

SEEKING SOLUTIONS

Maximizing American Talent by Advancing Women of Color in Academia
Summary of a Conference



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BACKGROUND

To explore ways that U.S. universities can attract and retain women of color in Science, Technology, Engineering, and Mathematics (STEM) fields, the National Research Council held a conference in June 2012, “Seeking Solutions: Maximizing American Talent by Advancing Women of Color”, with support from the National Science Foundation’s ADVANCE Program (Grant No. 1049637).

A summary of the conference was published in 2013. This **Overview** highlights some presentations and data from that summary report.

The views expressed are those of individual conference participants and do not necessarily represent the views of all conference participants, the planning committee, the National Research Council, or the sponsor who provided support for the project.

Taken from *Seeking Solutions: Maximizing American Talent by Advancing Women of Color in Academia. Summary of a Conference*. National Academies Press, 2013.

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Introduction

- The scientific and technological strength of the United States on the global stage is at a critical juncture.
- U.S. research and educational institutions and industries have encountered difficulties in attracting and retaining individuals in science, technology, engineering, and mathematics – the STEM disciplines.
- The United States needs “all hands on deck” and must attract and retain its top talent in these fields.
- Demographic shifts underway mean that the pool of talent from which the nation draws is becoming more and more diverse, with present-day “minorities” projected to be in the majority by 2050.

Taken from *Seeking Solutions: Maximizing American Talent by Advancing Women of Color in Academia*.
Summary of a Conference. National Academies Press, 2013.

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CAREER PATHWAYS OF WOMEN OF COLOR

DONNA GINTHER AND SHULAMIT KAHN

A presentation by Donna Ginther from University of Kansas, and Shulamit Kahn from Boston University analyzed data to identify the representation of women of color at key points along the educational and career pathways in STEM fields.

Overall, Ginther and Kahn found

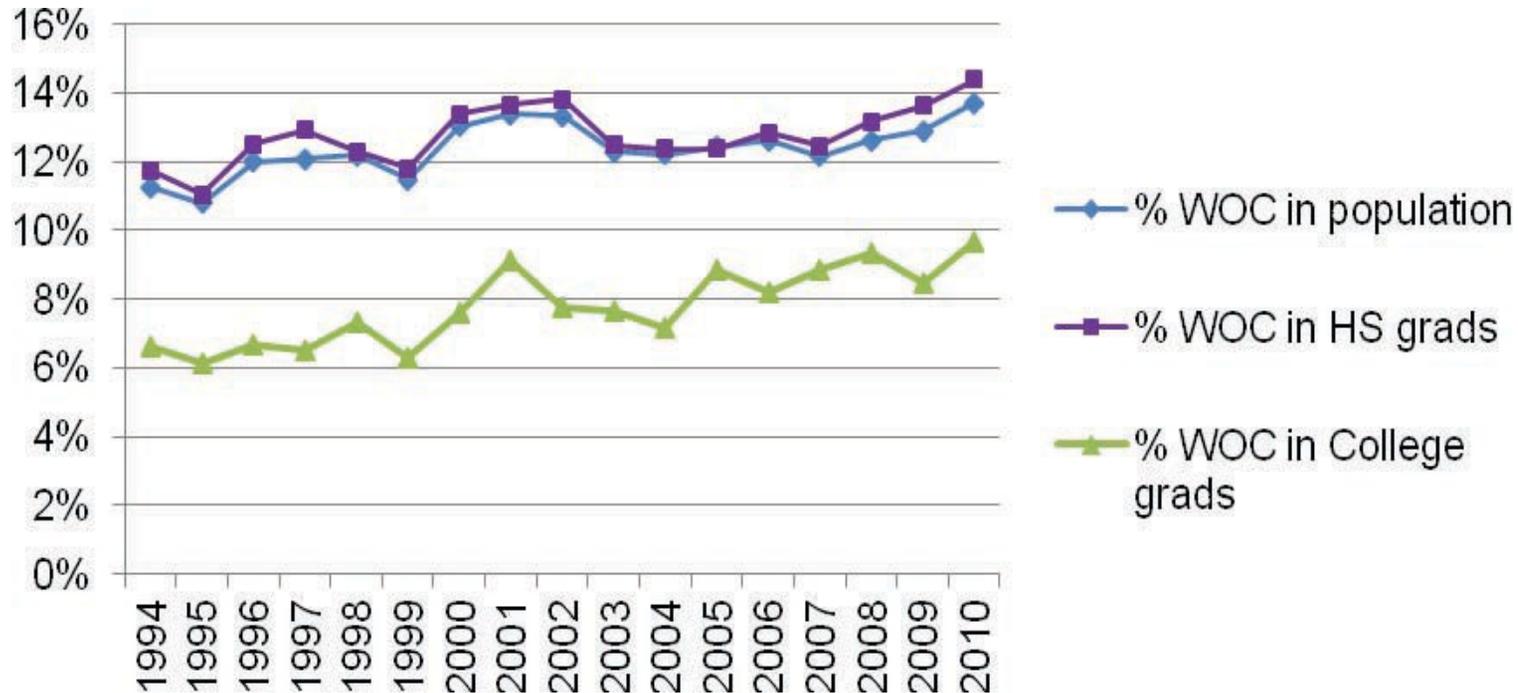
- Women of color are **less** likely than white women to
 - Graduate from college
 - Obtain a PhD in science and engineering
 - Obtain a tenure-track job in a non-minority-serving institution
- Women of color are **more** likely than white women to
 - Be employed in a non-tenure-track position
 - Be employed at a minority-serving institution

