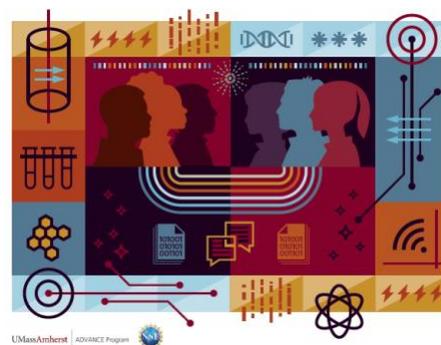


# STEM Faculty Experiences by Gender and Race

The UMass ADVANCE program is working to ensure greater equity among faculty through the power of collaboration. In this research brief, we describe some of the key findings from our initial survey, conducted in 2018-19. We will conduct the same survey in 2022-23 to measure the impact of our interventions.

In this research brief, we focus on patterns among STEM faculty by **race and gender**. We explore whether and how race and gender affect STEM faculty inclusion, shared decision-making, and research collaboration. UMass ADVANCE interventions aim to develop systemic and sustainable approaches to address faculty disparities at the intersection of gender and race, including addressing the experiences of STEM faculty of color to support their inclusion and retention. White STEM faculty were more likely to complete the survey than other groups; nonetheless, findings reveal significant differences among faculty by gender and race. As the findings in this brief indicate, **interventions must foster inclusion specifically for women faculty in STEM from underrepresented racial minority (URM) groups**.



Faculty are grouped by white men (n=152), white women (n=127), Asian men (n=26), Asian women (n=11), men from underrepresented racial minority (URM) groups (n=12) and women from URM groups (n=27). URM includes the categories "American Indian or Alaskan Native", "Black", "Hispanic or Latino origin", and anyone who chose "Multi-Racial" or "Other" and provided a response indicating they were a member of a traditionally underrepresented community.

In the figures below, statistical significance is indicated as \*p≤.10, \*\*p≤.05, and \*\*\* p≤.001.

Figure 1: Feelings of Inclusion

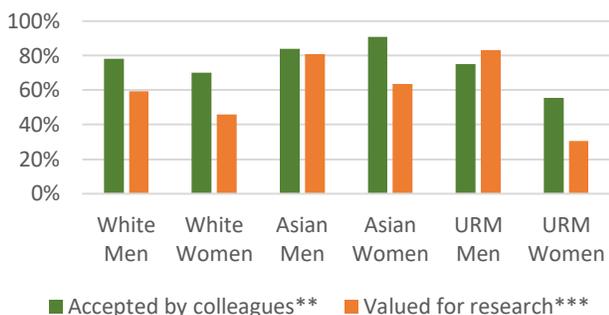
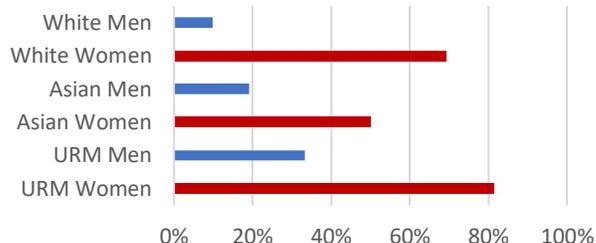


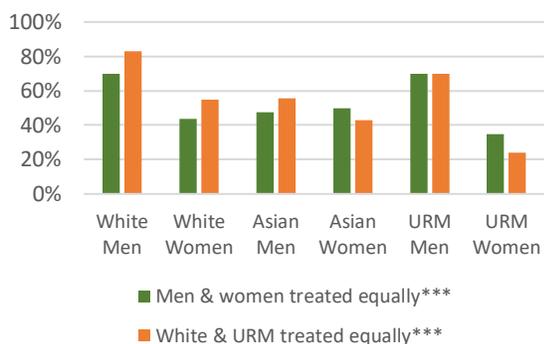
Figure 2: Demands associated with identity group have negative effect on career goals\*\*\*



Feelings of inclusion among STEM faculty are shaped by race and gender. As Figure 1 shows, men and Asian faculty are most likely to report feeling accepted by colleagues and valued for research. **Women from URM groups and white women feel the least accepted by colleagues and the least valued for their research;**

Women from URM groups feel especially undervalued for research, with only 30% feeling valued compared to 83% of men from URM groups. These findings match racial and gender stereotypes of the "ideal" scientist.

