Gender diversity in academia

What’s the problem?
Why should you care?
How can we improve?

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7 December 2018

Slides and resources at
What’s the problem?

Observational studies
Does gender matter?

The suggestion that women are not advancing in science because of innate inability is being taken seriously by some high-profile academics. Ben A. Barres explains what is wrong with the hypothesis.


...tion was much stronger (I had published six high-impact papers whereas my male competitor had published only one). Shortly after I changed sex, a faculty member was heard to say “Ben Barres gave a great seminar today, but then his work is much better than his sister’s.”
What’s going on here?

- Fraction of women in academia drops off steeply throughout career ladder
  - Also when corrected for class composition at time of graduation

- Men are evaluated more favorably given the same academic productivity

- Women are paid less for the same jobs
  - Median salary for men 24% higher than women with PhD in the same field.

- Women receive smaller start-ups as assistant professors
  - *Sege et al. JAMA, 2015*
What’s going on here?

- Women are invited to give fewer talks at top U.S. universities
  - 20% difference after adjusting for base rate of professors, Nittrouer et al. PNAS (2018)
- Men are 15% more likely to share data with another man
- Women are underrepresented as reviewers, editors and last authors
- Women are underrepresented, and cited less, in high-impact journals
- In peer review, editors of both genders favour same-gender authors
What’s going on here?

- Women are half as likely to receive excellent recommendation letters
- Women get less credit for the same contribution/effort on publications
- Women received lower grant scores than men with comparable career success
  - h-index, funding history, etc. Tamblyn et al. (2018)
- Women have lower application, funding and renewal rates for NIH grants
- Female grant applicants are equally successful when peer reviewers assess the science, but not when they assess the scientist
What’s the problem?

Randomized studies
What’s going on here?

- ‘Brian’ is hired for tenure-track job 70% vs. ‘Karen’ 55% of the time
  - Steinpreis et al., Sex Roles (1999)
- Male students with identical CVs are judged to be more competent, hireable, deserving of mentoring and $3000 higher salary
  - Moss-Racusin et al. PNAS (2012)
- “Male” teaching assistants rated better in online class
- Professors less likely to informally meet women/minority students
  - No advantage of contacting a professor of the same gender or race
What’s the problem? Implicit bias

- Scientists are mostly expected to be white men
  - Adults: Nosek et al. PNAS (2009)
- Test your own implicit bias! https://implicit.harvard.edu
- Everyone is biased
  - Women’s behavior is just as biased as men’s Raymond, Nature (2013)
  - But... men less likely to believe research on gender bias Handley et al. PNAS (2015)
Why should you care?
Why should you care?

● Fairness
  ○ Women need to work harder to achieve the same & for less money

● Selfishness
  ○ Diverse groups are more creative Woolley, et al. Science (2010)
  ○ Biases prevents us as a field from tapping into all talent and potential
What should/can you do?

Solutions focused on women/minority scientists (short-term)
Solutions focused on the scientific community more broadly (long-term)
How can I improve?

Iris van Rooij @IrisVanRooij · May 16
Several male scientists have asked recently what they can do to be better allies for women in science. I’m making this thread to collect possible answers & examples. If you have tips, advice, requests, examples etc. please feel free to add to this thread (or @ me & I’ll add it).

https://twitter.com/IrisVanRooij/status/996842292559405056
How can I improve?

- Examine your own and others’ bias
  - Speak up, hold yourself and each other accountable, listen to your colleagues
  - Increasing diversity is everyone’s job

- Promote, nominate, credit, suggest your women colleagues
  - Avoid mansplaining, manterrupting and gendered assumptions

- Do not sit on all-male panels
  - Sign the Gender Avenger pledge [https://www.genderavenger.com/the-pledge/](https://www.genderavenger.com/the-pledge/)

- Call out imbalanced seminar series, conferences, labs, panels, prizes, hiring pools
  - [https://biaswatchneuro.com](https://biaswatchneuro.com), [www.anneeslist.net](http://www.anneeslist.net), [http://compcog.science](http://compcog.science)
How can I improve?

- Set criteria before review, aim to hire/review blindly
  - After assigning candidate to gender-stereotypic jobs, criteria are adjusted to fit decision

- Beware gendered language in evaluations
  - helpful, kind, sympathetic, agreeable, interpersonal, warm vs.
  - assertive, ambitious, daring, outspoken, independent, intellectual

- Hold all your colleagues to the same standards: volunteering, mentoring, service tasks
How can we improve?

● Blind peer review

● Judge the science, not the person
  ○ In grant review, peer review and hiring procedures

● Evidence-based implicit bias training
  ○ WAGES: Workshop Activity for Gender Equity Simulation. http://wages.la.psu.edu/
Will any of this work?
Will any of this work?

  - A total review bias of 3.7% (one point lower for one reviewer on NIH 9 point scale) translates to a 20% lower grant success rate
- We’re in for the long haul
  - [Holman et al. PLoS Biology](https://doi.org/10.1371/journal.pbio.2006886) (2018); https://lukeholman.github.io/genderGap/
  - But: small changes in improvement rate accumulate over time
Thanks!

Slides and resources at
http://anneurai.net/2018/01/28
/gender-diversity-in-academia/