



*Women in Science & Engineering Leadership Institute
University of Wisconsin-Madison*

Reviewing Job Applicants – Understanding and Minimizing Bias in Evaluation

Eve Fine, Ph.D.



About WISELI

- **WISELI – Women in Science and Engineering Leadership Institute**
 - Research institute at the University of Wisconsin-Madison
 - Mission: Advancing and promoting women in academic Science, Technology, Mathematics and Medicine (STEMM) – focus on faculty
 - Broader goals – fostering a diverse faculty body
 - Funding: NSF ADVANCE, NIH, Campus support



About WISELI

- Molly Carnes, MD, MS;
Co-Director
Professor, Depts. of Medicine, Psychiatry, and Industrial & Systems Engineering
Director, Center for Women's Health Research
- Amy Wendt, PhD;
Co-Director
Professors Dept. of Electrical and Computer Engineering
- Jennifer Sheridan, PhD;
Executive and Research Director
- Eve Fine, PhD;
Research and Director of Curriculum Development and Implementation
- Christine Pribbenow, PhD;
Evaluation Director



Introduction

Searching for Excellence & Diversity®:
Workshops for Search Committee

Content

1. Run an effective and efficient search committee
2. Actively recruit an excellent and diverse applicant pool
3. Raise awareness of unconscious bias and assumptions and their influence on evaluation of candidates
4. Ensure a fair and thorough review of candidates
5. Develop and implement an effective interview process
6. Close the deal – successfully hire selected candidate



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Discussion

What does diversity mean in your department?
Why do you think it is important
to develop a diverse faculty?



Introduction: Benefits of Diversity

- Diverse working groups are more productive, creative and innovative than homogeneous groups
 - Herring, Cedric. "Does Diversity Pay?: Race, Gender, and the Business Case for Diversity." *American Sociological Review* 74 (2009): 208-224.
 - Page, Scott E. *The Difference: How the Power of Diversity Creates Better Groups, Firms, Schools, and Societies*. Princeton, NJ: Princeton University Press, 2007.
 - van Knippenberg, Daan and Michaéla C. Schippers. "Work Group Diversity." *Annual Review of Psychology* 58 (2007): 515-541.
 - Chang, Mitchell J., Daria Witt, James Jones and Kenji Hakuta. *Compelling Interest: Examining the Evidence on Racial Dynamics in Colleges and Universities*. Stanford, CA: Stanford University Press, 2003.



Introduction: Benefits of Diversity

- Diverse groups engage in a higher level of critical analysis than do homogenous groups
 - Nemeth, Charlan Jeanne. "Dissent as Driving Cognition, Attitudes, and Judgments." *Social Cognition* 13 (1995): 273-291.
 - Nemeth, Charlan Jeanne. "Differential Contributions of Majority and Minority Influence." *Psychological Review* 93 (1986): 23-32.
 - Sommers, Samuel R. "On Racial Diversity and Group Decision Making: Identifying Multiple Effects of Racial Composition on Jury Deliberations." *Journal of Personality and Social Psychology* 90 (2006): 597-612.
 - Antonio, Anthony Lising et al. "Effects of Racial Diversity on Complex Thinking in College Students." *Psychological Science* 15 (2004): 507-510.



Introduction: Benefits of Diversity

- Diverse scholars and professionals can invigorate and expand disciplines and fields
 - New approaches to teaching
 - New research questions
 - New perspectives and interpretations
 - New concerns



Introduction: Commitment vs. Results

- Despite broad commitment to the goal of diversity, why are results are less than satisfactory
 - Lack of training/education on the hiring process
 - Influence of unconscious bias and assumptions



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What is unconscious bias?

- A substantial body of evidence demonstrates that most people hold unconscious biases about groups of people.
- Depending on the discipline, unconscious biases can also be referred to as:
 - Schemas
 - Stereotypes
 - Mental models
 - Cognitive shortcuts
 - Statistical discrimination
 - Implicit associations
 - Spontaneous trait inference
 - System 1 thinking

The tendency of our minds to apply characteristics of groups (real or imagined) to our judgments about individual group members.



