

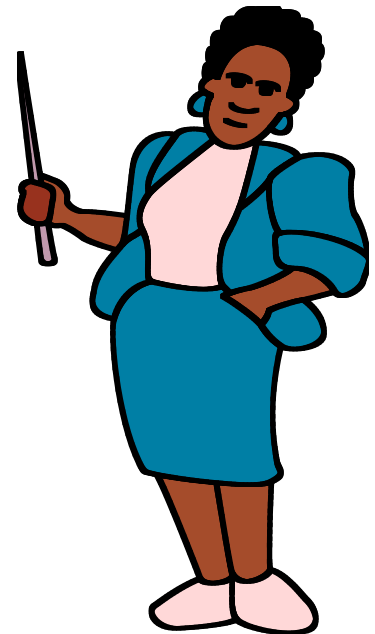
Gender and STEM Course Evaluations: Teaching While Female

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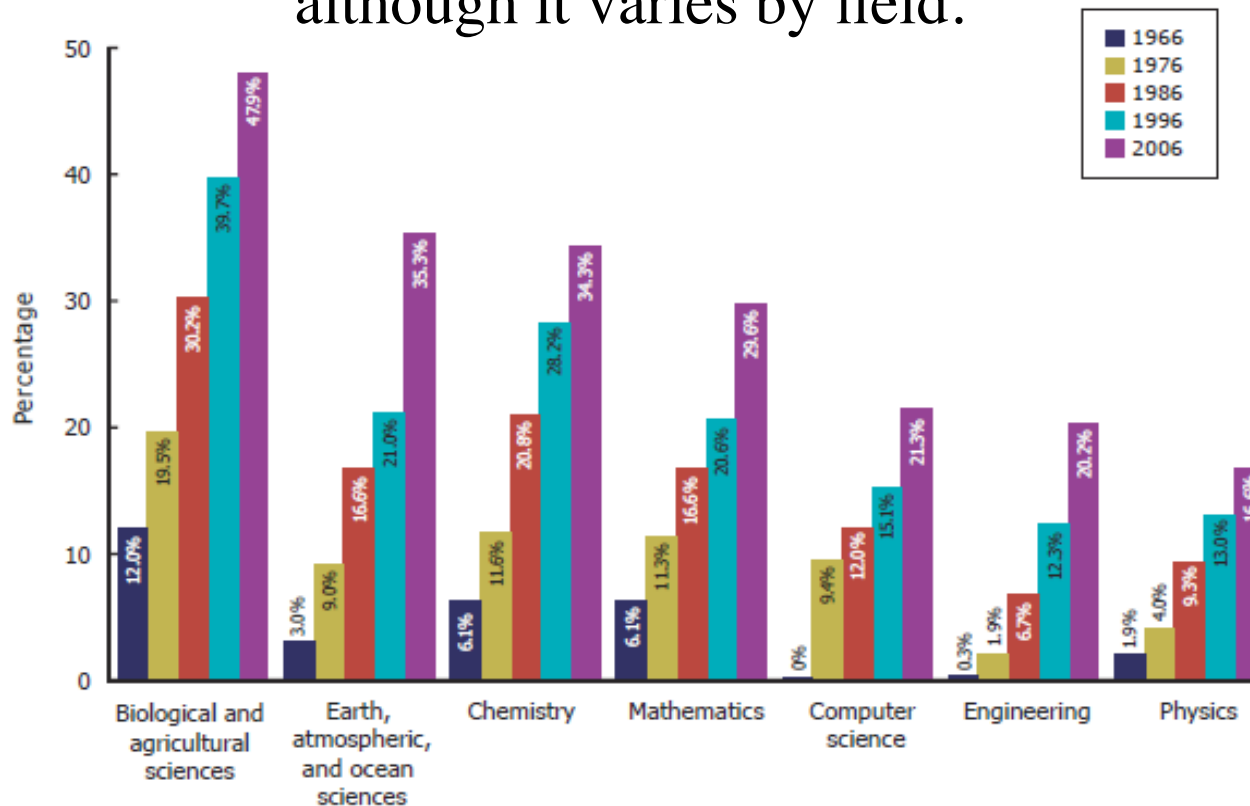


Overview

- Women in STEM fields
- Research on student evaluations
- The double bind
- Risk factors

