Career Development

Where best intentions and unconscious gender bias collide

Top left: 55Cancri_art by: LynetteCook
Bottom right: Venus; photo: JPL/NASA
Bottom left: Comet Garradd_photo credit: Robert Polzl
“To boldly go where no man (Star Trek) or no one (ST: The Next Generation) has gone before.”

Gender bias in medicine, science and pathology…

Does it exist?

What are the consequences?

Could I be biased and not know it?

How might gender bias be remediated?
Overview:

• Women are underrepresented in science, engineering and medicine
• The number of women in the ‘pipeline’ is no longer solely to blame
• The ‘pipeline’ metaphor wrongly suggests that scientific and medical careers progress along at a relatively steady rigid advancement pathway—they do not
• There is significant data which supports unintentional bias by both men and women, against women in AMC

Source: Beyond Bias and Barrier: Fulfilling the Potential of Women in Academic Science and Engineering, National Academy of Sciences, National Academy of Engineering, Institute of Medicine, 2007.
US SOM: the Proverbial Ivory Tower Attributes

- Deprecation
- Disrespect
- Erosion of trust
- Competitive individualism
- Under-valuing of humanistic qualities
- Lack of relationships
- Faculty attrition due to dissatisfaction and attrition rates
Gender Bias in Academic Medicine and Pathology: What is the data?
Women in Medicine in US AMC

• For the last 3 decades, women have constituted 30-50% of medical students.

• One third of SOM faculty at AMC are women

• Few women have been appointed to leadership positions with real power
Women in U.S. SOM/AMC

Women in Pathology Depts

- **Department of Pathology, Residents**
  - 1999: 46% Women
  - 2011: 53% Women

- **Department of Pathology Faculty**
  - 2005: 32% Women
  - 2011: 33% Women
    - Clinical: 39% Women
    - Research: 39% Women

- **Departments of Pathology, Senior Faculty Women**
  - 2005 (All): 31% Associate Prof, 18% Full Prof
  - 2011 (MD): 37% Associate Prof, 18% Full Prof
  - (Res): 41% Associate Prof, 23% Full Prof

Source: AAMC Data
<table>
<thead>
<tr>
<th></th>
<th>2005*</th>
<th>2013** Hosp Depts</th>
<th>LCME Depts</th>
<th>Total (Hosp and LCME)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>20% 9/44</td>
<td>16% 24/148</td>
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</table>

Source: *APC 2005 survey and **Current APC Membership List
Experiencing the Culture of Academic Medicine: Gender Matters, A National Study

Pololi LH et al, University of MA and Harvard Medical School
J Gen Intern Med
DOI: 10.1007/s11606-012-2207-1
© Society of General Internal Medicine 2012
C-Change Project

• Survey of ~5,000 randomly selected faculty from 26 US Schools of Academic Medicine

• Identification of female to male differences and similarities in their perceptions of key areas

Source: The National Initiative on Gender, Culture and Leadership in Medicine (C-Change Project), Pololi LH et al. J Gen Int Med 2012
Females and Males Reported Similarities Including:

- High levels of personal and professional engagement
- Leadership aspirations
- Feelings of ethical/moral distress related to the workplace
- Perception that the institution is committed to faculty advancement
Unlike Men, Females Report Significantly Less

- Sense of belonging and relationships in the workplace
- Self-efficacy for career advancement
- Gender equity
- Belief that their institutions were making changes to address diversity goals
- Belief that their institutions were family friendly
- Congruence between self and institutional values
Conclusions from C-Change Study

• Faculty men and women are equally engaged in their work and share similar aspirations for leadership and success.

• Medical schools have failed to create or sustain an environment where women feel fully accepted supported to succeed.

What are the factors that contribute to these perceptions?

- Perceived or actual issues related to familial responsibilities and workplace inflexibility
- Salary inequities
- Recognition, promotion and leadership inequity…
- Gender discrimination and Sexual Harassment
- Bias in funding and opportunities in science
Career Flexibility and Family-Friendly Policies: An NIH-Funded Study to Enhance Women’s Careers in Biomedical Sciences

Funded by the NIH Office of Research on Women’s Health
Data derived from UC Davis, survey of faculty of the SOM, Veterinary Med, College of Biological Science
Source: Villablanca AC et al. J Women’s Health 2011
Flexibility and Family-Friendly Policies: Data 2011

- Nearly half of men and women reported significant child care or family care responsibilities.
- Women faculty were significantly more likely to be childless than men faculty (35% vs. 14%, p<0.001).
- Interest in family friendly policies was higher in women, as compared to men.
- Barriers for the use of FFP was cited as significant, resulting in many faculty not using benefits that were available.
Gender Pay Gap for Newly Trained Physicians is Increasing: US Data, 2011

- Study of new physicians leaving residency programs New York State 1999-2008
- A significant ‘Gender Pay Gap’ not explainable by specialty, practice setting, work hours, or other characteristics
- Trend towards salary divergence is increasing, not decreasing.
  - 1999 $ 3,600
  - 2008 $16,819

