

“What Can Academic Institutions Do To Address Diversity and Inclusion?”

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Cornell University

Immunology 2019

AAI

Fostering Diversity and Preventing Harassment in the
Biomedical Research Workforce

May 11, 2019

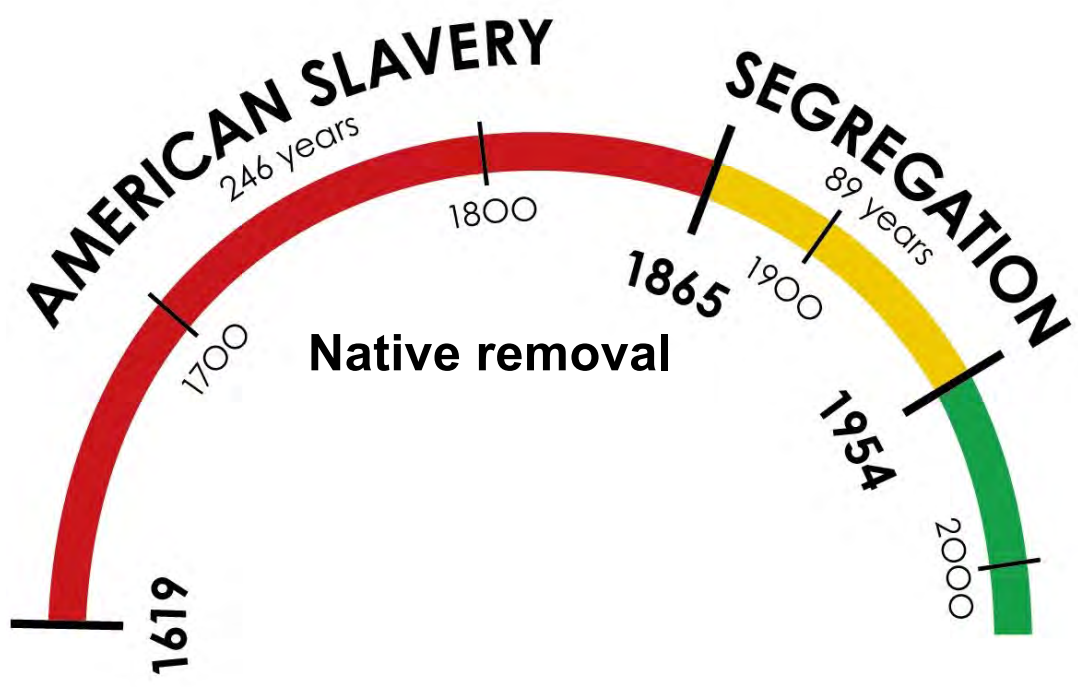
Disclosure:

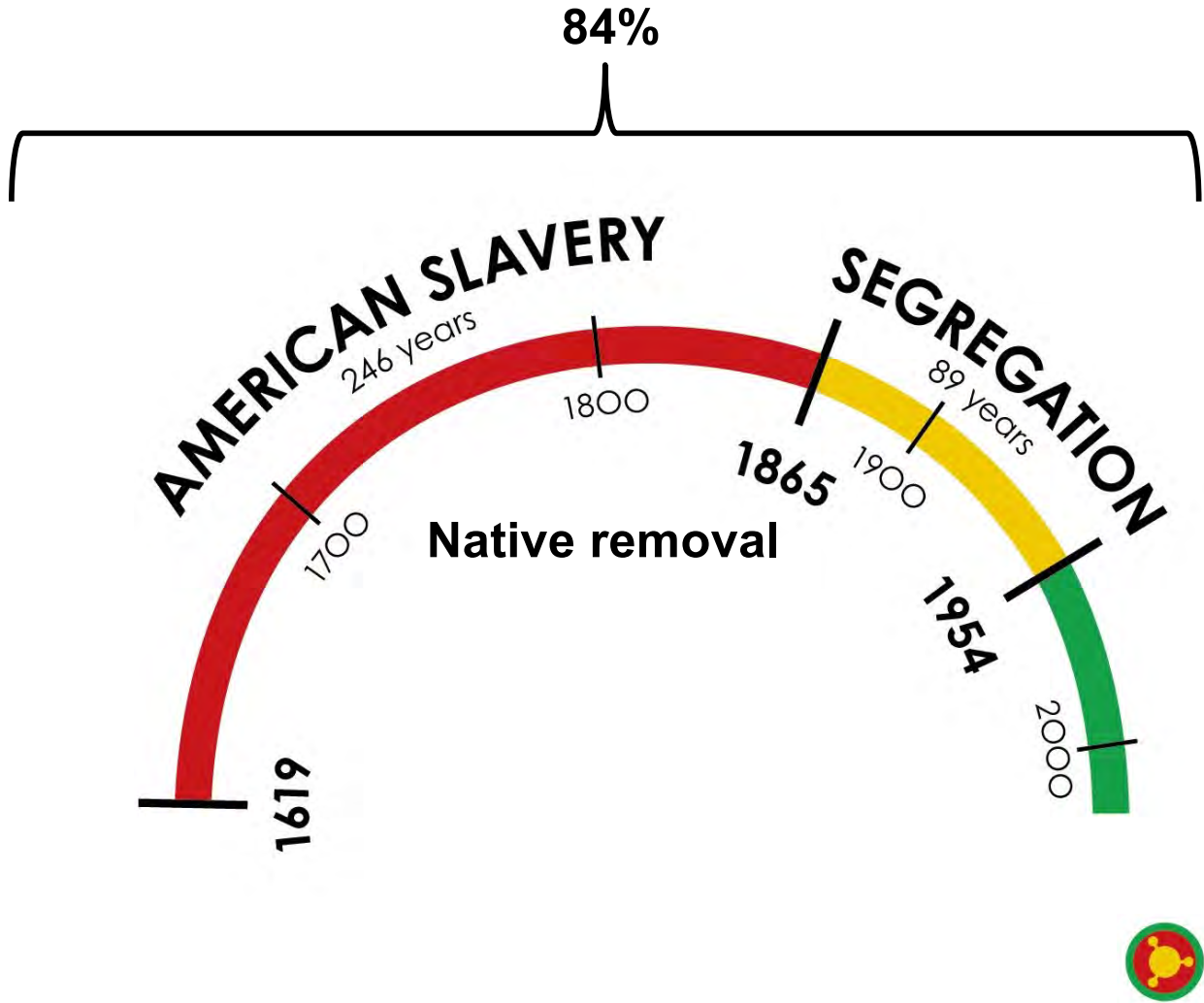
The 3M Company

Native peoples of San Diego:

Luiseno, Cahuilla, Cupeno, Kumeyaay, and Northern Diegueño

In the beginning.....







154 years ago (1865), Congress passed the 13th amendment to the constitution which abolished slavery in the United States.

Sixty-sixth Congress of the United States of America;

At the First Session,

Began and held at the City of Washington on Monday, the nineteenth day of May,
one thousand nine hundred and nineteen.

JOINT RESOLUTION

Proposing an amendment to the Constitution extending the right of suffrage
to women.

*Resolved by the Senate and House of Representatives of the United States
of America in Congress assembled (two-thirds of each House concurring therein),
That the following article is proposed as an amendment to the Constitution,
which shall be valid to all intents and purposes as part of the Constitution when
ratified by the legislatures of three-fourths of the several States.*

"ARTICLE ———"

"The right of citizens of the United States to vote shall not be denied or
abridged by the United States or by any State on account of sex.

"Congress shall have power to enforce this article by appropriate
legislation."

F. H. Lillitt

Speaker of the House of Representatives.

Thos. R. Marshall

*Vice President of the United States and
President of the Senate.*

**99 years ago (1920), Congress passed
the 19th amendment to the constitution
which gave women the right to vote.**



Marie Curie

Nobel Prize in Physics in 1903

Nobel Prize in Chemistry in 1911





Irène Joliot-Curie
Nobel Prize in Chemistry in 1935



Irène Joliot-Curie
Nobel Prize in Chemistry in 1935

1970's the Ivy League became co-educational....

Mendez, et al v. Westminster [sic] School District of Orange County, et al



RULING GIVES MEXICAN CHILDREN EQUAL RIGHTS

Regardless of Mexican school children from within its jurisdiction, the school district was ordered to admit to U.S. Judge Paul J. McNamara to be a violation of their constitutional rights under the 14th Amendment of the Constitution. The opinion was written in accordance with a suit filed by five parents of Mexican children seeking for equal and an integrated learning environment for their children. The parents alleged that placing the Spanish children in separate schools was a violation of the 14th Amendment of the Constitution. Judge McNamara ruled in favor of the plaintiffs, stating that the school district's actions were unconstitutional and that the children should be admitted to the same schools as their white peers. The ruling was a landmark decision in the fight for Mexican American civil rights.



1947 federal court case ruled that segregation of Mexican and Mexican American students in Orange County, CA into separate "Mexican schools" was unconstitutional.

U.S. Supreme Court

Brown v. Board of Education of Topeka, 347 U.S. 483 (1954)

