on the road to equality

dr jess wade (@jesswade)

imperial college london

stm annual frankfurt conference
### a-level (16 – 18 years old) participation

#### Male students

<table>
<thead>
<tr>
<th>Subject</th>
<th>Count</th>
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<tbody>
<tr>
<td>1 Mathematics</td>
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<td>2 Physics</td>
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<td>26771</td>
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<td>4 History</td>
<td>26181</td>
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<tr>
<td>5 English</td>
<td>25173</td>
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<tr>
<td>6 Biology</td>
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<tr>
<td>7 Economics</td>
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<td>8 Geography</td>
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<td>9 Business studies</td>
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<tr>
<td>10 Psychology</td>
<td>13758</td>
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<tr>
<td>11 Media / film / TV studies</td>
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<tr>
<td>12 Mathematics (further)</td>
<td>10816</td>
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<tr>
<td>17 Design and technology</td>
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<td>18 Physical education</td>
<td>7874</td>
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<td>19 Sociology</td>
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<td>20 ICT</td>
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<td>21 Computing</td>
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<td>27 French</td>
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<tr>
<td>28 Spanish</td>
<td>2897</td>
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<tr>
<td>35 Critical thinking</td>
<td>115</td>
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<td>36 Irish</td>
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#### Female students

<table>
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<td>4 Mathematics</td>
<td>35937</td>
</tr>
<tr>
<td>5 Art and design subjects</td>
<td>34219</td>
</tr>
<tr>
<td>6 History</td>
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<tr>
<td>7 Chemistry</td>
<td>25873</td>
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<tr>
<td>15 Economics</td>
<td>8924</td>
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<tr>
<td>16 Physics</td>
<td>7787</td>
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<tr>
<td>17 French</td>
<td>7152</td>
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<tr>
<td>21 Spanish</td>
<td>5797</td>
</tr>
<tr>
<td>22 Other modern languages</td>
<td>5381</td>
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<tr>
<td>23 Design and technology</td>
<td>5356</td>
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<tr>
<td>24 Physical education</td>
<td>4531</td>
</tr>
<tr>
<td>25 Mathematics (further)</td>
<td>4177</td>
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<tr>
<td>26 Classical subjects</td>
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<tr>
<td>27 Music</td>
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<td>28 ICT</td>
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<td>34 Computing</td>
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<tr>
<td>35 Irish</td>
<td>239</td>
</tr>
<tr>
<td>36 Critical thinking</td>
<td>121</td>
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</tbody>
</table>
this has not changed for 30 years.

hundreds of millions of pounds

awards, grants, shouting

focus groups, conferences, workshops

biology
chemistry
maths
physics

% girls

year
The Institute has published several reports investigating the gender imbalance of physics A-level and on issues around equality of education.


Opening Doors: A guide to good practice in countering gender stereotyping in schools (2015): Case studies and key recommendations of how schools can explore equality issues across the whole school.

Closing Doors: Exploring gender and subject choice in schools (2013): An exploration of national data on progression to A-level in selected subjects, including physics. The report draws attention to the gender imbalances that exist on A-level courses.

It’s Different for Girls: The influence of schools (2012): Uses data from the National Pupil Database to explore how uptake by girls onto A-level physics courses varies in different types of schools.

Girls Into Physics: Action research (2009) is the evaluation report from our 2008 school-based action research programme, including recommendations for classroom practice.

• 2005, ten principles
• three levels of award: bronze, silver and gold based on 10 principles
• to receive an award, the institution must have at least an athena swan bronze

Current Athena SWAN awards holders (April 2018)

- 731 Total awards
- 617 Department awards
- 96 University awards
- 18 Research institute awards
**juno award** (2007)

four levels of award:

- juno supporter
- practitioner
- champion
- excellence (2017)
1. a robust organisational framework to deliver equality of opportunity and reward
2. appointment and selection processes and procedures that encourage men and women to apply for academic posts at all levels
3. departmental structures and systems which support and encourage the career progression and promotion of all staff and enable men and women to progress and continue in their careers
4. departmental organisation, structure, management arrangements and culture that are open, inclusive and transparent and encourage the participation of all staff
5. flexible approaches and provisions that enable individuals, at all career and life stages, to optimise their contribution to their department, institution and to set
6. an environment where professional conduct is embedded into departmental culture and behaviour.
Quantitative evaluation of gender bias in astronomical publications from citation counts

Nevén Capella, Sandra Tacchella and Simon Birrer

Numerous studies across different research fields have shown that both male and female authors consistently give higher scores to work done by more than an identical work done by women. In addition, women are under-represented in prestigious publications and authorship positions and are often cited less than their male counterparts. In astronomy, similar biases have been observed in the number of citations awarded to papers by women. Even though the number of researchers active in astronomy is increasing, women are under-represented in the published literature. Furthermore, women who do publish are often cited less than their male colleagues. In this study, we examine the citation patterns of papers in astronomy and investigate the reasons for the gender bias.

