

# Breaking the Bias Habit:

## A Cluster Randomized Controlled Study of an Educational Intervention in STEMM Departments

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# Bias Literacy Workshop: Project Team



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*Premise:*

1. The mere existence of gender stereotypes leads to unintentional and unwitting bias in judgment and decision-making
  2. These “implicit biases” occur as *habits of mind* even in those who personally disavow prejudice
  3. If they are habits, they should be remediable
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# Stroop Color Naming Task

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Compatible Trials

RED  
BLACK  
BROWN  
GREEN  
YELLOW  
BLUE

Incompatible  
(interference) Trials

RED  
BLACK  
BROWN  
GREEN  
YELLOW  
BLUE

# Why do we approach gender bias as a habit?

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- Neutral - avoids blaming or shaming
- Familiar metaphor – who hasn't tried to break a habit?
- Habits can be broken
- Instills a sense of optimism regarding individual change and institutional transformation

# Breaking a habit takes *more than good intentions*

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- Awareness
- Motivation
- Self-efficacy
- Positive outcome expectations
- Deliberate practice

*e.g. Bandura, 1977, 1991; Devine, et al., 2000, 2005, 2008; Ericsson, et al., 1993; Prochaska & DiClemente, 1983, 1994*

# Breaking the bias habit in academic science, medicine & engineering

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- Cluster Randomized Controlled Study
- 92 departments (2290 faculty) – 46 pairs
  - General discipline, School/College, size
  - Randomly allocated to experimental or wait list control
- Intervention = 2.5 hour workshop
  - Attendance/dept = 31%, SD =21
  - Overall 301 attended/1137 invited = 26%
- Measures (50.4% response rate)
  - Implicit Association Test (gender and leadership)
  - Motivation to engage in gender bias reduction
  - Gender equity self-efficacy
  - Gender equity outcome expectations
  - Self-reported gender equity action

*Carnes et al. Acad Med 90 (2): 221-230, 2015*



# Personal Bias Reduction Strategies

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- Stereotype Replacement
- Counter-Stereotypic Imaging
- Individuating
- Perspective-Taking
- Increase Opportunities for Contact

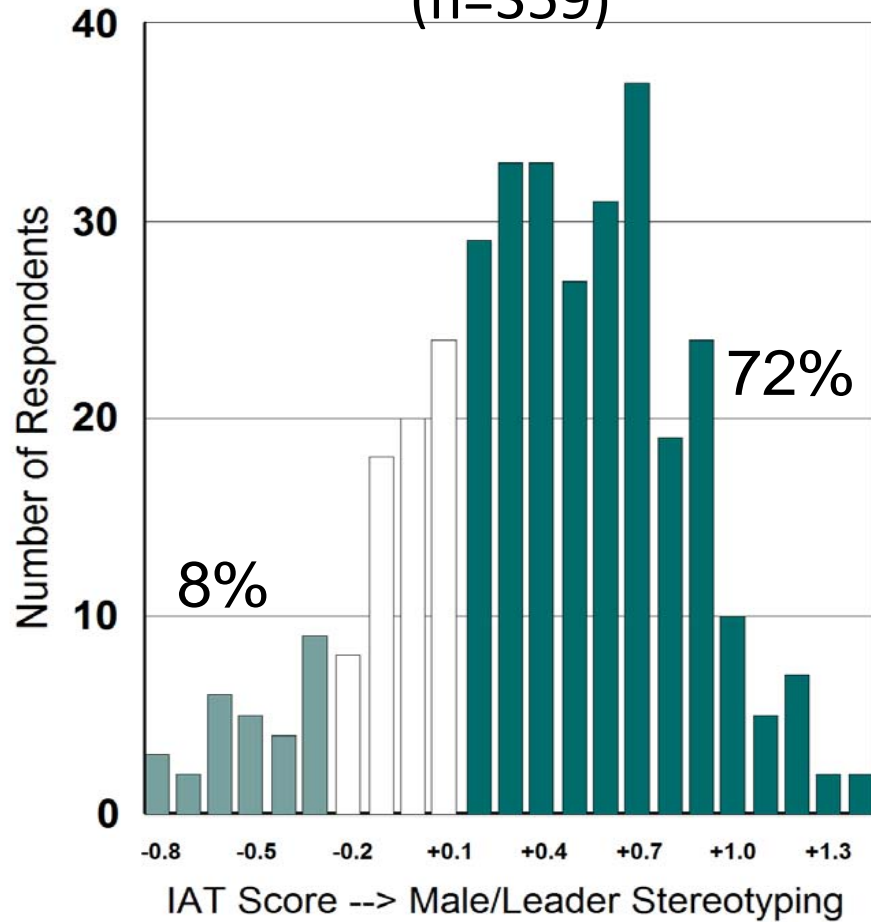
(e.g., Galinsky & Moskowitz *J Pers Soc Psychol* 2000; Monteith et al., *Pers Soc Psychol Rev* 1998; Blair et al., *J Pers Soc Psychol* 2001)