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Figure: Percentage of US citizens ages 24-25 who are women of color (WOC) out of: 1) the total population of 24-25 year-old citizens, 2) the high school graduates among 24-25 year-old citizens, and 3) the college graduates among 24-25 year-old citizens.



Source: Ginther and Kahn presentation, based on 1994–2010 Outgoing Rotations of the Current Population Survey.

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WORK-LIFE BALANCE AND SOURCES OF STRESS

SYLVIA HURTADO

Sylvia Hurtado, director of the Higher Education Research Institute (HERI) at the University of California, Los Angeles, shared the results of her research on how the experiences of women of color faculty in STEM compare with those of other groups, based on HERI's national faculty survey data.

SOURCES OF STRESS (reported most frequently by women of color):

- Lack of personal time (86.4 percent)
- Self-imposed high expectations (82.4 percent)
- Managing household duties (79.0 percent)
- Working with underprepared students (69.9 percent)
- Institutional budget cuts (66.0 percent)
- Personal finances (65.8 percent)
- Research or publishing demands (61.8 percent)

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Table: Proportion of STEM Faculty by Race/Ethnicity, Gender, and Academic Rank (n=11,039), by Percent

Population	% of Sample	Academic Rank				
		Professor %	Associate Professor %	Assistant Professor %	Lecturer / Instructor %	No Rank Data %
URM women	2.5	16.2	24.6	31.3	23.5	4.4
Asian women	2.3	18.6	29.5	30.2	15.1	6.6
White women	34.9	22.5	28.8	29.6	14.4	4.7
URM men	3.4	28.6	27.8	21.9	16.3	5.3
Asian men	5.1	30.8	24.1	28.8	6.5	9.7
White men	51.8	41.8	26.3	17.8	8.6	5.5

Note: The categories for Latino, Native American, and African American have been collapsed into the category “underrepresented minority” (URM).

Source: Hurtado presentation, based on sample from the HERI Faculty Survey.

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BIASES FACED BY WOMEN OF COLOR

JOAN WILLIAMS

Joan Williams, from the Center for Work-Life Law at the College of Law, University of California, Hastings, reported her work on gender bias. She also discussed her research group's efforts to expand the literature to include the experiences of people affected by gender and racial biases simultaneously, known as the double jeopardy. Some of the biases that all women face include the following:

Attribution bias

- A discrepancy in explanations for why a person achieves success depending upon whether the person is female or male. Studies show that women's successes tend to be attributed to transient or external causes (e.g., luck), whereas men's successes are attributed to skill.

Recall and leniency biases

- Under the recall bias, women's mistakes are taken more seriously and remembered longer than those made by men. Under the leniency bias, objective rules are applied rigorously to women and leniently to men.

Polarized evaluations

- Exceptionally high achieving women receive higher evaluations than exceptionally high achieving men, while women whose performance is described as only "excellent" receive much lower evaluations than men performing similarly.

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WRITTEN TESTIMONIES OF PROFESSIONAL SOCIETIES

The **Seeking Solutions** conference invited organizations to submit written testimony addressing one or more of the following topics:

- Data on women of color within the organization or discipline by gender, race/ethnicity, educational level, and employment sector;
- Challenges or barriers to success that confront women of color in the organization at various stages in their careers from graduate student to working professional;
- Policies and/or programs implemented by the organization to enhance the participation of women of color and to advance their academic careers; and
- Lessons learned from any policy and/or program efforts and overall policy recommendations to increase the representation and career satisfaction of women of color in the discipline or organization.

A total of 25 professional societies provided written testimony for the conference on their programs and policies (available in Appendix E of the report).

