NHGRI Diversity in Genomic Workforce Initiative

Vence L. Bonham, Jr. J.D.

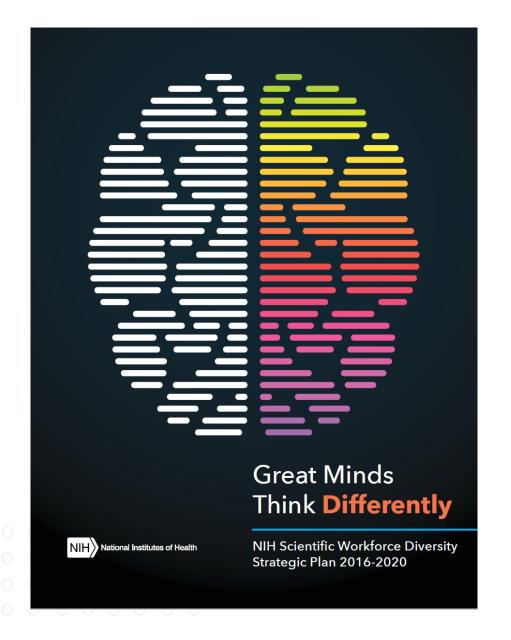
Senior Advisor to the NHGRI Director for Genomics and Health Disparities

On behalf of the Working Group

January 14, 2020







NIH Scientific Workforce Diversity Strategic Goals and Objectives

GOAL 1: Expand Scientific Workforce Diversity as a Field of Inquiry

- Objective 1-1. Advance scholarship of scientific workforce diversity
- Objective 1-2. Launch scientific studies on new ideas for promoting diversity inclusion practices

GOAL 2: Build and Implement Evidence Related to Diversity Outcomes

- Objective 2-1. Support evidence-based approaches to training and persistence in biomedical research
- Objective 2-2. Coordinate evaluation of NIH-wide diversity programs and interventions

GOAL 3: Understand the Role of Sociocultural Factors in Biomedical Recruitment and Retention

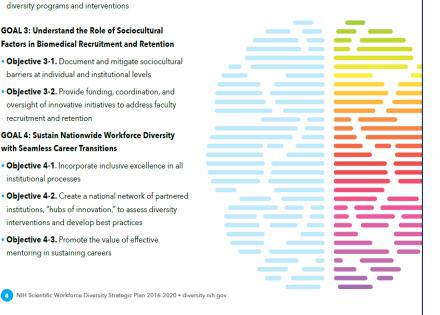
- Objective 3-1. Document and mitigate sociocultural barriers at individual and institutional levels
- Objective 3-2. Provide funding, coordination, and oversight of innovative initiatives to address faculty recruitment and retention

GOAL 4: Sustain Nationwide Workforce Diversity with Seamless Career Transitions

- Objective 4-1. Incorporate inclusive excellence in all institutional processes
- · Objective 4-2. Create a national network of partnered institutions, "hubs of innovation," to assess diversity interventions and develop best practices
- Objective 4-3. Promote the value of effective mentoring in sustaining careers

GOAL 5: Promote the Value of Scientific Workforce Diversity

- Objective 5-1. Establish and promote NIH as a nationwide diversity leader
- Objective 5-2. Serve as the NIH focal point for scientific workforce diversity-related information





