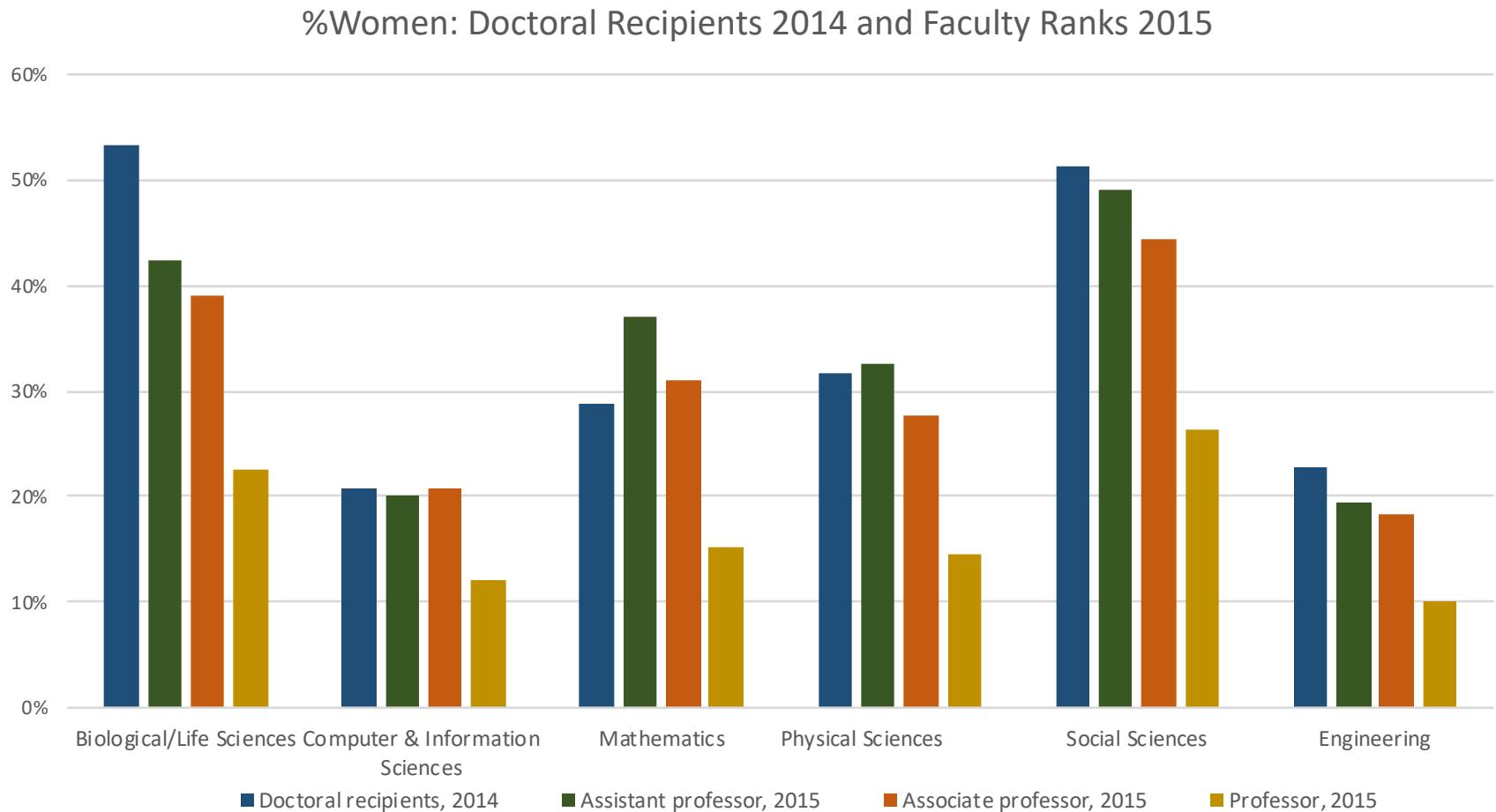


# *Beyond Bias and Barriers: Evidence-based strategies to advance women in STEM*

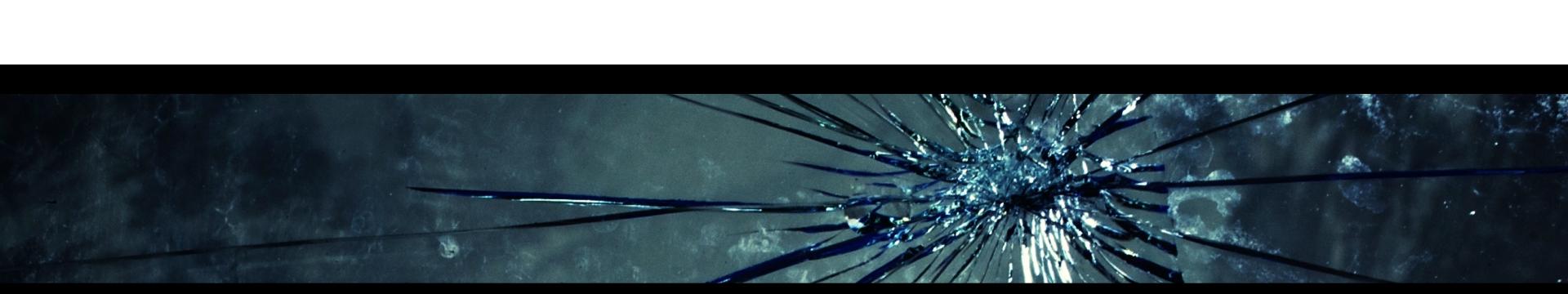
Eve Fine, PhD

WISELI: Women in Science & Engineering Leadership Institute  
University of Wisconsin - Madison