Source: LoSasso AT et al. Health Affairs, 2011
Gender Differences in the Salaries of Physician Researchers: 2012 Data US

- Mean salary women, $167,669 vs. mean salary for men, $200,433
- Male gender was associated with a significantly higher salary, even when adjusted for academic rank, specialty, leadership position, academic productivity, work hours, and seniority
- On an annual basis, the expected mean salary is higher on the basis of gender alone, by $12,194 per annum

Source: Gender Differences in the Salaries of Physician Researchers Jagsi R et al, JAMA 2012
Gender Discrimination and Sexual Harassment in Academic Medicine

• Female faculty 2.5x more likely to perceive gender based discrimination in AMCs
• Women who report gender discrimination have lower career satisfaction
• Rates of discrimination increase with rank, average 47% in Assist Profs up to 70% in Full Profs
• 50% of Female Faculty report at least one incident of sexual harassment

Sexual Harassment: the Till Scale

1. Generalized sexist remarks and behavior
2. Inappropriate Sexual Advances
3. Subtle bribery to engage in sexual behavior
4. Threats to engage in sexual behavior
5. Coercive Advances

Source: Till F. National Advisory Council on Women’s Educational Programs, 1980
Women's share of faculty positions is influenced by long-term trends in doctoral degree production and will be influenced by recency of degree, marital status, and presence of children in the home.

By 2006, women held the same overall percentage of full-time tenured and tenure-track faculty positions as there were women earning science and engineering doctoral degrees from 1958-2004.

By 2006, women attained a lower percentage of full-time full professorships in science and engineering.

Source: 2008 National Science Foundation Report
Nepotism and Sexism in Peer Review: a Study by the Swedish Medical Research Council

- UN has named Sweden as the leading country in the world with respect for equal opportunities for men and women.
- Peer reviewers consistently overestimated male achievement, underestimate female achievements
- Peer reviewers deemed women applicants to be especially low in scientific competence, unsupported by education, area of expertise, career productivity data based on publication number, impact factor, first authorship, total impact including number of citations
- Male gender and reviewer affiliation alone were major determinates of outcome

NIH Research Funding For AMC Faculty: Women vs. Men

• During 1994-2004 the participation of women in NIH grants increased, but it was still not comparable to the proportion of women in biomedical science
  – In 1994, 20% of awards and 17% of awarded dollars went to female Principal Investigators
  – In 2004, 25% of awards and 21% of awarded dollars went to female Principal Investigators
• The success rate for women submitting research grants during this period was very comparable to that of men

Source: Sex/Gender in the Biomedical Science Workforce, NIH Report. October 7, 2005
Women Scientists Are Less Likely to Apply for Research Grants. How come?

- Women have lower confidence and they are inclined to underestimate their abilities, even though their success rate in obtaining research grants is equal to men.
- Mentorship in grantsmanship is lacking in many instances, which adds to their fear of failure.
- Success as a Principal Investigator requires a level of assertiveness and competitiveness, the latter attributes being perceived by some women as incompatible with acceptable female behavior.

Source: 2007 EMBO Report: Survey of NIH Postdocs
What are the consequences of Prolonged Gender Issues in AMCs?
Social Media, SOM Cultural Backlash that Perpetuates the Problem Further Sensitizing Women Students and Faculty

• “...once you near graduation, people begin to pull you aside and warn you about the stresses inherent in such [an academic] lifestyle." While applying for residency, Dr. Mega encountered both male and female physicians who urged her to consider her "priorities" as a woman in an intellectually demanding and time-consuming field…”

• "We're still at a stage where there are not many women full professors floating around, or even women faculty who are on the advancement track...."

• "Women need to see other women who are professionally successful and satisfied with their choices. There are very few women who are department chairs or in other positions of major authority to fill that need,.."

“Situated Knowledge”

A different way of knowing, derived from occupying a position of less power than the dominant group. Groups with less power perceive inequality differently as a result of being discriminated against.

Allegations of “Mistreatment” and “Abuse”,
LCME Graduation Questionnaire 2012

• Established in 1978 to identify issues critical
to the future of medical education and the
well being of medical students
• Given to all US Medical Students
• Changes in 2012 related to mistreatment of
students, awareness of policies related to
discrimination, harassment, institutional
commitment and policies, student perceptions
and outcomes
<table>
<thead>
<tr>
<th>Year</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>2007</td>
<td>22.5%</td>
</tr>
<tr>
<td>2008</td>
<td>22%</td>
</tr>
<tr>
<td>2009</td>
<td>23.5%</td>
</tr>
<tr>
<td>2010</td>
<td>27.5%</td>
</tr>
<tr>
<td>2011</td>
<td>24.5%</td>
</tr>
</tbody>
</table>

