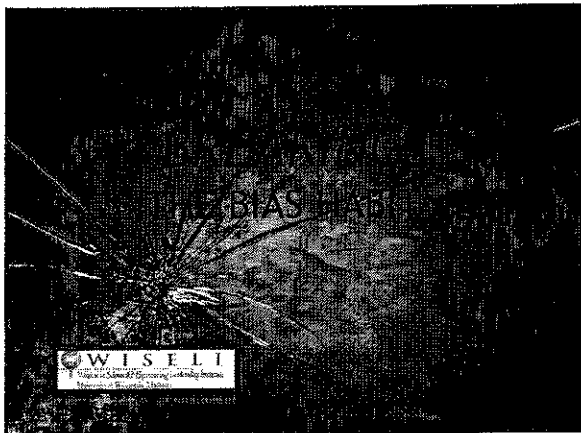


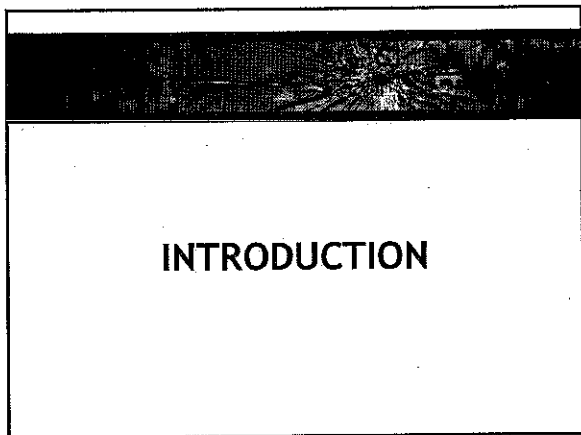
BREAKING THE BIAS HABIT®
A WORKSHOP TO PROMOTE GENDER EQUITY
Presenter List

Presenters

Molly Carnes, MD, MS
Jean Manchester Biddick Professor of Women's Health
Department of Medicine and Department of Industrial Systems Engineering
Director, Center for Women's Health Research
Co-Director, Women in Science and Engineering Leadership Institute (WISELI)
700 Regent Street, Suite 301, Madison, WI 53715
(608) 263-9770
mlcarnes@wisc.edu

Jennifer Sheridan, PhD
Executive and Research Director
Women in Science and Engineering Leadership Institute (WISELI)
3065 Mechanical Engineering Building
1513 University Avenue
Madison, WI 53706
(608) 263-1196
sheridan@enr.wisc.edu





WORKSHOP GOALS

Participants will gain:

- Knowledge about implicit bias, especially with regard to gender
- Understanding of how implicit bias can affect:
 - Grant applications
 - Faculty candidates
 - Manuscripts
 - Tenure and promotion files
 - Student applications
 - Award nominations and applications
- Strategies for minimizing one's own application of implicit biases

WORKSHOP FORMAT

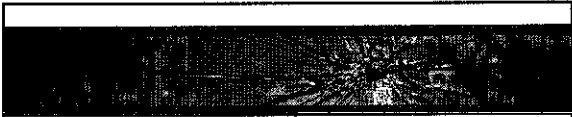
- 3 modules

Module 1: *Implicit Bias as a Habit*

Module 2: *Identifying Implicit Bias in the Workplace*

Module 3: *Strategies to Reduce the Influence of Implicit Bias*

- Lecture and facilitated group discussions
- Workshop materials



How do you define gender equity in your discipline or workplace setting?

OUR DEFINITION

Gender equity in an academic setting means that men and women enjoy equal opportunities for education, employment, success, advancement, recognition, compensation, and satisfaction.

WHAT ARE THE ISSUES?

