Why are John and David more likely to become department chair than Joan or Jamal?

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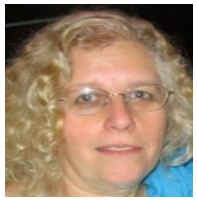

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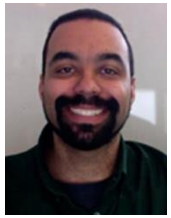

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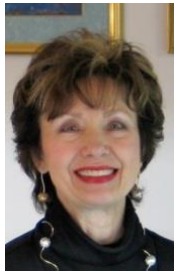

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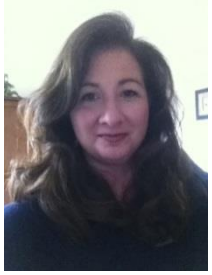

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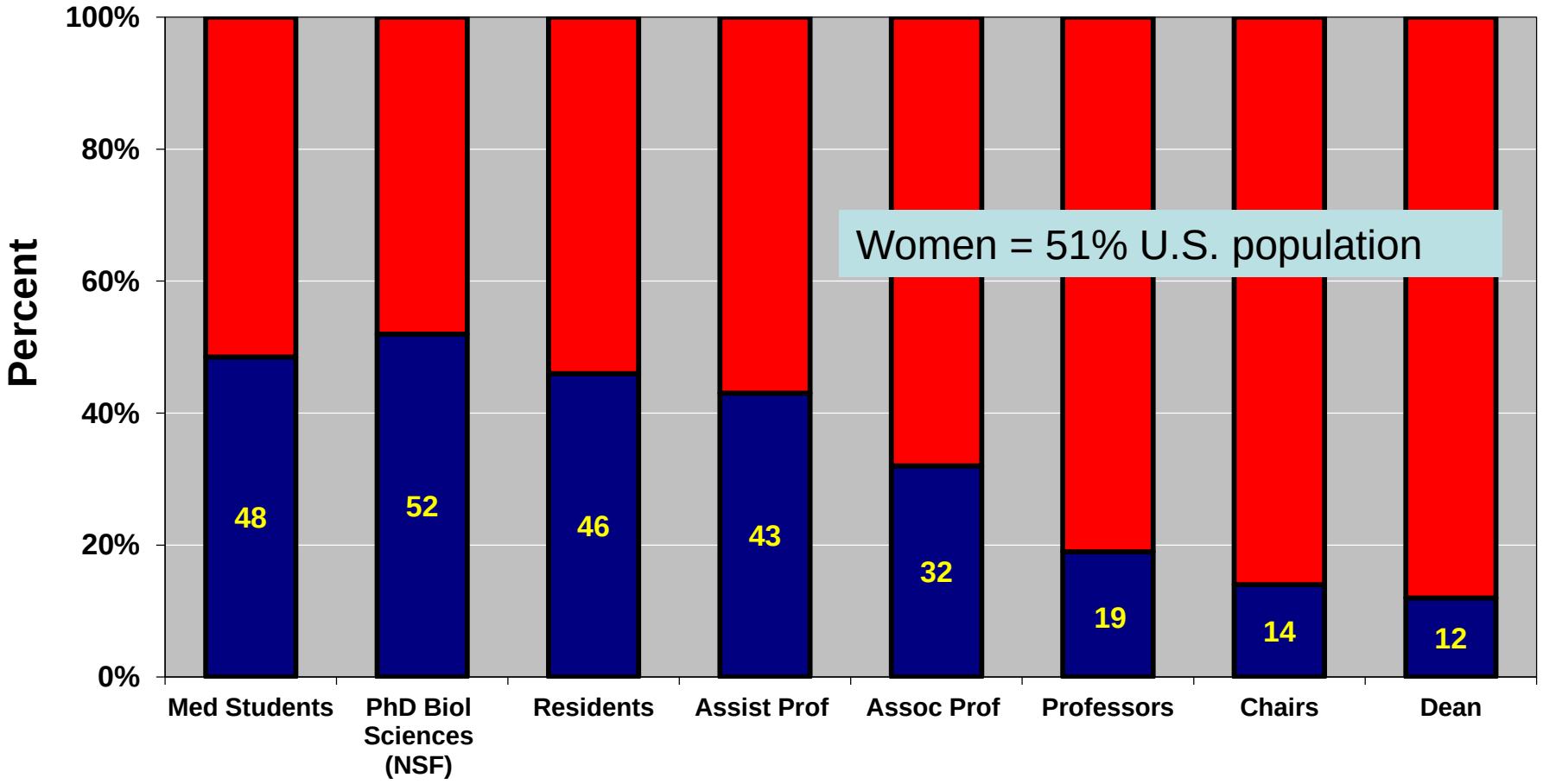
- UW School of Medicine and Public Health, College of Engineering, School of Pharmacy, School of Veterinary Medicine, College of Letters and Sciences, and College of Agricultural and Life Sciences
- Meriter Hospital; William S. Middleton VA Hospital

Today's lecture will consider the following:

1. How cultural stereotypes can constrain opportunities for advancement in academic medicine and science
2. Some of our research on stereotype-based bias with text analysis, code leadership by medical residents, and a video game
3. Effective strategies for "breaking the bias habit"

% Men (red) and Women (blue)



https://members.aamc.org/eweb/upload/Women%20in%20U%20S%20%20Academic%20Medicine%20Statistics%20and%20Benchmarking%20Report%202011-20123.pdf

Black/African American

- U.S. population = 12%
- Medical Students = 6.1%
- Faculty = 2.8%
- Full professors as % of all U.S. medical faculty = 1.4%
- Department chairs = 2.8% (W=0.2%; M=2.6%)

https://members.aamc.org/eweb/upload/Diversity%20in%20Medical%20Education_Facts%20and%20Figures%202012.pdf

Do we care?

