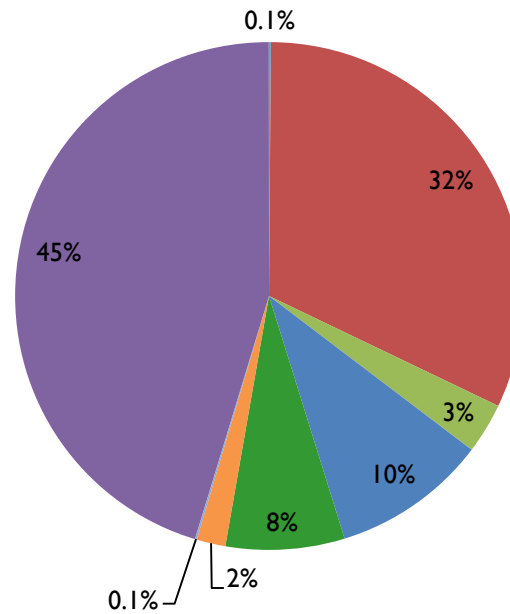
B) NIH-funded research project grant (RPG) applications C) RPG awardees D) NIH RPG awards in 5-year increments, 1995-2012

Race/Ethnicity of AADR, May 2017

All Members*



Students**

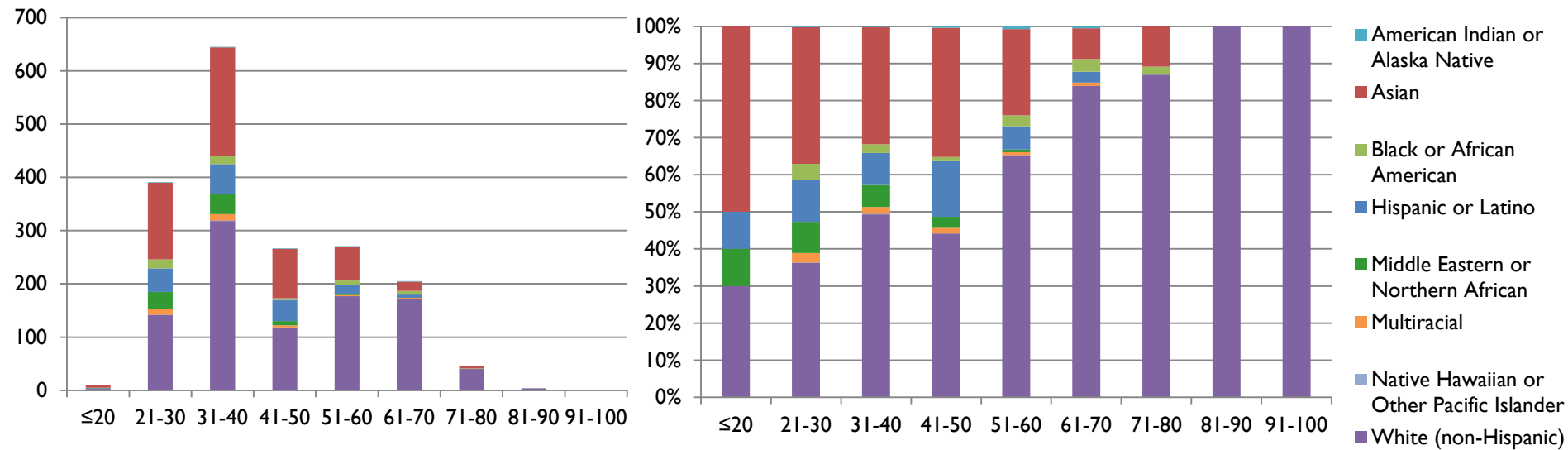


- American Indian or Alaska Native
- Asian
- Black or African American
- Hispanic or Latino
- Middle Eastern or Northern African
- Multiracial
- Native Hawaiian or Other Pacific Islander
- White (non-Hispanic)

*57% response rate

**82% response rate

Race/Ethnicity of AADR by Age, May 2017



PROGRAMS AND OPPORTUNITIES

Poor Returns on the Usual Diversity Programs

The three most popular interventions make firms less diverse, not more, because managers resist strong-arming. For instance, testing job applicants hurts women and minorities—but not because they perform poorly. Hiring managers don't always test everyone (white men often get a pass) and don't interpret results consistently.

% CHANGE OVER FIVE YEARS IN REPRESENTATION AMONG MANAGERS

Type of program	White		Black		Hispanic		Asian	
	Men	Women	Men	Women	Men	Women	Men	Women
Mandatory diversity training				-9.2			-4.5	-5.4
Job tests		-3.8	-10.2	-9.1	-6.7	-8.8		-9.3
Grievance systems		-2.7	-7.3	-4.8		-4.7	-11.3	-4.1

NOTE GRAY INDICATES NO STATISTICAL CERTAINTY OF A PROGRAM'S EFFECT.

