Toward a Diverse STEM Faculty

Pam Cook
University of Delaware

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www.udel.edu/advance
Which shape is longer?
## The Faces of Berkeley Engineering

*Meet Tomorrow’s Leaders and Today’s Pioneers*

### Students
- **Julia Cross**
  - Studies the martial art Wu Shu
- **Kibibi Moseley**
  - Table tennis champion
- **Anthony Levanowski**
  - Lego robot creator

### Faculty
- **Werner Goldsmith**
  - Wrote the book on Impact
- **Ali Niknejad**
  - Circuit Maven
- **Jennifer Mankoff**
  - Accomplished viola player

### Alumni
- **Oren Jacob**
  - Pixar wizard
- **Julia Gee**
  - Volunteer-aholic
- **Floyd Kvamme**
  - Chip guru
MIT Study
MIT School of Science – number of women faculty

Figure  Number of women faculty in MIT’s School of Science between 1960 and 2010. Taken from MIT, 2011.
Women had been “unconsciously” discriminated against

Intentional actions led to change in climate

Women were as accomplished as the men—no sacrifice of quality for diversity.

I believe that in no case was this discrimination conscious or deliberate. Indeed, it was usually unconscious and unknowing. Nevertheless the effects are and were real. . . . . Robert Birgeneau – Dean, School of Science, MIT 1999
Unconscious, unknowing

Cognitive Shortcuts
Implicit Bias
Blindspot: Hidden Biases of Good People Banaji & Greenwald

Carla Kaplan, Yale Professor AND Talented Quilter
Blindspot: Hidden Biases of Good People

Banaji & Greenwald

Carla Kaplan, Yale Professor AND Talented Quilter

• Only one identity got her access to a renowned specialist for her hand injury
• Physician’s blindspot: favoring one identity, privileging it over another
• Conclusions:
  • Hidden discrimination: in-group members receive invisible benefits
  • Out-group members are disadvantaged
  • Good people’s unconscious assumptions affect both in-group and out-group
Research shows that, regardless of our explicit beliefs, we all apply implicit assumptions.

- Both women and men hold them about gender.
- All people make them about race and ethnicity (even their own) (and age, and height, and accent, and . . . ).
Letters of Recommendation

Successful Medical School Faculty Applicants

Letters for women:
- Shorter
- “Mary” instead of “Dr. Smith”
- Greater focus on teaching, personal life
- More “doubt raisers,” such as: “It’s amazing how much she’s accomplished” and “It appears her health is stable.”

Letters for men:
- Longer
- “Dr. Smith” instead of “Larry”
- More references to publications and research

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Letters were written by Both men and women!

Letters of Recommendation: Psychology Faculty Positions

• 624 letters of recommendation studied (46% of applicants women)
• Women described as “communal”: affectionate, helpful, tactful, agreeable
• Men described as “agentic”: assertive, confident, ambitious, independent

Greater proportion of communal characteristics—lower hireability. Greater proportion of agentic characteristics—not related to hireability.

Summary: Women described as communal, thus less hireable.

Swedish Medical Research Council Postdoc:
Authors noticed:
46% of applicants were women (114 total).
20% of awardees were female.

Took the case to court, acquired access to applications. Assigned applicants “Impact Score” based upon publication record.

**Results**
**Males:** linear relationship (suggests original review panel used objective criteria).
**Females:** nonlinear relationship, and lower original score.

**Summary**
Women had to be 2.5 times as productive as men to be ranked the same.

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AND, for men or women,

Affiliation with a member of the review panel gave a comparable advantage.

Implicit Bias or Lack of Self Promotion?

Here is a chart showing the percentage of female scholarly award winners, female service/teaching award winners, and female faculty in three different fields:

- **BIOMEDICAL**
  - % Female Scholarly Award Winners
  - % Female Service/Teaching Award Winners
  - % Female Faculty

- **MATHEMATICS**
  - % Female Scholarly Award Winners
  - % Female Service/Teaching Award Winners
  - % Female Faculty

- **PHYSICAL SCIENCE**
  - % Female Scholarly Award Winners
  - % Female Service/Teaching Award Winners
  - % Female Faculty

For more information, visit the Association for Women in Science (AWIS) website: [http://www.awis.org/?Awards_Recognition](http://www.awis.org/?Awards_Recognition)
Association for Women in Science (AWIS) website
http://www.awis.org/?Awards_Outcomes

ACS: American Chemical Society
AGU: American Geophysical Union
AMS: American Mathematical Society
ASA: American Statistical Association
MAA: Mathematical Association of America
SfN: Society for Neuroscience
SIAM: Society for Industrial and Applied Mathematics
Studies: Gender Bias in Evaluation

- Psychology professors prefer 2:1 to hire “Brian” over “Karen,” even when the application packages are identical. Employers also prefer to hire “Brendan” over “Jamal.”