- Plus 2 that DON'T work:
  - Stereotype Suppression
  - Too Strong a Belief in One's Personal Objectivity

(e.g. Macrae et al. *J Pers Soc Psychol* 1994; Uhlmann & Cohen. *Organ Behav Hum Decis Process* 2007)

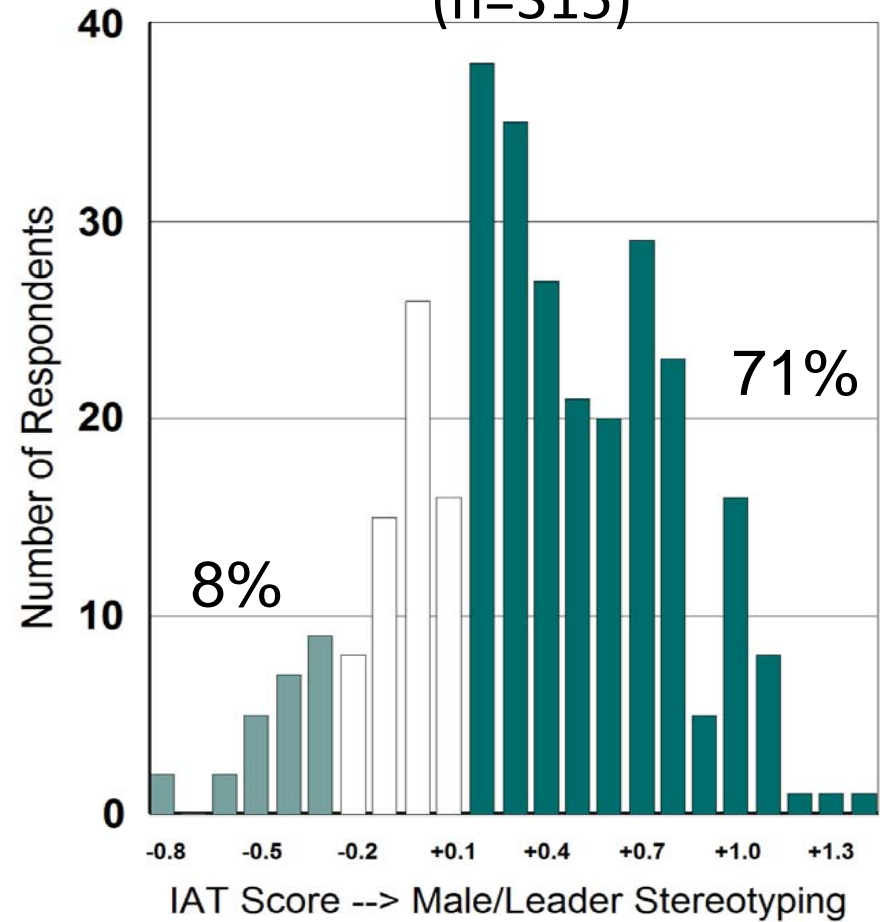
## Male Respondents

(n=359)