NHGRI at the Forefront of Increasing Diversity in Genomic Workforce

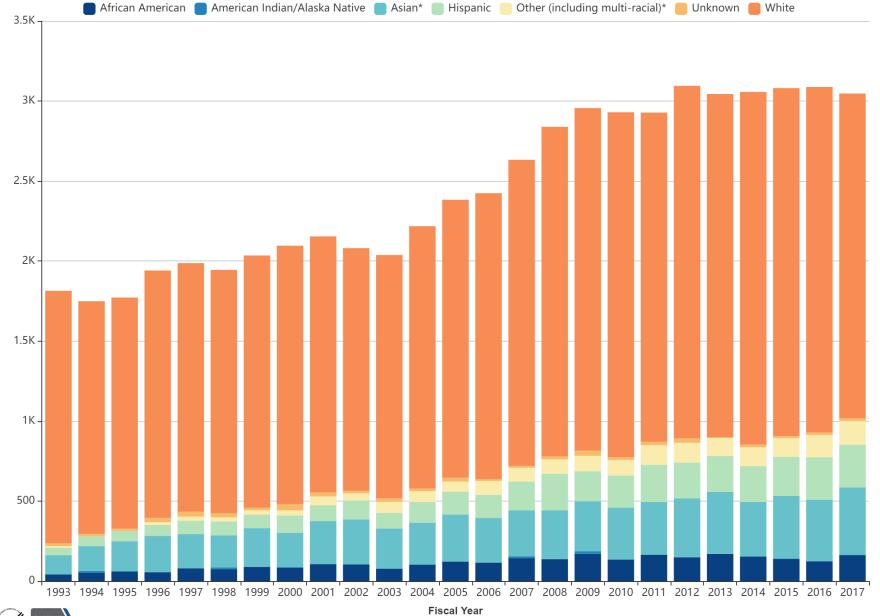
"Building upon the learnt lessons ..., the NHGRI will continue to fund, conduct and encourage diversity in biomedical research to build a strong foundation for genomic medicine. However, fulfilling our obligation to bring genomics research from bench to bedside for all will require the efforts of the entire scientific community."

Hindorff LA, Bonham VL, Brody LC, Ginoza MEC, Hutter CM, Manolio TA, Green ED. Prioritizing diversity in human genomics research.

Nature Reviews Genetics 19, 175-185(2018)



Trends in Race/Ethnicity of NIH-Supported Ph.D. Recipients

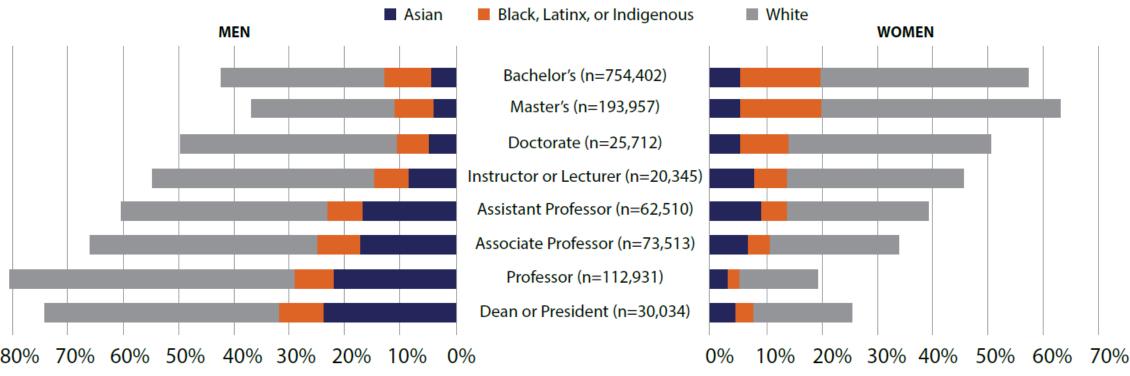






Women and minorities drop out of academic pipeline

Academic STEM Career Progression by Gender and Race, 2015

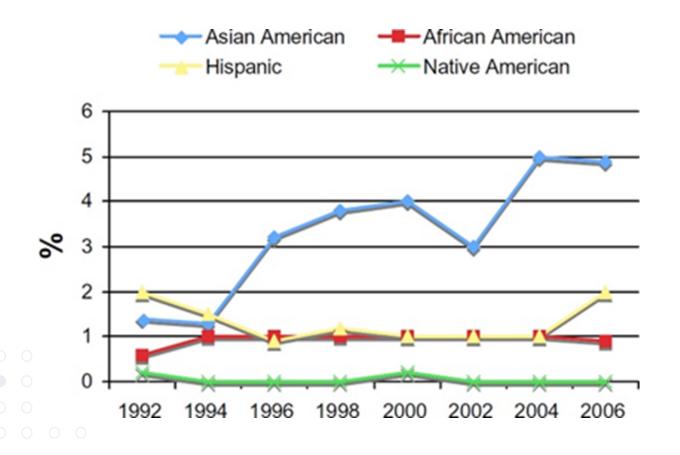


Source: Metcalf, H. and Russell, A. (2019). Original Analysis of 2015 NSF Survey of Doctorate Recipient and IPEDS Data.