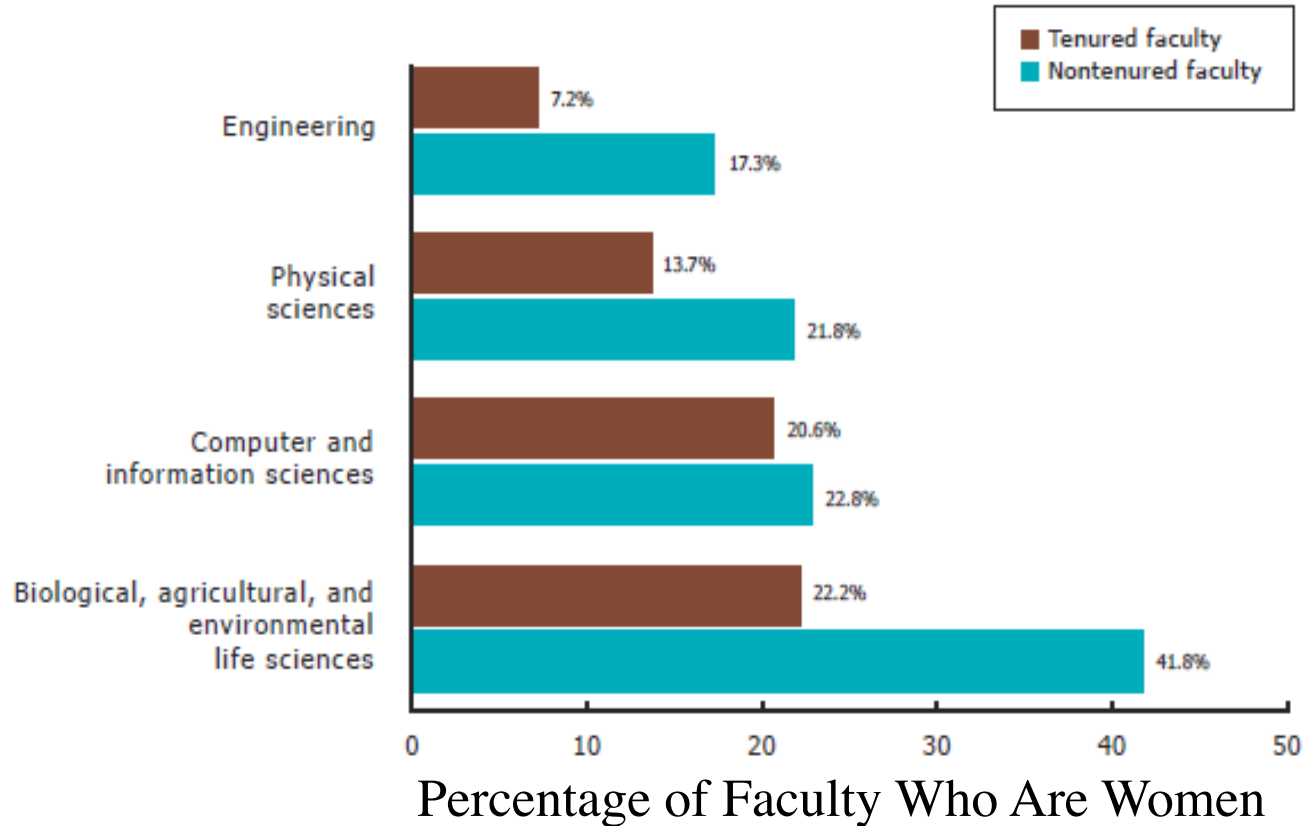
Doctorates Earned by Women in STEM Fields, 1966–2006

Women's representation has increased dramatically over time, although it varies by field.



Source: AAUW (2010); National Science Foundation, Division of Science Resources Statistics, 2008, *Science and engineering degrees: 1966–2006* (Detailed Statistical Tables) (NSF 08-321) (Arlington, VA), Table 25, Author's analysis of Tables 34, 35, 38, & 39.

Women in Academia: STEM Disciplines



Women's representation still lags behind men's but is improving in the life sciences

Source: AAUW (2010); National Science Foundation, Division of Science Resources Statistics, 2009, Characteristics of doctoral scientists and engineers in the United States: 2006 (Detailed Statistical Tables) (NSF 09-317) (Arlington, VA), Authors' analysis of Table 20.

