

## WHITE PAPER

### Does the stereotype that “Asian people are good at science” help women of Asian descent in STEM careers? No.

Joan C. Williams, Rachel M. Korn, Su Li

#### Executive Summary

The stereotype in the United States is that “Asian people are good at science.” You might think that this stereotype would advantage U.S. women of Asian descent in science, technology, engineering and math (STEM) disciplines. We found the opposite: instead, they encounter the same types of bias that other people of color do. This information is important because most diversity initiatives in STEM address the challenges faced by under-represented minorities (URMs)—black and Latino/a people—but exclude Asian people.

Imagine a scientist.

What springs to most people’s minds is a white man, which is why Asian scientists don’t seem as good a fit. This helps explain why scientists and engineers of Asian descent face implicit bias at work. Although more research is needed, our research has found the following:

- 1) A classic pattern of gender and racial bias is that women and people of color have to **Prove-It-Again**: they are required to provide more evidence of competence in order to be seen as equally competent (Eagly & Mladinic, 1994; Foschi, 1996; Foschi, 2000). Even though there is a stereotype that Asian people “belong” in science fields, they still report that they have to prove themselves repeatedly. Two different data sets

show that, like URMs, Asian women in STEM have to prove themselves more than their white colleagues.

- 2) Women and people of color must walk a **tightrope** between being too feminine, so likable but not competent, and too masculine, so competent but not likeable (Cuddy, Fiske, & Glick, 2004; Fiske, Xu, Cuddy, & Glick, 1999). They may face negative consequences for behaving in a way that is inappropriate for “people like them.” This stems from prescriptive stereotyping: Asian women *should* behave in a feminine way, but being a scientist sometimes means taking on masculine qualities. In our data, women of Asian descent actually report more pressure to behave in feminine ways, and more pushback if they don’t, than white women do.
- 3) The **Maternal Wall** bias is gender bias triggered by motherhood. Our research shows that Asian postdoc parents faced the most bias of any group across a number of different experiences including being allowed to take parental leave. This is a clear case of racial discrimination.

Across three samples (professors, engineers, and postdocs) and three patterns of gender bias, we find that people of Asian descent in STEM face more bias at work than white people do. Preliminary results suggest that women of Asian descent face bias at levels lower than black women, but similar to Latina women. Therefore, it does not make sense to leave Asian women out of STEM diversity initiatives.

### **STEM Professionals**

In interviews conducted for the book *What Works for Women at Work* (Williams & Dempsey, 2014) and the “Double Jeopardy” report (Williams, Phillips, & Hall, 2014), Asian

women professors reported experiencing higher levels of bias. Since Asian people are stereotyped as being good at science, it seemed possible that Asian women in STEM would not be asked to prove their competence repeatedly. One Asian physicist tried to use this stereotype to her advantage, saying, “I’m more acceptable, if you will, as an Asian woman scientist rather than a woman scientist.” However, the women we interviewed tended to report that they did face the Prove-It-Again bias pattern. Another Asian statistician noted that she was forced to provide more evidence of competence, “in many more settings than they are required of men, of white women, whatever...-[Y]ou have to prove yourself all the time and that yes, not a whole lot is taken on promise.” Across fields, Asian women still had to prove-it-again, despite the stereotype that Asian people are more competent.

These qualitative data were confirmed by quantitative data. Over 3000 engineers completed a survey that asked about bias experiences in the workplace as part of a study conducted by the Center for WorkLife Law at UC Hastings and the Society of Women Engineers (Williams, Li, Rincon, & Finn, 2016). The survey asked engineers to report on the types of bias they had faced at work in the previous five years using a 1-6 Likert scale. To examine differences between racial groups, we utilized one-way ANOVA tests and conducted post-hoc comparisons (see Figure 1). The bias patterns we found were similar to the previous interview data: Asian engineers had a different experience than white engineers. Asian women engineers were significantly more likely than white women engineers to report being held to higher standards and having to prove themselves repeatedly. This is, again, evidence that Asian STEM professionals do experience the Prove-It-Again pattern, despite being stereotyped as good at science. Asian women are not getting the benefit of the doubt at work; they are being forced to provide more evidence of competence in order to be judged as equally competent.