# Women in STEM - data



Sources: Table 7-2, NSF Survey of Earned Doctorates, 2017 Data Tables; Table H-25; Table 9-25, Women, Minorities, and Persons with Disabilities in Science and Engineering, posted 6/2018

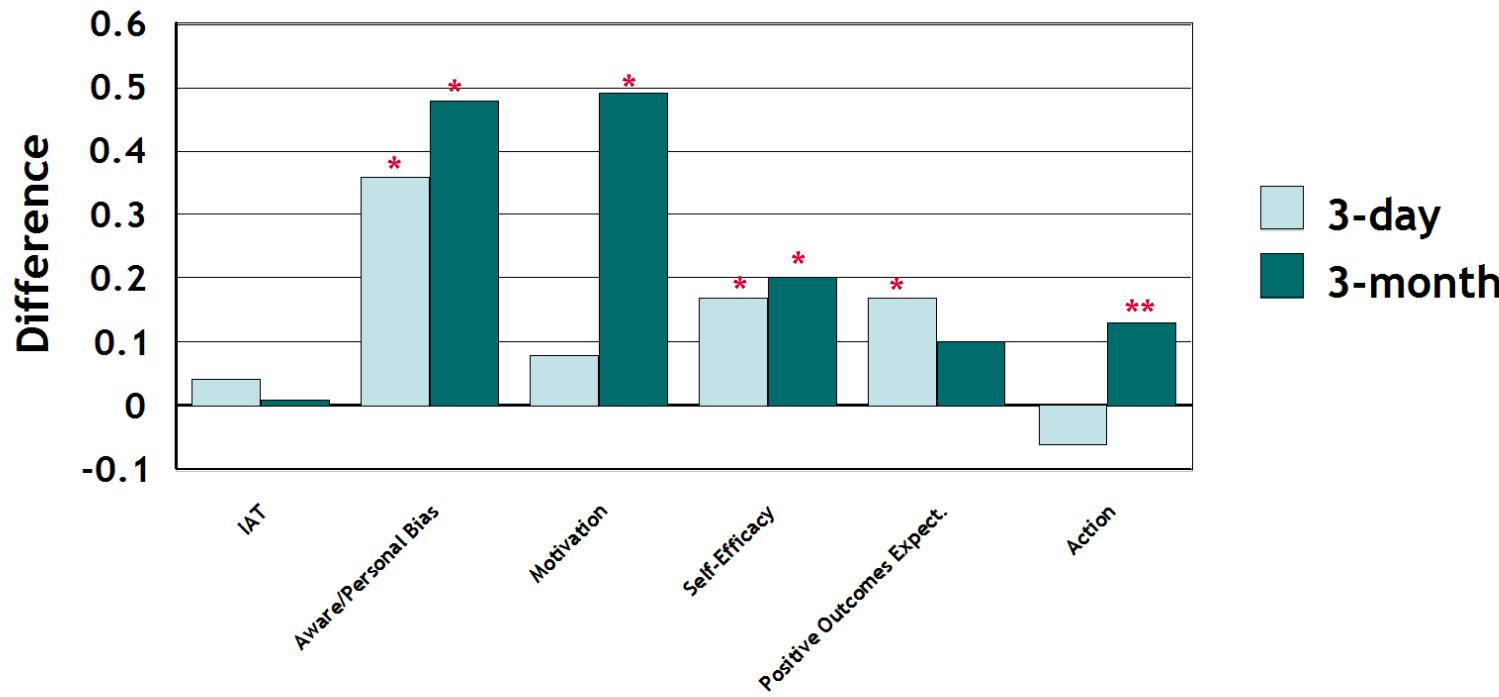


- Workshops for faculty search committees
- Climate workshops for department chairs
- Bias literacy workshops
  - Addressing gender bias in STEMM
  - Promoting diversity and inclusion

All focus on evidence-based strategies for minimizing bias - “Breaking the Bias Habit”

# Differences Between Experimental & Control Departments Compared With Differences at Baseline

## 3-day and 3-month



N = 92 departments; 1154 faculty (50.4% response rate)

- \* Statistically significant difference of  $p<0.05$  between experimental and control departments compared with differences at baseline
- \*\* Significant only for departments in which  $\geq 25\%$  of faculty attended the intervention workshop,  $p<0.05$

Carnes et al., 2015

# Does Changing Behavior of Faculty Affect Department Culture?

## *Study of Faculty Worklife*

- Faculty surveyed at baseline and after completion of interventions
  - 41%, 43% response rates (N=671 responded in both surveys)
- Experimental vs. control improvements in:
  - Research valued ( $p<0.024$ )
  - “Fit” in department ( $p<0.019$ )
  - Comfort raising personal/family issues that conflict with department activities ( $p<0.025$ )

# Does Changing Behavior of Faculty Have Long-Term Effects?

*Hiring trends before intervention and two years later*

- Control departments:
  - Before - hired 109 faculty (33% women)
  - Two years later - hired 113 faculty (32% women)
- Experimental departments:
  - Before - hired 85 faculty (32% women)
  - Two years later - hired 101 faculty (47% women)

# Effective strategies

Implicit bias training can work to change individual behaviors

- Approaching bias as a habit of mind

- Providing evidence-based strategies to practice

Changing institutional/organizational policies, practices, and procedures is also essential

- Actively recruiting faculty applicants

- Defining and prioritizing evaluation criteria (admissions, hiring, tenure, promotion)

- Creating resources and policies to facilitate work-life balance

- Implementing policies on harassment and holding people accountable

Change requires multiple interventions at multiple levels