Challenges for Academic Women in STEM Fields

- **Not** typically outright discrimination in
 - Manuscript and grant reviewing
 - Interviewing and hiring
- Work-life balance
 - Demands of research
- **Climate issues** (U Michigan ADVANCE study, 2008)
 - Lack of mentors, scholarly isolation
 - Disparaging comments, tokenism

What About Student Perceptions/ Evaluations?

- Overall, student ratings of male and female professors are similar
- Stronger **divisional** effects
 - Typically, professors in STEM fields get lower evals than profs in humanities
- **But what about women compared to men in STEM fields ?**
 - Not much studied due to small N's

Background on Gender and Evaluations

- Effects of gender are **complex**
- Depends on
 - Particular questions being asked
 - Gender of rater
 - Gender-typing of field
 - Gender-typed characteristics
 - Status cues

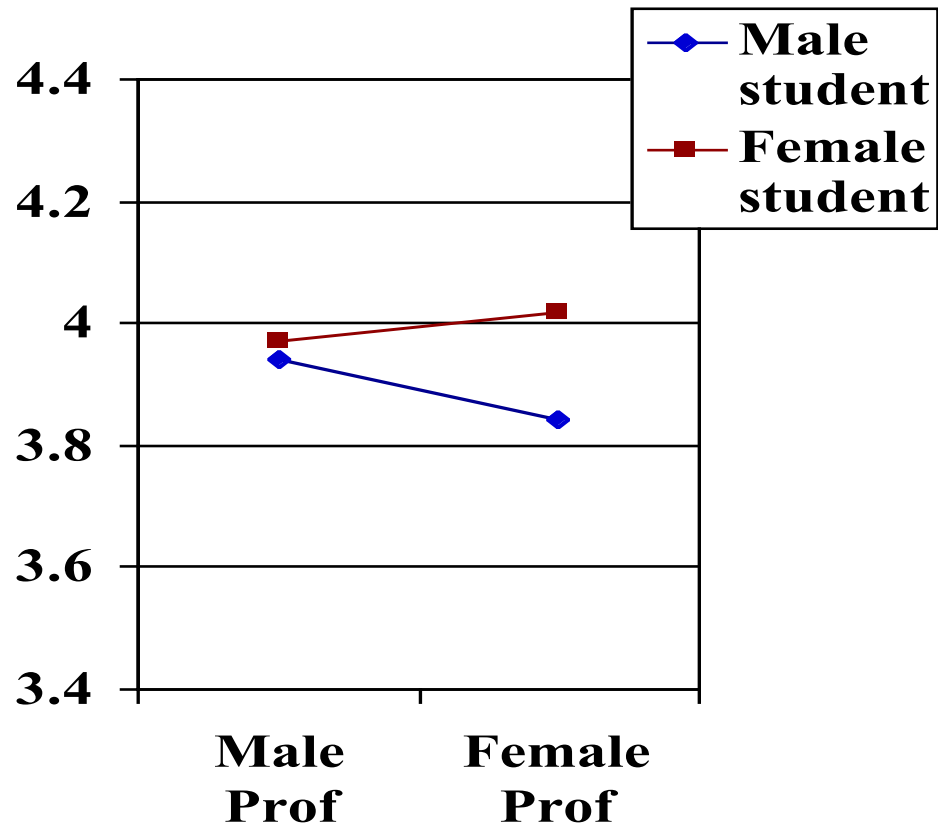


Finding: Teacher Gender by Student Gender Interaction

- Male profs rated equally by M and F students
- Female profs rated lower by M students
 - Especially traditional ones (business, engin.)
 - Chosen less often as “best” (but not more often as “worst”)
- Female profs rated higher by F students
 - Certain questions (e.g., fairness, comfort; “best prof.”)

