



UNIVERSITY *of* DELAWARE



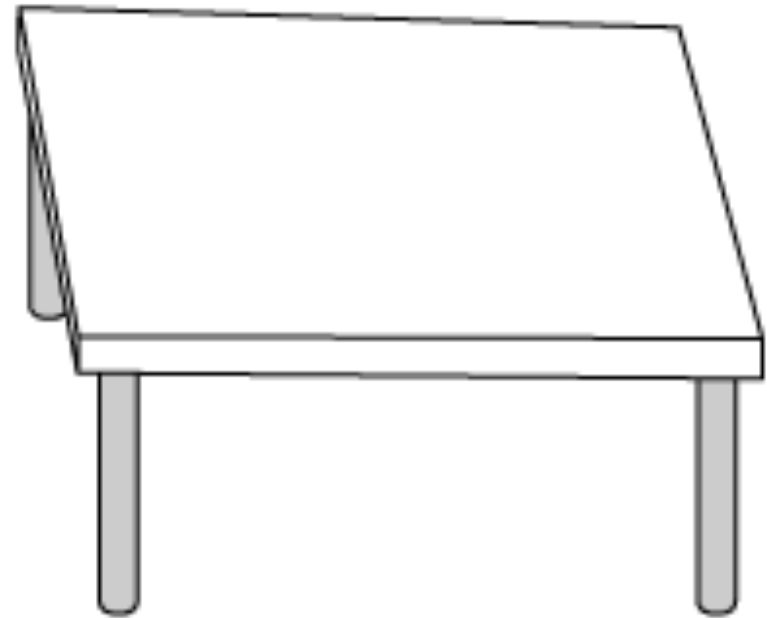
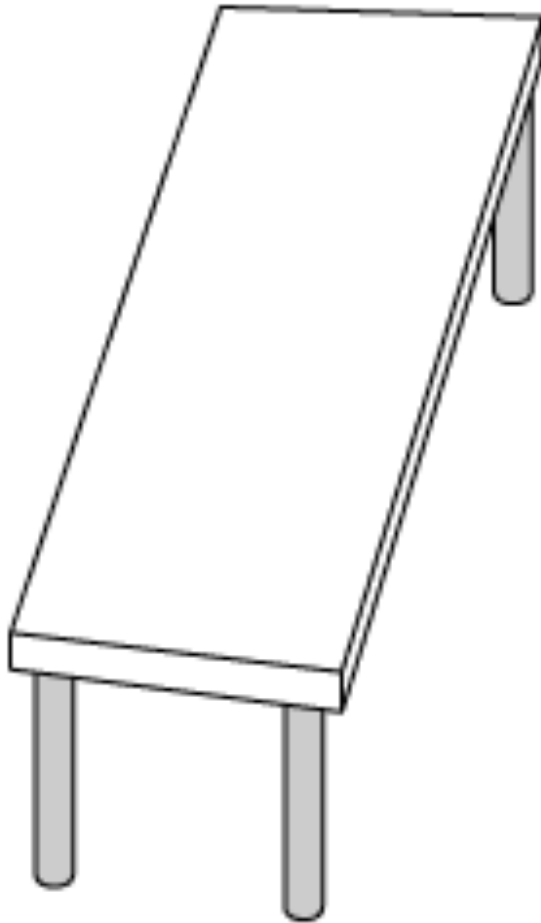
Toward a Diverse STEM Faculty