2019 Association for Women in Science Membership Report. Transforming STEM Leadership Culture. https://www.awis.org/wp-content/uploads/2019-Leadership-Report_FINAL_WEB.pdf

Diversity in Genetic Counseling

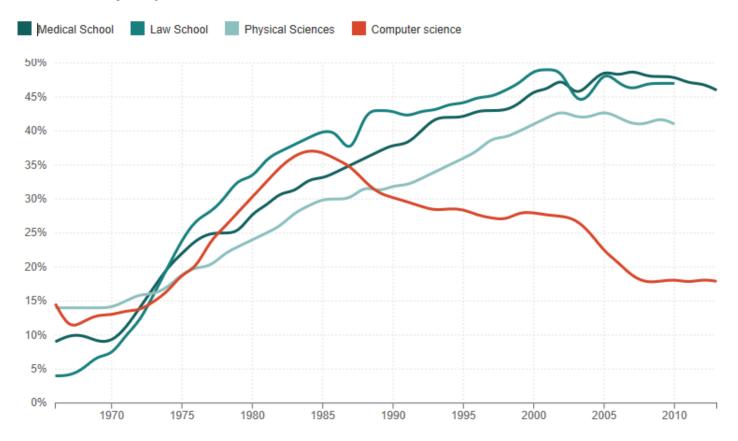




Women in Computer Science

What Happened To Women In Computer Science?

% Of Women Majors, By Field

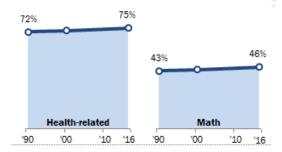


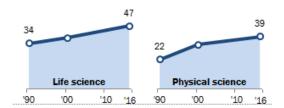
Source: National Science Foundation, American Bar Association, American Association of Medical Colleges Credit: Quoctrung Bui/NPR

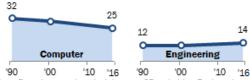
NIH)

Women's representation in computer jobs has declined since 1990

Share of employed in each occupational group who are women (%)







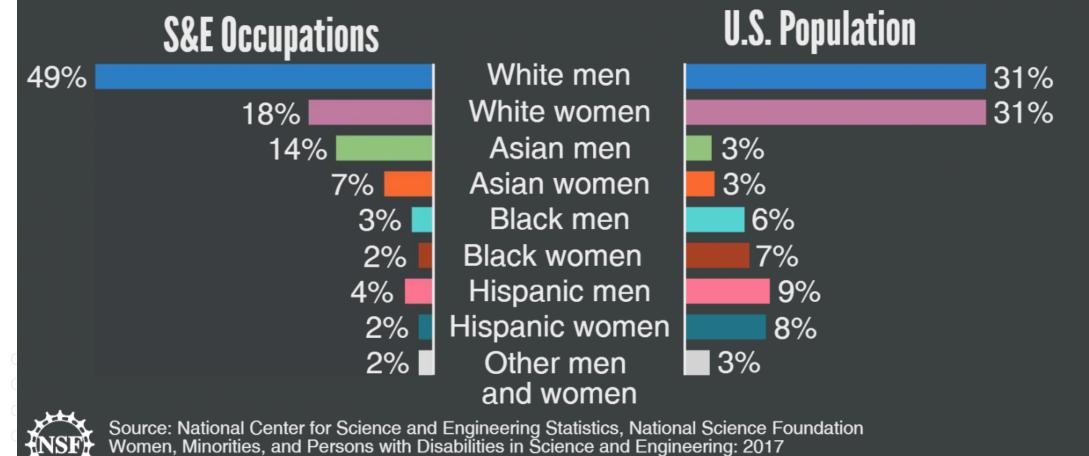
Note: Based on employed adults ages 25 and older. Engineering includes architects.