Brown v. Board of Education of Topeka

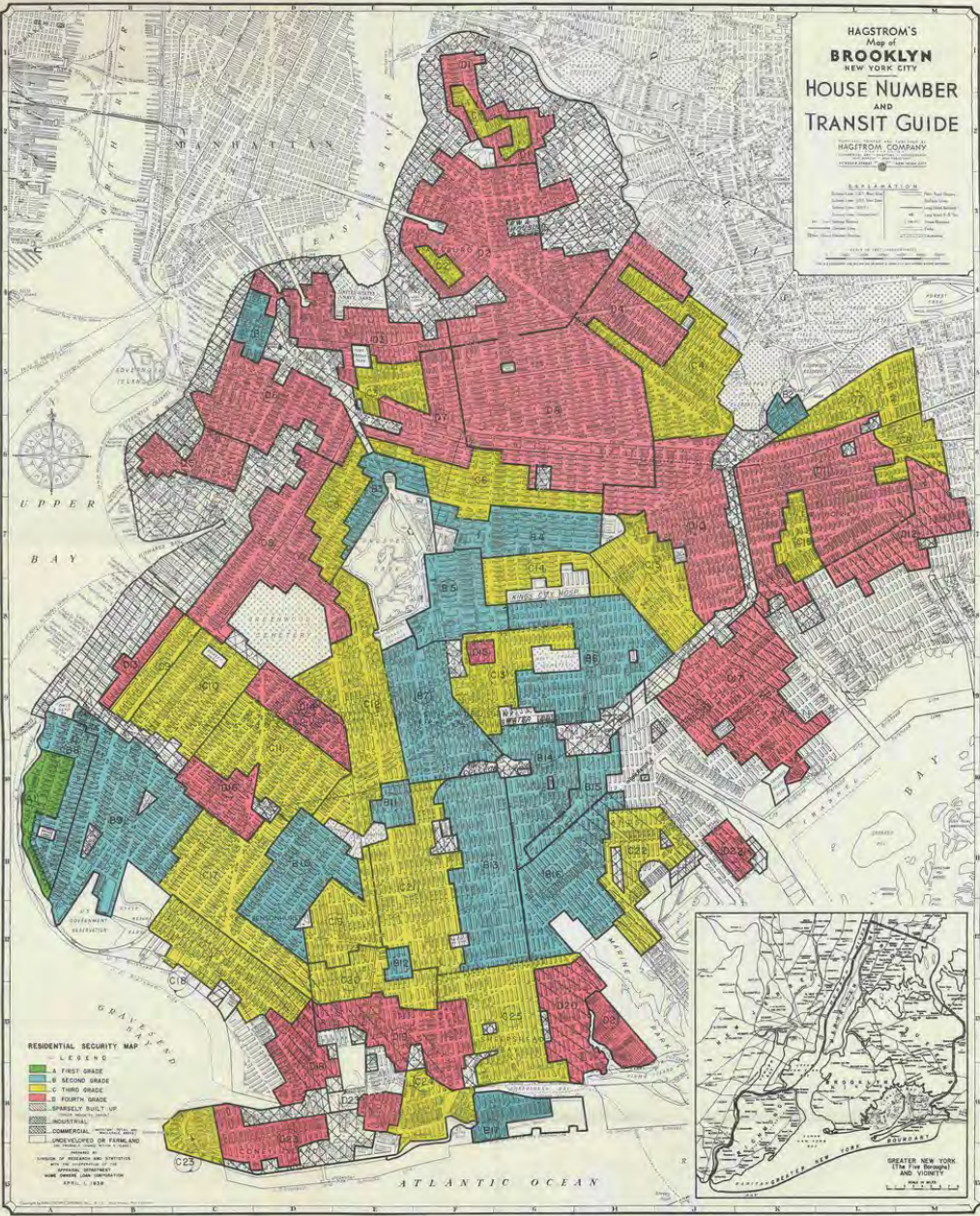
Argued December 9, 1952

Reargued December 8, 1953

Decided May 17, 1954*

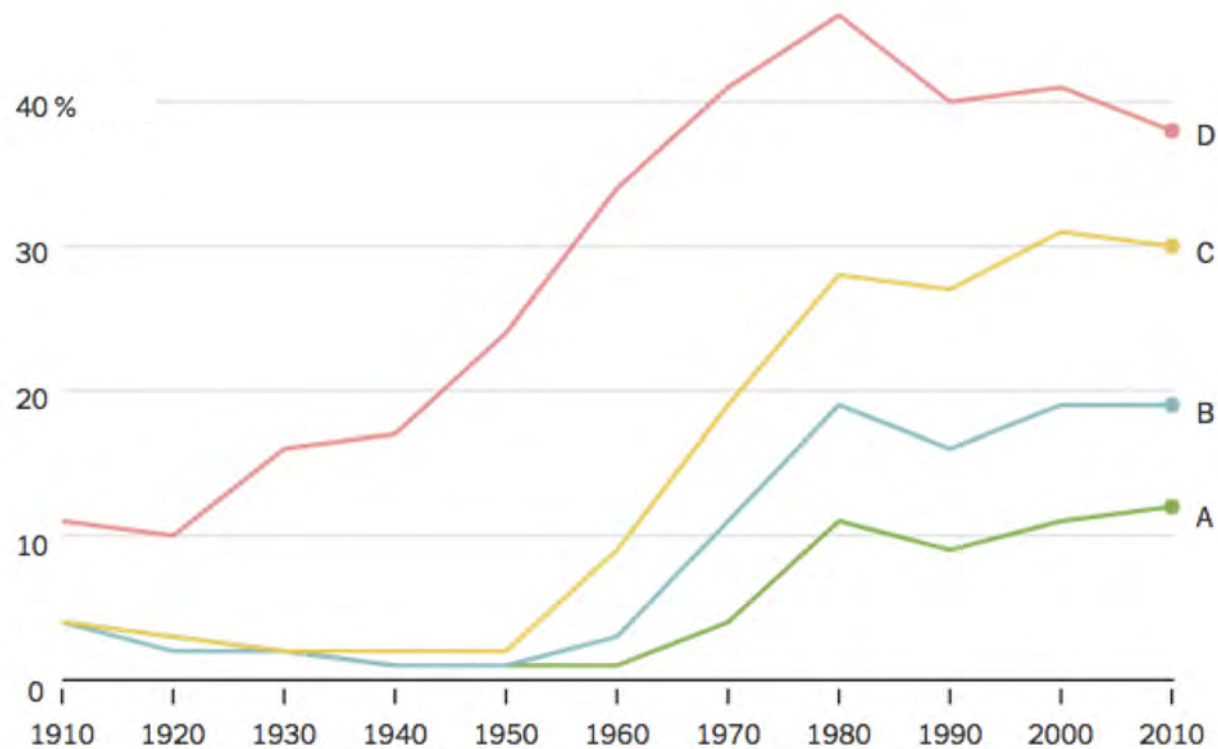
APPEAL FROM THE UNITED STATES DISTRICT COURT

FOR THE DISTRICT OF KANSAS



Effects of government sanctioned redlining

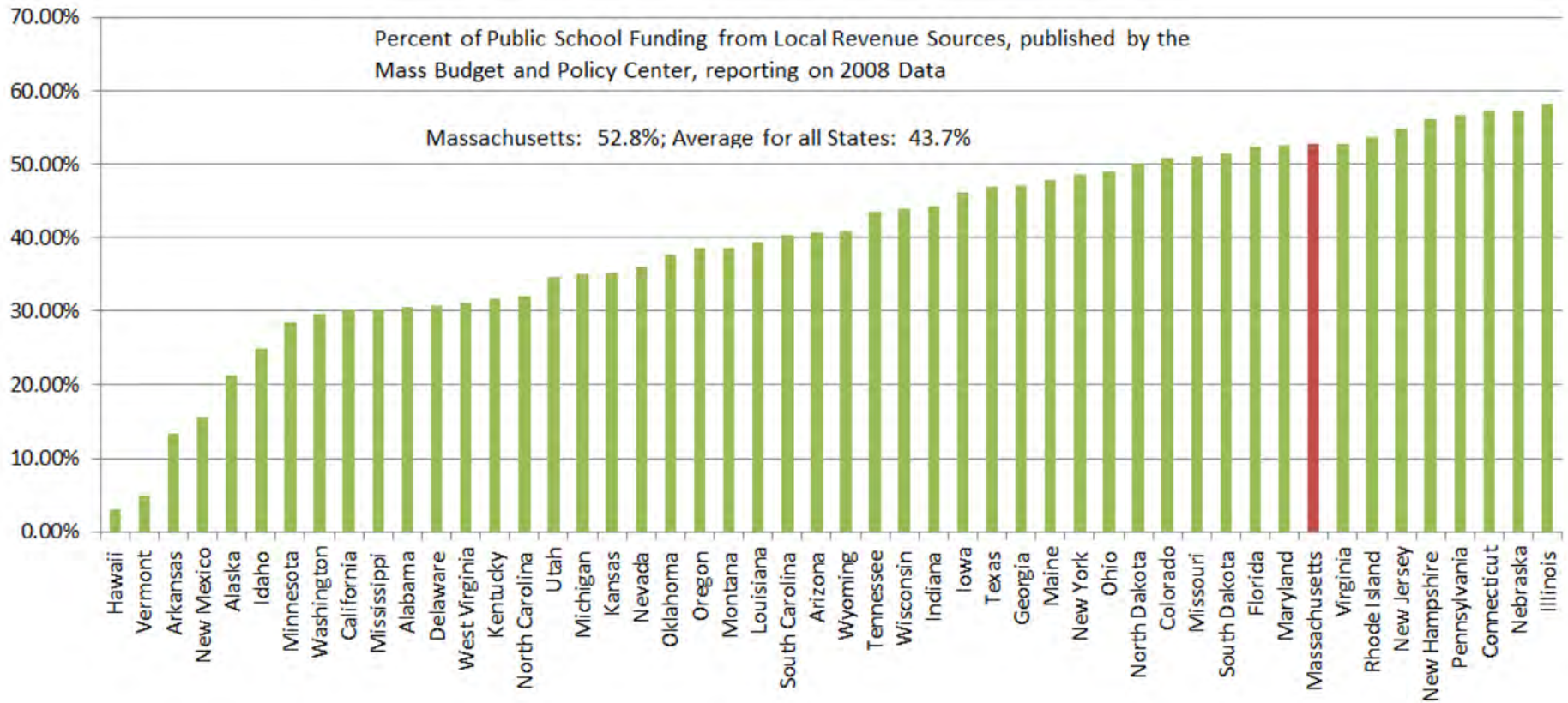
Redlined neighborhoods have the highest share of black residents



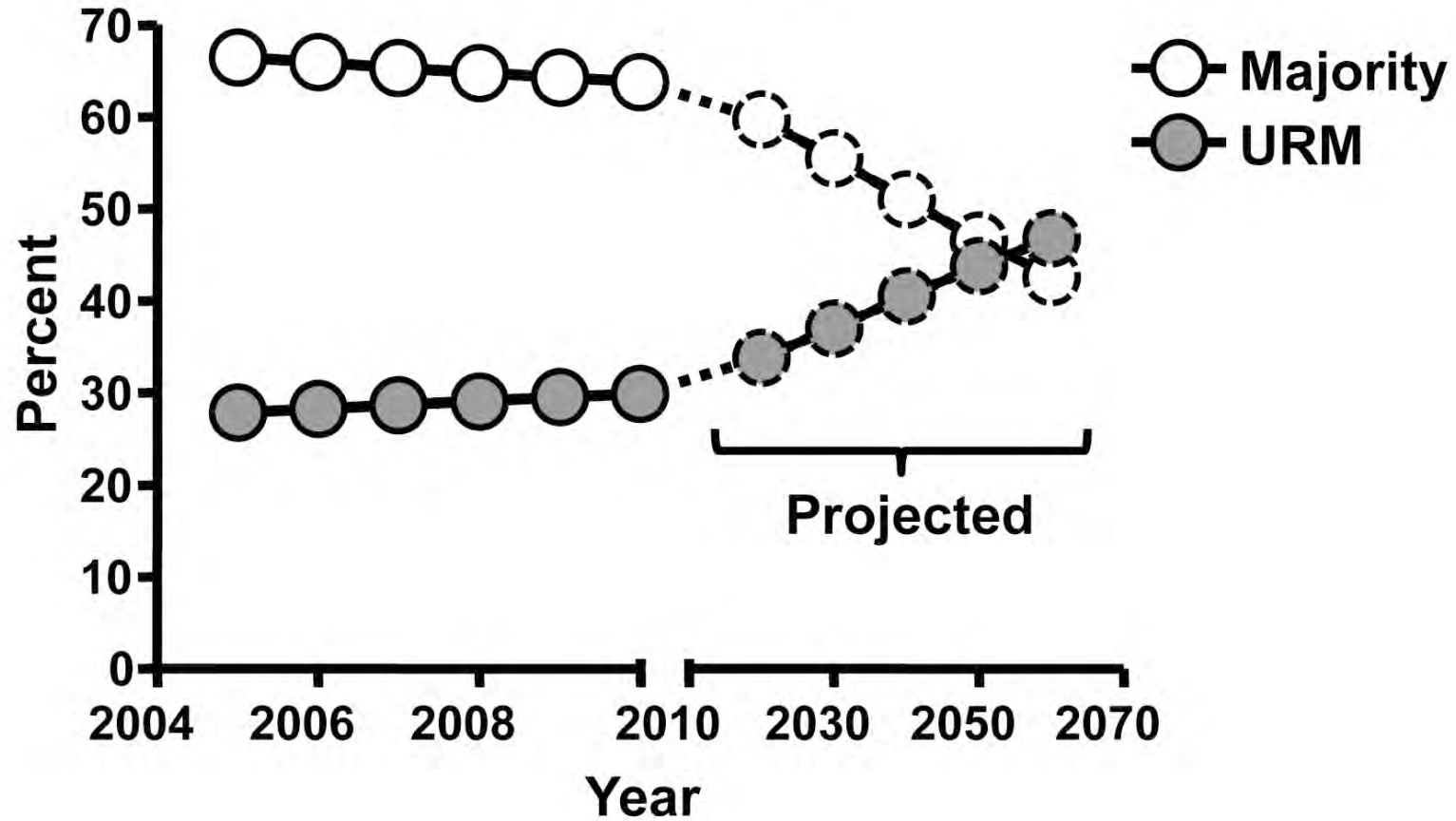
Data from 149 cities mapped by the Home Owners' Loan Corporation in the 1930s.

Source: 'The Effects of the 1930s HOLC "Redlining" Maps' by D. Aaronson, D. Hartley, B. Mazumder.