Figure 1 shows the number of citations awarded to papers by women and men, and the ratio of citations awarded to papers by women. As expected, the ratio is lower for women than for men. The number of citations awarded to papers by women is significantly lower than the number of citations awarded to papers by men. The ratio of citations awarded to papers by women is 0.7, indicating that women are cited less than men.

We propose a simple model to explain the gender bias in citations. The model assumes that the citation rate of a paper is proportional to its quality. The quality of a paper is determined by the number of citations it receives. The model also takes into account the gender of the authors of the paper. The model predicts that papers written by men are cited more than papers written by women. The model is consistent with the observed citation patterns.

In conclusion, the gender bias in citations in astronomy is a complex phenomenon that requires further investigation. The model we propose provides a simple explanation for the gender bias in citations, but further research is needed to understand the underlying mechanisms.

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Growing evidence of anti-female bias in student surveys

Dutch researchers find female academics 11 percentage points less likely to hit promotion threshold in course evaluations

Female lecturers ‘suffer from gender biases’ in student ratings

French research finds that undergraduates give higher scores to male teachers

August 14, 2015
Huge peer-review study reveals lack of women and non-Westerners

Analysis of thousands of submissions to *eLife* journal shows that these groups are also under-represented as senior authors and editors.

Women are inadequately represented as peer reviewers, journal editors and last authors of studies, according to an analysis of manuscript submissions to an influential biomedical journal.

The study looked at all submissions made to the open-access title *eLife* from its launch in 2012 to 2017—nearly 24,000 in total. It found that women worldwide, and researchers outside North America and Europe, were less likely to be peer reviewers, editors and last authors. The paper—which hasn’t itself yet been peer-reviewed—was posted on the preprint server bioRxiv on 28 August.

About 7,000 of the submitted studies went through the full submission process at *eLife*. Authors make a ‘pre-submission query’ before being invited by the journal to send a full paper—a relatively uncommon practice among journals. In all, the analysis covered the activity of about 7,000 referees, 8,900 reviewing editors and 57 senior editors.

The researchers found that women make up only around 20% of peer reviewers, and around one in four reviewing editors (see ‘Peer-review patterns’). Most reviewing editors and reviewers were in the United States—62% and 56%, respectively—followed by the United Kingdom and Germany in second and third place. Less than 2% of peer reviewers were in developing nations—all in China, India or South Africa.

The analysis also found that all-female reviewing panels accepted more manuscripts with female last authors than did all-male panels.
Diversity and Inclusion in Peer Review at IOP Publishing

https://genderize.io/

Figure 2. Gender composition of IOP Publishing's author and reviewer contacts database, August 2018

Does the chance of having an article accepted differ for men and women?
Percentage of articles accepted for male and female corresponding authors

- male: 43.0% (± 0.5%)
- female: 39.8% (± 0.8%)

http://ioppublishing.org/about-us/diversity-inclusion-peer-review-iop-publishing/
Sussex University 'failed to follow its own safeguarding procedures' by allowing Dr Lee Salter to remain employed, despite gross physical and emotional abuse caused to Allison Smith.

Sussex University failed duty of care to student assault victim, inquiry finds

University of Cambridge admits significant sexual misconduct problem

Institution receives 173 complaints of improper behaviour in nine months

Sex harassment victims force University College London to end gagging orders

Kate Gibbons
July 30 2018, 15:09 AM

Sex harassment victims force University College London to end gagging orders

Eve Blades claimed she was victim of sexual and physical harassment at UCL.

The Times (UK) Photograph: Jack Hill

The 1752 Group

Ending sexual misconduct in higher education

HOME / ABOUT SEXUAL MISCONDUCT / STRATEGIC PRIORITIES / NUS NATIONAL CAMPAIGN / SERVICES

MEDIA & ARTICLES / BLOG / RESOURCES / ADVISORY BOARD / ABOUT US / CONTACT
• 2015 (student – student), 1993
• fewer than 1 in 10 victims reported to institution
• 1/3 of British universities have no staff-students relationships policy
• 80% of students are uncomfortable with staff-student sexual or romantic relationship

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• Awareness-raising activities should take place only after policies and training have been implemented, in order to be sure that it is safe to encourage students to report
• Public/visible information both online and offline should be made available, including in induction packs, on what behaviours will and will not be should not be tolerated
Sexual harassment
Universities failing to tackle sex harassment by staff, says report

Only one sexual misconduct case out of 16 led to a staff member losing their job

Women in British universities have been targeted by members of staff, finds the 1752 Group. Photograph: Alamy

Sally Weale Education correspondent

Wed 26 Sep 2018 00:01 BST

A number of UK universities are failing to tackle sexual predators on their staff as a due to shortcomings in complaints and disciplinary processes, finds a new report.
Timeline
2007: Project Juno is introduced
2008: 19 departments in “Supporter” category
2009: First Juno Champions are awarded – Warwick and Imperial College
2017: Current status: 58 departments offering undergraduate courses in physics, 49 are currently engaged with Juno.

