



# The STEM Workplace Climate: Lessons from and for the Academy

Rebecca R. Riffle & Tamera R. Schneider  
Wright State University

May, 2011. Midwestern Psychological Association.





# The STEM climate

- Women faculty are underrepresented in STEM  
(National Academy of Science et al., 2007)
- Identify and address workplace climate barriers
  - Uncover particular issues
  - Strategize about best practices
  - Hone in on factors related to job satisfaction, an antecedent to turnover intent (Dougherty, Bluedorn, & Keon, 1985)
- Facilitate success for STEM faculty, particularly women



# Women Faculty Perceptions of the STEM climate



- Sex discrimination is often not reported for fear of backlash or retaliation (Goltz, 2005)
- Perceive that they are less productive (Valian, 2005)
- Experience more hostility (Greene, Stockard, Lewis, & Richmond, 2010)
- Experience more career complications (Settles, Cortina, Malley, & Stewart, 2006)



# Women Faculty Perceptions of the STEM climate



- Believe their opportunities are limited (Settles et al., 2006)
- Rate their departments as less inclusive (Fox, 2010)
- Talk about their research less
- Have fewer collaborators (Corley, 2005)
- Experience work/family balance issues
- Report that family responsibilities slow their progress (Greene et al., 2010)





# Methods

## Semi-structured interviews

- 12 tenured STEM faculty
- Content analysis

## Climate survey

- 44% (N = 252) with usable data
  - 60% (n = 152) men
  - 25% (n = 62) women
  - Assessed views of and actual productivity, departmental openness to women, discrimination, sexism, influence of women in the department, collegiality, balance between work and family, and job satisfaction





# No sex differences in job satisfaction

## Sex differences in:

Climate Indicators	Men	Women
How department views my productivity (7-pt scale)	4.76 (1.63)	4.06 (1.88)
Department is open and equal	4.01 (0.94)	3.56 (1.03)
Department does not engage in sex discrimination	4.33 (0.70)	3.78 (0.95)
Department is non-sexist	4.29 (1.00)	3.69 (1.12)
Women have departmental influence	3.91 (0.92)	3.06 (1.20)
Perceptions of collegiality	3.83 (0.85)	3.21 (0.74)
Balance between work and family	3.47 (1.06)	2.87 (1.24)





## **Views of my productivity relative to others**

“multiple times I’ve been pressured to ‘just write papers,’ [but] \$700,000 for kids versus one paper in a journal– that’s a no-brainer!”

## **Open and equal to women**

“before I made tenure, one of the male full professors treated me like a subordinate, not as colleagues!”





## Collegiality

“Dr. X’s support– if it were not for her, I would have been looking for another position. It’s just not right. It’s kind of hard to function.”

## Work-family balance

“There’s not a ‘one size fits all’ solution to retaining women. Different women have different views of themselves in motherhood. Give us the benefit of the doubt that we really want to stay in the job, if that’s what we say.”





# Predictor: Job Satisfaction

Hierarchical Regression: Step 2 $R^2 = 45\%^{**}$	<i>B</i>	<i>SE B</i>	$\beta$
Sex	.53	.15	.22**
Rank	.14	.14	.06
How department views my productivity	.12	.04	.19**
Department is open and equal	.09	.07	.07
Department does not engage in sex discrimination	.13	.11	.09
Department is non-sexist	.02	.07	.02
Women have departmental influence	.13	.08	.12
Perceptions of collegiality	.49	.09	.39**
Balance between work and family	.17	.06	.18**

Note. \*\* $p < .01$ .





# Discussion

- Women STEM faculty perceive they are less productive, but are equally productive
- Women STEM faculty perceive a different workplace climate
- All STEM faculty had climate perceptions that affect their job satisfaction
- Men and women STEM faculty could benefit by improvements to the workplace climate





# LEADER Initiatives

- Invisible Bias workshops – address perceptions
  - Women faculty with children are often more productive than their childless colleagues (Gibbons, 1992; Winkler, 2000)
- Functional mentoring- pair mentee needs with expert mentor
  - Mentoring is valuable for new faculty career development (Boise, 1993)
- Coaching –career advancement





# LEADER Initiatives

- Leadership workshops
  - Transformational leaders inspire subordinates (Bass, 1997)
  - Increase dedication, trust, satisfaction, and productivity (Vigoda-Gadot, 2006)
  - Predicts job satisfaction, performance, and commitment (Castro, Perinan, & Bueno, 2008)
- Institutional transformation
  - Policies and procedures on work-family balance can increase productivity, satisfaction, and retention (Ward & Wolf-Wendel, 2004)
- Create new norms and expectations across the academy





# THANKS:

NSF (HRD 0810989)

## Faculty:

Peggy DesAutels (UD)  
David Goldstein (WSU)

## Graduate Research Assistants:

Emily Polander (WSU)  
Sarah Jackson (WSU)  
Michelle Moore (UD)