- Remarkable success since 1972 attracting women into STEMM disciplines^{1,2}
- Women disproportionately leave STEMM at each career stage^{1,3}
- Disproportionate loss of women = waste of human capital and an economic threat (NSF⁴, NAS⁵, NIH⁶)

¹ Association of American Medical Colleges, 2007, 2008, 2009

² National Science Foundation, 2007

³ Nelson, 2007

⁴ National Science Foundation, 2006

⁵ National Academy of Sciences, 2007

⁶ National Institutes of Health, 1995, 2009

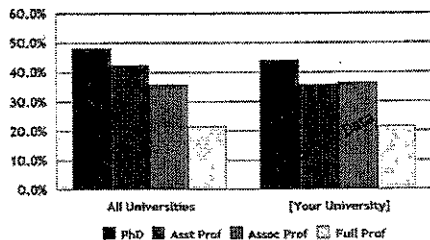


“The Nation cannot afford to lose a single mind with the potential to expand science and health research ...”

Raynard Kington, MD, PhD
Deputy Director, NIH, 2008


DROP OUT OF WOMEN IN ACADEMIA

Percent Women in Academic Science, 2010/11
NSF Biological, Physical, and Social Sciences



EASY ANSWERS HAVE PROVEN INADEQUATE	
Not a pipeline issue for many fields	<ul style="list-style-type: none"> • Women account for over 30% of medical school enrollments since 1980 • Women receive ~50% of PhDs in bio/behavioral sciences since 1995
Not a lack of talent	<ul style="list-style-type: none"> • Female scientists and engineers are contributing to breakthroughs and innovations (National Academy of Science, 2007) • Little difference in male vs. female leadership effectiveness (Isaac et al., <i>Journal of Women's Health</i> 2010; Eagly et al., <i>Psychological Bulletin</i> 2003; Rosser, <i>Equity & Excellence in Education</i> 2003)
Not a lack of interest or commitment	<ul style="list-style-type: none"> • Male and female medical faculty express comparable commitment and interest in career advancement (Shollen et al., <i>Academic Medicine</i> 2009; Wright et al., <i>Academic Medicine</i> 2003; Braaddus & Feigel, <i>Chest</i> 1994)

SUPPORTING EVIDENCE
<ul style="list-style-type: none"> • Funding discrepancies occur with NIH type 2 (renewal) R01s (Ley & Hamilton, <i>Science</i> 2008; Pohlhaus et al., <i>Academic Medicine</i> 2011; NIH, 2014) • “Goldberg” designs indicate that work performed by women is rated of lower quality than work performed by men regardless of rater gender (reviewed in Isaac et al., <i>Academic Medicine</i> 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., <i>Proceedings of the National Academies of Science</i> 2012)



Describe three benefits of gender equity in your department or field.

Why Have We Not Yet Achieved Equity?

"It is not a lack of talent, but unintentional biases and outmoded institutional structures that are hindering the access and advancement of women."

National Academy of Sciences, National Academy of Engineering, and Institute of Medicine of the National Academies, *Beyond Bias and Barriers* 2007

MODULE 1

IMPLICIT BIAS AS A HABIT

Understanding the Origins of Unintentional Bias

THREE CENTRAL IDEAS

① Our minds are more than the sum of the conscious parts

② Unintended thoughts can contradict beliefs

Action is shaped by thoughts both intended and unintended

③ Acting consistently with beliefs can require more than good intentions

Module 1

Module 3

BIAS AS A HABIT OF MIND

Ordinary mental operations that serve us quite well in most circumstances can *fail our intentions* and be *subject to error*

ESSENTIAL PROCESS

- Translation of the world outside to a mental experience inside

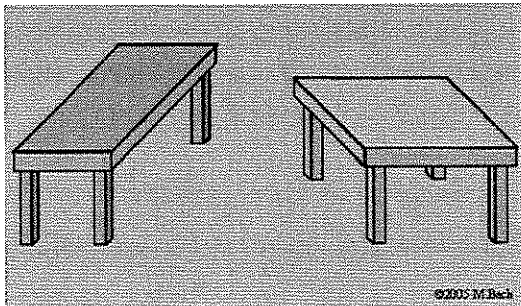
Guided by our experience and expectations