Pam Cook
University of Delaware

National Science Foundation ADVANCE-PAID HRD 0819993
NSF ADVANCE-IT HRD 1409472



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
Levan-
dowski

Lego robot
creator



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

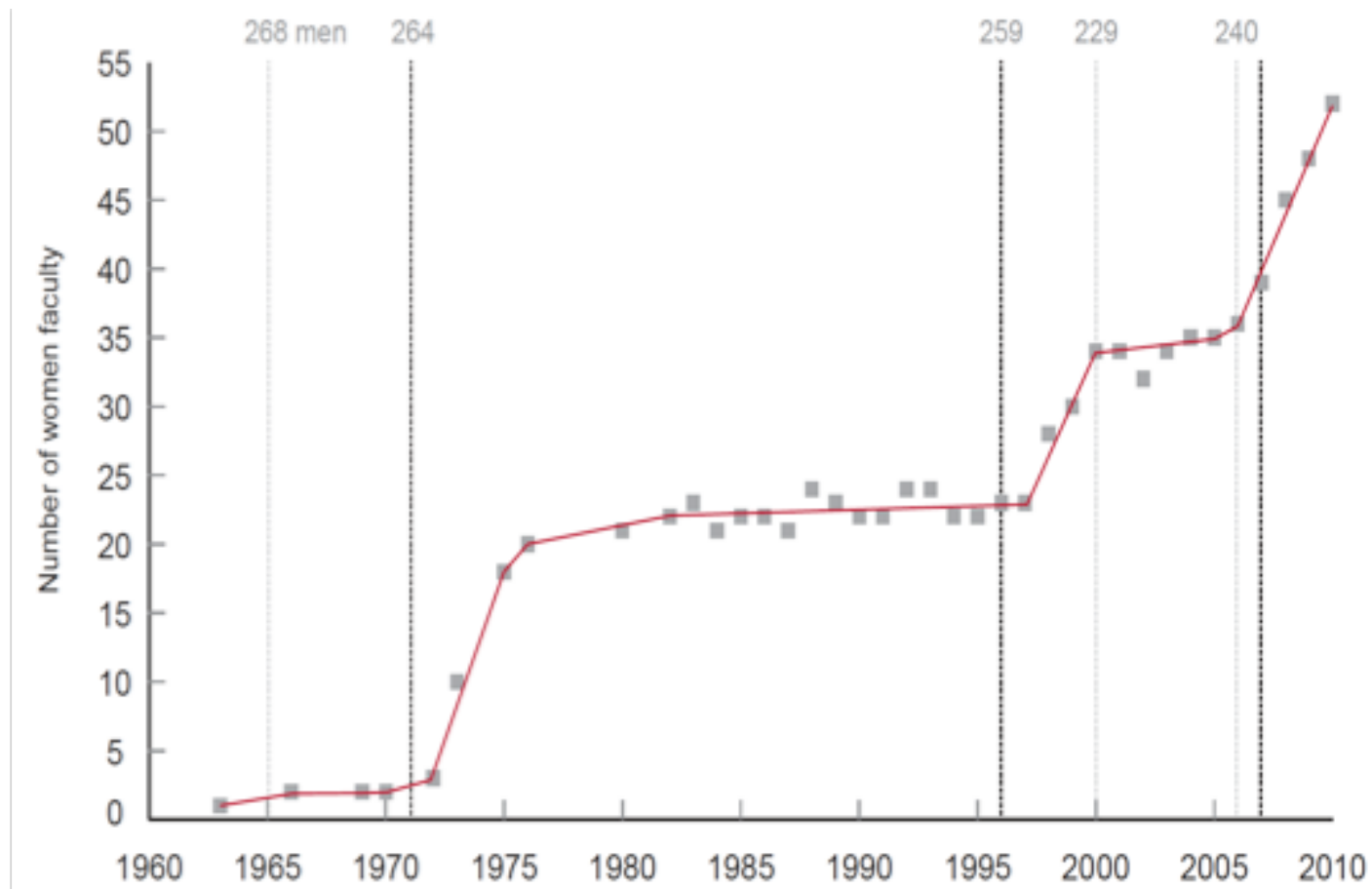


Figure Number of women faculty in MIT's School of Science between 1960 and 2010. Taken from MIT, 2011.



