Catch 22

Improving female researcher representation in peer review and publishing
**PEER-REVIEW PATTERNS**

In an analysis of thousands of submissions to the journal eLife, only one-fifth of peer reviewers, and about one-quarter of editors, were women.

<table>
<thead>
<tr>
<th>Role</th>
<th>Female</th>
<th>Male</th>
<th>Unassigned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Senior editors</td>
<td>26</td>
<td>74</td>
<td>74</td>
</tr>
<tr>
<td>Reviewing editors</td>
<td>24</td>
<td>76</td>
<td>76</td>
</tr>
<tr>
<td>Peer reviewers</td>
<td>20</td>
<td>76</td>
<td>76</td>
</tr>
</tbody>
</table>

The analysis also found that all-female reviewing panels accepted more manuscripts with female last authors than did all-male panels.

Sugimoto et al, 2018 [https://www.nature.com/articles/d41586-018-06678-6](https://www.nature.com/articles/d41586-018-06678-6)
Core STEM subjects - Female students

2017/18
Number of female students - 112,720 - 35%

35/100

Diagram showing the distribution of male and female students across different STEM courses.
‘The Leaky Pipeline’

- Students taking GCSE: 600k
- Male students achieving A*-C grade in 2 sciences and maths at GCSE: 300k
- Female students achieving A*-C grade in 2 sciences and maths at GCSE: 300k
- Students taking A level maths and physics: ~30k
- Students taking engineering, IT and construction apprenticeships at level 3: ~30k
- Students taking engineering degrees (UK domiciled): 15k
- Engineering graduates going into professional engineering occupations: 8k

Royal Academy of Engineering
Diversity matters

Reasons why we should care about who does Science, Technology, Engineering and Mathematics (STEM):
1) Utilitarian (sheer numbers)
2) Equity (making the workplace environment welcoming)
3) Democratic (widening which problems are studied/solved)

https://jcom.sissa.it/archive/16/04/JCOM_1604_2017_C01/JCOM_1604_2017_C04
Diversity matters
Diversity matters

- Head: 22.1% higher risk than males
- Neck: 44.7% higher risk than males
- Abdomen: 38.5% higher risk than males
- Chest: 26.4% higher risk than males
- Arm: 58.2% higher risk than males
- Leg: 79.7% higher risk than males
Diversity matters
Why are there fewer women publishing in academia?
However...

The analysis also found that all-female reviewing panels accepted more manuscripts with female last authors than did all-male panels.

![Bar chart showing gender acceptance rates for manuscripts with female last authors.

- All-male reviewers:
  - Female: 520 accepted submissions
  - Male: 1,952 accepted submissions

- All-female reviewers:
  - Female: 21 accepted submissions
  - Male: 56 accepted submissions

- Mixed-gender reviewers:
  - Female: 735 accepted submissions
  - Male: 2,211 accepted submissions

Sugimoto et al, 2018 https://www.nature.com/articles/d41586-018-06678-6
How blind auditions help orchestras to eliminate gender bias

To get more women into their ranks, many orchestras use blind auditions where musicians perform behind a screen. Could we replicate this in business?

Bias cannot be avoided, we just can’t help ourselves. Research shows that we apply different standards when we compare men and women. While explicit discrimination certainly exists, perhaps the more arduous task is to eliminate our implicit biases – the ones we don’t even realise we have.
Understanding unconscious bias

17 November 2015

https://royalsociety.org/topics-policy/publications/2015/unconscious-bias/
Equality

The assumption is that everyone benefits from the same supports. This is equal treatment.

Equity

Everyone gets the supports they need (this is the concept of “affirmative action”), thus producing equity.

Justice

All 3 can see the game without supports or accommodations because the cause(s) of the inequity was addressed. The systemic barrier has been removed.
Catch 22

How can we generate a solution which is not inherent in the problem?
10 STEPS

Understand the starting point so you can monitor progress
Equate your leaders, give them accountability for change
Change mindsets by challenging bias and sexism
Be creative in job design
Make flexible working a reality for all
Increase transparency of opportunities for progression
Sponsor female talent to the same extent as male talent
Demonstrate to women that you want to retain and develop them
Approach this like any other business improvement project
Share learning and good practice
Advance HE’s Athena SWAN Charter covers women (and men where appropriate) in:
• academic roles in STEMM and AHSSBL
• professional and support staff
• trans staff and students

In relation to their:
• representation
• progression of students into academia
• journey through career milestones
• working environment for all staff
Submissions and success rates for Athena SWAN Bronze awards

Bronze applications

Submissions: 565

316 Successful
249 Unsuccessful

55.9% Success rate

44.1% Unsuccessful: no award
55.9% Successful: Bronze award

These visuals present Athena SWAN data and refer to UK awards only. Data are presented for all rounds since the introduction of the Post-May 2015 criteria (November 2015 round results). Data include both Pre-May and Post-May criteria awards and submissions. Information correct as of 12 October 2018.
Dear Laura and Laura

Here are the proofs of your article that will be included in the (very late-running) December issue of [Journal Name]. These are the final proofs in the second batch of articles arising from the conference.

There are only a few minor queries for you. I would be very grateful if you could reply by tomorrow, Tuesday 24 December. Apologies for the short notice.
Examples of structural barriers in peer review

- No awareness of holidays
- Short lead-times
- Expectations of paid responsibilities – with no pay!
- No allowance for part-time hours or weekends 😊

Thank you for your submission to International Journal of Educational Psychology, “Engineers’ perceived self-efficacy for education outreach”.

The reviewers’ comments are included at the bottom of this email.

The reviewers have recommended the article be approved for publication pending minor revisions. Could you please review the comments below and incorporate the necessary changes? When making the revisions, do so by integrating the comments into the text of the article with track changes.

Once you have introduced all the suggestions and have a reviewed version of your paper, please send it again through the online system journal. If changes are made properly, your article will be included in the 2019 issue of IEP.

Please, submit a revised version of your manuscript no later than June the 2nd, 2019.

Please do not hesitate to contact us for further queries,
Tackling structural barriers in peer review

- Unpaid work
- Short time-scales
- Lack of training
- Unclear guidelines
- Unclear progression opportunities
Tackling structural barriers in peer review

- Unpaid work
- Short time-scales
- Lack of training
- Unclear guidelines
- Unclear progression opportunities

Tackled by…?

- Audit of male/female contributions
- Peer review remittance
- Longer time-scales, or agreed by negotiation
- Training in peer review for researchers
- Guidelines on reviewing