Effects of property value and school funding

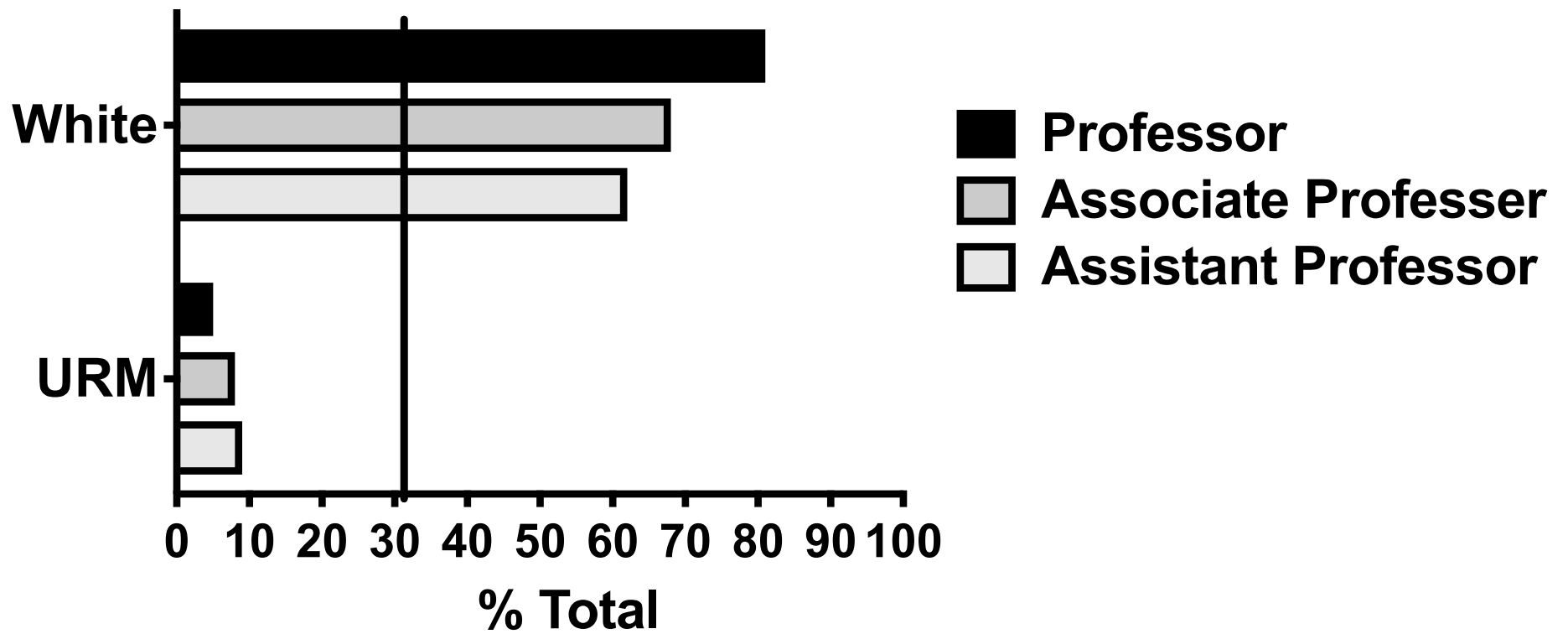


Changing demographics of the U.S.