1972 - Title IX - Amendment to the Civil Rights Act
1997-99 MIT “letter and report”
2001 NSF ADVANCE

Hopkins--Diversification of a University Faculty: Observations on Hiring Women Faculty in the Schools of Science and Engineering at MIT, MIT Faculty Newsletter XVIII No. 4 March/April 2006

- 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



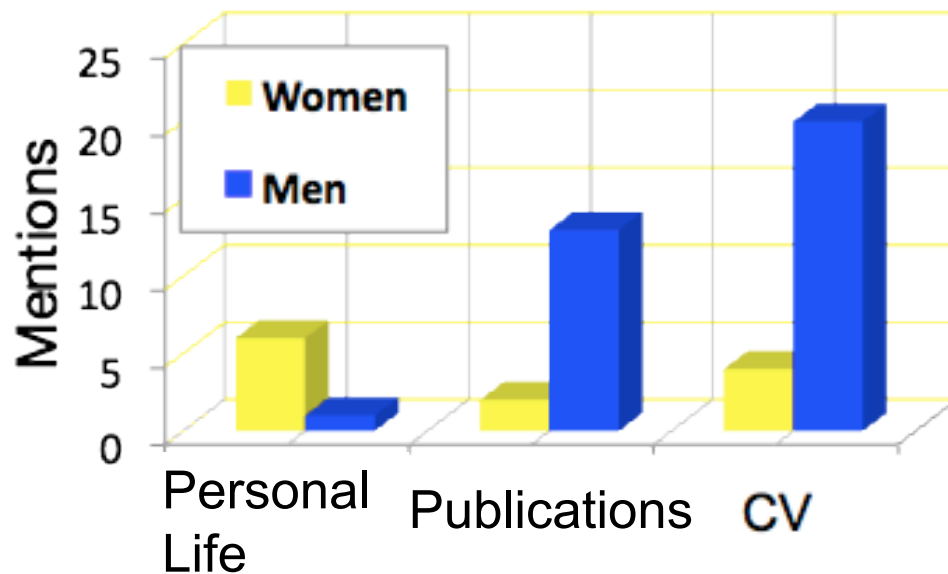
Research shows that, regardless of our explicit beliefs,
we **all** apply implicit assumptions.

- **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.”

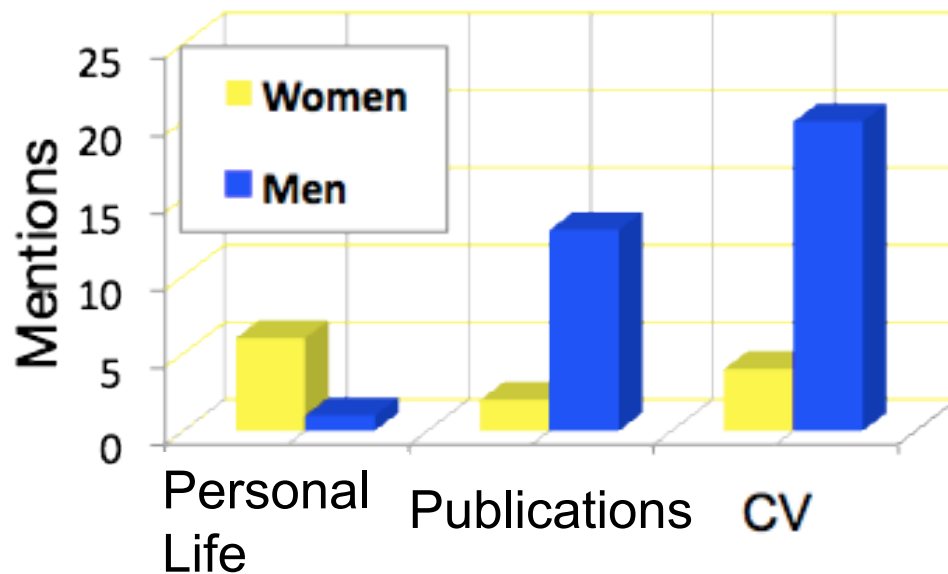
Letters for men:

- Longer
- “Dr. Smith” instead of “Larry”
- More references to **publications and research**



Letters of Recommendation

Successful Medical School Faculty Applicants



*Letters were written by
Both men and women!*

Trix, F. & Psenka, C. (2003) *Discourse & Society*, 14(2); 191-220.

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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.