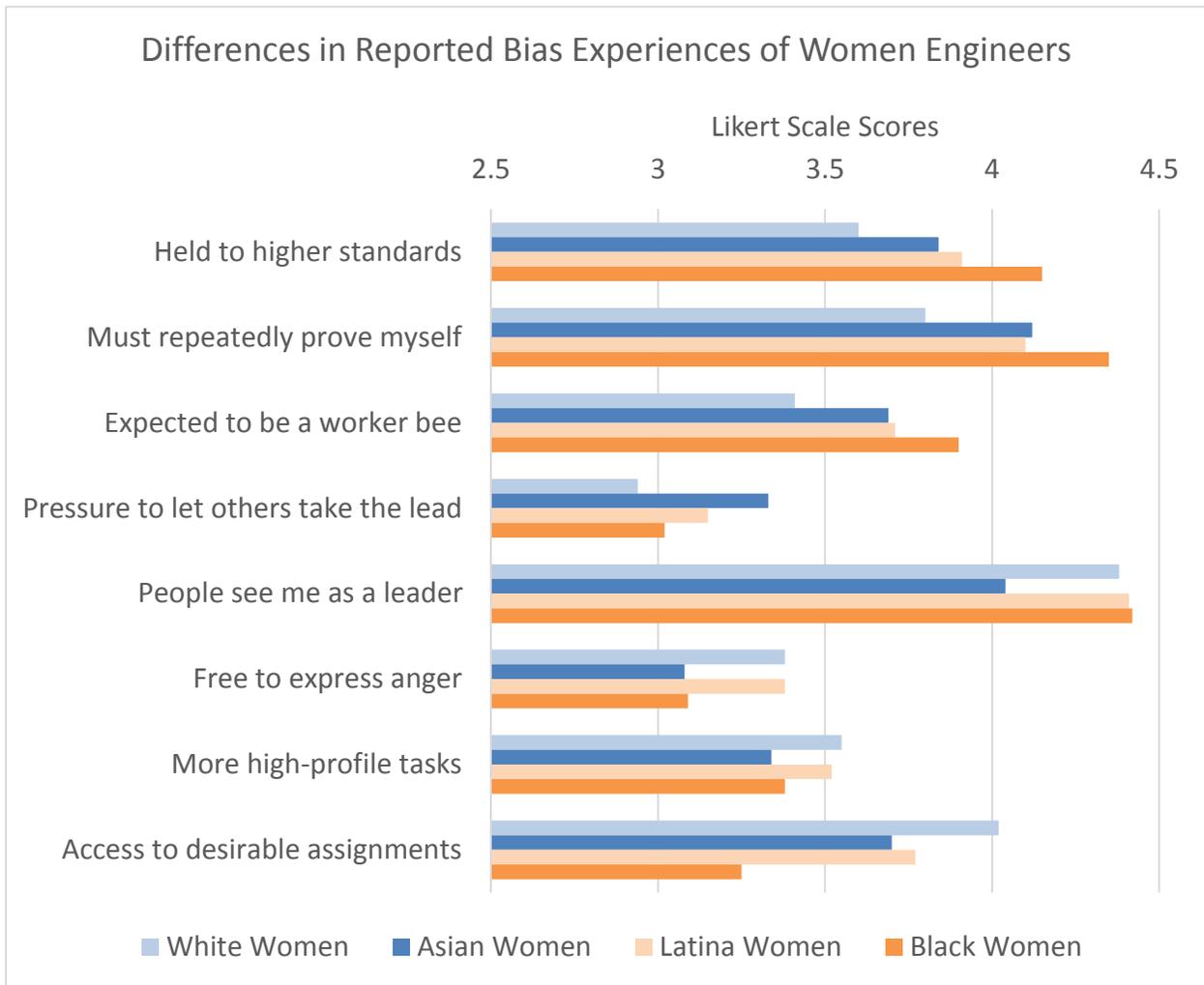
In this study, the sample size of men engineers of color was small, so these analyses were conducted only with women engineers. Also, due to the small number of women of color recruited for this study, we did not have the power to detect significant group differences between Asian women and other URM women. More research is needed in order to understand if the differences we found are truly not significant, or if this is simply due to the small sample size.

The tightrope that Asian women have to walk is even narrower than for white women: Asian women are stereotyped as passive and obedient, so it is even more problematic when they act assertively. One Asian woman geophysicist said, “Asians are supposed to be very passive. And when you add women to that, they really don’t expect Asian women to stand up for themselves, or they expect the dragon lady, the extreme opposite. You can’t just be a normal person. There’s no expectation for you to be normal.” The range of behaviors that are considered acceptable for Asian women is smaller than for others. One Asian woman scientist described her way of navigating the tightrope as, “I’m not particularly aggressive... I might be a more assertive version of a stereotypical Asian woman but a less assertive version of a generic woman.” These types of bias are commonly driven by gender; however, this qualitative evidence, along with the quantitative studies that followed, shows that these bias patterns also have a racial component.