- The Difference: How the Power of Diversity Creates Better Groups, Firms, Schools and Societies *(Scott E. Page)*
- The Wisdom of Crowds *(James Surowiecki)*
- Link between women leaders and improvements in women's health *(Carnes et al. JWH, 2008)*
- Women leaders more likely to be transformational *(Eagly et. al., Psychol Bull 2003)*
- Black physicians show least implicit race bias *(Sabin et al. J Health Care Poor & Underserved 20:896, 2009)* and more likely to practice in underserved areas *(Smedley et al. National Academies Press, 2001)*

Two kinds of inter-group bias

1. Explicit, consciously endorsed, personal beliefs
   - Decreasing
2. Implicit processes based on mere existence of cultural stereotypes
   - Still highly prevalent – https://implicit.harvard.edu/implicit/demo/takeatest.html
   - Strong predictor of behavior in some settings, even if at odds with personal beliefs
   - A major factor in preventing diversity in academic medicine and perpetuating healthcare disparities

Devine, J Pers soc Psychol, 1989. Carnes et al. JDHE, 2012. Chapman et al. JGIM, 2013

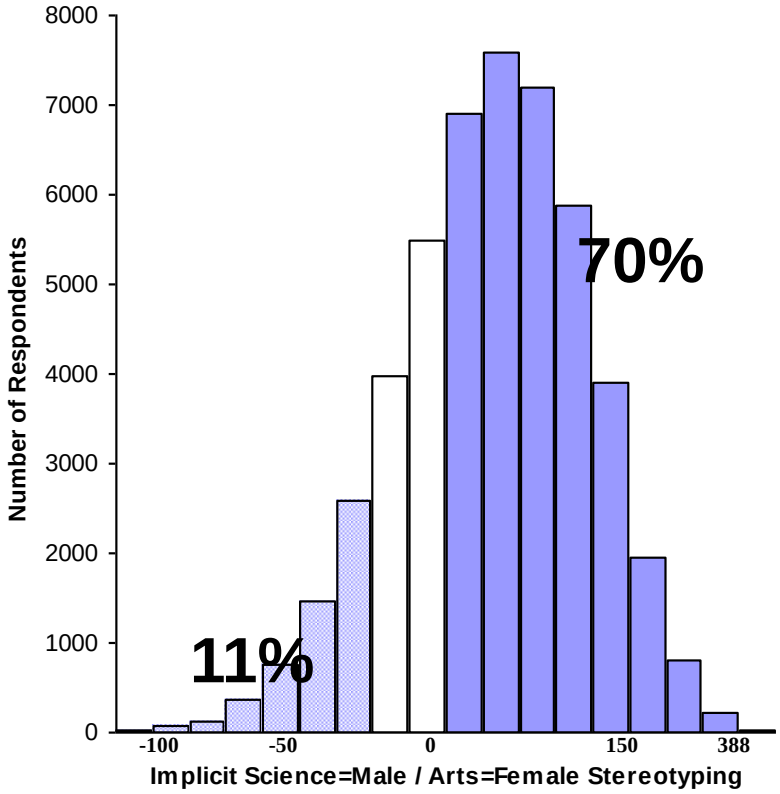
Cultural stereotypes about men and women

- Men are *agentic:* Decisive, competitive, ambitious, independent, willing to take risks
- Women are *communal*: nurturing, gentle, supportive, sympathetic, dependent

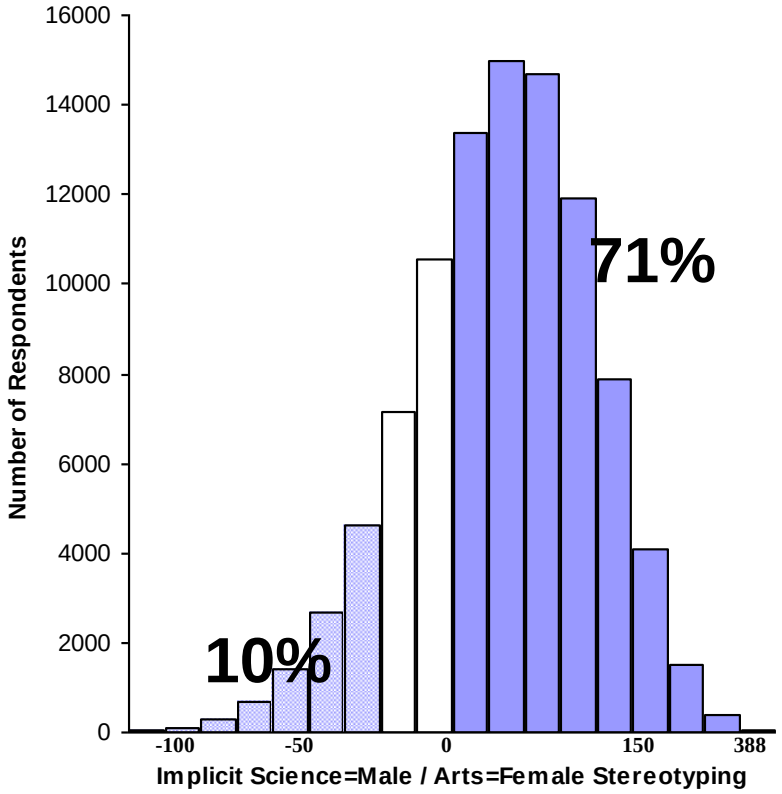
Works of multiple authors over 30 years: e.g. Eagly, Heilman, Bem, Broverman