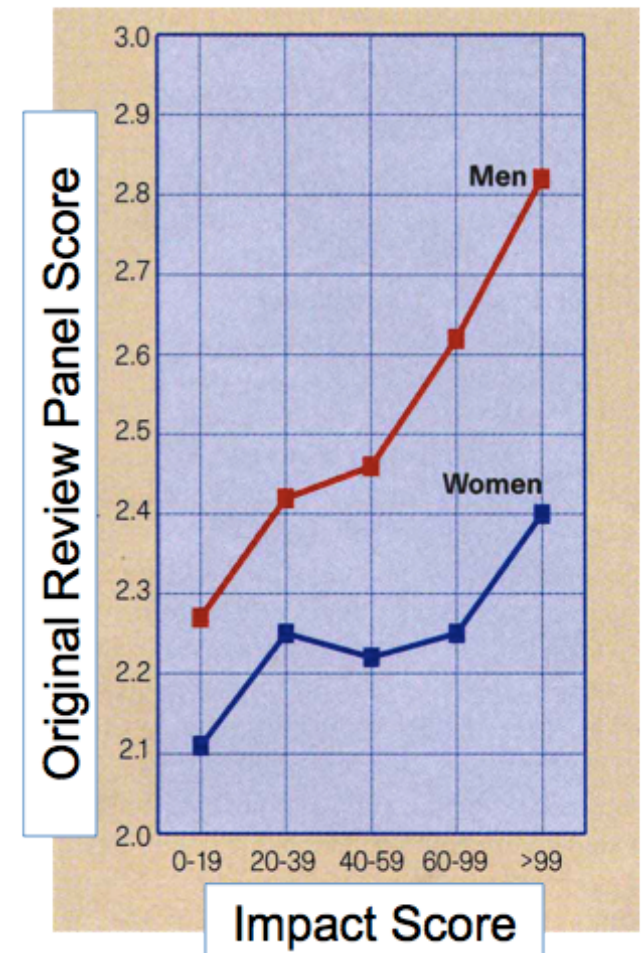
Results

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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