Affects our perceptions, judgments, and behavior

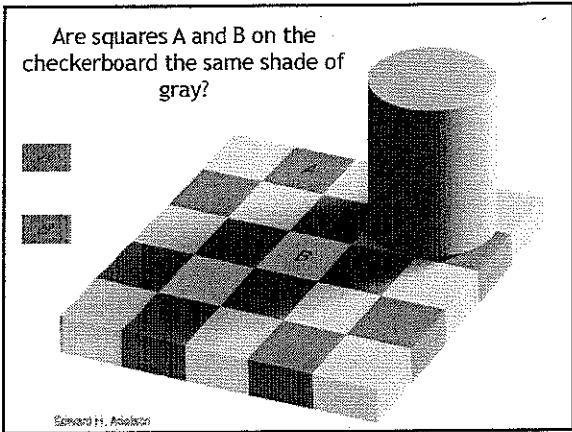
- This translation process is not infallible

A variety of habits of mind, born out of experience, can separate our experience from reality

Do the size and shape of these tabletops look identical?



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"STROOP EFFECT" AND THE COLOR NAMING TASK

Compatible Trial	Incompatible/Interference Trial
<p>RED</p> <p>BLACK</p> <p>BROWN</p> <p>GREEN</p> <p>YELLOW</p> <p>BLUE</p>	<p>RED</p> <p>BLACK</p> <p>BROWN</p> <p>GREEN</p> <p>YELLOW</p> <p>BLUE</p>

(Stroop, *Journal of Experimental Psychology* 1935)

GENERAL POINTS

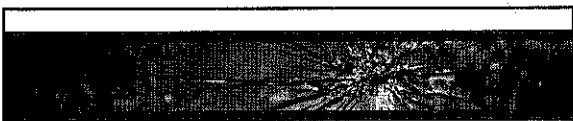
- As shown in the previous examples, implicit processes typically serve us well, but are often subject to error
 - People filter the world through their habits of mind
- Social perception is analogous to object perception
 - Prior experience provides frames or assumptions for interpreting and responding to the behavior of others
 - Implicit biases link social groups with characteristics in ways that create relative disadvantages for some groups
- Prejudice habits can conflict with conscious beliefs

PREJUDICE LITERATURE PARADOX

<ul style="list-style-type: none"> • Direct Measures <ul style="list-style-type: none"> - Tap conscious processes - Conclude that prejudice is declining • Indirect Measures <ul style="list-style-type: none"> - Bypass conscious processes - Conclude that prejudice is still prevalent - <i>even among those who have renounced prejudice at the conscious level</i> 	<div style="font-size: 3em; line-height: 1;">}</div> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">Explicit</div>
<ul style="list-style-type: none"> • Indirect Measures <ul style="list-style-type: none"> - Bypass conscious processes - Conclude that prejudice is still prevalent - <i>even among those who have renounced prejudice at the conscious level</i> 	<div style="font-size: 3em; line-height: 1;">}</div> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">Implicit</div>

ATTITUDES & STEREOTYPES

Explicit	Implicit
<ul style="list-style-type: none"> • Aware • Controllable • Intentional • Introspection • Endorsed 	<ul style="list-style-type: none"> • Unaware • Difficult to control • Unintentional • No introspection • Not endorsed
<div style="font-size: 2em; line-height: 1;">}</div> <p>Conscious Beliefs</p>	<div style="font-size: 2em; line-height: 1;">}</div> <p>Habits of Mind</p>



THE IMPLICIT ASSOCIATION TEST

LOGIC OF THE IAT

- Measures strength of associations between mental categories such as “male and female” and attributes such as “leader and supporter” roles
- Strength of association is reflected in the time it takes to respond to the stimuli while trying to respond rapidly
- Two trial types

