Gender diversity in academia

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

Explicit sexism/racism/harassment


  - University of Rochester president resigns as sexual-harassment probe ends. Available at:  http://www.nature.com/articles/d41586-018-00422-w  (Accessed: 12th January 2018)

What’s the problem?

Implicit bias

- Fraction of women in academia drops off steeply throughout career ladder
  - Also when corrected for class composition at time of graduation
- Women are paid less for the same jobs
  - Median salary for men 24% higher than women with PhD in the same field. Gender pay gap persists. (Accessed: 12th January 2018) http://www.nature.com/articles/d41586-018-00113-6

Turns out, academia isn’t really a meritocracy...

Show me the evidence

Men are evaluated more favourably given the same academic productivity

- Reviews of Swedish postdoctoral grants
Show me the evidence

Female grant applicants are equally successful when peer reviewers assess the science, but not when they assess the scientist.

- 23,918 grant applications from 7,093 unique applicants in a 5-year natural experiment across all open, investigator-initiated Canadian Institutes of Health Research grant programs in 2011-2016

- Reviewers judge *the science*: men 0.9% more successful than women
- Reviewers judge *the researcher*: men 4% more successful than women
Show me the evidence

Elite male faculty in life sciences employ fewer women

- Sheltzer & Smith. PNAS 111, 10107–10112 (2014)
- “male professors run laboratories that have about 22% fewer female postdocs and 11% fewer female graduate students than their female colleagues do”
- Self-selection vs. hiring decisions?
Show me the evidence

Both male and female evaluators more likely to hire men for math task

- Difference decreases with ‘cheap talk’ (informal) and information about past math performance
- Women with demonstrably better math skills still less likely to be hired
Show me the evidence

Women Are Invited to Give Fewer Talks Than Men at Top U.S. Universities

- 20% difference after adjusting for base rate of professors
- Women don’t decline more talks
Randomized experiments

Male students with identical CVs are judged to be more competent, hireable, deserving of mentoring and more salary

- 127 US faculty members rated student CVs applying for a lab manager position
- Identical CVs with randomly assigned male/female names
- Both male and female reviewers show gender bias!
Randomized experiments

Professors less likely to informally meet women/minority students

- Professors contacted by fictional prospective students discuss research opportunities prior to applying to grad school
- Bias in response rate (from Caucasian males as baseline)
- No advantage to contact professor of same gender/race!
Randomized experiments

- With identical CVs
- ‘Brian’ is hired 70% of the time
- vs. ‘Karen’ 55% of the time
Conclusions

- Implicit bias & stereotypes: gender & race
  - *Intersectionality!* Women of colour experience many of these problems much more strongly
- Scientists are mostly expected to be white men
- **Everyone** is biased!
Why should you care?

- **Fairness**
  - Women need to work harder to achieve the same & for less money

- **Selfishness**
  - Diverse groups are more creative
  - Biases prevents us as a field from tapping into all talent and potential
How can I improve?

- Solutions focused on women/minority scientists (short-term)
- Solutions focused on the scientific community more broadly (long-term)

- Barres (2006)
  - Enhance leadership diversity in academic and scientific institutions
  - Diverse faculty role models - open hiring
  - Don’t be silent in the face of discrimination
  - Enhance fairness in competitive selection process
  - Teach young scientists how to survive in a prejudiced world
How can I improve?

- Examine your own and others’ bias, hold everyone accountable

- Evidence-based implicit bias training
  - WAGES: Workshop Activity for Gender Equity Simulation. [http://wages.la.psu.edu/](http://wages.la.psu.edu/)

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

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

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

- Ensure balanced conferences, meetings and seminar series
  - [https://biaswatchneuro.com/](https://biaswatchneuro.com/), [https://anneslist.net/](https://anneslist.net/)
- Blind peer review
  - Budden et al. *Double-blind review favours increased representation of female authors.*
- Judge the science, not the person
  - In grant review, peer review and hiring procedures