What is unconscious bias?

- Most of us routinely rely on unconscious assumptions even though we intend to be fair and believe that we are fair.
- Human brain works by categorizing people, objects and events around us -- this allows us to quickly and efficiently organize and retrieve information.
- But – when evaluating people we can be led astray by our tendency to categorize people – and we tend to do so on the following dimensions:
 - Race/Ethnicity, Sex, and Age.



How is the research on bias and prejudice conducted?

- **Blind, randomized trials**
 - Give each group of evaluators pictures, words, or applications with a racial or gender indicator
 - Compare evaluations
- **Real life studies**
 - Evaluate actual resumés/curriculum vitae, job performance, letters of recommendations, call backs for interviews, etc.



Examples of Research on Unconscious Bias

- **Estimating height**

When shown photographs of people who are the same height evaluators overestimated the heights of male subjects and underestimated the heights of female subjects. Biernat et al. (1991). "Stereotypes and Standards of Judgment." *J Pers & Soc Psychol* 60:485-499.

- **Judging Athleticism**

When shown photographs of black and white men with similar body types, evaluators rated the athletic ability of black men as higher than that of white men. Biernat and Manis (1994). "Shifting Standards and Stereotype-Based Judgements." *J. Pers & Soc Psychol* 66: 5-20.

- **Evaluating Verbal skills**

When asked to rate the quality of verbal skills indicated by a short text, evaluators rated the skills lower if they were told an African American wrote the text than if a they were told a white person wrote it, and rated verbal skills higher when told that a woman wrote it than when told a man wrote it. Biernat and Manis. (1994).



Unconscious bias in the search process

- Applications/CVs/Résumés
- Reference Letters
- Job interviews



Evaluation of Curriculum Vitae and Résumés

Curriculum vitae for positions in academic psychology

Steinpreis et al. (1999) "The Impact of Gender on the Review of the Curricula Vitae of Job Applicants and Tenure Candidates: A National Empirical Study." *Sex Roles* 41: 509-528.

- 238 academic psychologists (118 male, 120 female) evaluated an actual cv randomly assigned a male or female name (Karen or Brian Miller).
 - One cv – at time of job application (jr-level)
 - One cv – at time of early tenure (sr-level)
- Entry level – academic psychologists more likely to hire male applicants and gave men higher ratings for:
 - Research
 - Teaching
 - Service
- Senior-level - Academic psychologists were equally likely to tenure men and women candidates, **but** were four-times more likely to include cautionary comments on cv's with a female name