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Example of Written Testimony Data

Table: Percentage of gender and of racial/ethnic groups among all tenured, tenure-eligible, postdoctoral and other full time faculty in mathematics departments of four-year colleges and universities in fall 2010.

Mathematics Departments	Asian (%)	Black, not Hispanic (%)	Mexican American / Puerto Rican / other Hispanic (%)	White, not Hispanic (%)	Other / Unknown (%)
Tenured men	6	1	1	36	1
Tenured women	1	0	0	10	0
Tenure-eligible men	2	0	0	7	0
Tenure-eligible women	1	0	0	4	0
Postdoctoral men	1	0	0	2	0
Postdoctoral women	0	0	0	1	0
Full-time men not included above	1	1	0	10	1
Full-time women not included above	1	0	0	9	1
Total full-time men	9	2	2	56	2
Total full-time women	3	1	1	23	11

Notes: The column "Other/Unknown" includes the federal categories Native American/Alaskan Native and Native Hawaiian/Other Pacific Islander. 0 means less than half of 1 percent and this may cause apparent column sum inconsistencies.

SOURCE: American Mathematical Society.

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Practices of professional societies to increase participation of women of color, based on written testimonies, in order of frequency

1. The establishment of boards and committees (including diversity office) within its governance structure to focus on issues of women of color and address their challenges.
2. The creation of professional development programs (including mentoring programs).
3. The creation of programs and awards that support women of color by providing travel funds, scholarships, research grants, etc.
4. The promotion, endorsement, and conduct of surveys and studies to improve the collection and evaluation of data on women of color.
5. The inclusion of “diversity” in the professional societies’ mission, core value and strategies.
6. Programs to help improve institutional climate in academia, to initiate, or to sponsor diversity events.
7. The development of partnership among professional societies, with federal agencies, universities and other entities.
8. Engagement students in the pipeline and increase recruitment and retention.
9. Recognition of women of color’s achievement and accomplishments; and encouragement nominations of women of color for awards/memberships.
10. The integration of trainings and networking opportunities into the societies’ meetings.
11. The engagement of women of color in leadership positions.
12. Federal programs to increase recruitment and retention of women and minority workforce.
13. Dissemination of effective practices and successful program experiences.

Note: This list is based on information distilled from the written testimonies as described in Appendix E-1 of the report.

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Recommendations from professional societies to increase participation of women of color, based on written testimonies, in order of frequency

1. To better collect and report data, and to have more funding available for research related to women of color in STEM.
2. To have better and more mentoring (including more resources for building the mentoring network), and to provide role models.
3. To build, develop and sustain a community for women of color.
4. To build awareness of the issues related to recruitment, retention and advancement of women of color in STEM, and to call for attention on the issues from the entire institution.
5. To focus on the pipeline and attract younger generation to major in STEM and pursue a STEM career; to facilitate the critical transitions for students and faculty (e.g., from undergraduate to graduate, from students to professionals).
6. To engage more women of color in leadership positions; to improve self-empowerment; and to recognize women of color's accomplishments and achievements.
7. To develop and improve work-life balance policies in academia (e.g., flexible working hours, supplements to maternity leave).
8. To reward and recognize institutions or individuals that support women of color.
9. To engage various stakeholders in the conversation (academia, professional societies, industry and government).
10. To identify, highlight, and disseminate model programs and best practices for maximizing talent of women of color.
11. To ensure the diversity component of committees, conference speakers, and prize nominations.
12. To continue federal funding programs (e.g., NSF ADVANCE Program), and to gain financial support for meetings, workshops, travel, etc.
13. Federal agencies to establish compliance programs to conduct compliance reviews of all grantees.

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CLOSING REMARKS

SHIRLEY MALCOM

Shirley Malcom, Head of the AAAS Directorate for Education and Human Resource Programs, suggested several next steps:

- **There is a need for data disaggregated** by race, sex, discipline, citizenship, and other traits, because we cannot change what we do not understand.
- **Mentors, sponsors, and coaches are critical.** Today, young women of color do not have to become something they have never seen. Senior women have a responsibility to make the path visible and easier for junior scholars.
- **We encourage publications by encouraging publishing with others** as well as building broader partnerships.
- **Scholars must make and nurture professional connections.** Women of color must regularly attend the major conferences in their fields and expand their professional networks.
- **Women of color in tenure-track positions must make sure that they understand the policies and procedures that will guide their advancement** in the academic community. They must ask department chairs about the requirements for moving up and taking leadership roles.
- **Institutions need to ensure that the selection of faculty is more equitable** throughout the recruitment and advancement processes.

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For more information on the Committee on Women in Science, Engineering, and Medicine, go to: www.nationalacademies.org/pga/CWSEM.

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