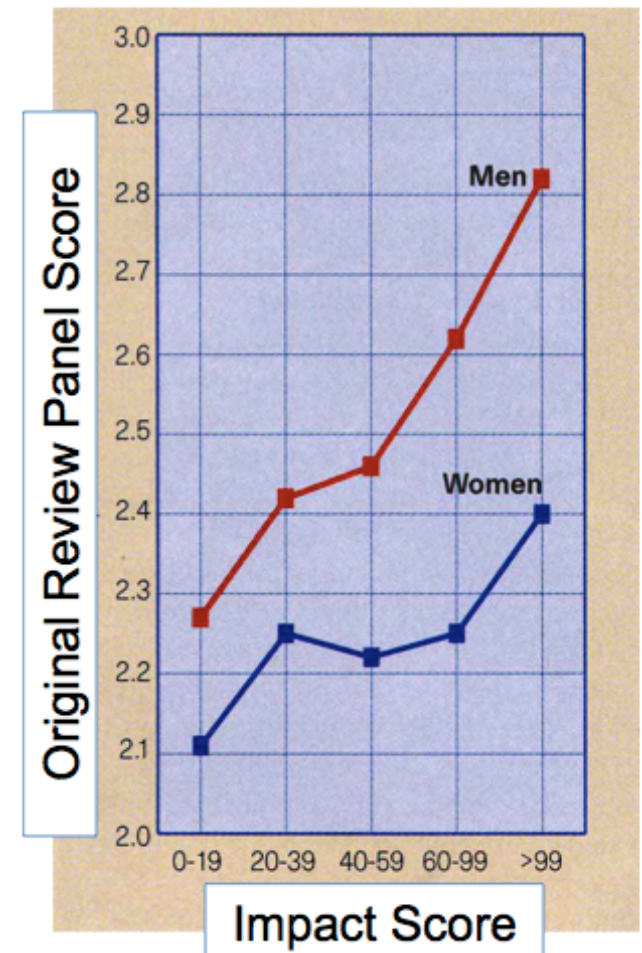
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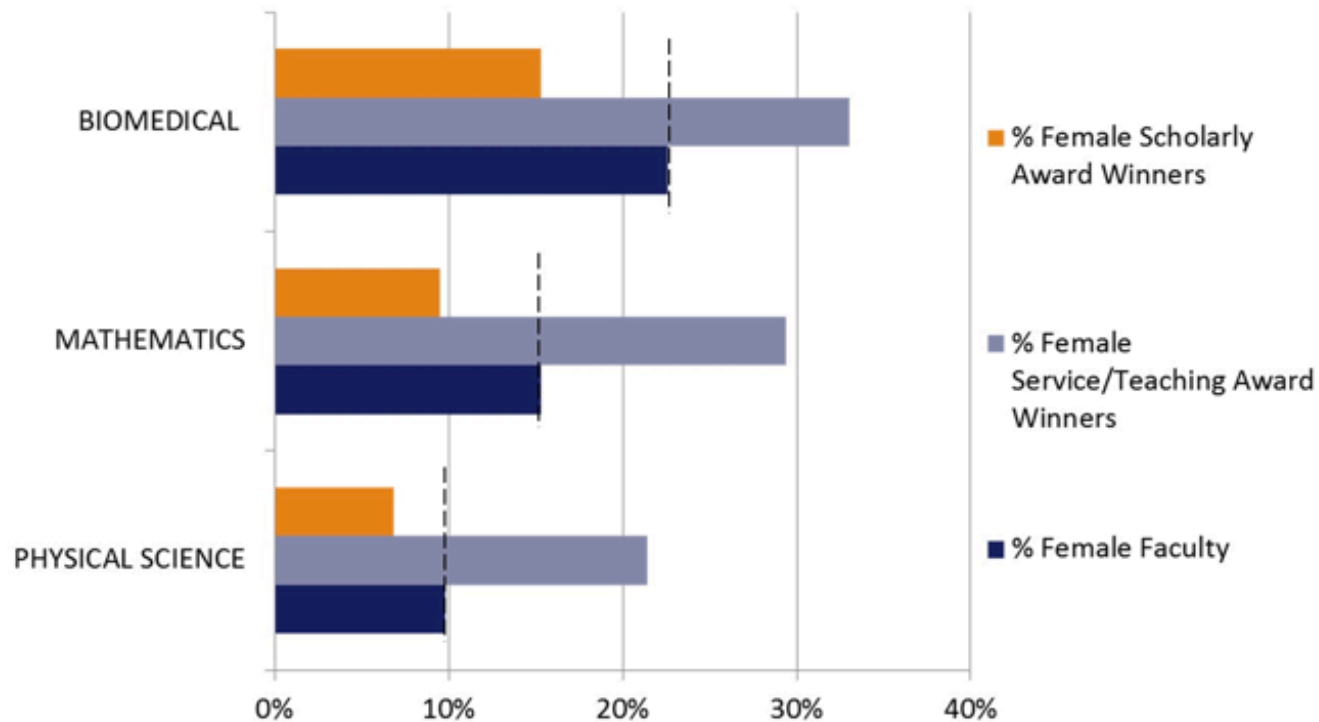
AND, for men or women,