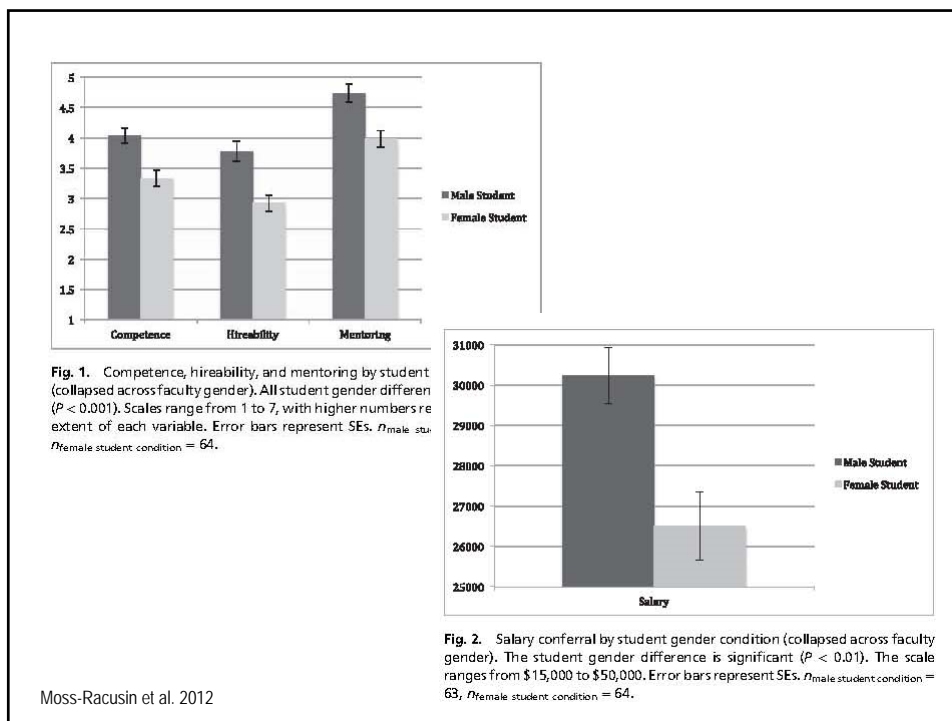



Evaluation of Curriculum Vitae and Résumés

Applications for lab manager

Moss-Racusin et al. (2012). "Science faculty's subtle gender biases favor male students." *PNAS* 109: 16474-16479.

- 127 science faculty (men and women) rated application materials for an entry level position as a lab manager; applications randomly assigned a male or female name.
- Rated male applicant as more competent and hireable than the female applicant.
- Selected a higher starting salary for the male applicant.
- Reported more willingness to offer career mentoring to the male applicant.





Evaluation of Curriculum Vitae and Résumés

- Evaluating résumés with African American- or white-sounding names
 - Bertrand and Mullainathan. (2004). "Are Emily and Greg More Employable than Lakisha and Jamal? A Field Experiment on Labor Market." *Am Econ Rev* 94: 221-1013
 - Resumes sent to a variety of employers advertising openings in local newspapers in Chicago and Boston.
 - Randomly assigned "white-sounding" or "African American-sounding" names to résumés.
 - Applicants with "white-sounding" names were 50% more likely to be called back to interview for positions.
 - For "white-sounding" names, applicants with better qualifications were 27% more likely to be called back. For "African American-sounding names," applicants with better qualifications were only 8%* more likely to be called back.

* Not statistically significant



Evaluation of Curriculum Vitae and Résumés

Additional examples

- **Motherhood Bias**

Correll, S. J., Benard, S., & Paik, I. (2007). "Getting a job: Is there a motherhood penalty?" *The American Journal of Sociology*, 112: 1297-1338

- **Career Gaps for Men**

Smith et al. (2005). "The Name Game: Employability Evaluations of Prototypical Applicants with Stereotypical Feminine and Masculine First Names." *Sex Roles*, 2005

- **Sexual Orientation**

Tilcsik, A. (2011). Pride and prejudice: Employment discrimination against openly gay men in the United States. *American Journal of Sociology*, 117: 586-626.



Evaluation of Curriculum Vitae and Résumés

Additional examples

- **Arabic sounding-names**

Derous, Hanh Nguyen, and Ryan. (2009). "Hiring Discrimination Against Arab Minorities: Interactions between Prejudice and Job Characteristics." *Human Performance* 22: 297-320.

Compared call back for job interviews for applicants with Arabic- or Dutch-sounding names

Rooth. (2010). "Automatic Associations and Discrimination in Hiring: Real World Evidence." *Labour Economics* 17: 523-534.

Compared call backs for job interviews for applicants with Arabic- or Swedish-sounding names

Widner and Chicoine. (2011). "It's All in the Name: Employment Discrimination Against Arab Americans." *Sociological Forum* 26: 806-823.

Compared call backs for job interviews for applicants with white or Arabic-sounding names in the U.S.



Letters of Recommendation

Trix and Psenka. (2003). "Exploring the Color of Glass: Letters of Recommendation for Female and Male Medical Faculty." *Discourse & Soc* 14: 191-220.