“juno is run by physicists for physicists”

apply for award
→ assessed by panel of independent physicist who work on equality and diversity
→ buddying, mentoring

<table>
<thead>
<tr>
<th>Number of Physics Departments</th>
<th>Supporter</th>
<th>Prachitioner</th>
<th>Champion</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supporter</td>
<td>17</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prachitioner</td>
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<tr>
<td>Champion</td>
<td>18</td>
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<td></td>
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<tr>
<td>Total</td>
<td>49</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

“juno is run by physicists for physicists”

apply for award
→ assessed by panel of independent physicist who work on equality and diversity
→ buddying, mentoring
athena journey
2005 – founding member of charter
2006 – first institutional award
2009 – first departmental award (now 16)
2016 – first award in UK on new criteria
2017 – all 21 departments entered

ongoing projects
• have your say: anonymous harassment and bullying reporting
• annual athena lecture
• women @ imperial week
• unconscious bias training
• active bystander training
• mind, student minds
• sexual harassment working group
• research around bias on student surveys
• research around experience of BME staff and students

networks
• able@imperial, imperial 600
• women’s engineering society
• women in physics society
  • lunches, networking
  • talks, sponsors
• women in science & engineering campaign
diversity @ imperial

recruitment
• know your pool
• targeted job adverts
• inclusive language

training and support
• learning and development centre
• postdoc development centre
• educational development unit
• equality, diversity & inclusion centre
• 50 courses, including springboard
• workshop on job level review process
• tailored departmental induction packs for postdocs

other awards
• juno champion status (iop)
• stonewall diversity champion
• disability confident employer
• time to change mental health action plan

maternity & returnships
• nurseries on main campuses
• childcare vouchers for all
• return to work plan pre-maternity leave
• short-term funding to accommodate maternity leave /grant proposals
1.7% OF UK PROFESSORS WERE BME WOMEN

- White male - 69.4%
- White female - 22.6%
- BME male - 6.2%
- BME female - 1.7%

15: UK professors by gender and BME/white identity, 2015-16

#ECUstats

ECU (2017) Equality in higher education statistical report 2017 - weighted by full person equivalent
IOP diversity survey

Every four years, the IOP carries out a diversity survey with more than 35,000 UK and Ireland members. Participation is voluntary, and in the July 2015 survey 13% of the membership responded. Included for the first time in the 2015 survey was a question about sexual orientation.

Results are based on 3,218 responses. 773 (4.29%) preferred not to answer.

How to be an LGBT+ Ally

By Joseph Kendall, Halls of residence officer, NPL

More than 50% of LGBT+ scientists are still in the closet despite growing support, and that’s not going to change unless there is a concerted effort to make science more inclusive at every level. The fear of a negative reaction or adverse impact on their career leads LGBT+ people to hide personal relationships, and even their identities. The stress involved can have a profound impact on mental health, over time, leading to depression and even suicide.

Even if you’re not LGBT+, you can still make your lab a more welcoming place by following our beginner’s guide to being an ally.

Learn about LGBT+

Think before you assume

Be open about your support

Challenge discrimination

Look out for role models

Support networks

Push for inclusivity

Unconscious bias

Accept your limitations

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Sexual orientation

- bisexual 5.2%
- gay man 3.4%
- gay woman 0.9%
- heterosexual 83.5%
- other 2.5%
Building momentum towards inclusive teaching and learning

A good-practice guide for undergraduate physics

Strong and effective leadership
- Engagement of senior management in discussions on the need to take more strategic approaches to inclusive learning, including the consideration of anticipatory approaches
- Regular discussions and sharing of expertise to embed good practice and to document support strategies for future provision
- A named, visible champion for disabled students, acting as the focal point of contact for support and reporting into departmental decision-making structures

Clear and consistent policies and practices
- Consistently applied policies and practices on inclusive learning, such as the use of lecture capture, provision of lecture notes, attendance policies that support the identification of student health or mental-health issues
- Assessing the impact of policies and practices on disabled students during review processes, such as peer review, programme review, or curricula or assessment review
- Encouraging feedback specifically from disabled students

Ongoing training and development
- Training, development, and support of staff and students and opportunities for students to contribute
- Appropriate disability awareness training and processes, such as induction

Encouraging disclosure
- A positive culture of disclosure, with ongoing opportunities

Engagement with career and life planning
- Understanding the needs of disabled students and reasonable adjustments
- Good communication to central disability offices

Communicating diagnosis
- Clear process for diagnosis and ensuring those involved in teaching and learning are aware of any need to make adjustments

Ensuring adjustments
- Understanding the needs of disabled students and ensuring that the departmental assessment is accessible

Lab accessibility
- Offering flexible learning environments
- Communication to teaching staff on how to support disabled students and the accessibility of laboratories
British astrophysicist overlooked by Nobels wins $3m award for pulsar work

Dame Jocelyn Bell Burnell will donate the money to help students underrepresented in physics

A British astrophysicist who was passed over for the Nobel prize for her discovery of exotic cosmic objects that light up the heavens has won the most lucrative award in modern science.

Dame Jocelyn Bell Burnell, a visiting professor at Oxford University, was chosen by a panel of leading scientists to receive the $3m (£2.3m) special Breakthrough prize in fundamental physics for her landmark work on pulsars and a lifetime of inspiring leadership in the scientific community.
thank you

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