CONGRUENT TRIALS

Press “LEFT” key for Press “RIGHT” key for

LEADER
or
MALE

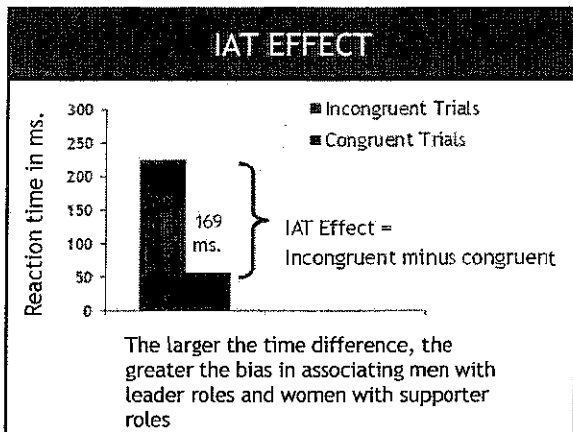
SUPPORTER
or
FEMALE

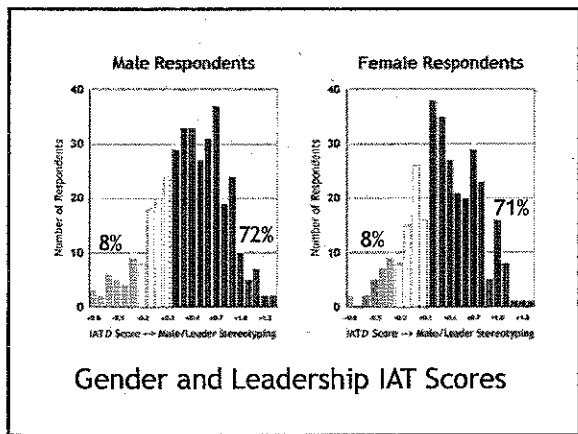
INCONGRUENT TRIALS

Press “LEFT” key for Press “RIGHT” key for

LEADER
or
FEMALE

SUPPORTER
or
MALE





- ### IMPLICIT BIAS CHARACTERISTICS
- 1 Ordinary
Stem from our natural tendency to form associations to help organize our social worlds
 - 2 Learned from culture
Reflect the "thumbprint of culture" on our minds
 - 3 Pervasive
Prevalent among men and women, blacks and whites, young and old, etc.
 - 4 Often conflict with consciously endorsed beliefs
Dissociation between implicit and explicit responses

IMPLICIT BIAS CHARACTERISTICS

5. Consequential

Predict behavior better than (and often at odds with) explicit measures

Constrain the opportunities of targets of implicit bias

THREE CENTRAL IDEAS

- 1 Our minds are more than the sum of the conscious parts

Implicit processes

- 2 Unintended thoughts can contradict beliefs

Prejudice as a habitual response

- 3 Acting consistently with beliefs can require more than good intentions


Breaking the bias habit

SHIFT IN CONCEPTUALIZATION OF PREJUDICE

Old Framework = Prejudice is bad so if I think or act with bias, I am a bad person

New Framework = Prejudiced thoughts and actions are habits that we all have and breaking these habits requires more than good intentions

MODULE 2
**IDENTIFYING IMPLICIT BIAS IN THE
WORKPLACE**

- BIAS CONCEPTS**
- ① Expectancy Bias
 - Social Categories
 - Stereotypes
 - Status
 - ② Prescriptive Gender Norms
 - ③ Role Congruity or Incongruity
- 

CONCEPT 1: EXPECTANCY BIAS

Expecting certain behaviors or characteristics in *individuals* based on *stereotypes* about the *social category* to which they belong

Common stereotypes about men?

Common stereotypes about women?

EXPECTANCY BIAS EXAMPLE

Social Category	Stereotyped Trait
Mothers	Family first, nurturing
Fathers	Provide economic support for family, responsible
Professional employees	Organization-first

Expectancy Bias - Mothers are not ideal workers because of their primary commitment to nurture their families. Fathers are ideal workers because of their need to support their families.

