Introduction

Most people associate men with science more than women with science (Nosek, Banaji, & Greenwald, 2002). Such cultural associations and stereotypes about women in Science, Technology, Engineering, and Mathematics (STEM) hinder women’s advancement in these fields (National Academy of Science, 2006). Because stereotypes can be activated and applied unconsciously, even egalitarian people can discriminate if they are not aware of the potential for cultural stereotypes to cause bias (Devine, 1989).

After examining whether faculty across the LEADER consortium (AFIT, CSU, UD, and WSU; Dayton, OH) perceive discrimination toward women in their departments, we examined how stereotypic associations relate to behavior toward women in STEM, as well as whether stereotypic associations may change as a result of participation in a diversity training session.

Climate for Women Faculty

Procedure: Online survey of faculty.

Participants. 252 faculty in STEM (n = 181) and Social, Behavioral, and Economic Sciences (SBE; n = 54); 152 men, 62 women.

Measures. Participants completed measures of perceptions of the department’s sexism (4 items, α = .74), openness toward women (2 items, r = .41), and portion of women faculty (3 items, α = .78). Participants rated their agreement with items (1 = strongly disagree, 5 = strongly agree).

Results

As shown in Figure 1, women perceived more departmental sexism, F(1, 191) = 14.62, p < .001, and less openness toward women, F(1, 190) = 5.10, p < .05, than men.

As shown in Figure 2, STEM faculty perceived more departmental sexism, F(1, 191) = 3.93, p < .05, and less openness toward women, F(1, 191) = 6.02, p < .05, than SBE faculty.

Finally, STEM faculty (M = 2.87, SD = 1.04) were more likely to agree that their department had too few women than SBE faculty (M = 1.69, 0.76), F(1, 191) = 47.03, p < .001.

This study highlights gender issues in the STEM workplace. Invisible bias may contribute—how can we address bias?

Faculty Diversity Training, Continued

Results

There were no significant differences between conditions (i.e., training vs. control) or time (i.e. pre- vs. post-test) for the traditional GNAT.

In contrast, simple slopes comparisons revealed a significant interaction between condition and time for the personalized GNAT (see Figure 3). Associations for women scientists/engineers became more positive from pre- to post-test for those who participated in the training session, but not for those who attended a faculty meeting.

Discussion

STEM faculty perceived more gender discrimination and less departmental openness to women than SBE faculty. Negative implicit associations toward women in STEM may underlie this problem. Our undergraduate study showed that personalized implicit measures predict egalitarian behavior. Our second faculty study showed that STEM faculty who completed diversity training had more positive associations about women scientists/engineers from pre- to post-training.

This research suggests that diversity training on invisible bias can decrease an individual’s stereotypic associations, which likely results in more egalitarian behavior toward women in STEM. Future intervention research may benefit from the inclusion of a personalized implicit measure.

Acknowledgement: The research was supported by National Science Foundation ADVANCE Award (grant #HRD 0810989).