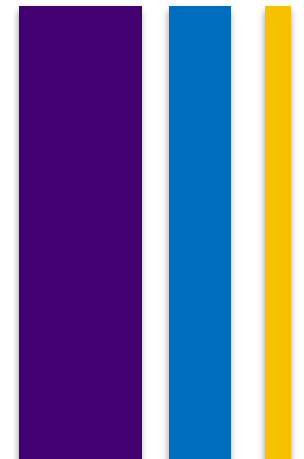


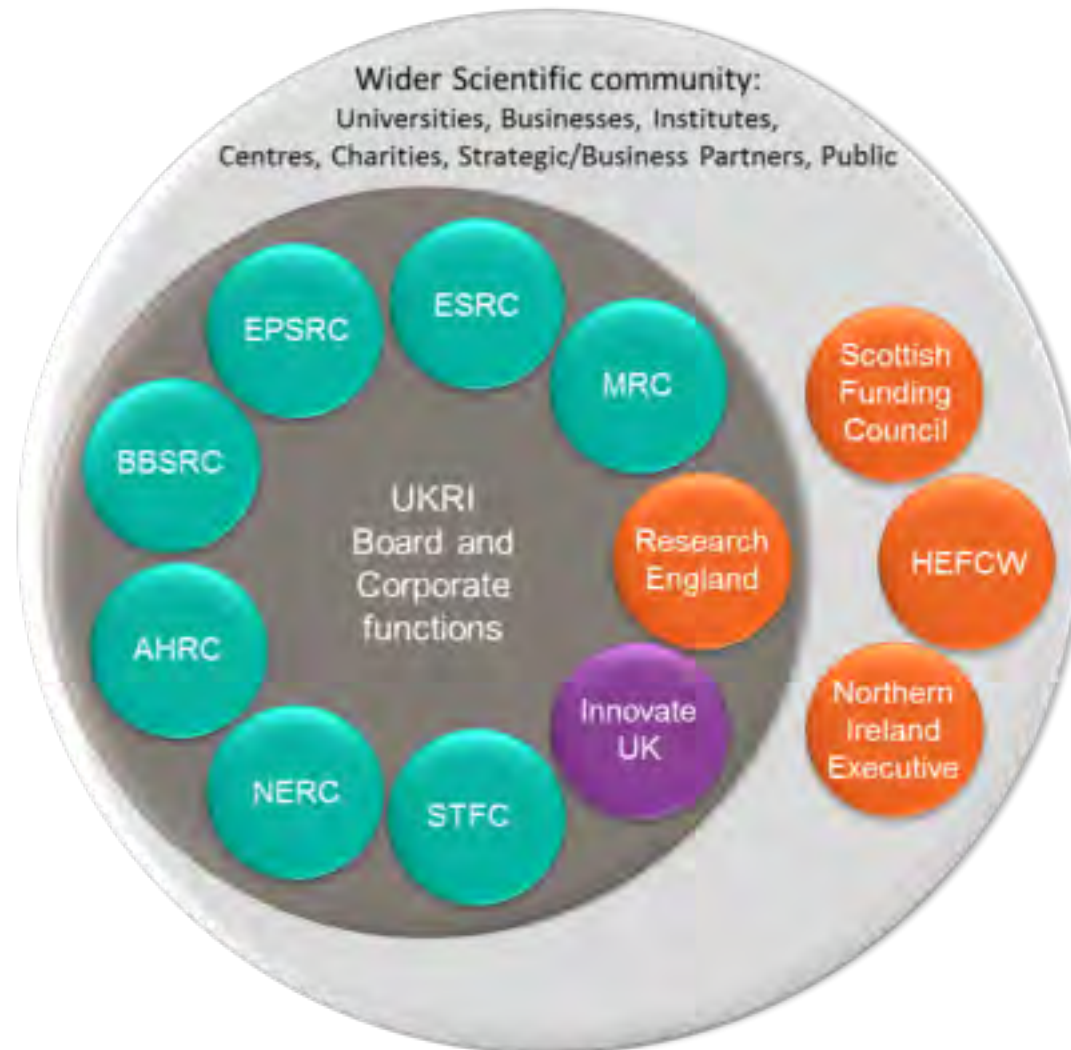


Understanding the status of under-represented groups in the Information and Communication Technologies

Nigel Birch, ICT Theme, EPSRC



UK Research and Innovation brings together the seven **UK Research Councils**, **Innovate UK** and a new organisation, **Research England**, working closely with its partner organisations in the devolved administrations.