Asian women engineers also faced bias from the tightrope pattern. Asian engineers were significantly more likely than white engineers to report that they were expected to act like a worker bee (to work hard and avoid confrontation) and to let others take the lead. Asian engineers were less likely than white engineers to report that they were seen as a leader, that they were free to express anger at work, or that they had access to high-profile tasks and desirable assignments. Again, this corroborates the reports of the women who were interviewed: because

of the stereotype about Asian people, Asian engineers are forced to walk an even narrower tightrope of acceptable behaviors at work. Interestingly, although these results were not statistically significant, Asian engineers reported similar levels of bias as Latina engineers, while black engineers reported the highest levels of bias.

Figure 1



Note: Racial group comparisons were conducted using one-way ANOVA tests. Differences between white women and Asian women were significant at the  $p < .05$  level for all questions reported here. Differences between Asian women and black women are also large, but generally do not reach statistical significance due to the smaller number of black women in the sample.

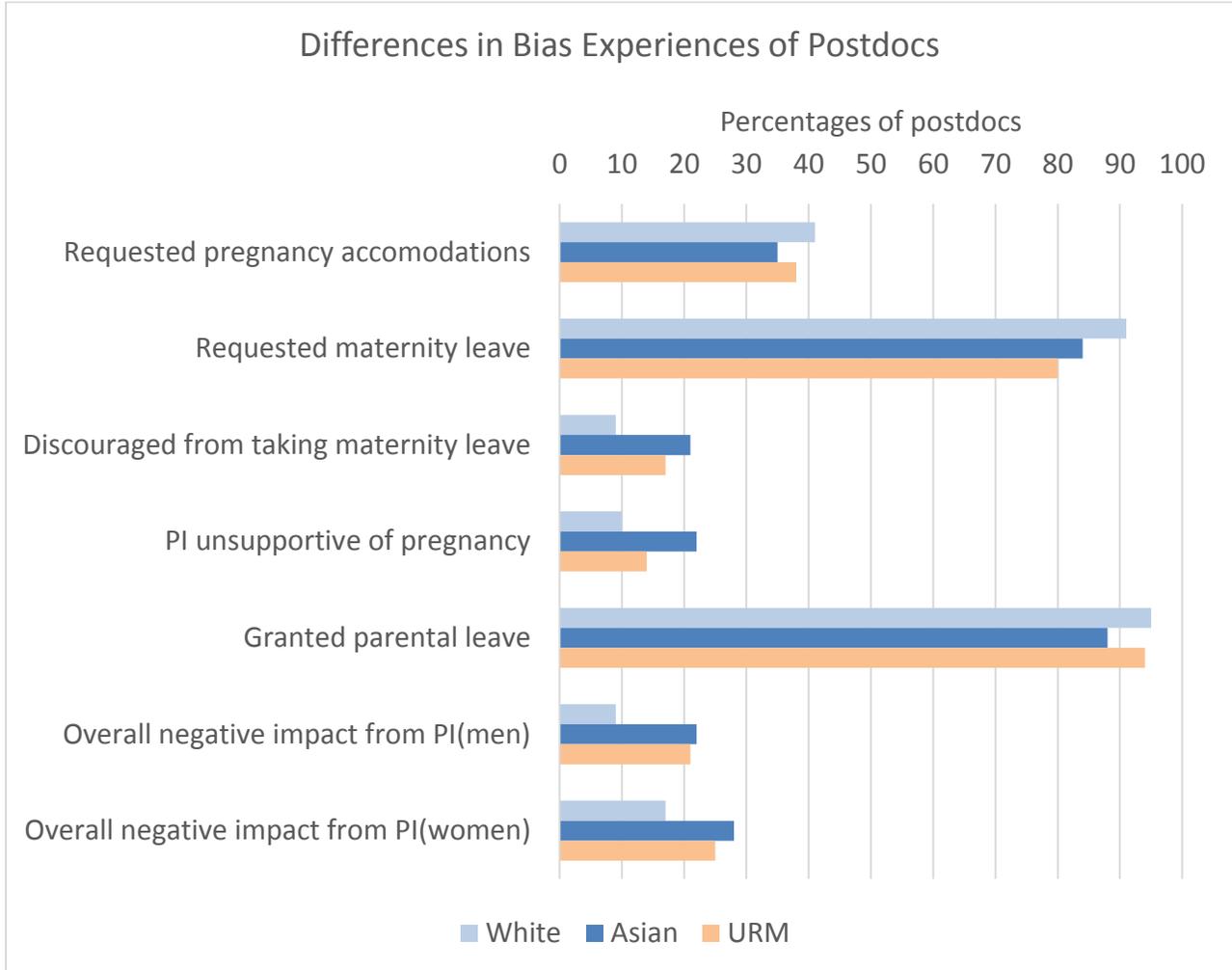
## **Postdocs**

For a study on postdocs, 741 parents who had a child while in a postdoc appointment participated in a survey by the Center for WorkLife Law and the National Postdoctoral Association (Lee, Williams, & Li, 2017). The survey asked individuals to report on their experiences with regard to pregnancy and parental leave. To examine racial group differences, we used t-tests to compare percentage agreements with the questions between groups (see Figure 2).