SOURCE AUTHORS' STUDY OF 829 MIDSIZE AND LARGE U.S. FIRMS. THE ANALYSIS ISOLATED THE EFFECTS OF DIVERSITY PROGRAMS FROM EVERYTHING ELSE GOING ON IN THE COMPANIES AND IN THE ECONOMY.

FROM "WHY DIVERSITY PROGRAMS FAIL," BY FRANK DOBBIN AND ALEXANDRA KALEV, JULY-AUGUST 2016

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Diversity Programs That Get Results

Companies do a better job of increasing diversity when they forgo the control tactics and frame their efforts more positively. The most effective programs spark engagement, increase contact among different groups, or draw on people's strong desire to look good to others.

% CHANGE OVER FIVE YEARS IN REPRESENTATION AMONG MANAGERS

Type of program	White		Black		Hispanic		Asian	
	Men	Women	Men	Women	Men	Women	Men	Women
Voluntary training			+13.3		+9.1		+9.3	+12.6
Self-managed teams	-2.8	+5.6	+3.4	+3.9				+3.6
Cross-training	-1.4	+3.0	+2.7	+3.0	-3.9		+6.5	+4.1
College recruitment: women*	-2.0	+10.2	+7.9	+8.7		+10.0	+18.3	+8.6
College recruitment: minorities**			+7.7	+8.9				
Mentoring				+18.0	+9.1	+23.7	+18.0	+24.0
Diversity task forces	-3.3	+11.6	+8.7	+22.7	+12.0	+16.2	+30.2	+24.2
Diversity managers		+7.5	+17.0	+11.1		+18.2	+10.9	+13.6

*College recruitment targeting women turns recruiting managers into diversity champions, so it also helps boost the numbers for black and Asian-American men.

**College recruitment targeting minorities often focuses on historically black schools, which lifts the numbers of African-American men and women.

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Grant Opportunities

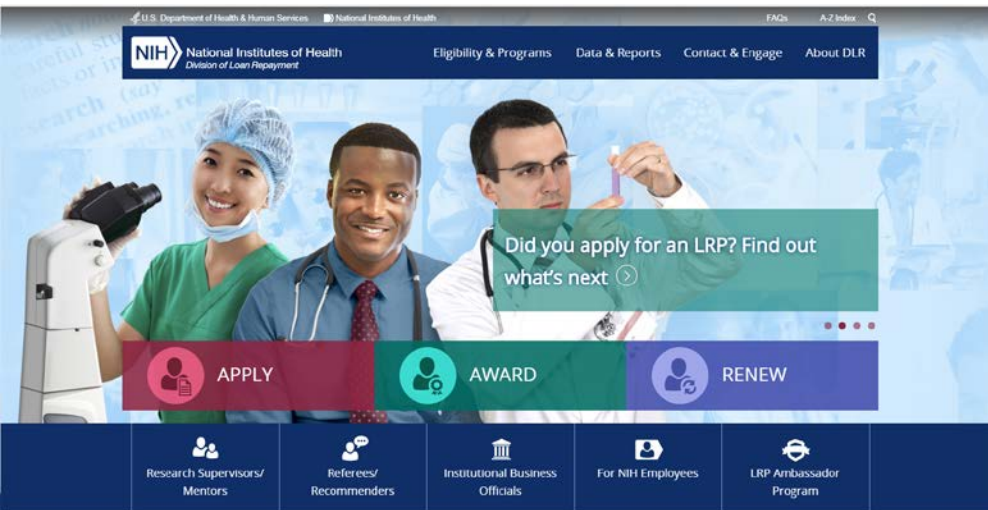
- Ruth L. Kirschstein National Research Service Award (NRSA) or Individual Predoctoral Fellowships to Promote Diversity in Health-Related Research (Parent F31 - Diversity)
- NIDCR Mentored Career Development Award to Promote Diversity in the Dental, Oral and Craniofacial Research Workforce (K01)
- Maximizing Access to Research Careers Undergraduate - Student Training in Academic Research (MARC U-STAR) (T34)

Diversity Supplements

Diversity supplements are administrative supplements that provide extra support for investigators with trainees that will improve to the diversity of the research workforce.

- Research Supplements to Promote Diversity in Health Related Research
- Research Supplements to Promote Re-entry into Biomedical and Behavioral Research Careers
 - Support re-entry of researchers into the workforce after a disruption due to family or other qualifying circumstances.