Implicit Gender-Science Stereotypes

Male Respondents

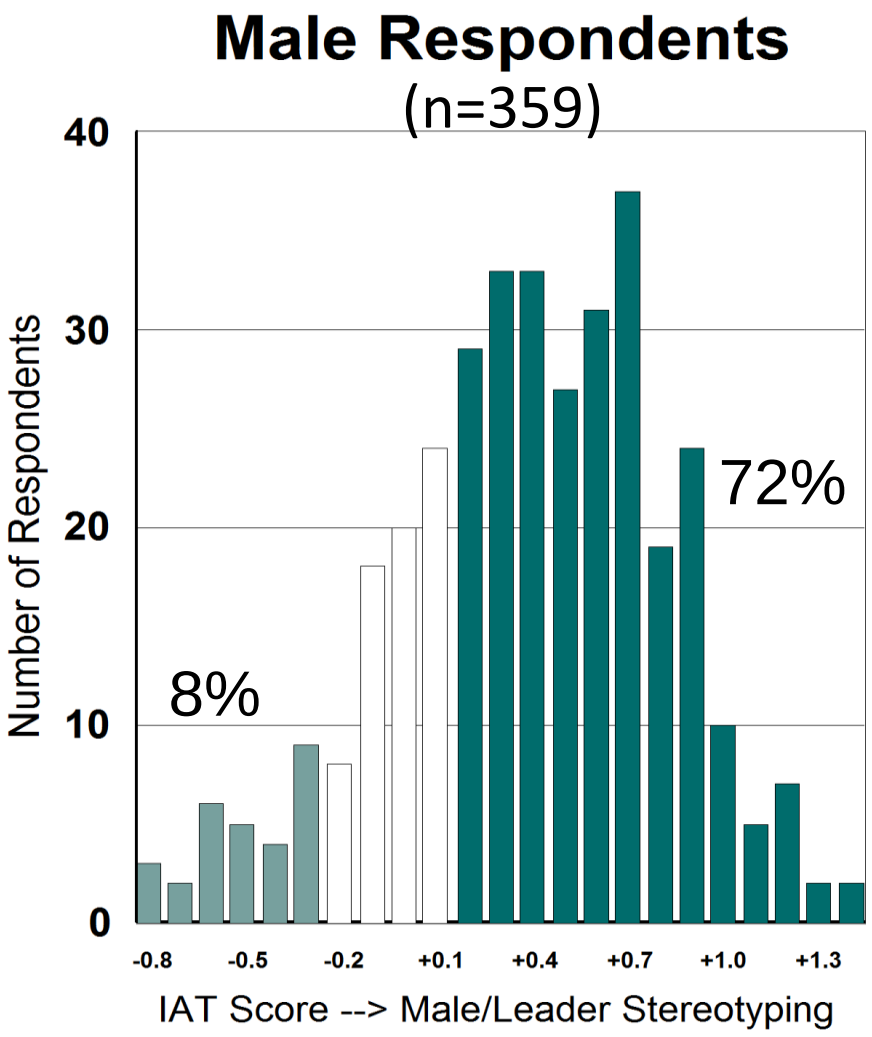


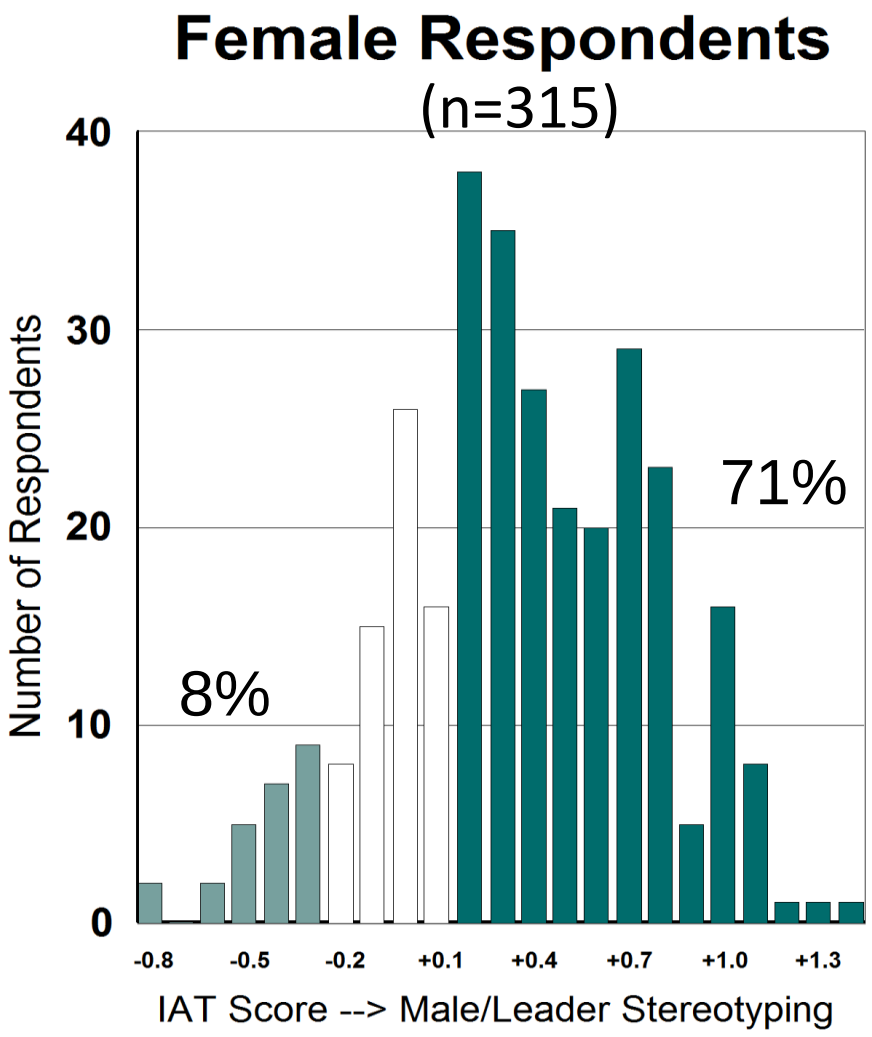
Female Respondents



Nosek BA, Banaji MR & Greenwald AG, 2006