Source: Pew Research Center analysis of 1990 and 2000 decennial censuses and 2014-2016 American Community Survey (IPUMS). "Women and Men in STEM Often at Odds Over Workplace Equity"

PEW RESEARCH CENTER

Workers in science and engineering occupations

In 2015, women and some minority groups were represented less in science and engineering (S&E) occupations than they were in the U.S. general population.





https://nsf.gov/statistics/wmpd/

Initiative Goal: Increase substantially the diversity of the genomic workforce from under-represented backgrounds in the field of genomics in the United States



Diversity

"NIH encourages institutions to diversify their student and faculty populations to enhance the participation of individuals from groups that are underrepresented in the biomedical, clinical, behavioral and social sciences, such as..."

- Underrepresented racial and ethnic groups
- Individuals with disabilities
- Individuals from disadvantaged backgrounds (including homeless, from the foster care system, eligible for federal programs aimed a reducing poverty, from a rural area, first-generation higher ed)
- Women



- 1. Develop resources to support the diversity mission of the NHGRI (e.g. identification, of successful training programs, identification of genomic scientists from underrepresented groups)
- 2. Collaborate with the NIH Scientific Workforce Diversity Program, ICs, Industry, and Societies to maximize the significance of NIH programs to increase URM in the genomic workforce (including independent researchers, genomics scientists, and administrators)
- 3. Develop Strategic Plan to Support the Initiative



Members of the Working Group

- Luis Cubano (Rockledge)
- Carla Easter (Bldg. 31)
- Lori Erby (Clinical Center)
- Dave Kaufman (Rockledge)
- Tina Gatlin (Rockledge)



Members of the Working Group

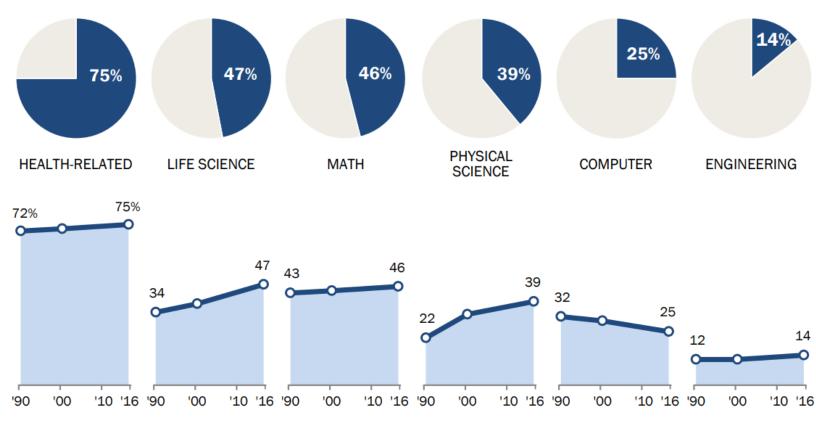
- Bettie Graham (Rockledge)
- Chris Gunter (Bldg. 31)
- Faith Harrow (Bldg. 12)
- Cyndi Tifft (Clinical Center)
- Elaine Ostrander (Bldg. 50)
- Meru Sadhu (Bldg. 49)





The share of women in life and physical sciences has gone up but it has gone down for computer jobs since 1990

Share of women in each of the following science, technology, engineering and math occupations over time



Note: Based on employed adults ages 25 and older. Engineering includes architects.

Source: Pew Research Center analysis of 1990 and 2000 decennial censuses and 2014-2016 American Community Survey (IPUMS).

PEW RESEARCH CENTER



[&]quot;Women and Men in STEM Often at Odds Over Workplace Equity"