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





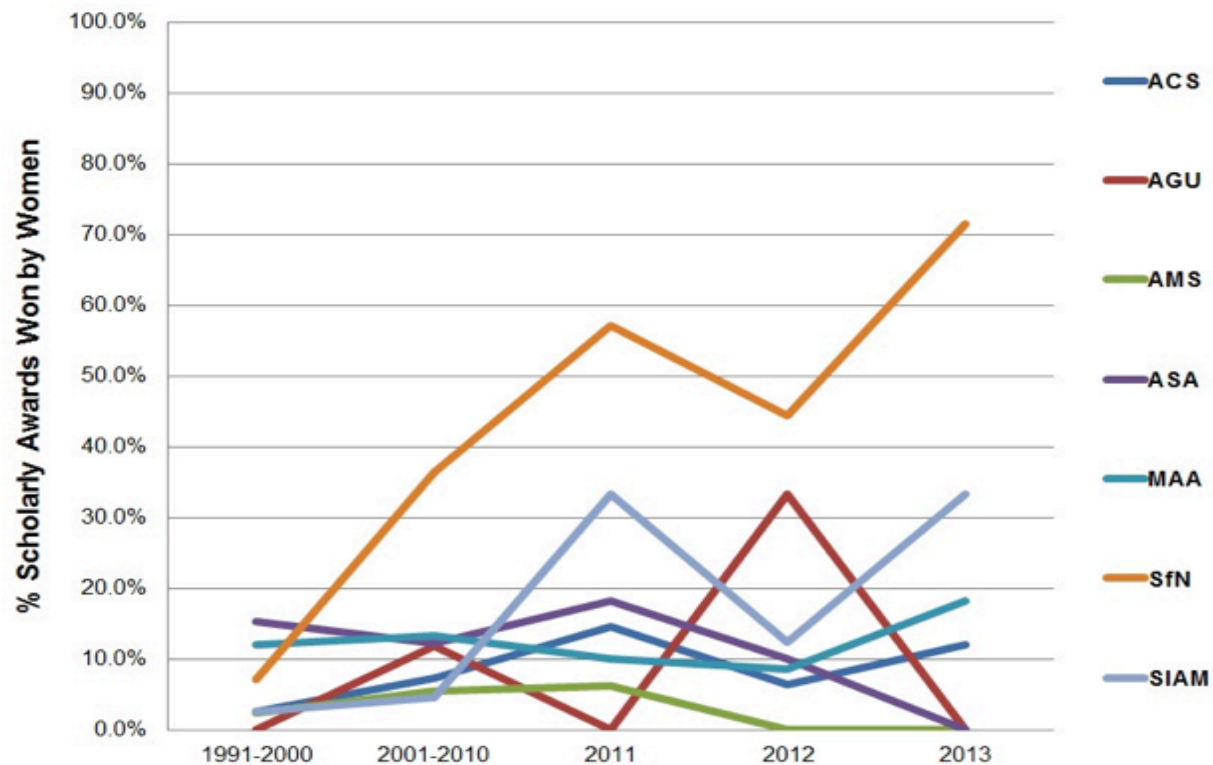
Implicit Bias or Lack of Self Promotion?



ADVANCE Grant #0930073



PIONEER SOCIETIES (PARTNERS SINCE 2010)



- 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

Association for Women in
Science (AWIS) website
[http://www.awis.org/?
Awards_Outcomes](http://www.awis.org/?Awards_Outcomes)



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.”

(Steinpreis, 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.

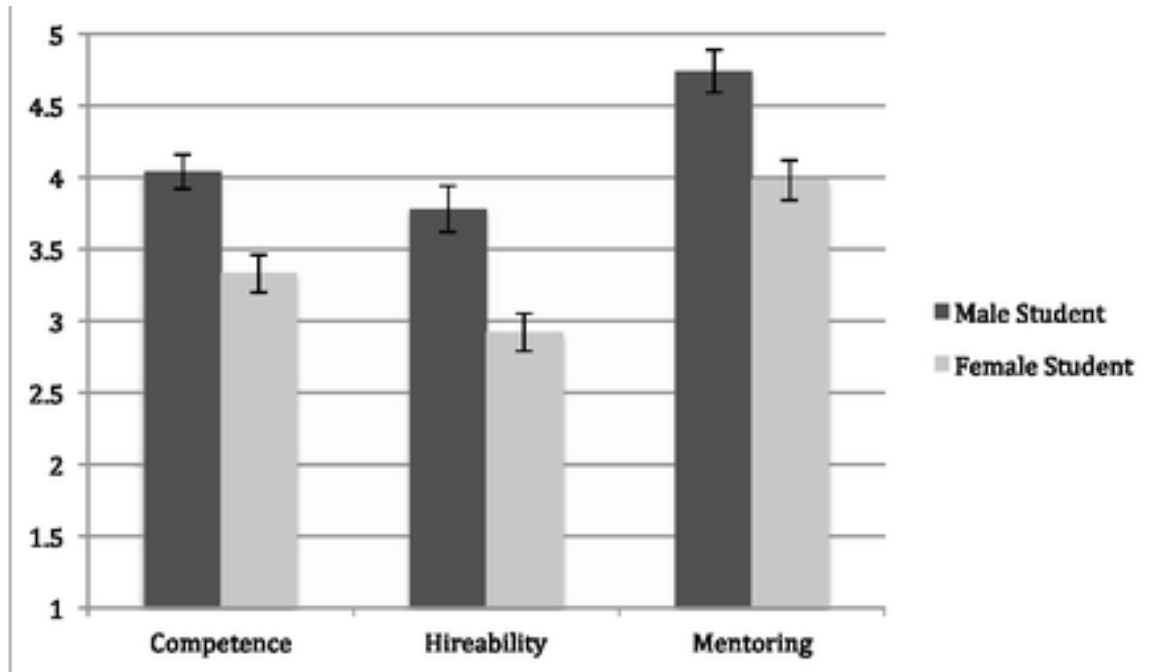
(Goldin and Rouse (2000) *The American Economic Review*, 90, 4, 715-741)