Correll et al., *American Journal of Sociology* 2007

Measure	Female Applicants	
	Mothers	Non-Mothers
Competence	<u>5.19</u>	5.75
Commitment	<u>67.0</u>	79.2
Salary recommended	<u>\$137,000</u>	\$148,000
% recommended for hire	<u>46.8%</u>	84.0%

Underlined = statistically significant

Measure	Male Applicants	
	Fathers	Non-Fathers
Competence	<u>5.51</u>	5.44
Commitment	<u>78.5</u>	74.2
Salary recommended	<u>\$150,000</u>	\$144,000
% recommended for hire	<u>73.4%</u>	61.7%

Underlined = statistically significant

CONCEPT 2: PRESCRIPTIVE GENDER NORMS

Beyond Expectancy Bias → assumptions about how men and women *should* and *should not* behave

- Men are *agentic*: decisive, competitive, ambitious, independent, willing to take risks
- Women are *communal*: nurturing, gentle, supportive, sympathetic, dependent
- *Social penalties* for violating prescriptive gender norms

Supported by works of multiple authors over 30 years (e.g., Bem, 1974; Broverman et al., 1970; Eagly & Koenig, 2008; Heilman et al., 2001, 2004, 2007)

DISCONTINUOUS EMPLOYMENT
Different Assumptions for Men and Women

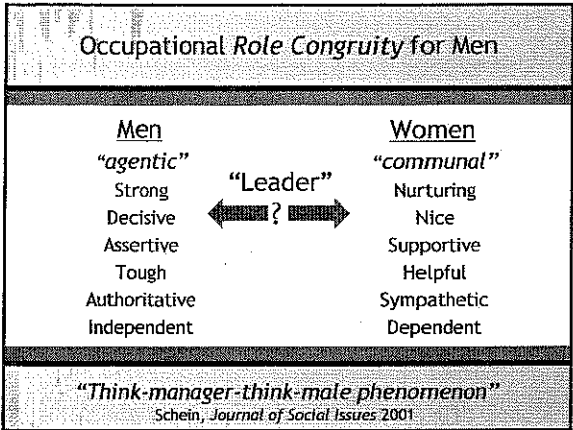
- 143 members of a professional HR organization assessed applicants with...
 - No employment gap
 - Discontinuous employment (9-month gap or three 12-week gaps)
- Only men were disadvantaged by gaps

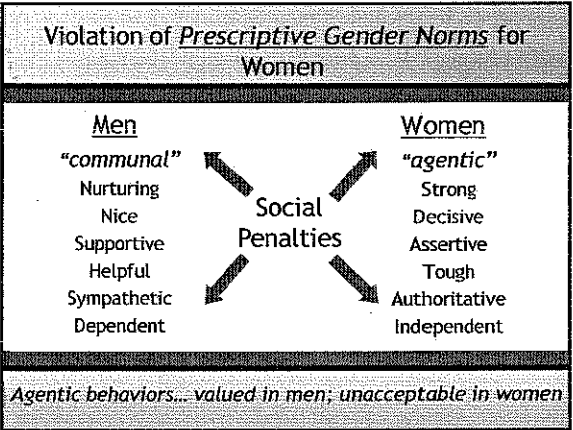
Smith et al., *Sex Roles* 2005

CONCEPT 3: ROLE CONGRUITY / INCONGRUITY

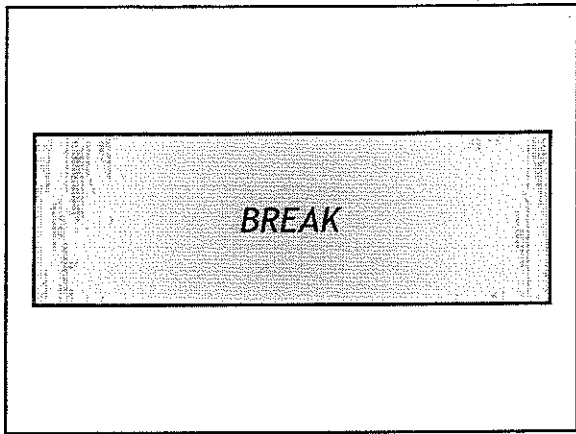
The fit (or lack of fit) between gender norms and workplace roles

Stereotypes about a typical leader?