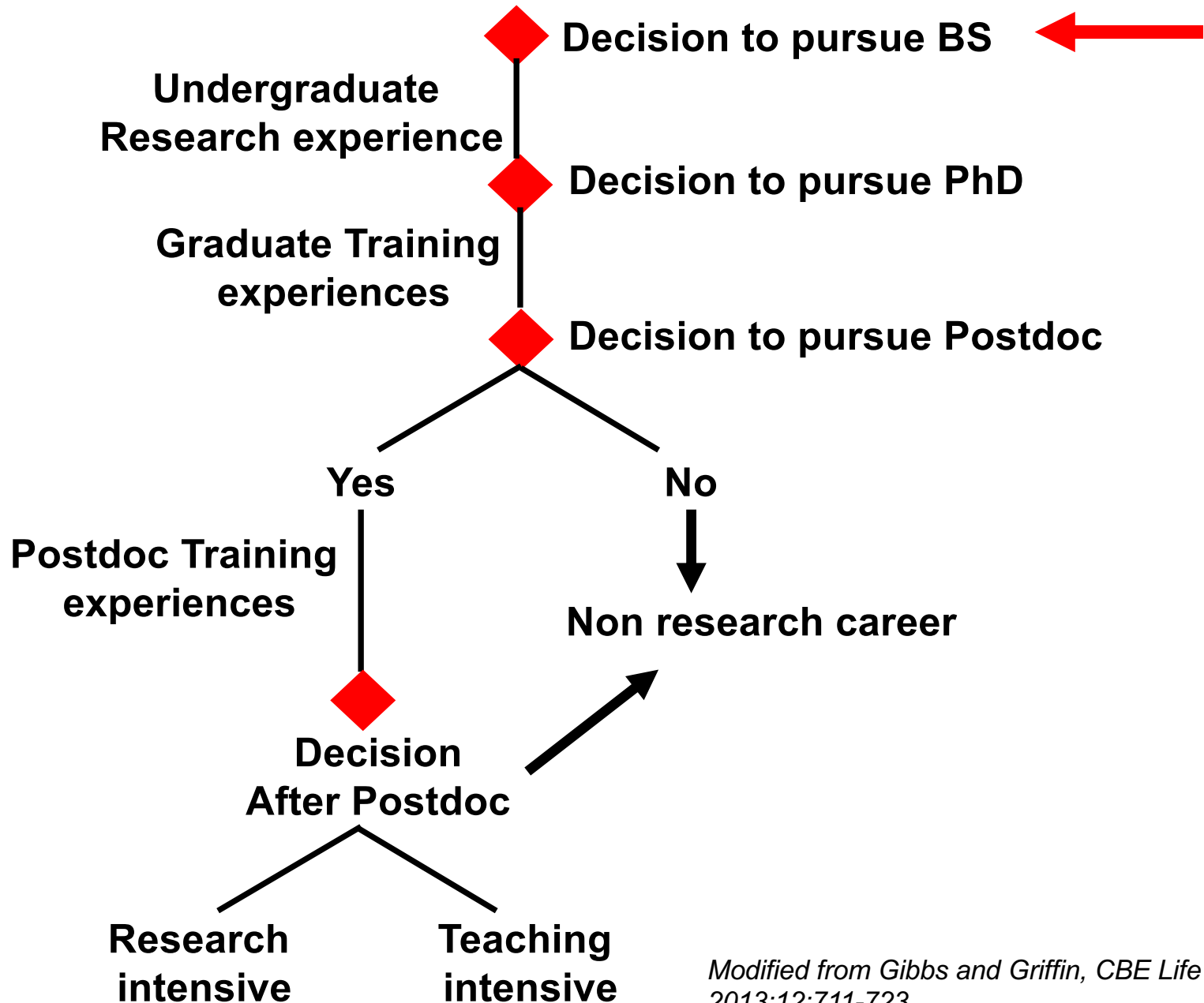


Basic Science faculty makeup at Medical Schools

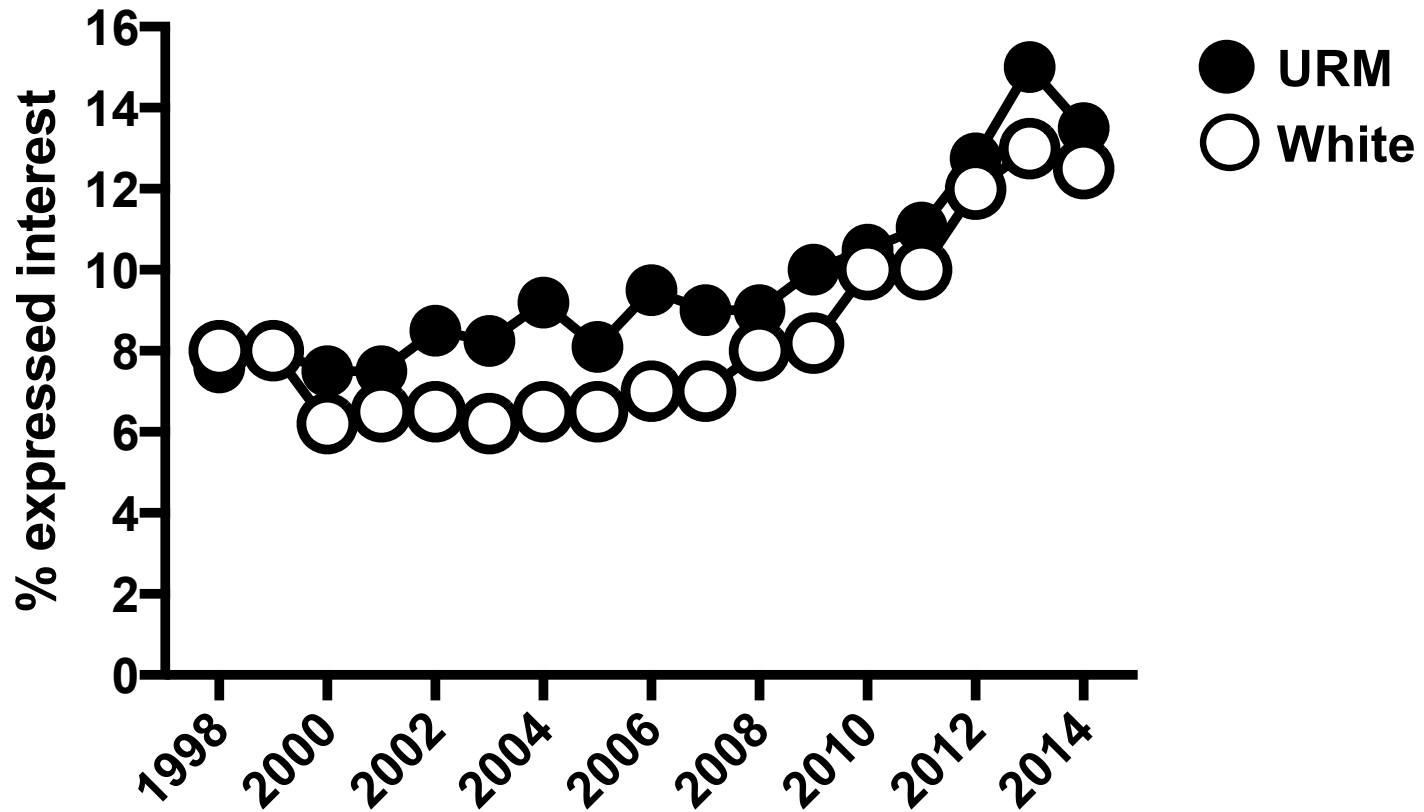
URM Status



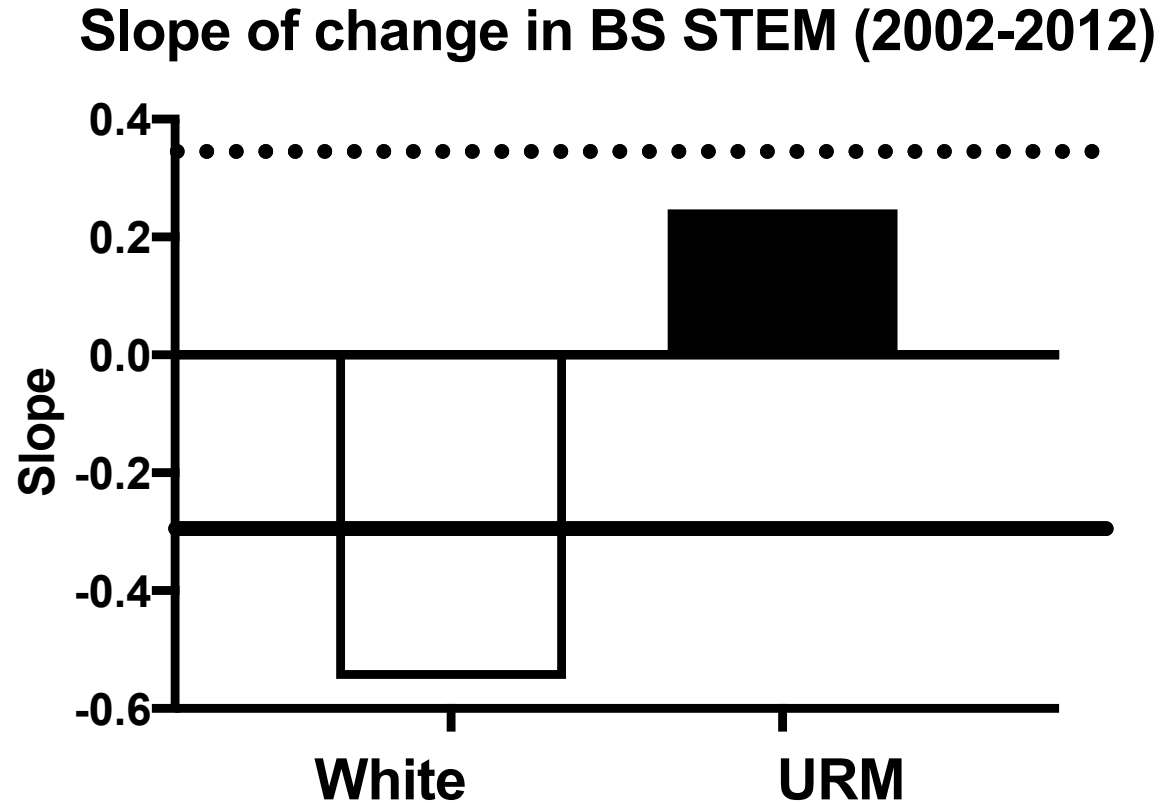
Career pathway decisions



Similar interest among high school students in a degree in biology

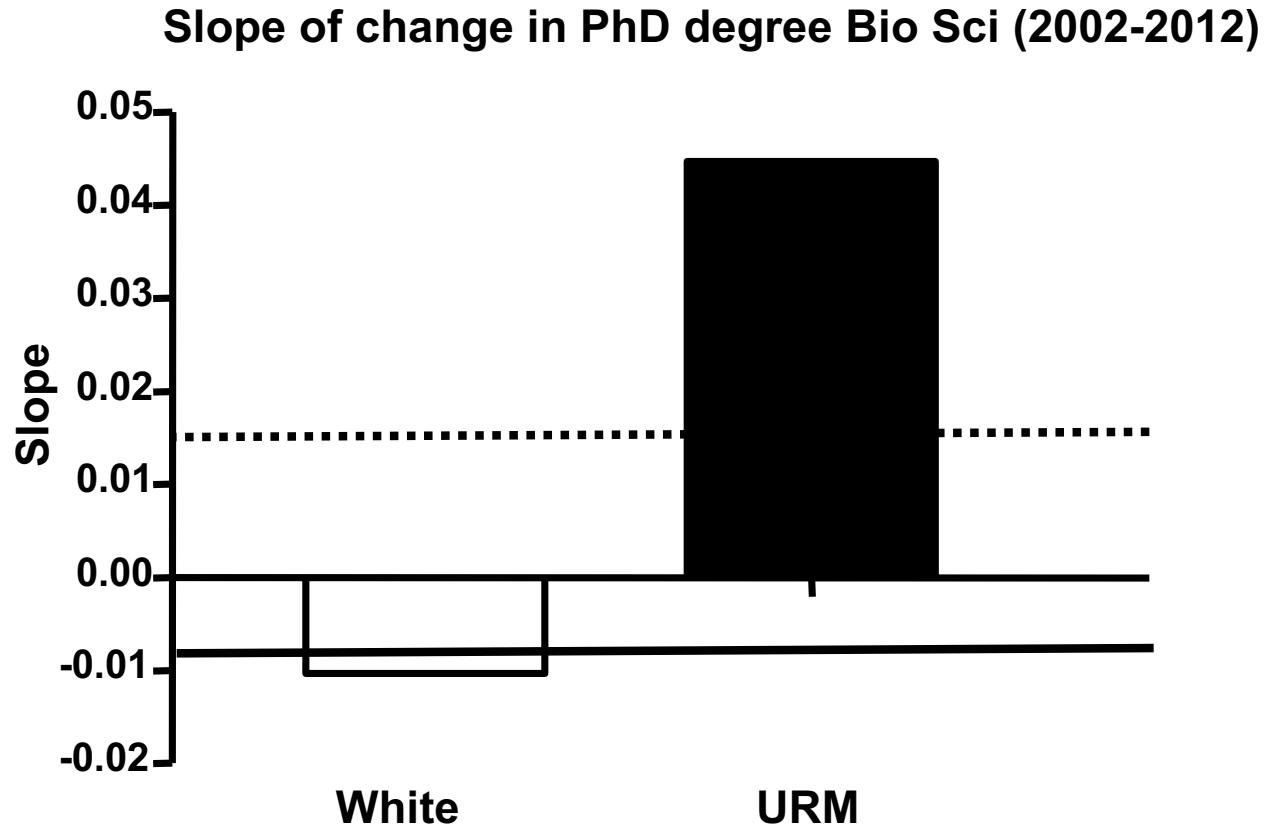


Higher rate of STEM BS degrees for URM....



Calculated from data tabulated by National Science Foundation, National Center for Science and Engineering Statistics; data from Department of Education, National Center for Education Statistics: Integrated Postsecondary Education Data System Completions Survey.

Higher rate of biological sciences PhD degrees for URM....



Calculated from data tabulated by National Science Foundation, National Center for Science and Engineering Statistics; data from Department of Education, National Center for Education Statistics: Integrated Postsecondary Education Data System Completions Survey.

Welcome to NIGMS

The National Institute of General Medical Sciences (NIGMS) supports basic research that increases understanding of biological processes and lays the foundation for advances in disease diagnosis, treatment, and prevention.



Undergraduate and
Predoctoral Programs



Postdoctoral
Programs



Research Programs



Educational
Resources

Increasing graduate trainee diversity....



Increasing graduate trainee diversity....



Advancing Chicanos/Hispanics
& Native Americans in Science

BECOME A MEMBER

DONATE

CONFERENCE

HOME

WHO WE ARE

WHAT WE DO

OUR STORIES

TAKE ACTION

Achieving



TRUE DIVERSITY



SCIENTIFIC COMMUNITY

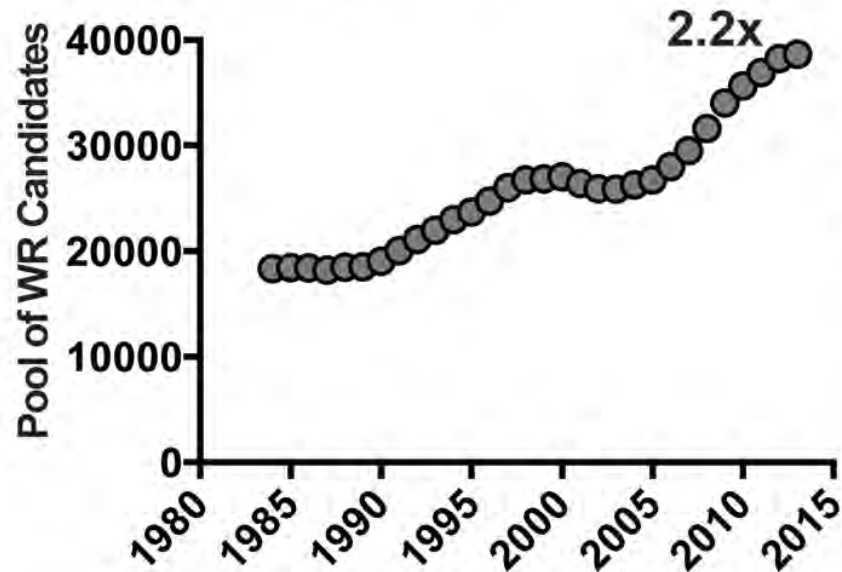
Typical physics Ph.D. admissions criteria limit access to underrepresented groups but fail to predict doctoral completion

Casey W. Miller^{1*}, Benjamin M. Zwickl², Julie R. Posselt³, Rachel T. Silvestrini⁴, Theodore Hodapp⁵

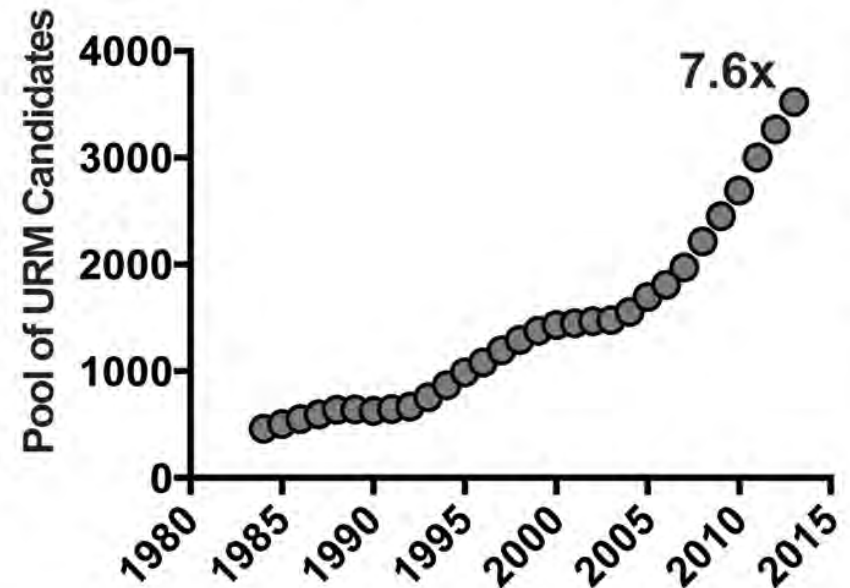
This study aims to understand the effectiveness of typical admissions criteria in identifying students who will complete the Physics Ph.D. Multivariate statistical analysis of roughly one in eight physics Ph.D. students from 2000 to 2010 indicates that the traditional admissions metrics of undergraduate grade point average (GPA) and the Graduate Record Examination (GRE) Quantitative, Verbal, and Physics Subject Tests do not predict completion as effectively admissions committees presume. Significant associations with completion were found for undergraduate GPA in all models and for GRE Quantitative in two of four studied models; GRE Physics and GRE Verbal were not significant in any model. It is notable that completion changed by less than 10% for U.S. physics major test takers scoring in the 10th versus 90th percentile on the Quantitative test. Aside from these limitations in predicting Ph.D. completion overall, overreliance on GRE scores in admissions processes also selects against underrepresented groups.

Larger rate of increase in URM faculty pipeline pool...