Figure 3: Perceptions of Treatment

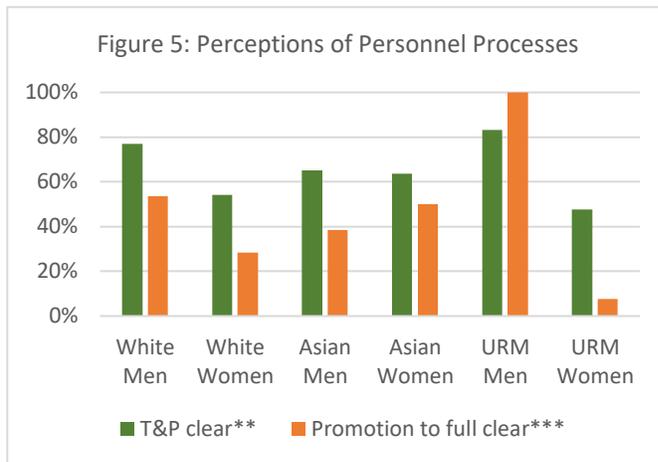
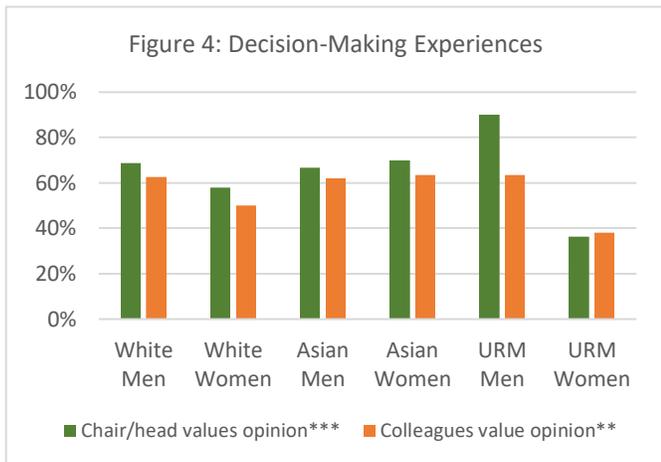


Similarly, Figure 2 shows that white and Asian men are least likely to report demands associated with their identity groups have had a negative effect on their careers. **Women across racial groups are more likely to report demands associated with their identity groups have had negative effects on career goals.** As Figure 3 points out, women are also less likely than men to perceive men and women as receiving equal treatment

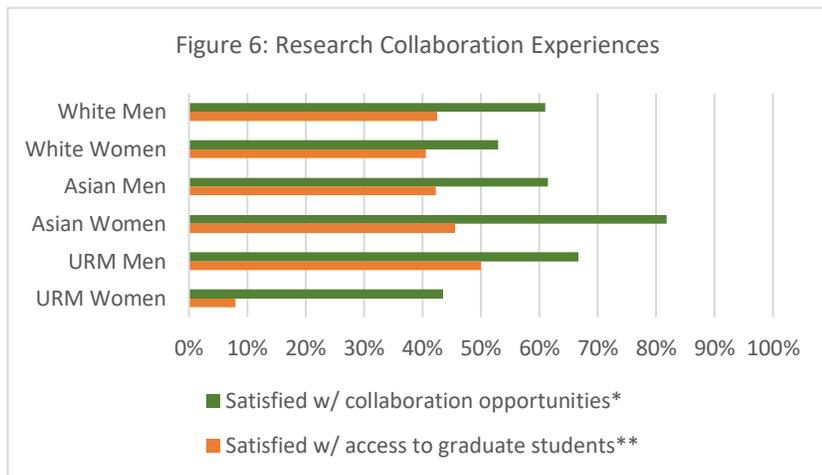
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in their departments, or that white and racial minority faculty receive equal treatment. **Women from URM groups are most likely among all groups to perceive their departments as unequal**, and white men are the most likely to report that all groups receive equal treatment in departments.

In the context of decision-making, STEM faculty generally report feeling that their opinions are valued by chairs/heads and colleagues. However, as Figure 4 shows, **women faculty from URM groups feel significantly less valued than other groups in decision-making** compared to other groups.



Men across racial groups are more likely to report that tenure & promotion processes are clear than women, as shown in Figure 5. **Less than half of women STEM faculty from URM groups feel that tenure & promotion processes are clear. Only 7.7% of women associate and full professors from URM groups believe that promotion to full processes are clear.** Men from URM groups and white men tenured faculty are the most likely to report that promotion to full processes are clear (Asian men are less clear on promotion to full).



On average, UMass STEM faculty report enjoying collaboration very much; however, collaboration opportunities vary by gender and race. As Figure 6 shows, **women STEM faculty from URM groups are the least satisfied with research collaboration opportunities** on campus, followed by white women. Women from URM groups are also **deeply unsatisfied** with access to resources to collaborate, including access to graduate students, with only **8% reporting being satisfied**. Men STEM faculty from URM groups are

the most satisfied with access to graduate students of any group, suggesting the importance of looking at intersections of race *and* gender to understand faculty collaboration experiences.

Through the power of collaboration UMass ADVANCE transforms the campus by cultivating faculty equity, inclusion and success. ADVANCE provides the resources, recognition and relationship building that are critical to equitable and successful collaboration in the 21st century academy. UMass ADVANCE is funded by the National Science Foundation. For more information on ADVANCE go to <https://www.umass.edu/advance/>.