- 312 letters of recommendation for medical faculty **successfully hired** at large U.S. medical school
- Letters for women vs men:
 - Shorter
 - More letters for women with "*minimal assurance*"
 - More gendered terms in letters for women
 - More letters for women included "*doubt raisers*"
 - Men more frequently referred to as "researchers" and "colleagues". Women more frequently referred to as "teachers" and "students"
 - Women – 4X more references to personal lives
 - Women - Fewer *standout adjectives* ("outstanding" "excellent") and more *grindstone adjectives*.



Letters of Recommendation

Schmader, Whitehead, Wysocki. (2007). "A Linguistic Comparison of Letters of Recommendation for Male and Female Chemistry and Biochemistry Job Applicants." *Sex Roles* 5: 509-514.

Found fewer differences between letters for men and women in comparison to the Trix and Psenka study, but reaffirmed the comparative absence of outstanding adjectives in letters for women.



Evaluation of Job Interviews

Interviews for a leadership position

Phelan, Moss-Racusin, and Rudman. (2008) "Competent Yet Out in the Cold: Shifting Criteria for Hiring Reflect Backlash Toward Agentic Women." *Psychology of Women Quarterly* 32: 406-413..

- Videotaped interviews of actors (male and female) performing an agentic or communal script.
- **Agentic characteristics:**
Decisive, competitive, ambitious, independent, willing to take risks (often male-assumed characteristics)
- **Communal characteristics:**
Nurturing, gentle, supportive, sympathetic, dependent (often female-assumed characteristics)



Evaluation of Job Interviews

Interviews for a leadership position (cont.)

- Stereotypes/assumptions about leaders align more closely with agentic characteristics
- Social penalties may apply to men and women who violate gender-based behavioral norms/expectations.
- What happened when evaluators (428, approx. 50% women) viewed the taped interviewers and rated the "candidates" on?
 - Competence
 - Likeability
 - Hireability



Evaluation of Job Interviews

Phelan, et al. (2008).

RESULTS:

- No differences by sex of evaluator

Competence:

- Agentic interviewees rated more competent than communal interviewees

Likeability:

- When interviewee was “agentic” – males rated as more likeable or socially skilled than females.
- When interviewee was “communal” – males rated as less likeable or socially skilled than females (new finding – prev. studies found no differences)

Demonstrates the penalty for men and women who violate gender norms.



Evaluation of Job Interviews

Phelan, et al. (2008).

Hireability

- **Agentic vs. Communal: Agentic interviewees more hireable than communal** – consistent with evaluation of agentic interviewees as more competent than communal interviewees.
- **Gender Differences:**
 - Communal men and women – no difference in hireability
 - **Agentic men more hireable than agentic women** – despite equivalent ratings of competence
- Regression analysis showed that evaluators weighed **competence** more heavily than likeability for all applicants except agentic women.
- **For agentic women, likeability was given more weight.** Their strength (competence) was devalued and their perceived weakness emphasized. **This is an example of Shifting Criteria.**



Other “In-person” Evaluations

Evaluating résumés with minority- or white-sounding names

Pager & Western. (2012). “Identifying Discrimination at Work: The Use of Field Experiments.” *J. Social Issues* 68:221-237.

- Applicants applied in-person for a variety of low-wage, entry-level jobs advertised in major city newspapers in Milwaukee and New York.
- Milwaukee: 8 black and white pair-matched testers applied to 350 employers (black and white testers applied to different employers)
- New York: 10 black, white, and Latino testers applied to the same set of 340 employers
- White applicants received approx. 50% more job offers or call backs for a 2nd interview than black applicants in both cities. In NY, white applicants received approx. 20% more job offers/call backs than Latinos.



Other “In-person” Evaluations

Pager & Western. (2012).