In this study, Asian postdoc parents again reported experiencing significantly more bias than white postdoc parents. Asian postdocs were less likely to request pregnancy accommodations than white or URM postdocs. Asian postdocs were also less likely to request maternity leave than white postdocs. Furthermore, Asian postdocs were more likely than both white and URM postdocs to be discouraged from taking maternity leave by their PI, and to report that their PI was not supportive in response to their pregnancy/new parent status. Bias experiences were not confined to the actions and perceptions of postdocs; Asian postdocs were also less likely to actually be granted parental leave than white or URM postdocs. Because Asian people are stereotyped as being strongly committed to work, the assumption is that they do not need time off to care for their families. This is a big problem for postdocs, who are sometimes used as perpetual research assistants in a way that borders on exploitation.

Finally, Asian postdocs were more likely to report that their PI had a negative impact on their overall postdoc appointment: more than one in five Asian postdoc men and one in four Asian postdoc women experienced this negative impact. Taken together with the previous studies, it is clear that Asian individuals are experiencing bias in the workplace at a level that is on par with URMs, and higher than white individuals.

Figure 2



Note: Racial group comparisons were conducted using t-tests. Differences between white and Asian postdocs were significant at the  $p < .05$  level for all questions reported here.

## Conclusion

Across multiple studies, we provide evidence that people of Asian descent experience workplace bias at a higher level than white people<sup>1</sup>. The stereotype about Asian people is not entirely negative, however the data still show that Asian people are not protected from

<sup>1</sup> Rattan, Steele, & Ambady (2017) find that in a STEM hiring situation, Asian-American females are rated higher when race is salient; however, they do not address workplace bias that occurs outside of a hiring context.

experiencing the same types of bias as other people of color. Asian people face stereotypes that white people do not, they are seen as an out-group and a worse fit in the workplace, and they experience the corresponding negative consequences.

In our research, we had a limited number of male participants and were unable to fully explore the likelihood that Asian men also experience higher levels of bias than white men. However, since the experience of bias is linked to the lack of fit and classification as an out-group member, we expect that Asian men are also required to repeatedly prove their competence and that they face a narrower range of acceptable behaviors in the workplace, in addition to the higher levels of parenthood bias that we were able to examine.

Across three studies, we found that people of Asian descent face a higher level of workplace bias than white individuals, and that the experience of Asian people is more similar to the experience of URMs. With this knowledge, it is crucial to reconsider diversity initiatives that exclude Asian people.

- Cuddy, A. J., Fiske, S. T., & Glick, P. (2004). When professionals become mothers, warmth doesn't cut the ice. *Journal of Social Issues*, 60(4), 701-718.
- Eagly, A. H., & Mladinic, A. (1994). Are people prejudiced against women? Some answers from research on attitudes, gender stereotypes, and judgments of competence. *European review of social psychology*, 5(1), 1-35.
- Fiske, S. T., Xu, J., Cuddy, A. C., & Glick, P. (1999). (Dis) respecting versus (dis) liking: Status and interdependence predict ambivalent stereotypes of competence and warmth. *Journal of Social Issues*, 55(3), 473-489.
- Foschi, M. (1996). Double standards in the evaluation of men and women. *Social Psychology Quarterly*, 237-254.
- Foschi, M. (2000). Double standards for competence: Theory and research. *Annual Review of Sociology*, 26(1), 21-42.
- Lee, J., Williams, J.C., & Li, S. (2017). Parents in the Pipeline: Retaining Postdoctoral Researchers with Families. Center for Worklife Law, UC Hastings College of the Law.
- Rattan, A., Steele, J., & Ambady, N. (2017). Identical applicant but different outcomes: The impact of gender versus race salience in hiring. *Group Processes & Intergroup Relations*, 1368430217722035.
- Williams, J.C. & Dempsey, R.W. (2014). What works for women at work: Four patterns working women should know. New York, NY: New York University Press.
- Williams, J.C., Li, S., Rincon, R., Finn, P. (2016). Climate Control: Gender and Racial Bias in Engineering? Center for Worklife Law. UC Hastings College of the Law.
- Williams, J.C., Phillips, K.W., & Hall, E.V. (2014). Double jeopardy? Gender bias against women of color in science. Center for WorkLife Law, UC Hastings College of the Law.