University of Colorado SOM
All Schools Av. 17%
## Mistreatment by Category

<table>
<thead>
<tr>
<th>Category</th>
<th>UC</th>
<th>All Schools</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public humiliation</td>
<td>43%</td>
<td>34%</td>
</tr>
<tr>
<td>Threatened with physical harm</td>
<td>5%</td>
<td>2%</td>
</tr>
<tr>
<td>Physically harmed</td>
<td>5%</td>
<td>2%</td>
</tr>
<tr>
<td>Required personal service</td>
<td>8%</td>
<td>9%</td>
</tr>
<tr>
<td>Subject of offensive sexual remarks</td>
<td>22%</td>
<td>15%</td>
</tr>
<tr>
<td>Denied opportunities b/o gender</td>
<td>11%</td>
<td>5%</td>
</tr>
<tr>
<td>Lower evals b/o gender</td>
<td>10%</td>
<td>7%</td>
</tr>
<tr>
<td>Unwanted sexual advances</td>
<td>6%</td>
<td>5%</td>
</tr>
</tbody>
</table>
## Personal Experience with Mistreatment—Beyond Gender

<table>
<thead>
<tr>
<th></th>
<th>UC</th>
<th>All Schools</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asked to exchange sexual favors for grades/rewards</td>
<td>0</td>
<td>0.2 %</td>
</tr>
<tr>
<td>Denied opportunities based on race/ethnicity</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Subjected to racially offensive remarks</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>Lower evaluations or grades because of race/ethnicity</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Denied opportunities because of sexual orientation</td>
<td>0</td>
<td>0.3</td>
</tr>
<tr>
<td>Offensive remarks because of sexual orientation</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Lower evaluations or grades b/o sexual orientation</td>
<td>0</td>
<td>0.3</td>
</tr>
</tbody>
</table>
Survey Identification of Problem Areas

- Public humiliation
- Physical harm
- Offensive sexist remarks
- Denied opportunities because of gender
- Disrespect for student
- Public disrespect of others
Are the Same Persons Reported Multiple Times?*

<table>
<thead>
<tr>
<th>Number</th>
<th>Faculty</th>
<th>Housestaff or Fellows</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>53%</td>
<td>51%</td>
</tr>
<tr>
<td>2</td>
<td>25%</td>
<td>18%</td>
</tr>
<tr>
<td>3</td>
<td>12%</td>
<td>13%</td>
</tr>
<tr>
<td>4</td>
<td>10%</td>
<td>18%</td>
</tr>
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</table>

*Source: Data from UC, 2012
Do you have Women Students and Faculty who are Lost in the Crowd?

Photo credit: http://funnyasduck.net
We all have gender bias, the question is, how much and what do we do about it?
Become a Change Agent to Reduce Your Implicit Bias

• Take the survey, compare yourself to > 83,000 other participants

https://implicit.harvard.edu/implicit/

Source: Scientific reports of the IATD effect Geenwald, Nosek and Banaji 2003 and Nosek, Greenwalk and Banaji 2006
Lead from the Top

- Set organizational goals to include ~1/3 women at all levels, including the leadership circle.

- Prioritize as a department to reduce gender bias.
  - Share data on the negative impact of gender bias on the institution, department, faculty.
  - Compare faculty pay, promotion, tenure, hiring and faculty departure data by gender, rank, diversity.
  - Survey faculty and students to assess strength of gender in your organization. Benchmark to others via AAMC, etc.
Practical Steps

• Women leaders often overburdened...choose what you ask them to do carefully so that you do not diminish their availability, effectiveness and productivity.

• Encourage women to lead and given them roles which will allow success, skill building, visibility. This includes women residents and fellows. Leadership is a learned art!

• Emphasize focus and what is important for academic career development.
Mentoring and Role Models Are a Must to Reduce Gender Bias

• Senior mentors and role models have a positive influence on the career advancement of junior professionals…

• Multiple mentors are best, including women and men

• Women in academic medicine with mentors report more career satisfaction, more publications, greater time spent on research activities

Source: Levinson et al. Mentors and role models for women in academic medicine. WJM 154, 1991
Be Aware: Letters of Recommendation, Nomination and Support are Major Sources of Gender Bias

• An organized approach and gender neutrality is a must for success
• Avoid gender stereotyping language….her teaching, her nurturing vs. his research, his skills and career.
• Avoid Standout Adjectives for Men and Grindstone descriptors for women
• Use affirmative language, don’t include “doubt raisers” or fewer terms of praise for women

President B. Obama Issues a Challenge…. Second Inaugural Address, Jan. 21, 2013

“It is now our generation’s task to carry on what those pioneers began… for our journey is not complete until our wives, our mothers and daughters can earn a living equal to their efforts…

That is our generation’s task, to make these works, these rights, these values of life and liberty and the pursuit of happiness real for every American”
“Realizing the full potential of female physicians and scientists will more fully use the nation’s human capital and resources devoted to medical training.

Academic medicine needs its highly skilled and deeply dedicated female physicians and biomedical scientists to implement their own vision of leadership and health priorities for the nation.”

Source: The National Initiative on Gender, Culture and Leadership in Medicine (C-Change Project) Premise
Gender Bias?

The Final Frontier

Photo credit: W. Rychlik