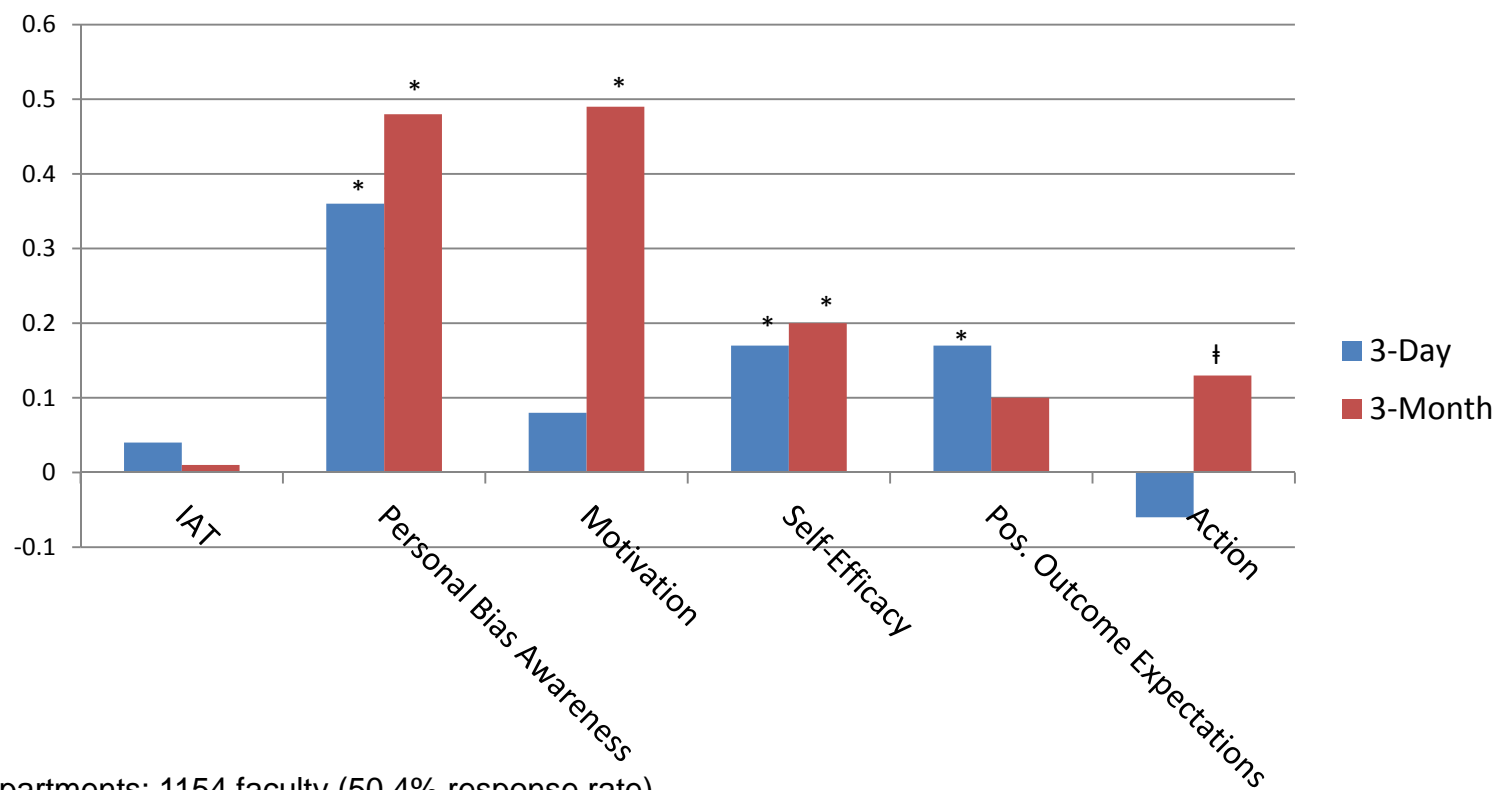
## Female Respondents

(n=315)



# Gender and Leadership IAT Scores

Differences Between Experimental and Control Departments  
 Compared With Difference at Baseline  
 (IAT in D-scores; others on 7-point Likert scales)



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

IAT= Implicit Association Test (standardized D-score)

\*P < 0.05; models adjusted for faculty gender and rank

† P < 0.05 for action at 3 months when comparing only experimental departments with at least 25% attendance

# Does changing behavior of faculty affect departmental culture?

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## *Study of Faculty Worklife:*

- Faculty surveyed baseline and after completion of interventions; 41%, 43% response (N=671 responded both times)
- 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)

*Carnes et al. Acad Med 90 (2): 221-230, 2015*

# Summary & Conclusions

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1. Male and female STEMM faculty demonstrated implicit pro-male leadership bias to the same degree
2. Gender bias did appear to act as remediable a habit
3. Breaking the gender bias habit improved department climate for everyone