Majority candidates

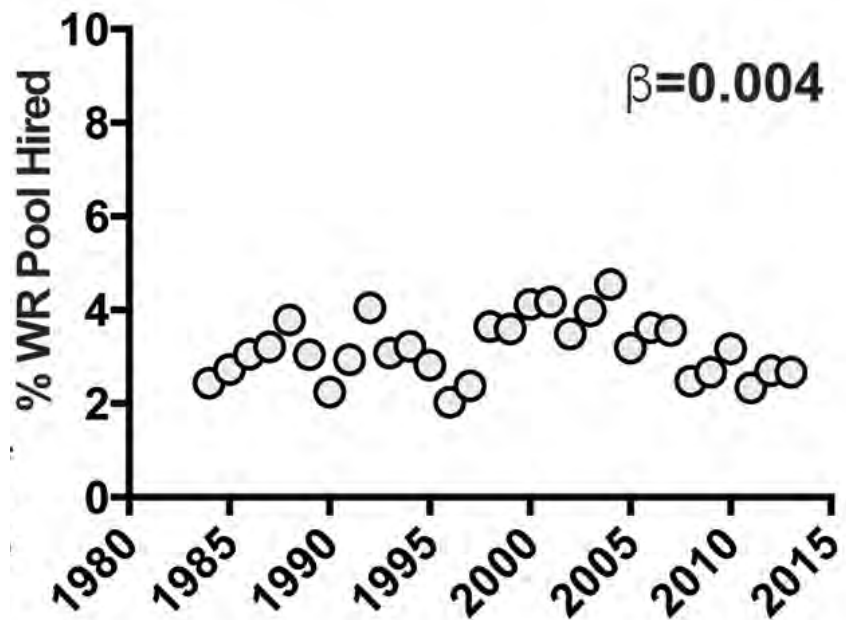


URM candidates

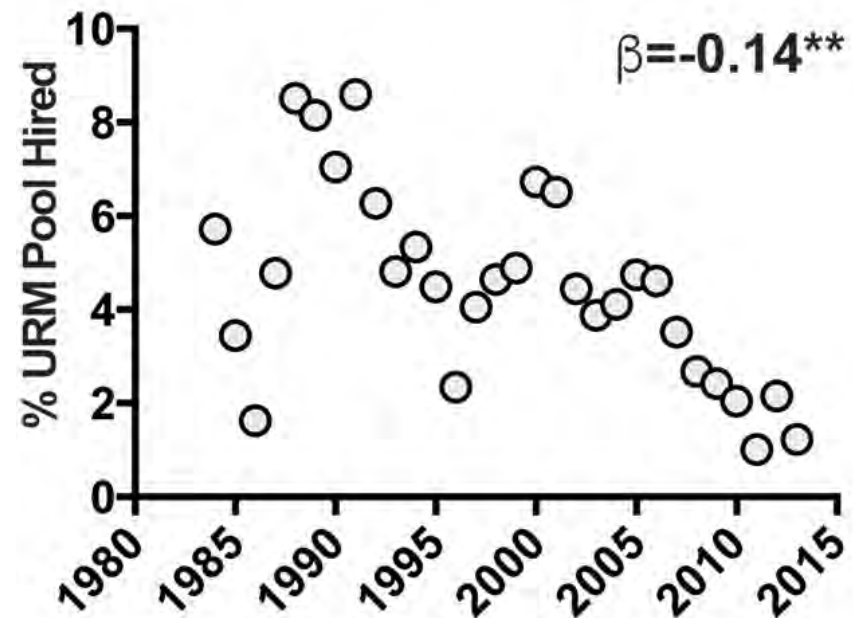


...accompanied by a drop in hiring URM faculty

Majority candidates



URM candidates

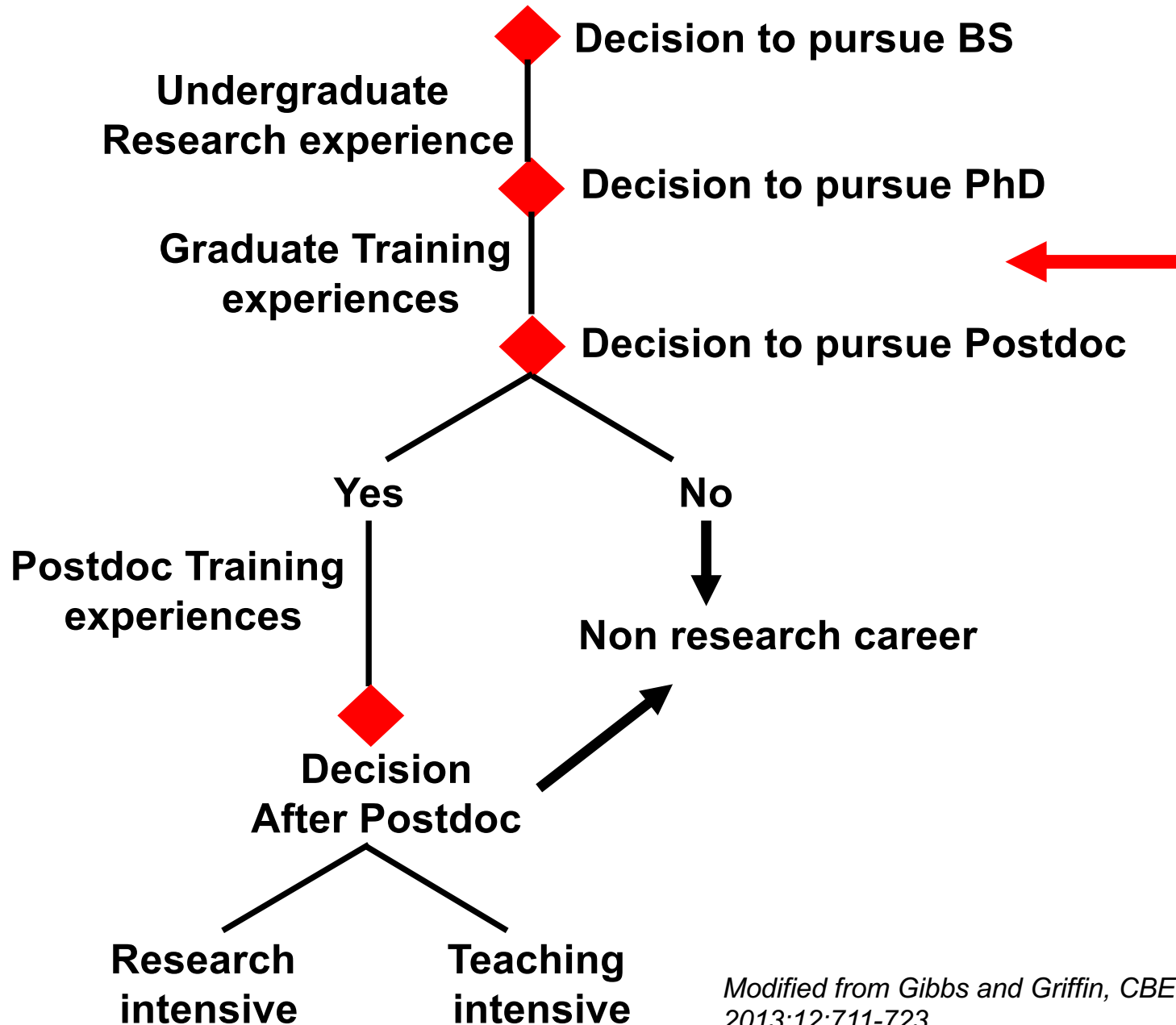


Paradox

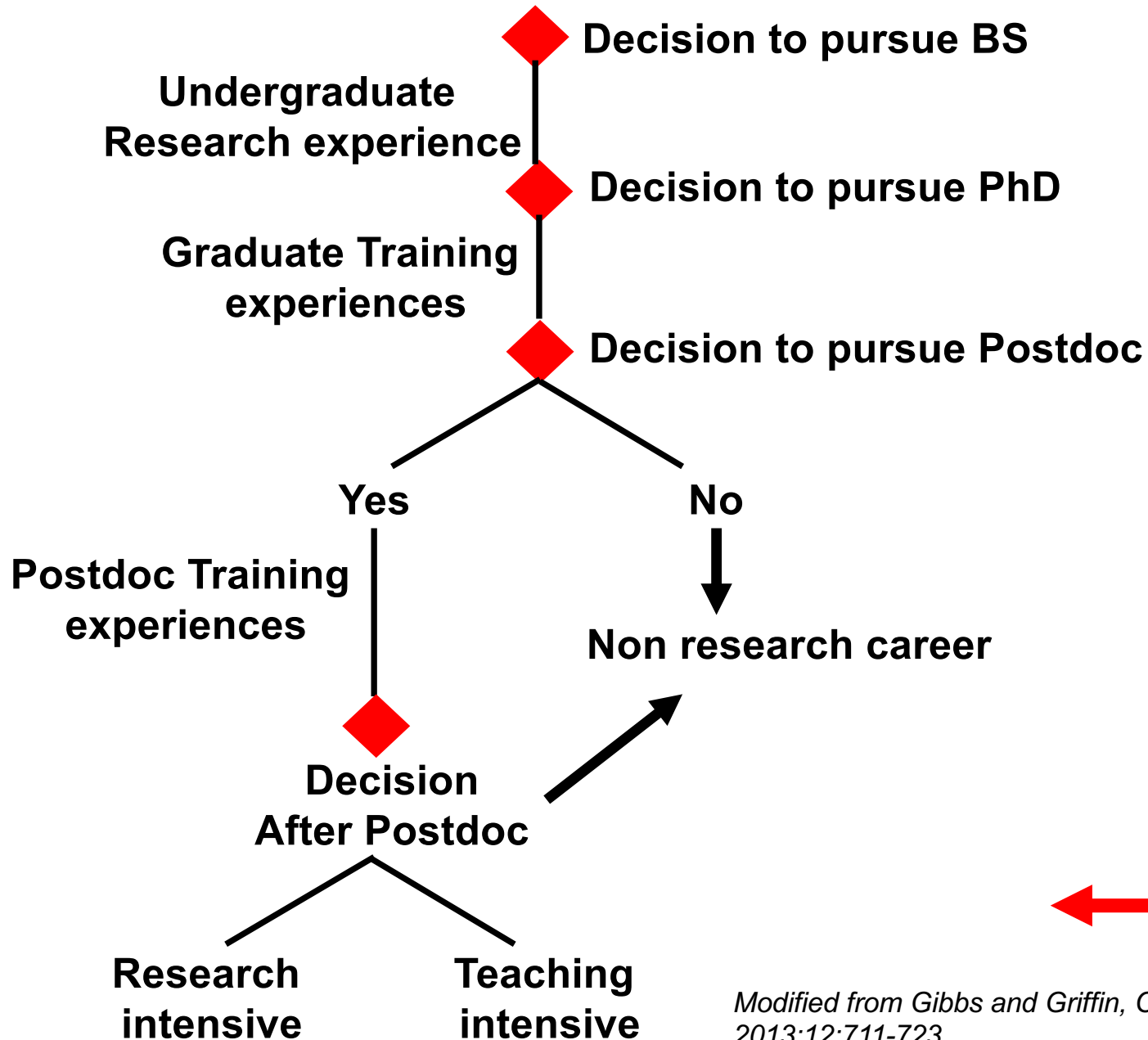
More is less..

Choices....

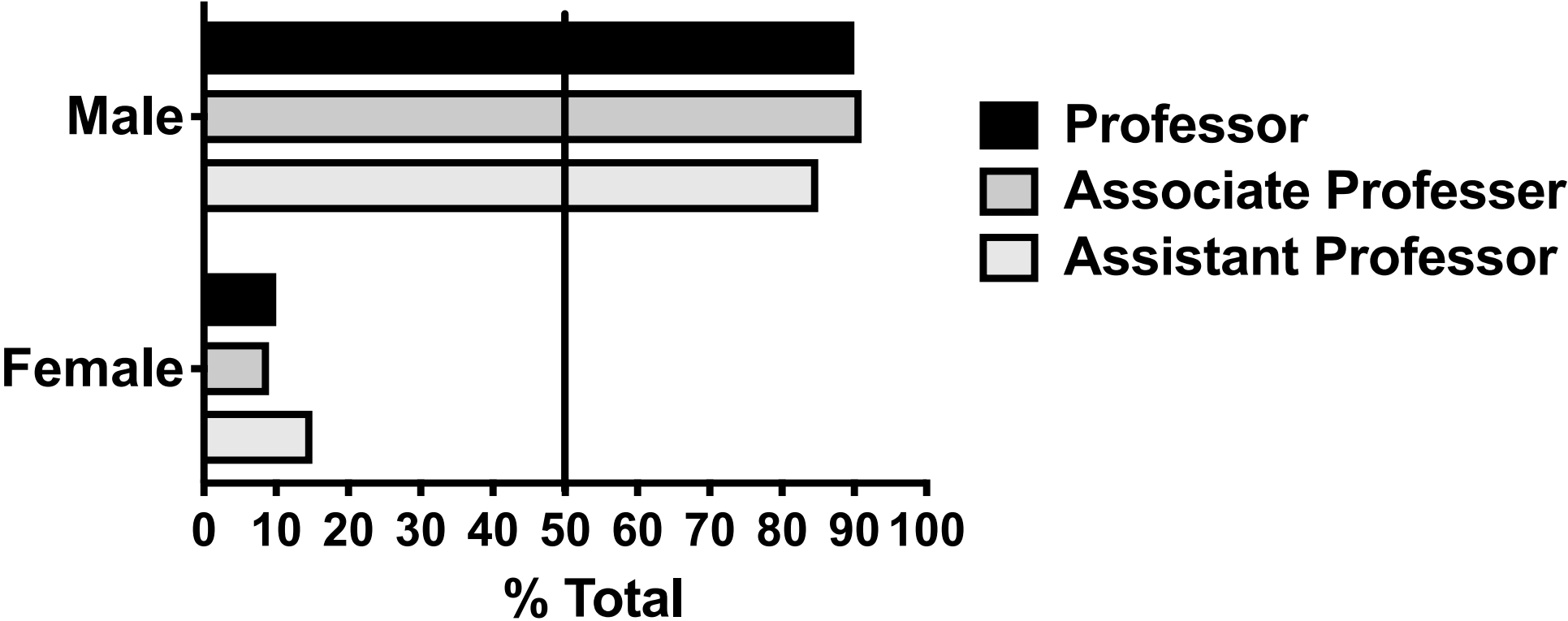
Career pathway decisions



Career pathway decisions



Basic Science faculty makeup at Medical Schools



Data from the AAMC 2017

Athena Swan Initiative



Good Practice Initiatives

Athena Scientific Women Achievement Network (SWAN) Charter

Launched in 2005 to address the unequal representation of women and to encourage and recognize commitment to advancing the careers of women in STEM employment in both higher education and research..