ORGANISATION
OF UKRI



56%

OF OUR PORTFOLIO
IS MULTIDISCIPLINARY

OVER

6,000

RESEARCHERS SUPPORTED



55%

OF EPSRC'S RESEARCH
PORTFOLIO IS
COLLABORATIVE



OVER **3,800**

ORGANISATIONS INVOLVED IN
COLLABORATIVE
EPSRC GRANTS



£900m

ANNUAL BUDGET

**KEY
FACTS**

£4.6bn

EPSRC'S TOTAL
RESEARCH & TRAINING
PORTFOLIO

£1.2bn

OF
LEVERAGE
FROM



£3.4bn

OF OUR PORTFOLIO
IS RELEVANT TO THE
INDUSTRIAL SECTORS

- c25% of ICT student population and 18% of research staff are women, but
- ICT covers a wide range of fields making it difficult to know the diversity of the landscape
- EPSRC organised a discussion in 2016 that indicated issues
- With no single body able to take responsibility, EPSRC commissioned a study from Napier University:

*Understanding the status of women and under-represented groups in the
“Information and Communication Technologies”
(published April 2018)*





Employment
Research
Institute

Understanding the status of under- represented groups in the Information and Communication Technologies

A report to the Engineering and Physical
Sciences Research Council

Helen Graham, Robert Raeside and Gavin Maclean
Employment Research Institute, Edinburgh Napier University

July 2017

Edinburgh Napier
UNIVERSITY



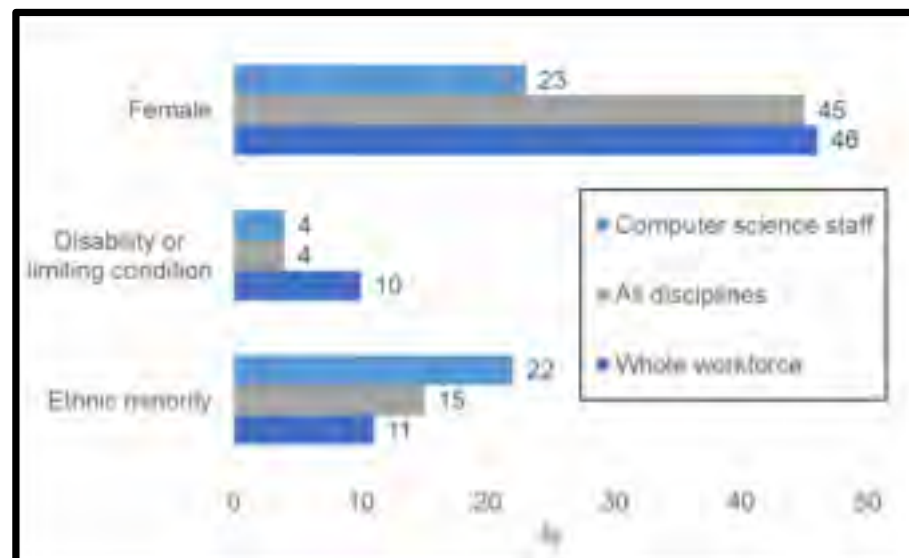
Diversity in academic ICT - staff

Women and those with a limiting disability or health condition are under-represented in academic ICT

Men are twice as likely to be Professors

Women are slightly more likely to be on a fixed-term or teaching only contract

Representation of women, ethnic minorities and those with a limiting health condition or disability



Source: HESA

The report grouped its finding under 7 headings:

- ■ ■ Motivation for pursuing an academic career
- ■ ■ Working conditions
- ■ ■ Confidence
- ■ ■ Caring responsibilities
- ■ ■ Discrimination (including harassment)
- ■ ■ Future career plans
- ■ ■ Diversity



Women may have different motivations for pursuing this career - and therefore different incentives to stay/leave

Men more likely to cite intrinsic motivations, women to cite instrumental

*"I wanted work that's **interesting**. If you're spending so much time working, you want it to be working on something interesting and with people that are interesting, doing something that will hopefully make some sort of progress. I'm **not wedded to academia**, but if I moved to industry, it would be an industry where I would still be doing research."*

Source: Interview respondent, female



- ■ ■ Long hours culture
- ■ ■ Competing responsibilities
- ■ ■ Expectation that women do 'good citizenship'
- ■ ■ Part-time and flexible working: detrimental to career