CASE STUDY 1
 Retention



BIAS CONCEPTS

- ④ Reconstructing Credentials
- ⑤ Stereotype Priming
- ⑥ Stereotype Threat

CONCEPT 4: RECONSTRUCTING CREDENTIALS

Unintentionally adjusting the value of specific credentials to favor an applicant from a stereotype congruent group

- Decisions appear to be based on credentials and not on discrimination
- Thus, reconstructing credentials may inadvertently justify discrimination

RECONSTRUCTING CREDENTIALS EXAMPLE

Research Study: Mock hiring situation - 2 cases...

• Male and female applicants with identical credentials

1. Police Chief position - criteria constructed to favor male applicants (street experience vs. educational credentials)
2. Women's Studies Professor position - criteria constructed to favor female applicants (activist vs. educational credentials)

Uhlmann & Cohen, *Psychological Science* 2005

CONCEPT 5: STEREOTYPE PRIMING

Priming an individual with words, pictures, or media images that align with stereotypes (e.g., gender stereotypes) will promote bias in subsequent decision-making

GENDER PRIMING EXAMPLES

Research subject exposed to dependent words... Female target was rated as more dependent Research subject exposed to aggressive words... Male target was rated as more aggressive	Banaji et al., <i>Journal of Personality and Social Psychology</i> 1993
Exposure to female stereotype media images ... Reduced reaction time for female-stereotyped words	Davies et al., <i>Personality and Social Psychology Bulletin</i> 2005
"Chairman" vs. "chair" as job title ... Assumption that targeted person had more stereotypically male traits	McConnell & Fazio, <i>Personality and Social Psychology Bulletin</i> 1996

Semantic Priming in NIH Director's Pioneer Award?	
2004	≥ 2005
<i>Characteristics of target scientist and research</i>	
Risk-taking emphasized: <ul style="list-style-type: none"> • "exceptional minds willing and able to explore ideas that were considered risky" • "take...risks" • "aggressive risk-taking" • "high risk/high impact research" • "take intellectual risks" • application URL included "highrisk" 	Emphasis on risk removed: <ul style="list-style-type: none"> • "pioneering approaches" • "potential to produce an unusually high impact" • "ideas that have the potential for high impact" • "highly innovative" • URL no longer includes "risk"
Cames et al., <i>Journal of Women's Health</i> 2005	

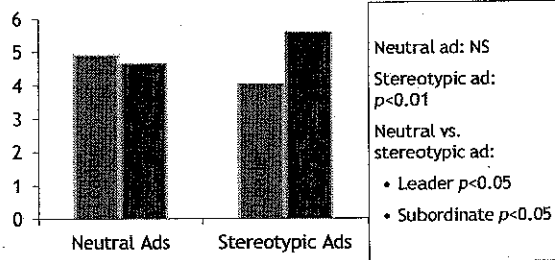
NIH Director's Pioneer Awards		
Awards to Women Scientists		
2004	0/9	0%
2005	6/14	43%
2006	4/13	31%
2007	4/12	33%
2008	4/16	25%
2009	7/18	39%
2010	3/17	18%
2011	2/13	15%
2012	4/10	40%
2013	3/12	25%

CONCEPT 6: STEREOTYPE THREAT
<p>Members of negatively stereotyped groups may underperform when reminded of their group membership</p>

STEREOTYPE THREAT EXAMPLES

Females vs. males in math	e.g., Spencer et al., 1999; Shih et al., 1999; Danaher & Crandall, 2008
White men vs. Asian men in math	e.g., Aronson & Lustina, 1999
White men and African American men in sports	e.g., Stone, 1999
Women and leadership	e.g., Davies et al., 2005
Women and science	e.g., Good et al., 2010

