

Beyond Bias and Barriers: Fulfilling the Potential of Women in Academic Science and Engineering

Myth	Evidence	Chapter Discussed
<p>Innate Differences Women are not as good in mathematics as men.</p>	<p>When cultural factors change, women capitalize on opportunities in droves. Female performance in high school mathematics now matches that of males. <i>Departments and majors that offer a chilly climate to women are discouraging half their potential applicants.</i></p>	2
<p>Pipeline is not full “Under-representation” on faculties will resolve itself with time; it is a function of the number of women qualified to enter positions.</p>	<p>Pipeline is full, but “leaky” Women’s representation decreases with each step up the tenure-track and academic leadership hierarchy, even in fields that have had a large portion of women Ph.D.s for 30 years. <i>Representative numbers of women being admitted to ranks of assistant professors will not likely translate to representative numbers of female associate and full professors in 6-15 years time.</i></p>	3
<p>Women are not as competitive as men. Women don’t want jobs in academe.</p>	<p>Similar portions of men and women science and engineering doctorates plan to enter postdoctoral study and academic employment.</p>	3
<p>Women and minorities are recipients of favoritism through affirmative-action programs.</p>	<p>Affirmative action is used to broaden searches to include more women and minority-group members, but not to select candidates on the basis of race or sex, which is illegal.</p>	4
<p>Academe is a meritocracy</p>	<p>Although scientists like to believe that they “choose the best” based on objective criteria, decisions are influenced by factors—including biases about race, sex, geographic location of a university, and age—that have nothing to do with the quality of the person or work being evaluated.</p>	4
<p>Changing the rules means that standards of excellence will be deleteriously affected.</p>	<p>Throughout a scientific career, advancement depends upon judgment of one’s performance by more senior scientists and engineers. This process does not optimally select and advance the best scientists and engineers, because of implicit bias and disproportionate weighting of qualities that are stereotypically male. Reducing these biases will foster excellence in science and engineering.</p>	4
<p>Women faculty are less productive than male faculty.</p>	<p>Publication productivity of women science and engineering faculty has increased over the last 30 years and is now comparable to men’s. The critical factor affecting publication productivity is access to institutional resources; marriage, children, and eldercare responsibilities have minimal effects.</p>	4
<p>Women take more time off due to childbearing, so they are a bad investment.</p>	<p>On average, women take more time off during their early careers to meet caregiving responsibilities, which fall disproportionately to women. But, over a lifelong career, a man is more likely to take significantly more sick leave than a woman.</p>	5
<p>The system as currently configured has worked well in producing great science. Why change it?</p>	<p>The global business environment has changed in ways that undermine America’s traditional S&E advantages.</p>	6

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