NIH Loan Repayment Programs

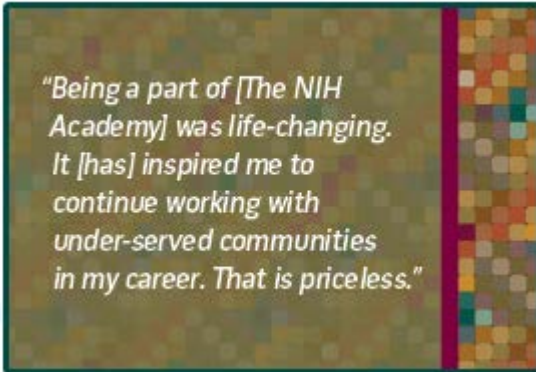


<https://www.lrp.nih.gov/>

- 20 hrs/week of research for 2 years in exchange for repayment of \$35,000 annually of educational debt
- Clinical Researchers
- Pediatric Research
- Health Disparities
- Loan Repayment Program for Individuals from Disadvantaged Backgrounds

Other Opportunities

NIH Academy - postbacs



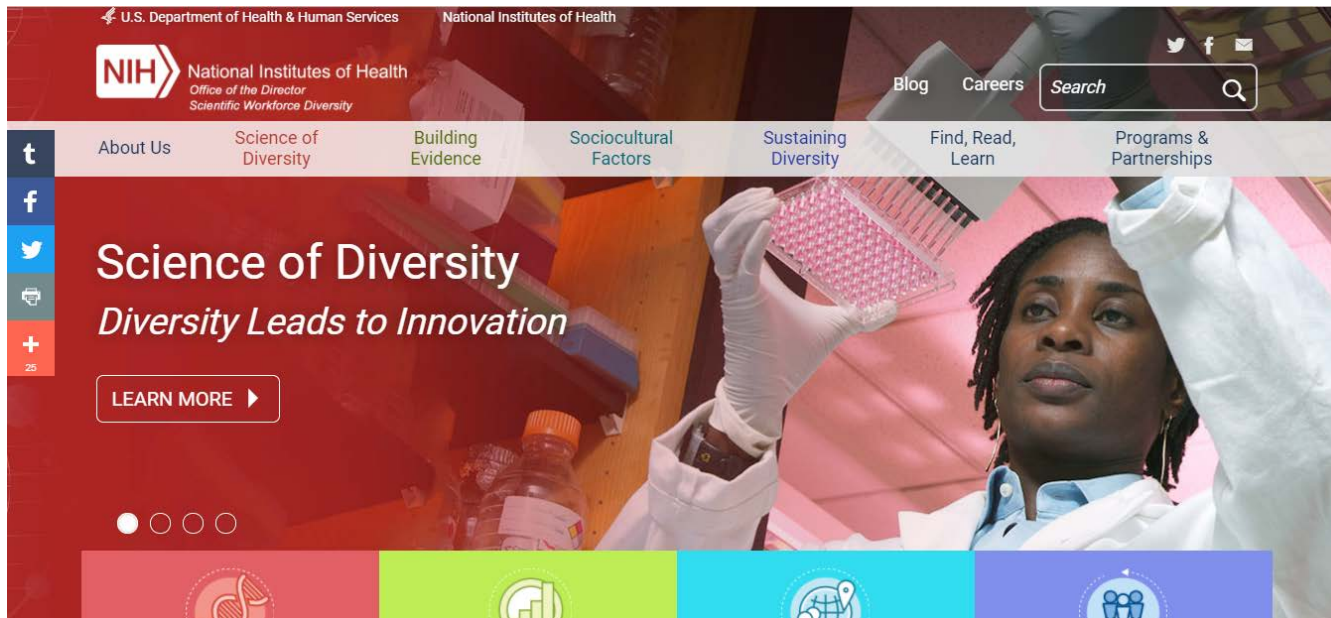
-postdocs and early career scientists

A screenshot of the Harold Amos Medical Faculty Development Program website. The header is green and contains the text "Harold Amos MEDICAL FACULTY DEVELOPMENT PROGRAM" and "A Robert Wood Johnson Foundation program". Below the header is a navigation menu with links for "Home", "About AMFDP", "For Scholars", "For Applicants", "For Mentors", and an "APPLY" button. The main content area features a large blue and white graphic of a DNA double helix. The text reads: "Working to increase the number of medical, dental, and nursing faculty from historically disadvantaged backgrounds". Below this is a section titled "About The Program" with a photograph of a large group of people in professional attire. To the right of the photograph is text describing the program's history and Harold Amos's role. At the bottom right, there is a link that says "more About The Program »".

-postdocs

NIH Office of Scientific Workforce Diversity

<https://diversity.nih.gov/>



AADR Committee on Diversity and Inclusion



George Taylor, DMD, MPH, DrPH (UCSF)
Chair, AADR CDI

- Diversity Task Force formed in 2014 to address diversity of AADR membership
- Evolved into CDI, established March 2017
- Task Force and CDI accomplishments to date
 - Voted to accept the NIH’s definition of “underrepresented populations”
 - Audit of diversity within AADR’s membership
 - Surveyed diversity programs of similar scientific associations
 - Reached out to NDA, HDA, and ADEA and exhibited at meetings

AADR Committee on Diversity and Inclusion

Priorities

- Data-driven strategies
- Recruitment and retention
- Visibility
- Mentorship
- Welcoming and Inclusive Environments

Questions?

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