  (Steinpries, Anders, and Ritzke (1999) Sex Roles, 41, 509)
  (Bertrand, et al., MIT Dept. Economics Working Paper No. 03)

- “Blind” auditions increased the percentage (25-46%) of women winning orchestral jobs and increased the probability that women would advance out of preliminary rounds.


- Double-blind review of journal articles yields 7.9% increase in proportion of papers with a female first author.

  (Budden, et al. (2007) TRENDS in Ecology and Evolution Vol.23 No. 1)
127 biology, chemistry and physics professors rated credentials ofugs for science lab manager position.

same materials but randomly Named (Jennifer, John)

Mean starting salary:
  female $26,500
  male $30,238

female faculty members were just as likely as their male colleagues to favor the male student.

Moss-Racusin, et al. PNAS 2012
NIH Awards: Race and Ethnicity

~83,000 proposals (‘00-’06)

Study controlled for:
- demographics
- education and training
- employer characteristics
- NIH experience
- research productivity

Student teaching evaluations

On-line course

6 discussion groups – 2 taught by the professor, 2 by a female, 2 by a male instructor.

Each instructor taught 1 group under their own identity, the second under the other’s identity.

So of the two groups who believed they had the female/male instructor, one actually had the other.

What’s in a Name: Exposing Gender Bias in Student Ratings of Teaching
MacNell, Driscoll & Hunt (2014)
Student teaching evaluations

When the actual male and female instructors posted grades after two days:

- as a male, this was considered to be a 4.35 out of 5 level of promptness,

- as a female, it was a 3.55 out of 5.
Assignment of Duties

- https://www.youtube.com/embed/cX3GQZvgzDo

- Center for WorkLife Law, UC Hastings College of the Law
What can you, as a faculty member learn from this?

- Letters of reference. We are all busy, don’t assume we know, or remember anything. Give a clear description of your work/assets on paper so we will have it “at hand”. If you are asked for a letter of recommendation, write the letter, put it in your drawer overnight and re-check the next day.

- Have an elevator speech ready at all times! This is critical if you are different in any way. You have to make the person notice your value immediately.

Did you know? Your chance of getting an award increases 2.5 times if you have an acquaintance with someone on the selection committee?
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- Learn/practice how to say NO in a positive way, after some (overnight) thought.

- Create a mentoring network – to learn of opportunities, have nominators

- Continue to learn about, and promote consciousness about implicit bias.

- Pursue external mentorship, leadership in professional organizations.

- Have a plan. Be intentional. That way you won’t be so easily swayed from your path.
Effective Self-Promotion

AND, if you get some recognition/honor
don’t be shy about having it put on the department webpage, on the university webpage/news
AND, you need to write the draft!!
publicity people don’t know your field/honor/recognition
AND, generally, we are all busy and it is unclear who has the time for this if you don’t!
Faculty Recruitment: 10 Best Practices

1. Assure the search committee agrees to a timeline and sticks to it.
2. Have an agenda with time limits for each meeting of the committee.
3. Actively recruit a wide, deep initial candidate pool. Call desirable candidates and invite them to apply.
4. Have the committee understand the cognitive shortcuts that we all take when evaluating others.
5. Develop and use an evaluation rubric. Have committee members bring numerical ratings and opinions in writing to meetings.
6. Make an inclusive long shortlist before settling on the shortlist.
7. Work to include more than one woman, or underrepresented minority, in the final pool.
8. Use the interview to highlight your campus to the candidate.
9. Don’t lose the thread once an offer is accepted - follow up.
10. Don’t lose the thread once an offer is accepted - mentor your new colleague.
Hey guys, how is the water?

Apologies to Scott Page – “The Difference”

What’s water?

Thank you!
Effective Self-Promotion

Not Afraid To Give Themselves Credit

At a time when scholars are increasingly judged by how frequently their work is cited, research shows that men are more likely than women to cite their own work—driving up their citation rates. The percentages below show how much more likely male authors have been than female authors to cite themselves in select disciplines over the past 60 years.

<table>
<thead>
<tr>
<th>Discipline</th>
<th>Percentage</th>
</tr>
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<tbody>
<tr>
<td>Probability and statistics</td>
<td>100%</td>
</tr>
<tr>
<td>Mathematics</td>
<td>84%</td>
</tr>
<tr>
<td>Molecular biology</td>
<td>74%</td>
</tr>
<tr>
<td>Political Science, international</td>
<td>68%</td>
</tr>
<tr>
<td>Economics</td>
<td>65%</td>
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<tr>
<td>Political Science, U.S.</td>
<td>58%</td>
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<tr>
<td>Ecology and Evolution</td>
<td>44%</td>
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<tr>
<td>Sociology</td>
<td>43%</td>
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<tr>
<td>History</td>
<td>38%</td>
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<tr>
<td>Philosophy</td>
<td>37%</td>
</tr>
<tr>
<td>Education</td>
<td>30%</td>
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