Good Practice Initiatives

160 Charter Members to date; provides guidance, templates, best practices



..recognise a solid foundation for eliminating gender bias and developing an inclusive culture that values all staff. Includes assessment, 4-year plan, organization structure..

36 members



..significant record of activity and achievement in promoting gender equality and in addressing challenges in different disciplines, including improvements from Bronze..

288 members



completely embedded, strong leadership in promoting and championing the charter principles of gender equality, data demonstrating the impact and intersectional approach of Athena SWAN activities.

316 members

Funding in the U.K. dependent on Athena SWAN Silver status



**Good
Practice
Initiatives**

..significant record of activity and achievement in promoting gender equality and in addressing challenges in different disciplines, including improvements from Bronze..



NIHR | National Institute
for Health Research



ADVANCE: Organizational Change for Gender Equity in STEM Academic Professions (ADVANCE)

Launched in 2001 to to develop systemic approaches to increase the participation and advancement of women in academic STEM careers.

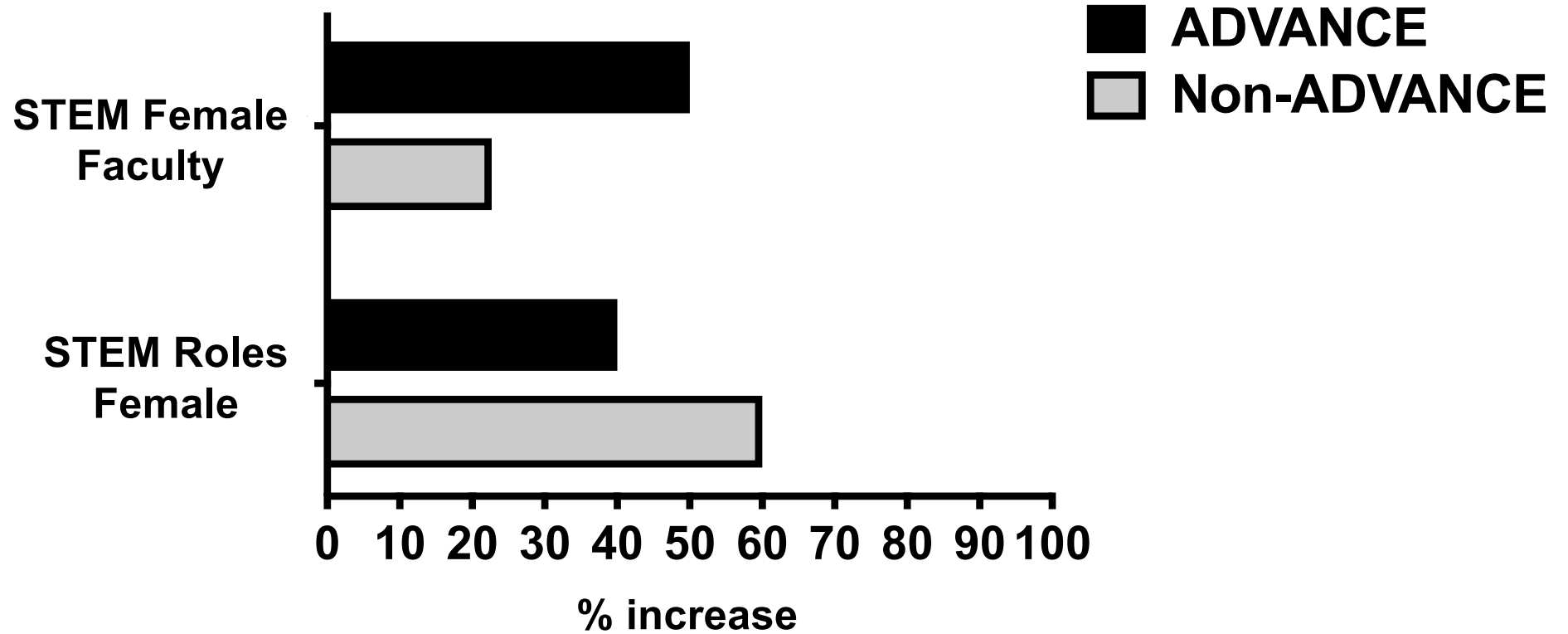
>drive institutional transformation based on gender-disaggregated data collection methods, mentoring schemes, implementation of work–life balance policies, and guidance for institutional leaders to ensure understanding of changes to policies and practices aimed at enhancing faculty careers for women in STEM.

> Research on gender equity and inclusive practices.

> Examples include how to train search committees, department chairs, and tenure and promotion committees to reduce the impact of cultural stereotypes on judgement and decision making.



ADVANCE: Organizational Change for Gender Equity in STEM Academic Professions (ADVANCE)



Lessons from Athena Swan and NSF ADVANCE



**Good
Practice
Initiatives**



ADVANCE: Organizational Change for Gender Equity in STEM
Academic Professions (ADVANCE)

Lessons from Athena Swan and NSF ADVANCE



High Quality Institutional Data

- > **Baseline data for benchmarking**
 - > **Disaggregated**
 - > **Quantitative and Qualitative**

Lessons from Athena Swan and NSF ADVANCE



Appropriate Leadership

- >President and Provost must be invested and accountable**
- >Female/URM leaders may experience positive and negative effects on career**
- >Men in STEM should become more engaged**

Lessons from Athena Swan and NSF ADVANCE

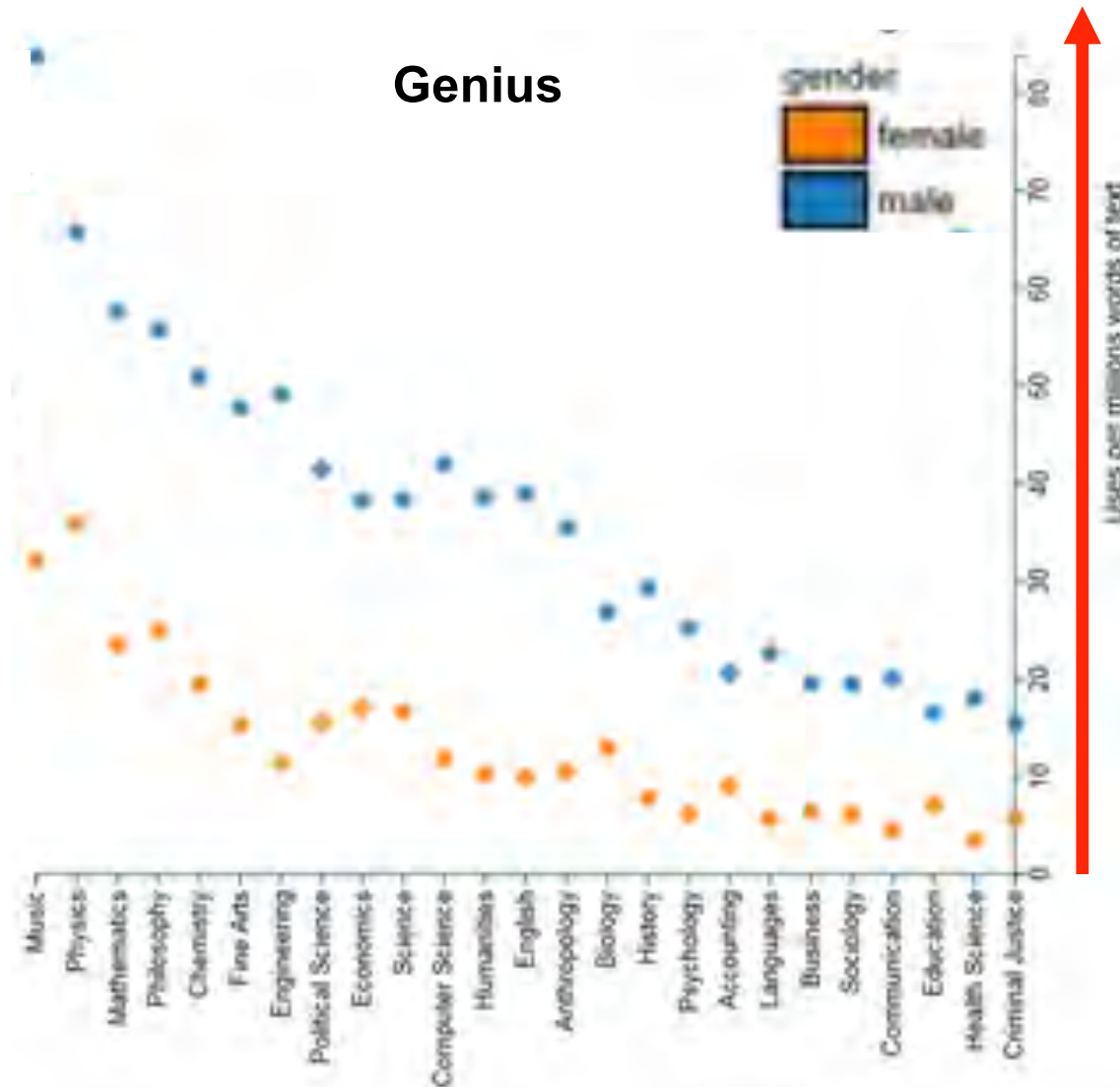


Implement and Sustain Policy changes

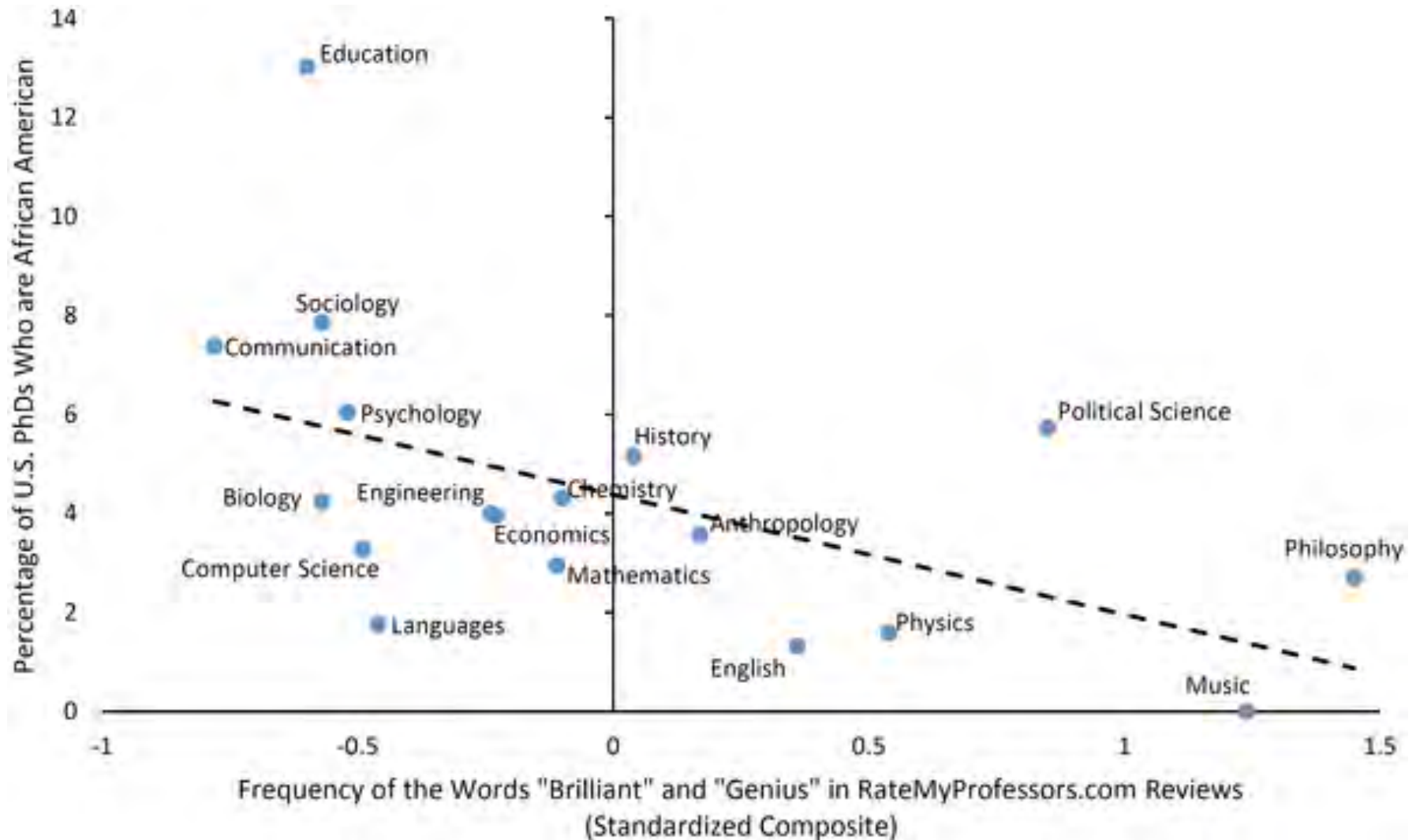
- > **Depends on senior management**
- > **Recruitment, hiring, research support, tenure and promotion criteria, work life balance**
- > **Negative policies might be difficult to eliminate**
- > **Representation of women/URM**

The utility of student teaching evaluations...