http://implicit.harvard.edu/



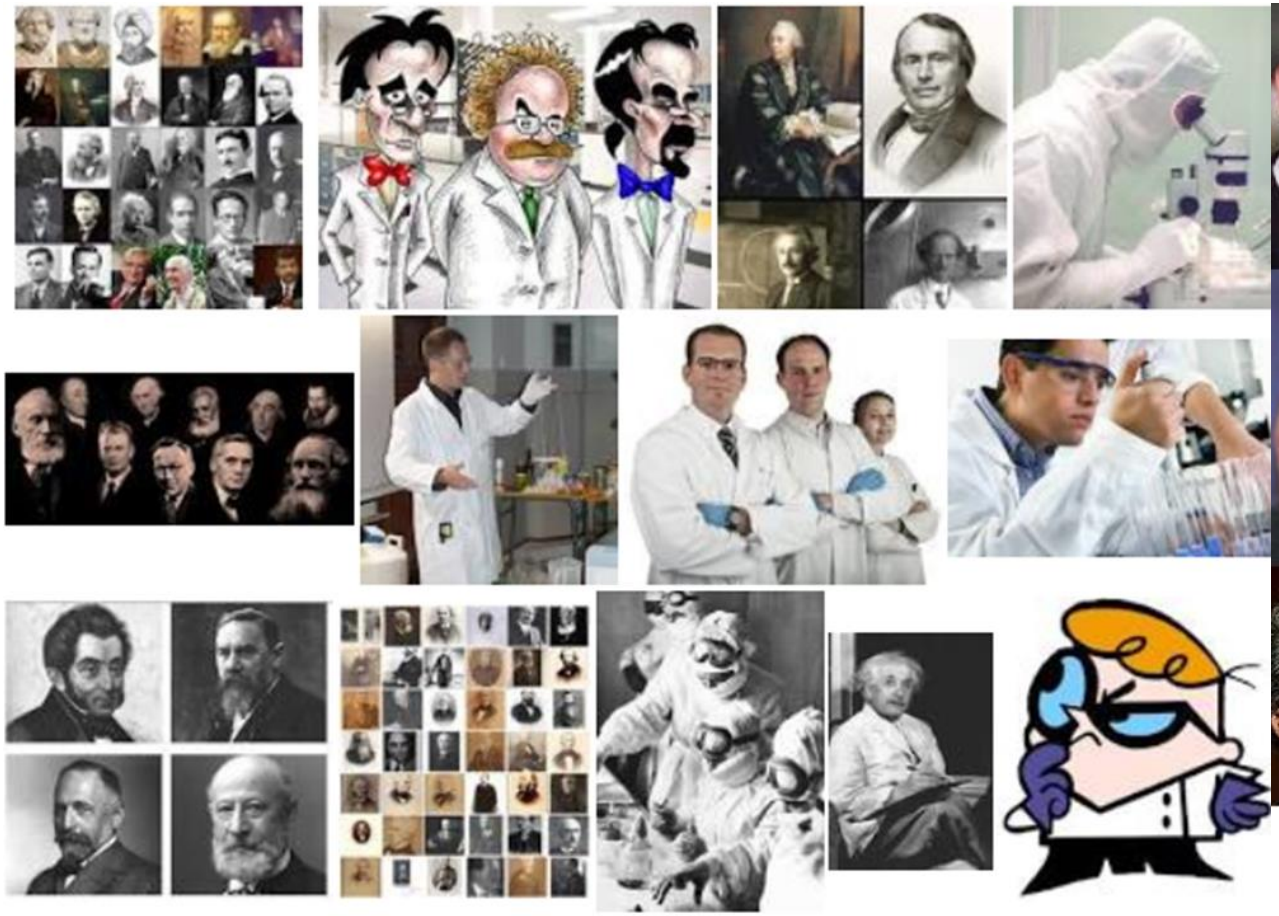


Gender and Leadership IAT Scores

Science and leader more strongly associated with male than female

"Pictures of scientists"