Working conditions

*“The problem I think with our job is that there is no clearly defined set of tasks you have to do, especially when you do research... **It’s open-ended, you can always do more** and you have to do more to stay at the forefront of research.”*

*“There is still the attitude that your work is **more than a job** and it’s your raison d’être and **everything else gets pushed to the side** lines... Even if I wanted to make it the overwhelming thing in my life, I’m not going to be able to because I have caring responsibilities both of young kids and older parents.”*

Source: Interview respondents, female



■ Caring responsibilities may also make it more difficult to participate in the wider academic (e.g. seminars) and social life of the department

■ Also affects those who do not drink, or those with conditions that make social interaction difficult (e.g. autism)

*“A classic example is that there will be a **late afternoon seminar**...and people say we’ll **go to the pub afterwards**, and even if I can come to the seminar, I can’t come to the pub afterwards and that’s where the **soft networking** stuff goes on and it’s frustrating.”*

*“People always select evening pub events to socialize. I have to **pick up children** from childminder and I **do not consume alcohol** nor enjoy being in that setting. So I did feel **excluded**.”*

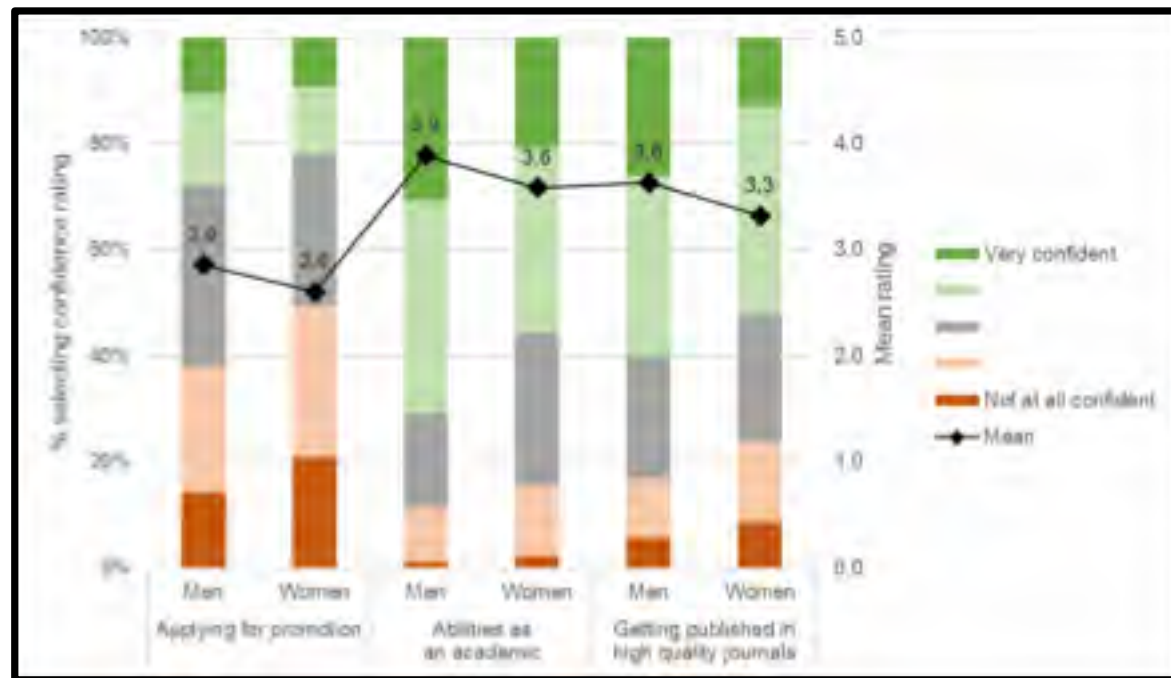
Source: 1) Interview respondent and
2) online survey respondent, female



Confidence

Women are less confident
in their abilities than men

Q: To what extent would
you say that you feel
confident about...