Use of "Genius" on RateMyProfessors.com



Use of the words “brilliant” and “genius” on RateMyProfessors.com predicts the proportion of 2011 U.S. PhDs who are African American



Availability of cookies during an academic course session affects evaluation of teaching

Michael Hessler,[†]  Daniel M Pöpping,[†] Hanna Hollstein, Hendrik Ohlenburg, Philip H Arnemann, Christina Massoth, Laura M Seidel, Alexander Zarbock & Manuel Wenk 

Medical Education (2018) 52: 1064–1072

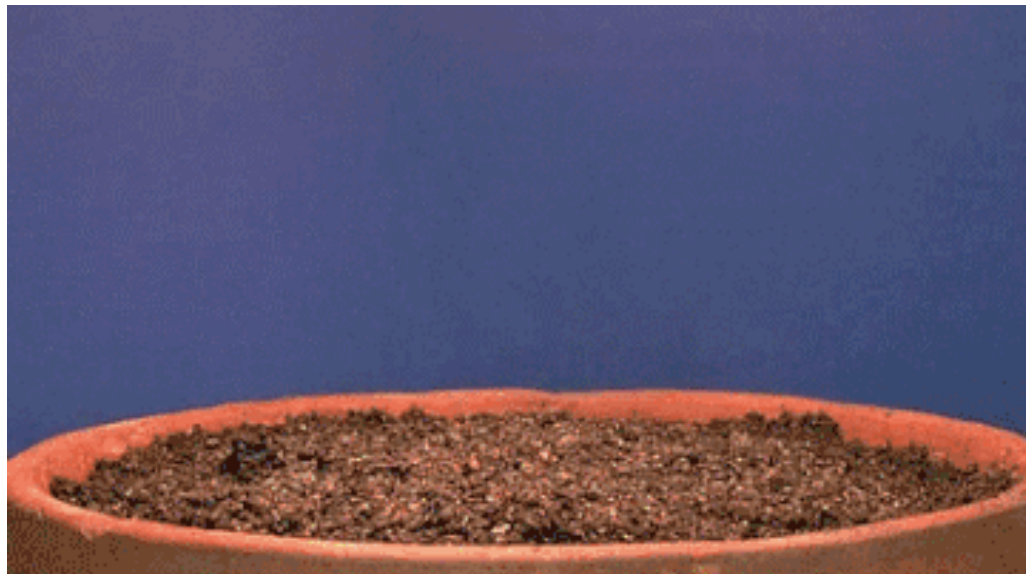
Teaching evaluations

Change the environment.....

From Deficits to Possibilities

Mentoring Lessons from Plants on Cultivating Individual Growth through Environmental Assessment and Optimization

Beronda L. Montgomery



AdvanceHE

Previously



Equality Challenge Unit



..recognizing, progressing and committing to equality and diversity in higher education.



Recognizing commitment to the advancement of gender equality in academia, addressing unequal gender representation across academic disciplines, professional and support functions and removing the obstacles faced by women.



Improving the representation, progression and success of black and minority ethnic staff and students within higher education.



SEA CHANGE

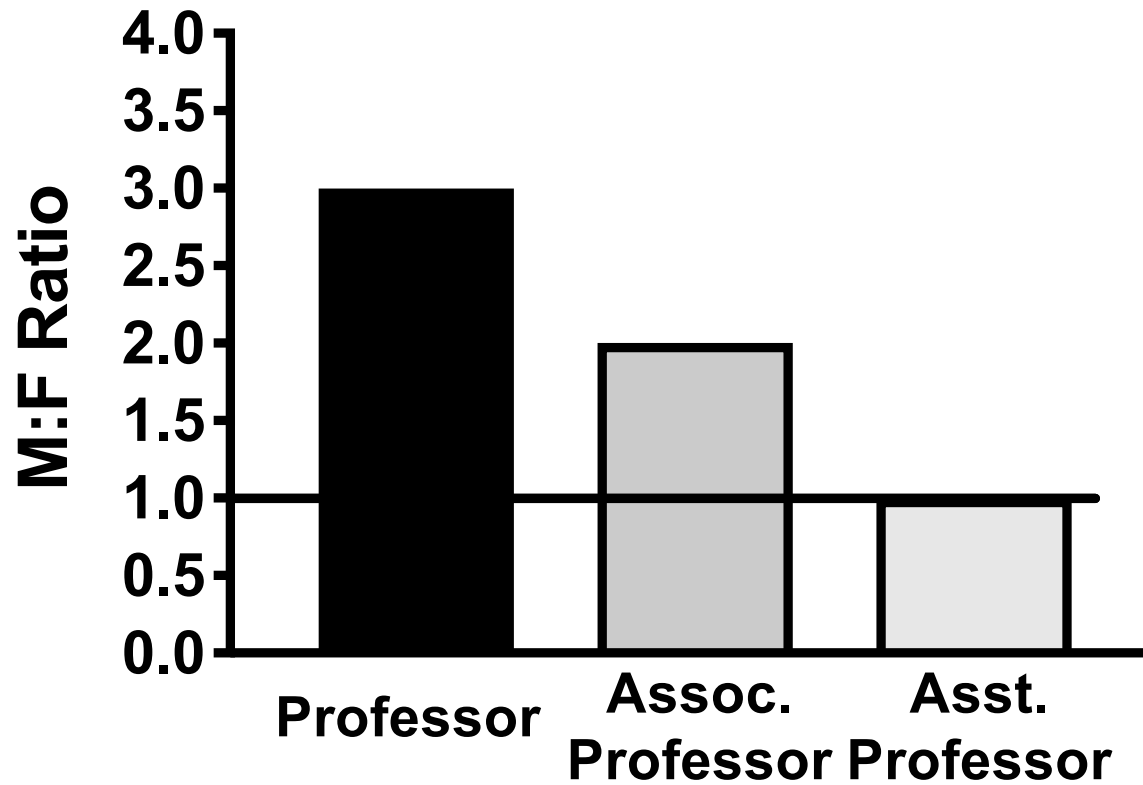
<https://seachange.aaas.org/>

AAAS SEA CHANGE

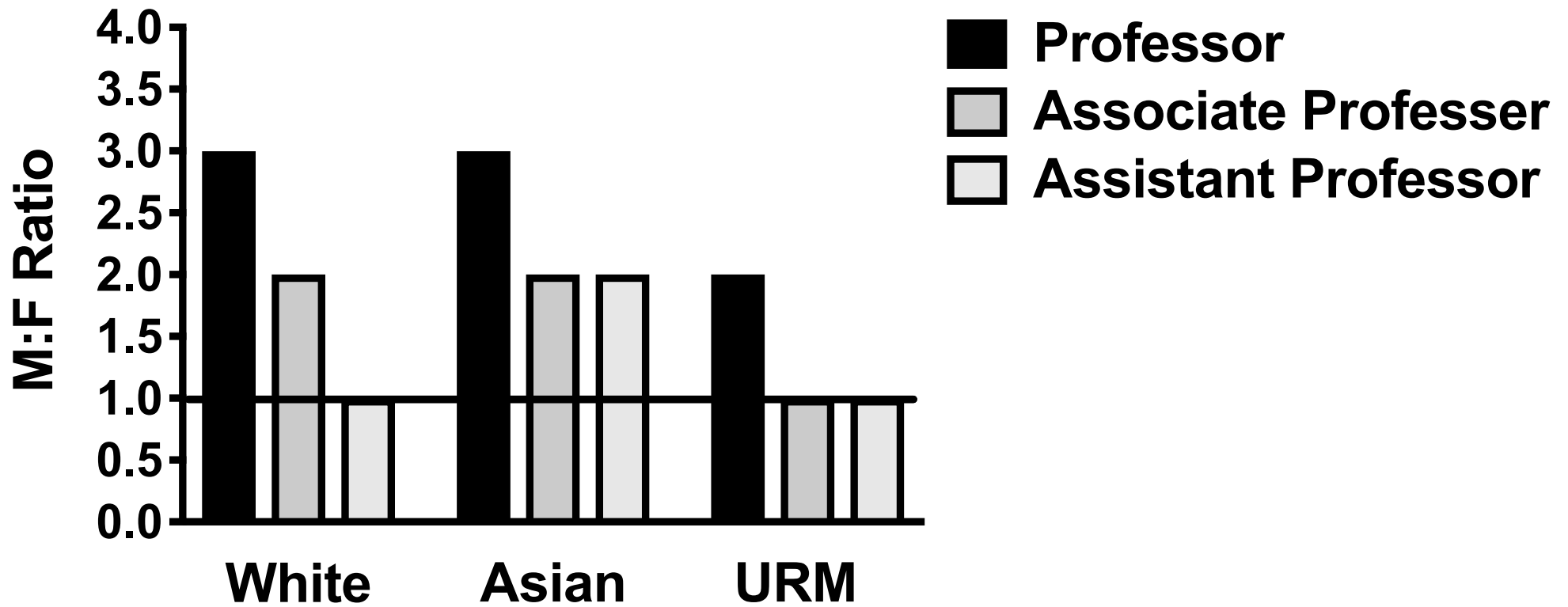
*See change with STEM
Equity Achievement*