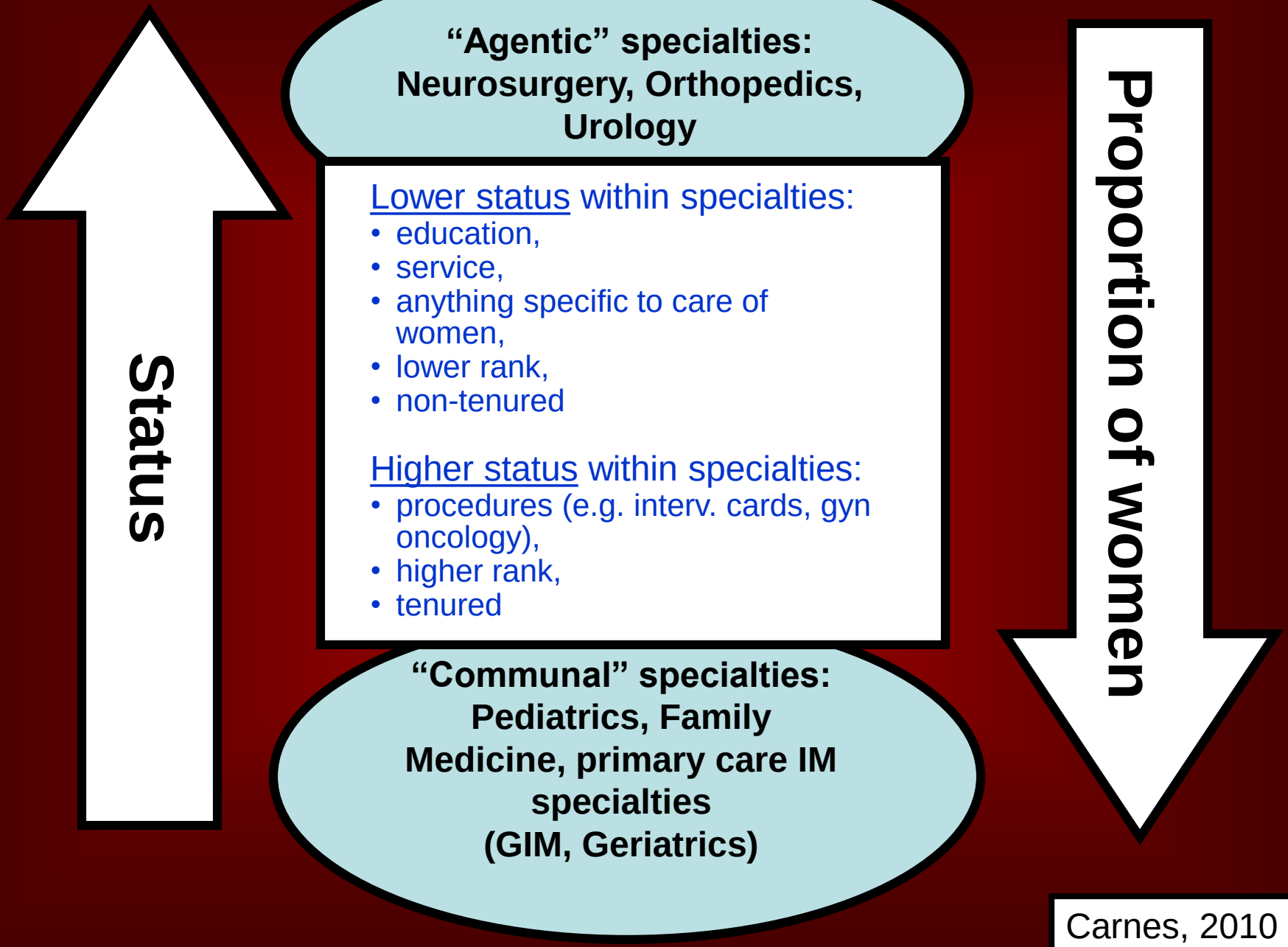
"Pictures of leaders"



Joan vs. John

Impact of gender stereotypes

- On evaluation of Joan for male-typed role:
  - Lack of fit (*e.g. Koenig et al. Psychol Bull 137:616, 2011)*
  - Assumption of lower competence (multiple studies by Biernat and colleagues; e.g. *Biernat et al., Social Cognition 26:288, 2008*)
  - Social reprisal for violating gender norms (e.g. Okimoto &Heilman J Soc Iss 68:704, 2012)
- On Joan:
  - Fear of "backlash" *(Rudman & Fairchild J Pers Soc Psych 87:157, 2004; Moss-Racusin & Rudman Psych Wom Quart 34:186, 2010)*
  - Stereotype threat = underperformance due to the threat of confirming the stereotype (*Burgess et al., 87:506, Acad Med, 2012)*


Status
"Agentic" specialties: Neurosurgery, Orthopedics, Urology
Lower status within specialties:
• education,
• service,
• anything specific to care of women,
• lower rank,
• non-tenured
Higher status within specialties:
• procedures (e.g. interv. cards, gyn oncology),
• higher rank,
• tenured
"Communal" specialties: Pediatrics, Family Medicine, primary care IM specialties (GIM, Geriatrics)
Proportion of women

Carnes, 2010

Male and female students socialized toward different specialties?

- Text analysis of 297 MSPEs
- Only female students with female authors had family medicine correlated with standout adjectives
- Male students
  - Male authors: Family medicine absent
  - Female authors: Family medicine negatively correlated with ability & insight
    - "[he] really surprised us! [he] is an exceptional student [in family medicine]."
    - "although [he] received highest honors on [his] family medicine rotation, surely [his] finest performance was on surgery … was outstanding - spoke with families, got consent forms signed, was extremely aggressive…."