Women are less likely to select a leadership role under stereotype threat



Davies et al., *Personality and Social Psychology Bulletin* 2005

CASE STUDY 2
NIH Grant

BIAS WITHIN THESE CONCEPTS IS MALLEABLE

To reduce expectancy bias and promote role congruity...	Provide evidence of specific job-relevant competence and experience (Heilman, <i>Organizational Behavior and Human Performance</i> 1984)
To reduce the impact of prescriptive gender norms for agentic women...	Include communal information for women leaders (e.g. "caring and sensitive to the needs of her employees") (Heilman & Okamoto, <i>Journal of Applied Psychology</i> 2007)
To reduce opportunities for reconstructing credentials...	Establish the value of credentials before any applicant is seen (Uhlmann & Cohen, <i>Psychological Science</i> 2005)
To reduce the impact of stereotype threat...	State that "there is no gender difference in the ability to perform this task" (Davies et al., <i>Journal of Personality and Social Psychology</i> 2005)
To reduce the effect of stereotype priming...	Remove gender stereotype priming (e.g., pictures of men and women doing science) (Good et al., <i>Journal of Social Psychology</i> 2010)

TEST SCORES BY PHOTO CONDITION & STUDENT SEX

Photo Condition	Female Students	Male Students
Three lone male scientists (stereotype)	7.4 18 students	9.0 7 students
Three lone female scientists (counter-stereotype)	9.4 16 students	7.7 10 students
Mixed gender photos of scientists	8.4 15 students	8.3 12 students

Perfect test score = 12 Good et al., *Journal of Social Psychology* 2010

- Six ways that implicit bias has an impact... PERSIST**
- **P**rescriptive Gender Norms
 - **E**xpectancy Bias
 - **R**econstructing Credentials
 - **S**tereotype Priming
 - **I**ncongruity of Roles
 - **S**tereotype Threat

Breaking THE BIAS HABIT

Self-regulating our individual bias habits

MODULE 3

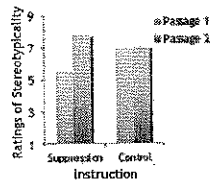
STRATEGIES TO REDUCE THE
INFLUENCE OF IMPLICIT BIAS

STRATEGIES THAT DO NOT WORK

Stereotype Suppression

(e.g., Galinsky & Moskowitz, 2000; Monteith et al., 1998)

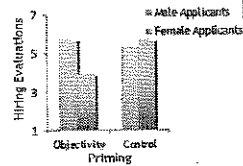
- Banish stereotypes from one's mind (be gender or race "blind")
- Macrae et al. 1994
- Rebound effects



Belief in Personal Objectivity

Uhlmann & Cohen
(*Organizational Behavior and Human Decision Processes*, 2007; Experiment 2)

- Biased evaluations of women



STRATEGY 1. Stereotype Replacement

Steps to take...	Examples
Recognize when you have stereotypic thoughts. Recognize stereotypic portrayals in society.	<ul style="list-style-type: none"> • Women faculty are less interested in leadership opportunities • Portrayal of females as poor at math or males as unable to do housework
Label the characterization as stereotypical.	<ul style="list-style-type: none"> • Men as agentic, women as communal
Identify precipitating factors.	<ul style="list-style-type: none"> • Priming with gender-congruent information
Challenge the fairness of the portrayal and replace it with a non-stereotypic response.	<ul style="list-style-type: none"> • I know many successful women leaders • I know that training and experience rather than gender are the main determinants of leader competence • Research does not support a gender difference in math performance once we control for the number of math courses taken

STRATEGY 2. Counter-Stereotypic Imaging

Steps to take...	Examples
Help regulate your response by imagining a counter-stereotypic woman in detail.	<ul style="list-style-type: none"> • Imagine a strong, effective woman leader • Think about specific positive counter-stereotypical individuals you know

STRATEGY 3. Individuating (vs. Generalizing)

Steps to take...	Examples
Avoid making a snap decision based on a stereotype.	<ul style="list-style-type: none"> • Make gender less salient than being a scientist, physician, engineer, or program developer
Obtain more information on specific qualifications, past experiences, etc., before making a decision.	<ul style="list-style-type: none"> • Mock hiring study reviewed in Module 2 (Heilman Organizational Behavior and Human Performance, 1984)
Practice making situational attributions rather than dispositional attributions.	<ul style="list-style-type: none"> • If a woman's grant is not successful, consider a situational explanation (e.g., funding is highly competitive) rather than a dispositional explanation (she does not have what it takes to be an independent investigator)