- 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)



Studies: Gender Bias in Evaluation



127 biology, chemistry and physics professors rated credentials of ugs for science lab manager position.

same materials but randomly Named (Jennifer, John)

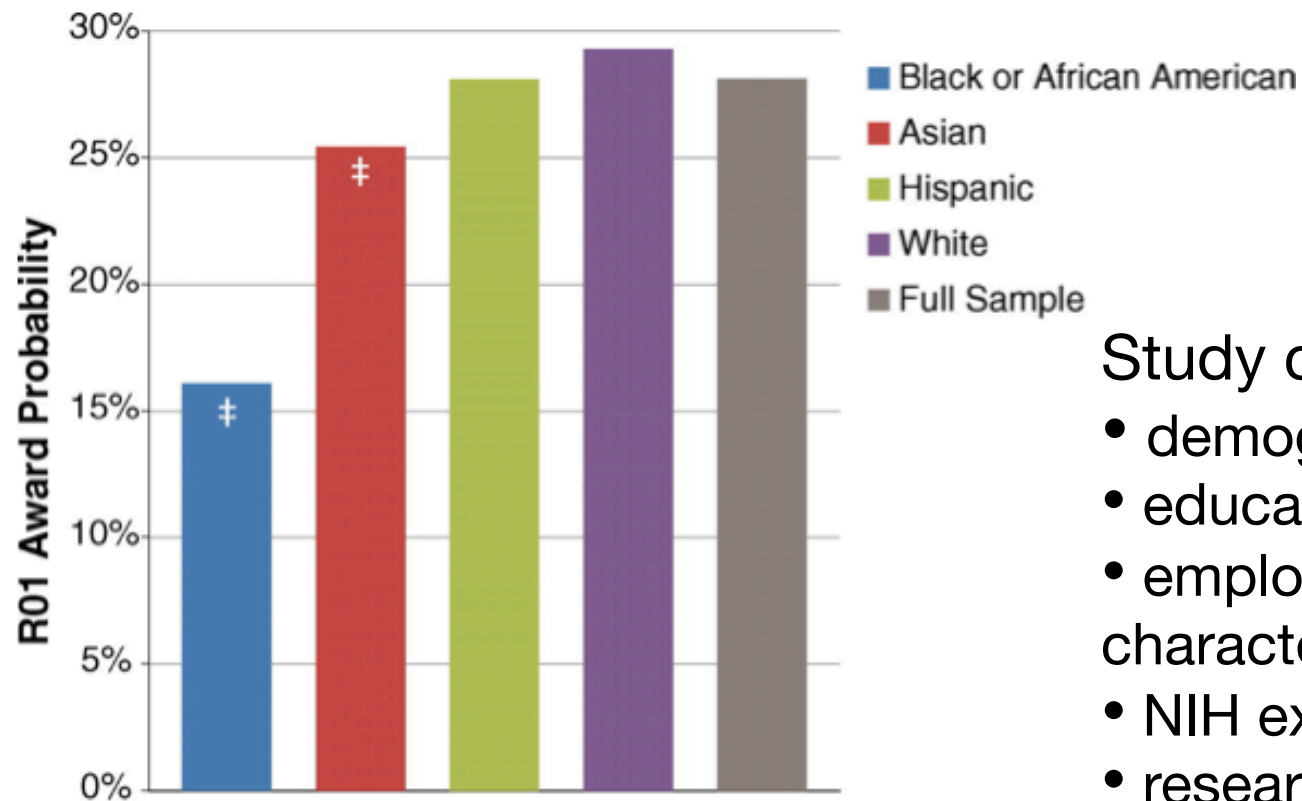
Mean starting salary:
female \$26,500
male \$30,238