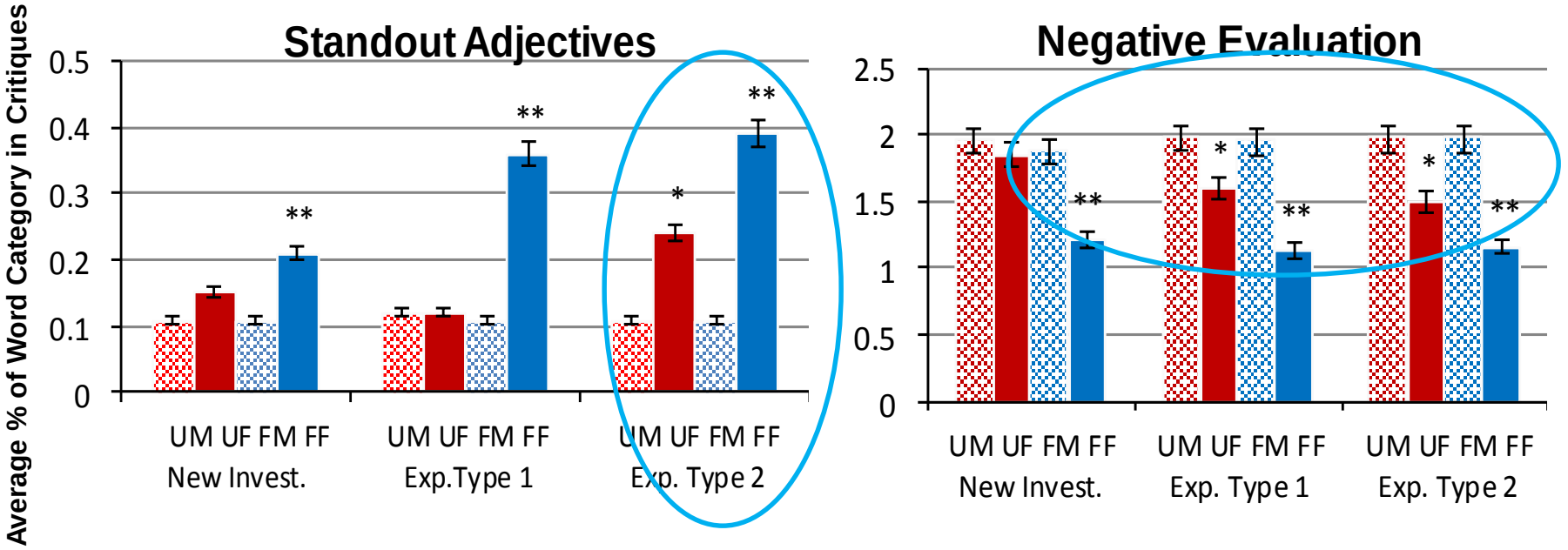
Isaac et al., Acad Med 86:1, 2011

Gender stereotypes and evaluation

- Funding discrepancies occur with type 2 (renewal) R01s (Ley & Hamilton. *Science* 2008; Pohlhaus et al., *Acad Med* 2011; http://report.nih.gov/NIHDatabook/Charts/Default.aspx?showm=Y&chartId=178&catId=15)
- "Goldberg" designs indicate that work performed by women is rated of lower quality than work performed by men regardless of the rater's gender (reviewed in Isaac et al. *Acad Med* 2009)
- Science faculty rated a male applicant as more competent, hireable, deserving of mentorship, and worth a higher salary than an identically credentialed female student whom they found more likeable. *(Moss-Racusin et al. PNAS 2012)*

Quantitative text analysis of R01 critiques

- 443 grant reviews from R01s awarded after unfunded in 2008 (N=65)
- Women's: more standout adjectives (e.g., excellent, outstanding) ($p \leq 0.01$)
- Men's: more negative descriptors (e.g., unfocused, illogical) ($p \leq 0.01$)



Women held to higher confirmatory standards for fundable research?
Men held to higher confirmatory standard for unfundable research?

Kaatz et al., 2013, under review

Joan vs. John

Impact of gender stereotypes

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  - Lack of fit *(e.g. Koenig et al. Psychol Bull 137:616, 2011)*
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“She’s a bitch!”

Exploring code leadership

- Interview 25 medical residents from 9 programs
- Male and female residents felt both genders equally effective
- Code leadership = highly agentic

  Assertive, authoritative presence, loud deep voice, tall
- Counternormative behavior stressful for female residents

  "I just felt kind of bad yelling at people"

  "I always turn red"

  "I just try my best to look authoritative…but it's stressful"
- Female residents found effective strategies to integrate conflicting identities

Strategies to integrate dual identities

- Permission to suspend gender norms
  - "That is not a very accepted way to speak to people outside of a code but I think in that room it's fine."
  - "Normally I'm very much 'would you mind please putting in a line?' [In a code] it's a different situation totally. I just drop the formalities and pleasantries."
  - "I'm super apologetic afterward"
- Affirm legitimate power
  - wearing your long coat, having a badge that says 'resident', announcing 'I have the code pager'
- Adopt a "code persona" and a "code stance"
  - "I tend to stand at the foot of the bed or have my hands on the foot of the bed and then just sort of lean over the patient a little bit…[it] makes me feel like I'm more in control of the situation."