Source: Online survey, staff respondents, n=395

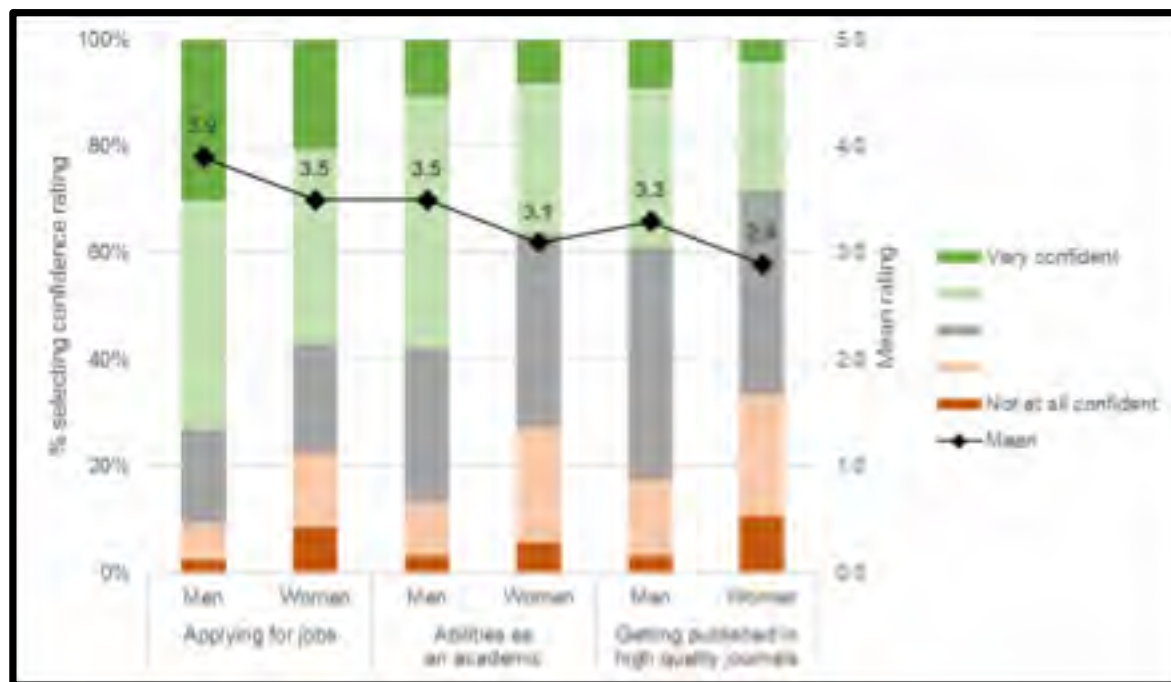
Confidence

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discovery and innovation

Female postgraduate students also display lower confidence

Q: To what extent would you say that you feel confident about...



Source: Online survey, postgraduate respondents, n=242

*“We seem to suffer a lot more with feeling, like, **we don’t fit** and that we just don’t seem to be as **confident in our innate ability** to complete a PhD, whereas the males seem to ... even though some of them are significantly less well-qualified than us, and achieve less than us, just **don’t seem to have that mental block** of, “Oh, I can’t do this, and I’m not good enough to do this,” and those kind of things. They just don’t have that.”*