Intersectionality

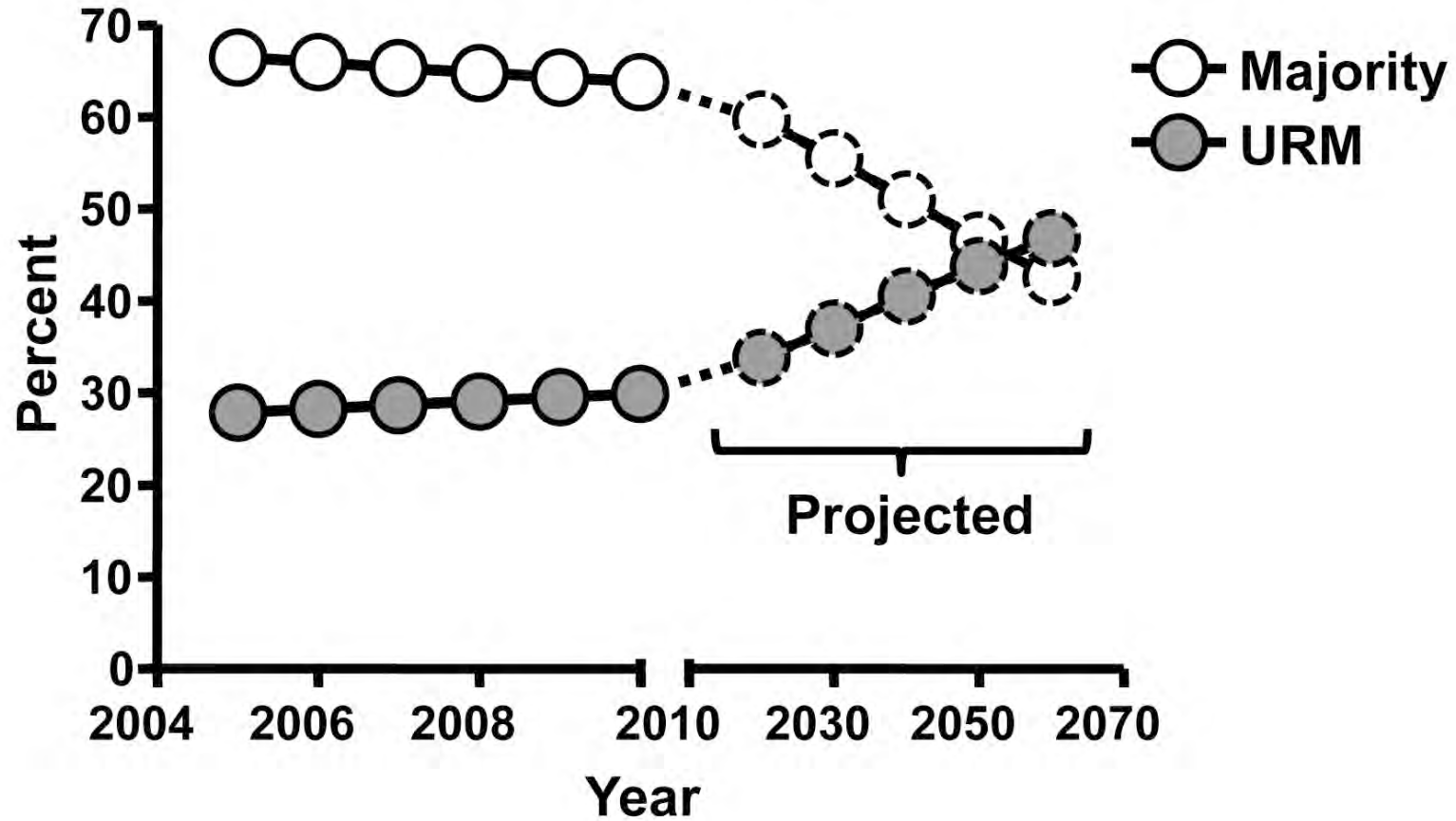
Male: Female ratio of basic science faculty at U.S. medical schools



Male: Female ratio of basic science faculty at U.S. medical schools

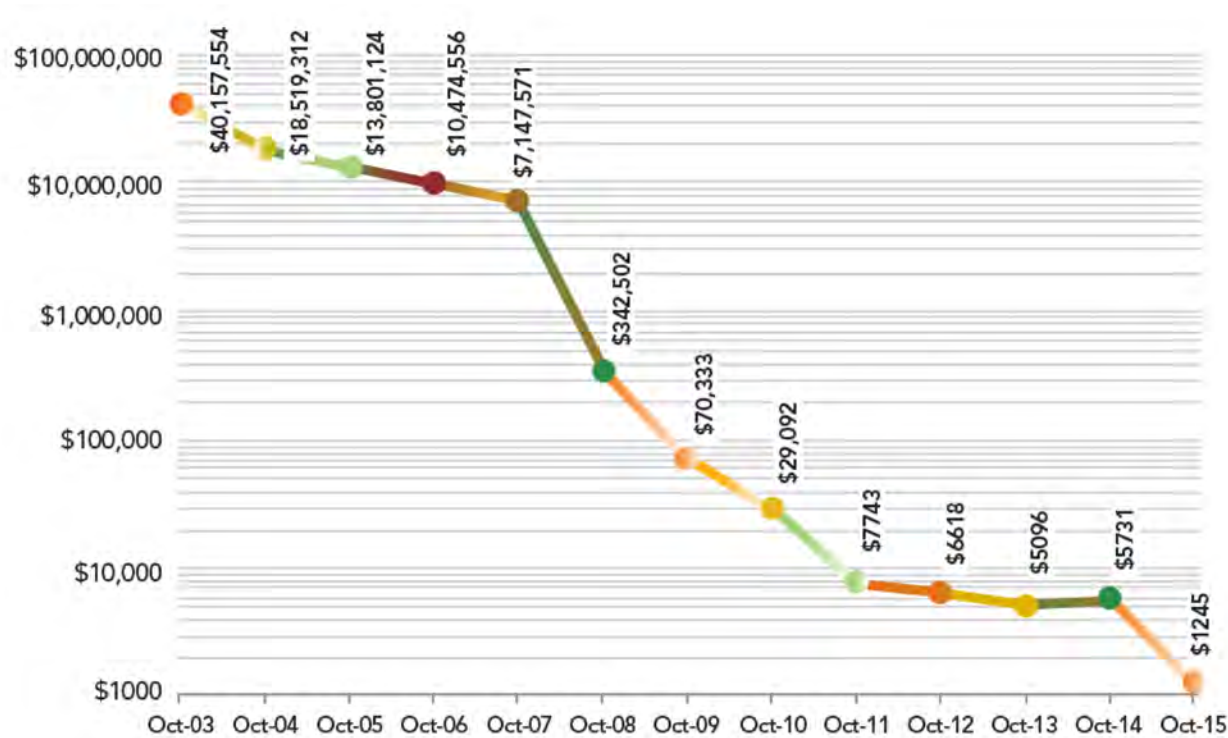


Changing demographics of the U.S.

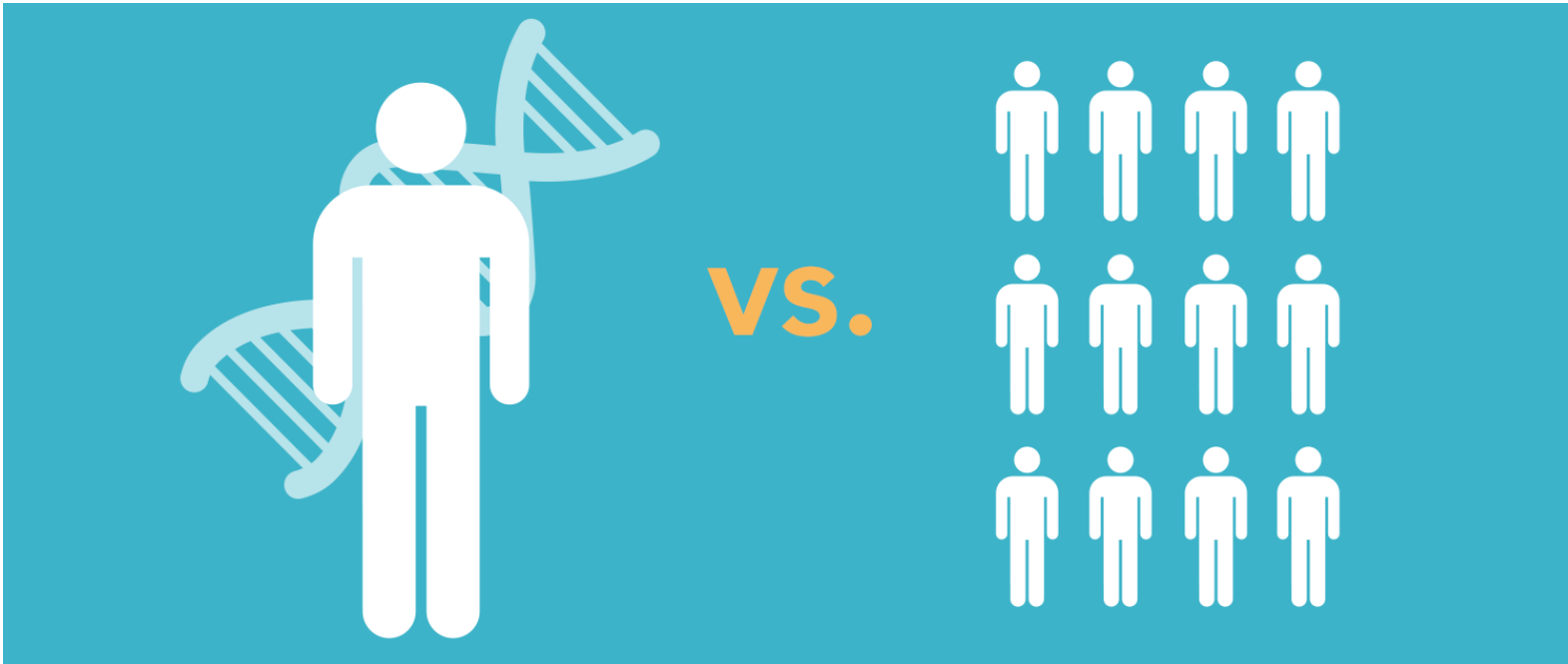


The promise of personalized medicine

Costs of Sequencing a single Human Genome 2003-2015



Who decides?







Charles Drew, MD, CM, MDSc.
- born June 3, 1904, in Washington,
D.C.

As you know, there is no scientific basis for the separation of the bloods of different races except on the basis of the individual blood types or groups.

- ***Charles Drew***

"BANKED BLOOD"

A Study in Blood Preservation

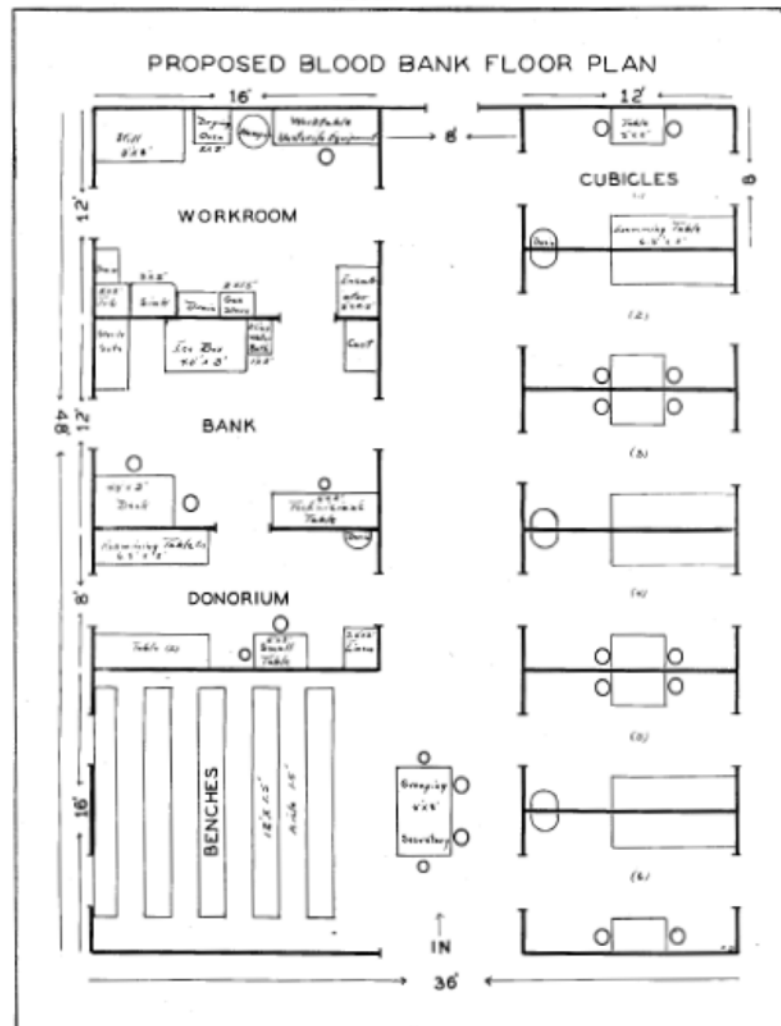
by

Charles Richard Drew, M.D., C.M.

From the Surgical Pathology Laboratory
of the College of Physicians and Surgeons,
Columbia University, and the Department
of Surgery, Presbyterian Hospital.

1940.

FIGURE 21



This also consists of two units. One contains the



**American
Red Cross**

1940

Change the environment.....

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