Powerful postures make one think and act like a powerful person

Carney et al. Psychol Sci 21:1363, 2010; Huang et al. Psychol Sci 22:95, 2011; Adam & Galinsky J Exp Soc Psychol 48:918, 2012

Implications for resident training

- Clear affirmation that research finds no difference in effectiveness of male and female code leaders *(Wayne et al. Simul Healthc 7:134, 2012; Kolehmainen et al. Acad Med, 2013)*
- Acknowledge existence of socialized gender norms and greater departure from those norms and code leader behaviors for women than men
- Present some strategies that have helped others (along with evidence-base)

David vs. Jamal

70-80% of IAT takers more strongly associate White faces with pleasant words and Black faces with unpleasant words

Implicit bias predicts:

- Awkward body language in conversations between a White student and a Black student *(Dovidio, et al., 2002)* or Black experimenter *(McConnell and Leibold, 2001)*
- Interpretation of friendliness in facial expressions *(Hugenberg & Bodenhausen, 2003)*
- More negative evaluations of a Black vs. a White individual's ambiguous actions *(Devine, 1989; Rudman & Lee, 2002)*
- Inadequate prescription of opioid analgesics in identical clinical vignettes of Black vs. White patients in pain *(Sabin, 2012)*
- Failure to follow treatment guidelines in prescribing thrombolytic therapy in identical vignettes of Black vs. White patient with acute myocardial infarction *(Green et al., 2007)*

Using a video game to address issues of race bias

- Web-based game inspired by point-and-click adventure games
- Players take the perspective of Jamal Davis, African American graduate student
- 5 chapters, each with goals
  - e.g. Chapter 1: write personal statement, find out about funding, select an advisor
- Goal:
  - Provide authentic experience where player has agency to discover implicit bias and its consequences in a safe space as a means to transformative learning

Challenges

- Ensuring that the contents are authentic, engaging, and not offensive
- Making sure that the game does not actually reinforce negative societal stereotypes
- Encountering bias events without putting all the responsibility for action on Jamal

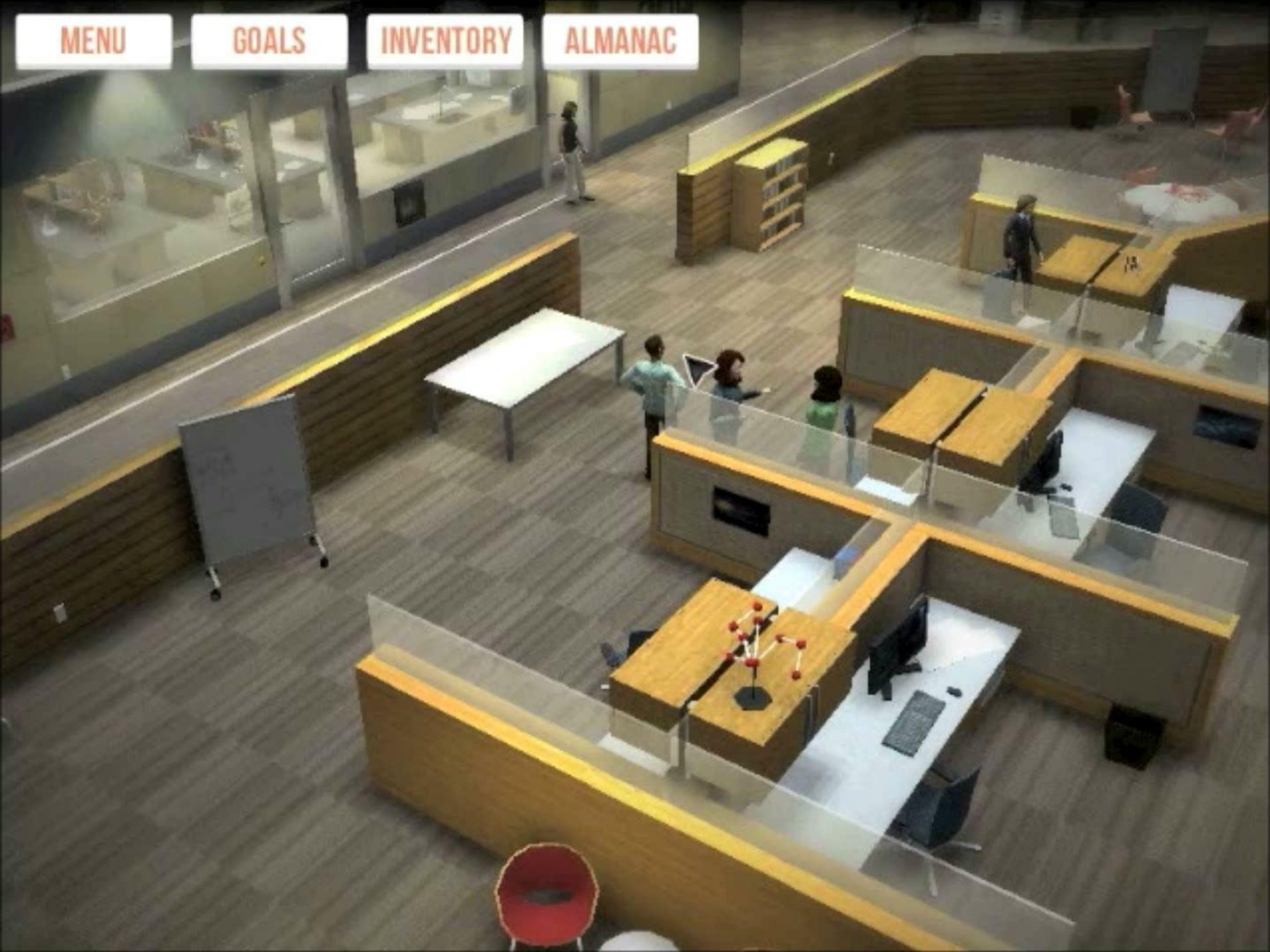
Examples of biases in *Fair Play* that could negatively impact an academic career

