Driving Force

Does gender bias play a role in the leaky pipeline after all?

October 1, 2012 | Author:Summer Allen, Graduate and Postdoc, Brown University

Despite high graduation numbers, there are still relatively few women working in STEM fields. (Image: CDC)

An interesting study exploring how gender bias may impact hiring in academic science was recently published online by the Proceedings of the National Academy of Sciences. The study was conducted by researchers at Yale University and has the potential to reframe discussion about why women are underrepresented in Science, Technology, Engineering, and Math (STEM) faculty positions.

Several studies have aimed to determine why, despite increasing numbers of female graduate students, there are so few women represented in the faculty of many STEM fields. One study, published last year, examined 20 years of research in this area and concluded that the main reason there are fewer women in these positions is because women are choosing to leave academic science (for a number of reasons) and not because of outright gender discrimination. However, there is compelling evidence from other fields that gender discrimination, which is often subtle and unconscious, does exist. In fact, as the authors of the more recent study point out, the very fact that scientists see themselves as objective may lead them to be more susceptible to subtle bias because they aren't watching out for it.

To explore how gender bias could play a role in hiring for early stage jobs in academic science, the authors of this study used an experimental approach. They sent 127 fake applications for a lab manager position to physics, chemistry, and biology professors at research intensive universities. The applications were completely identical, except that 63 applications had the name of a male student and 64 had the name of female student. Based on the application materials for this student, the professors were asked to rate his/her competence and hireability as well as the amount of salary and mentoring they would offer the student. The results are interesting.

On average (these findings were all statistically significant):

- Faculty members rated the female student less competent than the male student.
- Faculty members offered less mentoring to the female student than the male student.
- Faculty members offered the female student a lower starting salary ($26,507.94) than the male student ($30,238.10).
- Faculty members rated the female student as more likeable than the male student (as has been found in other experiments looking at gender discrimination).

It is important to note that these biases were independent of the gender, age, career stage, and discipline of the faculty members—meaning female professors were just as likely to favor the male student for hiring purposes.

These results aren't exactly heartwarming. But how do we reconcile them with the 2011 meta-analysis, which did not find evidence of gender discrimination in hiring in science and in fact found that "If women applied for positions at R1 institutions, they had a better chance of being interviewed and receiving offers than male job candidates." There are several possible explanations for this. One is that, on average, the women applying for research intensive positions were simply more qualified than their male counterparts. This could be due to gender discrimination for pre-tenure track positions (like this imaginary lab manager position) which could create a situation where only superstar female scientists fight their way through to the tenure track stage. This in turn could be either because women are less likely to be hired for jobs before the tenure-track stage or because women are opting out of science careers along the way—perhaps because of lower pay or less mentoring support—even if they are still hired for jobs.

Results like this are always depressing to hear—what can we do about discrimination that is so subtle that we don't even know whether we're doing it? Luckily evidence from studies looking at racial discrimination shows that simply being aware that a bias may exist can help combat discriminatory actions. Perhaps further examination of this issue can help prevent one type of hole from being punched in the STEM career pipeline for women.

Related Links:

- CNN: Why are we biased against women in science?