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



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.

What's in a Name: Exposing Gender Bias in Student Ratings of Teaching
MacNell, Driscoll & Hunt , Innovative Higher Education, Aug. 2015 22



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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- 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.
- 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”

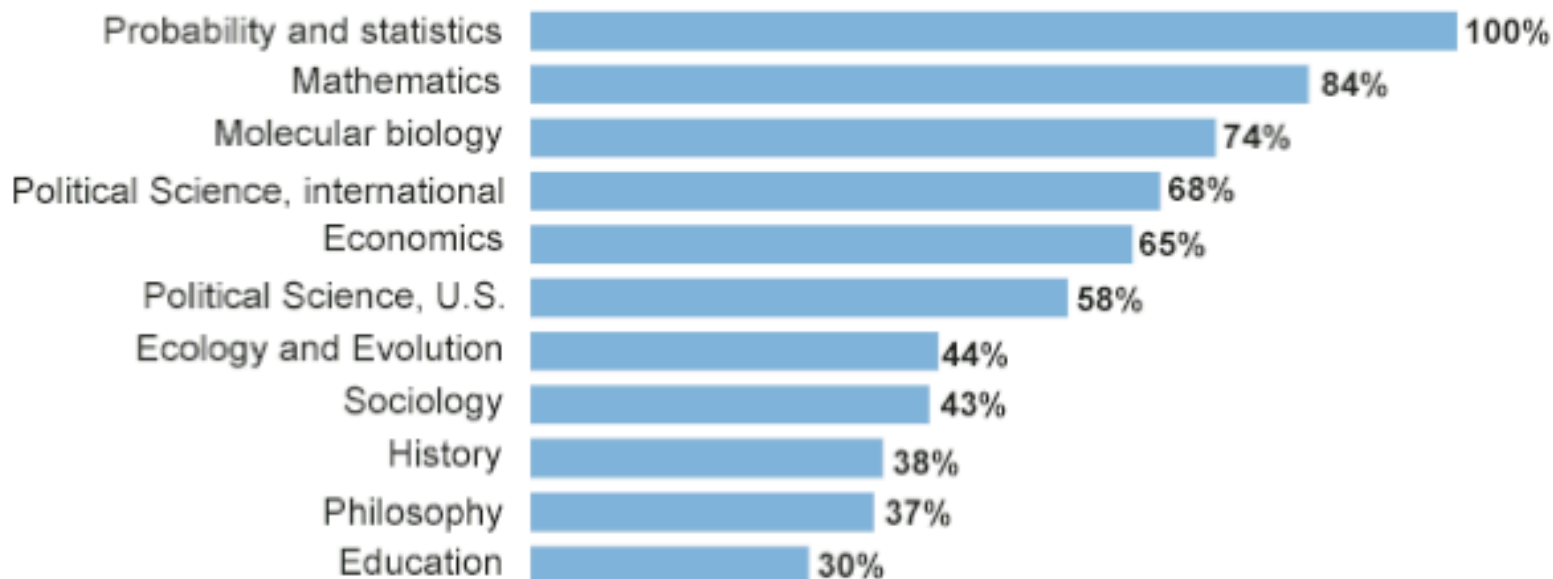
What's water?

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.



Chronicle of Higher Education March 17, 2013 by Robin Wilson