- Color-Blind Racial Attitudes *(e.g., Plaut et al. 2009; Morrison et al. 2010; Ryan et al., 2007)*
  - Dr. McNamara, a faculty member, tells Jamal that he treats all students the same whether they are white, black, or polka-dot
- Tokenism *(e.g., Wright, 2001)*
  - Jamal is asked to speak on behalf of all Black people
- Status Leveling *(e.g., Smith, 1985)*
  - Lucas, a graduate student, assumes Jamal is a caterer rather than an incoming graduate student
- Racial Microaggression *(McCabe, 2009; Sue et al., 2007; Sue, 2010)*
  - Wall portraits of past departmental faculty are all White men

The Almanac

- Just in time or on-demand learning
- Track examples of implicit bias
- Provide definitions of terms
- Citations to relevant literature


MENU
GOALS
INVENTORY
ALMANAC


MENU
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Possible Uses for *Fair Play*

- Initiate discussion of sensitive topic of bias
- Professional development
- Promote perspective-taking as a way to reduce implicit bias *(Gutierrez, B. 2013)*

Breaking the bias habit takes *more than good intentions*

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

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

Breaking the bias habit in academic science, medicine & engineering

- 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

Personal Bias Reduction Strategies

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

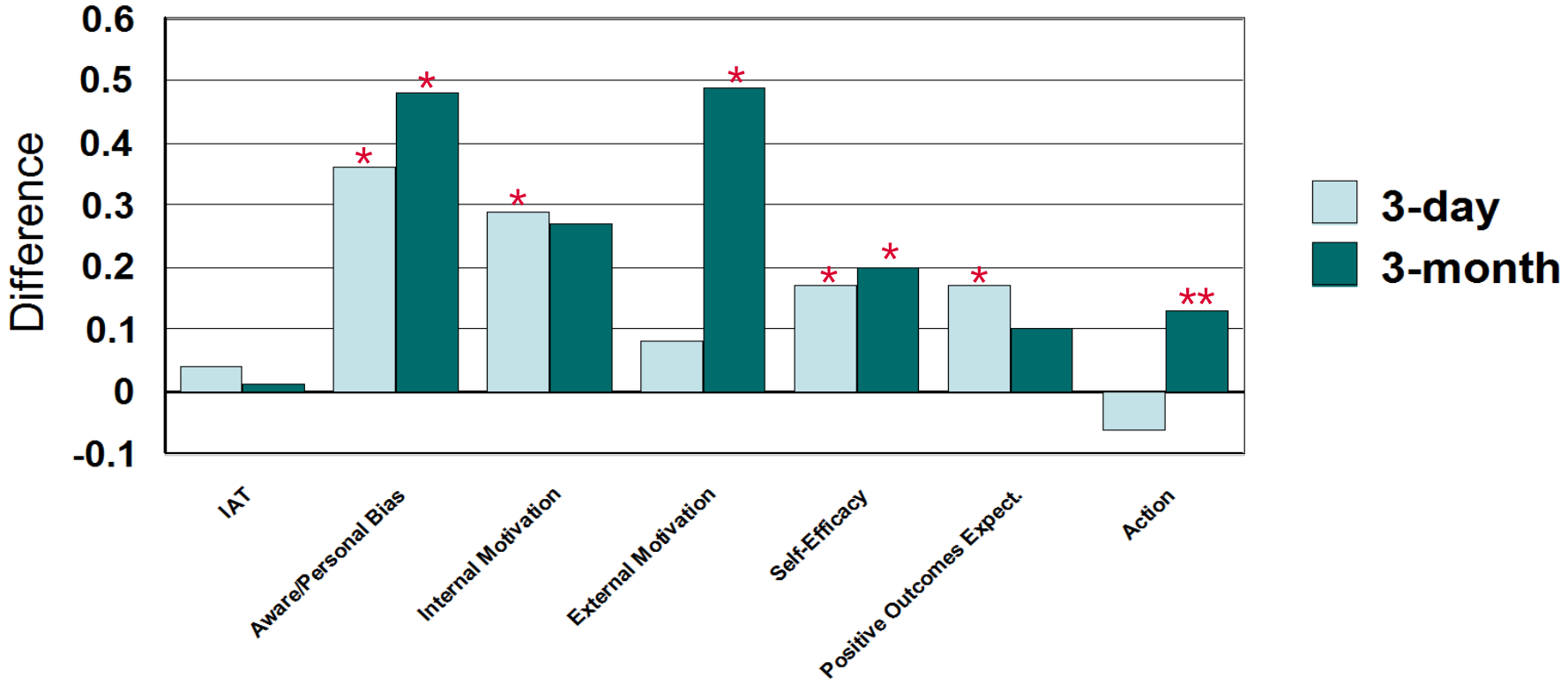
(e.g., Galinsky & Moskowitz *J Pers Soc Psychol* 2000; Monteith et al., *Pers Soc Psychol Rev* 1998; Blair et al., J Pers Soc Psychol 2001)

- 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)

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 ≥25% of faculty attended the intervention workshop, $p<0.05$

Does changing behavior of faculty affect departmental culture?

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)

Summary & Conclusions

1. Cultural stereotypes about race and gender lead to subtle unintentional advantages in academic career advancement for John and David not afforded to Joan or Jamal
2. Stereotype-based bias is a habit that can be broken, but it requires more than good intentions
3. Breaking the bias habit appears to improve department climate for everyone