Typical Interaction (from Basow, 1995)

- Mean Rating of Overall Teaching Ability (1-5 scale)



Finding: Gender x Divisional Effects

- Teacher gender by student gender interaction mainly found in Humanities and Social Sciences
- In Natural Sciences, male profs typically rated higher than female profs by both M and F students **overall** (Basow , 1995)
 - But male profs receive lower ratings in **instructor-student interactions** (Basow & Montgomery, 2005; Centra & Gaubatz, 2000)

More Divisional Effects

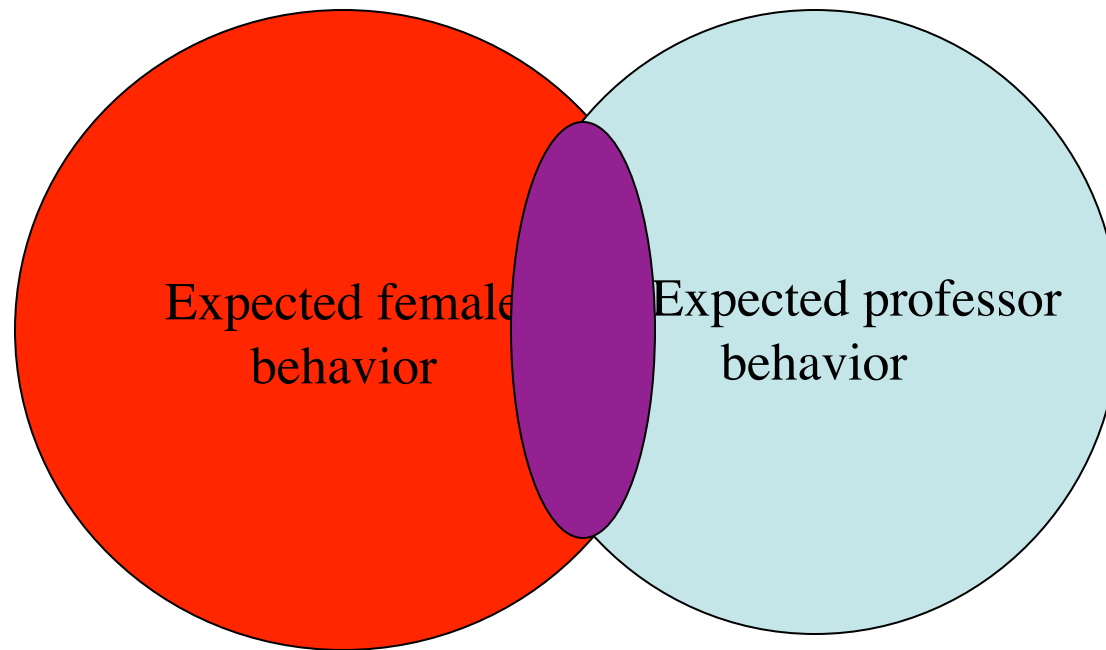
- In Natural Sciences
 - Male profs especially rated higher in “demonstrates **knowledge**”
 - Changing as more females are in these fields (Basow & Montgomery, 2005)
 - e.g., psychology, biology
 - Supports other research (Heilman & Okimoto, 2007):
 - Women in “male” jobs viewed as less competent than their male peers

Possible Explanations of Findings

- Gender stereotypes lead to **perceptual biases**
 - Similar behavior perceived differently
- Male and female profs **teach differently**
 - Different behaviors: lecture vs. discussion
- Both appear **true**

Expectancy Disconfirmation

Double Bind for Female Professors



Differential Expectations, Perceptions

- Female profs expected to be **more available**
 - They typically are
- Expected to be **warmer** and more engaging
 - They typically are
- But receive **similar evaluations**
 - Women need to work harder to receive equal ratings

Differential Expectations, Perceptions

- If women viewed as **similar** to their male counterparts in availability, warmth
 - **Lower** evaluations
- If women are viewed as **equally** demanding or low graders
 - **Lower** evaluations

Double Bind for Women Academics

- Women must combine traditional markers of femininity (“warmth”) as well as traditional markers of masculinity (“competence”)
 - Very fine line
- Even more pronounced in STEM fields (traditionally “male”):
 - If viewed as appropriately “feminine”, viewed as less competent
 - If viewed as clearly competent, liked less

Summary

- Female profs marked for gender in ways male profs aren't
 - Double set of expectations: fine line
- Male and female students may react differently
- Gender appropriateness of discipline, personality matter
- Small differences (1-4% of variance) can add up

Risk Factors for Bias against Women Professors

- Student characteristics: male; traditional gender role attitudes
- Subject area: nontraditional
- Teacher: non-nurturant, non-expressive personality traits
- Lecture-based teaching style
- “Tough” grader
- Status cues: untenured, young-looking
- Lower-level course
- Feminist reputation
- Additional minority cues (race, ethnicity, sexual orientation)