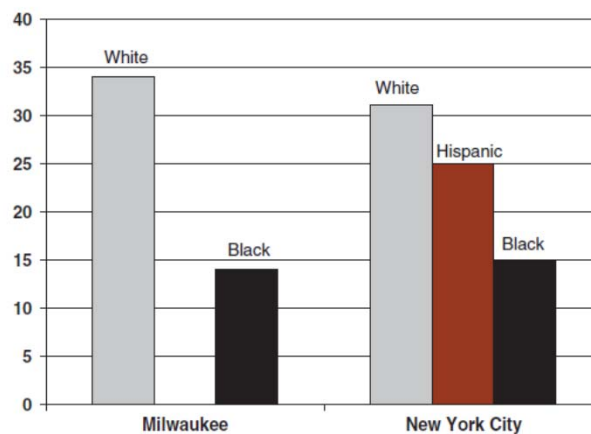


Fig. 1. Percent of applicants receiving a callback or job offer, by race.

Source. Pager, 2003; Pager, Western, and Bonikowski, 2009.



Job Interviews - Other Examples

- **Sexual Orientation**

Hebl, M. R., et al. (2002). "Formal and interpersonal discrimination: A field study of bias toward homosexual applicants." *Personality & Social Psychology Bulletin*, 28: 815-825.

- **Accented English**

Segrest Purkiss et al. (2006) "Implicit sources of bias in employment interview judgments and decisions." *Organizational Behavior and Human Decision Processes* 101: 152-167.

- **Weight**

Kutcher and Bragger. (2004) "Selection Interviews of Overweight Job Applicants: Can Structure Reduce the Bias?" *Journal of Applied Social Psychology* 34: 1993-2022.

- **Pregnancy**

Bragger et al. (2002). "The Effects of the Structured Interview on Reducing Biases Against Pregnant Job Applicants." *Sex Roles* 46: 215-226.

- **Disability**

Hebl and Skorinko. (2005). Acknowledging One's Physical Disability in the Interview: Does "When" Make a Difference? *J. of Applied Soc. Psychol.*, 35(12), 2477-2492.



Minimizing Bias and Assumptions

What Not to Do:

- **Suppress bias and assumptions from one's mind (or try to)**
 - **Studies demonstrating Stereotype Rebound effect**
 - Nira Liberman and Jens Förster, "Expression After Suppression: A Motivational Explanation of Postsuppressional Rebound," *Journal of Personality & Social Psychology* 79 (2000): 190-203
 - C. N. Macrae, Galen V. Bodenhausen, Alan B. Milne, and Jolanda Jetten, "Out of Mind but Back in Sight: Stereotypes on the Rebound." *Journal of Personality & Social Psychology* 67 (1994): 808-817
- **Relying solely on a presumably "objective" ranking or rating system to reduce bias**
 - Christine Wennerås and Agnes Wold. "Nepotism and Sexism in Peer Review," *Nature* 387 (1997): 341-343.



Minimizing Bias and Assumptions

What to do before conducting evaluations:

- Replace your self-image as an objective person with recognition and acceptance that you are subject to the influence of bias and assumptions

Uhlmann and Cohen, Organizational Behavior and Human Decision Processes, 2007

- Diversify your search committee
 - Social tuning/increased motivation to respond w/o bias
Lowery, Hardin, and Sinclair, J. Personality and Social Psychology, 2001
 - Counterstereotype imaging
Blair, Ma, and Lenton, J. Personality and Social Psychology, 2001
 - Dasgupta and Greenwald, "Journal of Personality and Social Psychology, 2001"
- Critical Mass – increase proportion of women and minorities in the applicant pool

Heilman, Organizational Behavior and Human Performance, 1980; van Ommeren et al., Psychological Reports, 2005



Minimizing Bias and Assumptions

What to do before conducting evaluations:

- Develop and prioritize criteria prior to evaluating applicants.

Uhlmann and Cohen, Psychological Science, 2005

- What credentials and skills are you seeking?
- What types of experience will be valued?
- What application materials and interview questions will enable you to access candidates strengths and weakness in areas such as:
 - Commitment to undergraduate teaching
 - Teaching skills and abilities
 - Experience and ability to work with diverse students and students with different learning styles
 - Scholarly contributions and productivity
- Which of these criteria (or others) will matter most?
- How will you evaluate candidates with strengths in some areas/weaknesses in others?