STRATEGY 4. Perspective-Taking

Steps to take...	Examples
Adopt the perspective (in the first person) of a member of the stigmatized group.	<i>Imagine what it would be like to...</i> <ul style="list-style-type: none">• Have your abilities called into question• Be viewed as less committed to your career than colleagues with similar training and effort• Not be offered opportunities because of assumptions about family responsibilities

STRATEGY 5. Increasing Opportunities for Contact

Steps to take...	Examples
Seek out opportunities for greater interaction with counter-stereotypic women.	<ul style="list-style-type: none">• Meet with women in high authority positions to discuss research endeavors, ideas, and visions• When compiling membership for key committees or speaker lists, ensure that women (from diverse groups) are represented

5 STRATEGIES to Reduce the Influence of Implicit Bias

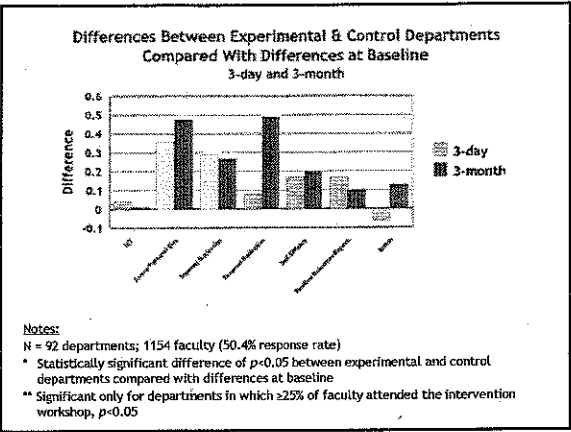
- Stereotype replacement
- Counter-stereotypic imaging
- Individuating
- Perspective-taking
- Increasing opportunities for contact

2010-2012 university-based study to assess if approaching gender bias as a remediable habit could promote gender equity behaviors among faculty and improve department climate

Carnes et al., *Academic Medicine* 2015

- 92 STEM departments paired based on discipline, school or college, and size
- Departments in each pair randomly assigned to experimental or control condition; experimental departments offered this workshop
- Faculty in department pairs were surveyed 2 days before and at 3 days and at 3 months following the workshop for experimental department

- Online survey queried:
 - Gender bias awareness
 - Motivation, self-efficacy, and outcome expectations to reduce gender bias
 - Engagement in actions to promote gender equity
 - Implicit bias score on a gender and leadership word categorization task (IAT)
- Questions about department climate extracted from worklife survey mailed to all faculty before and after intervention period



Study conclusion:

“A brief intervention that facilitates intentional behavioral change can help faculty break the gender bias habit and change department climate in ways that should support the career advancement of women in academic medicine, science, and engineering.”

- Not necessarily easy
- With effort (awareness, motivation, and a sustained commitment), prejudice is a habit that can be broken
 - Can expect that you may slip up
 - Stay committed
- Strategies we provided are powerful tools to combat implicit biases
 - Implicit responses can be brought into line with explicit beliefs


INDIVIDUAL EXERCISE

Write down a strategy you commit to using to reduce:

- ① Gender bias in your workplace
- ② Gender bias in your personal life

Continuing education evidence shows that articulating a commitment can reinforce behavior change^{1,2}

¹Overton & MacVicar, *Journal of Continuing Education in the Health Professions* 2008
²Wakefield et al., *Journal of Continuing Education in the Health Professions* 2003





Strategies to Employ

- Stereotype replacement
- Counter-stereotypic imaging
- Individuating
- Perspective-taking
- Increasing opportunities for contact

PERSIST in your attempts to break the bias habit through bias literacy. Be aware of...

P = Prescriptive gender norms
E = Expectancy bias
R = Reconstructing credentials
S = Stereotype joining
I = Incongruity of roles
S = Stereotype
T = Threat





THANK YOU!

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