Minimizing Bias and Assumptions

What to do while conducting evaluations:

- Spend sufficient time and attention on evaluating each application
Martell, J. Applied Social Psychology, 1991
- Focus on each applicant as an individual and evaluate their entire application package – information minimizes bias
Heilman, Organizational Behavior & Human Performance, 1984; Tosi and Einbender, Academy of Management Journal, 1985; Brauer and Er-rafiy, Journal of Experimental Social Psychology, 2013.
- Use inclusion rather than exclusion decision-making processes
Hugenberg et al., J. Personality and Social Psychology, 2006
- Stop periodically to evaluate your criteria and their application
- Accountability: Be able to defend every decision and hold each member of the search committee responsible for equitably evaluating applicants.
Foschi, Social Psychology Quarterly, 1996
Dobbs and Crano, Social Psychology Quarterly, 2001.



Minimizing Bias and Assumptions

What to do while conducting evaluations (cont.):

- Accountability: hold each member of the search committee responsible for equitably evaluating applicants.

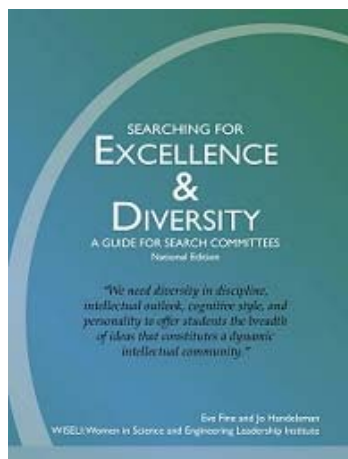
Some examples that should cause you to **pause, consider, and raise questions**:

- I couldn't care less if the person we hire is black, purple, green, polka-dot, male female or whatever. All I care about is excellence.
- I know that I am gender-blind and color-blind.
- I'm not sure how well this candidate will fit here (or in this position).
- I think he/she is just too soft-spoken for a leadership position.
- She struck me as too aggressive.
- I'm not sure why, but I don't really like this candidate ... something just rubs me the wrong way.
- Is this candidate sufficiently mature? or ... past his prime?
- Will we have a partner hire issue to contend with?

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http://wiseli.engr.wisc.edu/docs/BiasBrochure_3rdEd.pdf



http://wiseli.engr.wisc.edu/docs/SearchBook_US.pdf



Relevant Publications

- Fine, Eve, Jennifer Sheridan, Molly Carnes, Jo Handelsman, Christine Pribbenow, Julia Savoy, Amy Wendt. 2014. "Minimizing the Influence of Gender Bias on the Faculty Search Process." *Advances in Gender Research* 19: 267-289.
- Sheridan, Jennifer; Eve Fine; Christine Maida Pribbenow; Jo Handelsman; Molly Carnes. 2010. "[Searching for Excellence & Diversity: Increasing the Hiring of Women Faculty at One Academic Medical Center.](#)" *Academic Medicine*. 85(6):999-1007.
- Isaac, Carol; Barbara Lee; and Molly Carnes. 2009. "[Interventions that Affect Gender Bias in Hiring: A Systematic Review.](#)" *Academic Medicine*. 84(10):1440-1446.
- Sheridan, Jennifer; Eve Fine; Jessica Winchell; Christine Maida Pribbenow; Molly Carnes; and Jo Handelsman. 2007. "[Searching for Excellence & Diversity: Does Training Faculty Search Committees Improve Hiring of Women?](#)" *American Society for Engineering Education (ASEE) 2007 Conference Proceedings*. June 2007.
- Sheridan, Jennifer; Christine Maida Pribbenow; Eve Fine; Jo Handelsman; and Molly Carnes. 2007. "[Climate Change at the University of Wisconsin-Madison: What Changed, and Did ADVANCE Have an Impact?](#)" *Women in Engineering Programs & Advocates Network (WEPAN) 2007 Conference Proceedings*. June 2007.

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