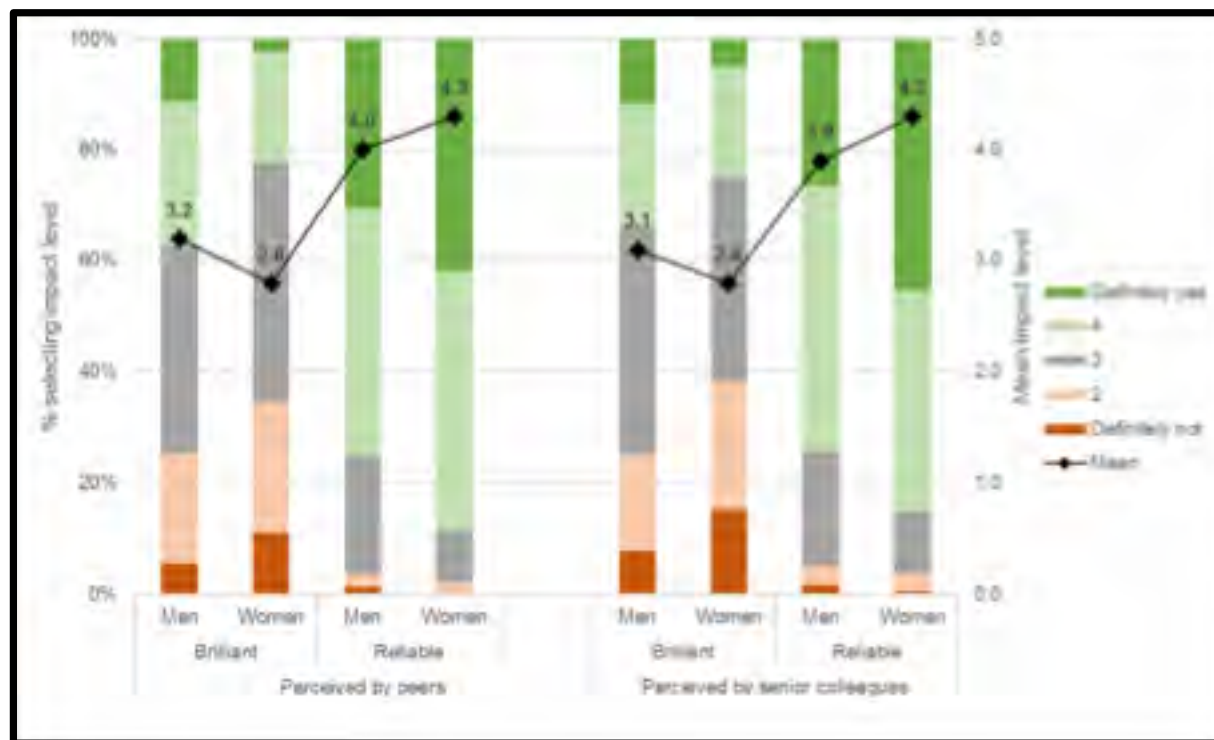
Source: Interview respondent, female



Women are less likely to believe that their colleagues perceive them as 'brilliant', but more likely to believe that they are perceived as 'reliable'

Q: Do you think your academic peers perceive you as...

Q: Do you think your managers and senior colleagues perceive you as...

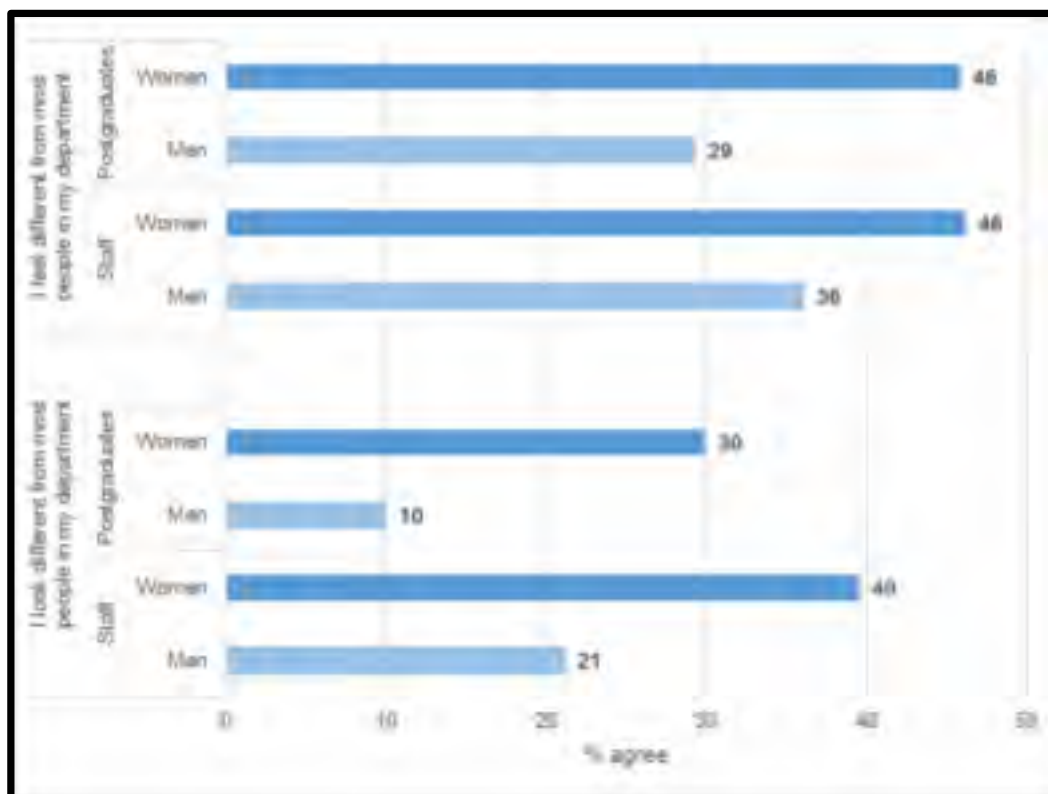


Source: Online survey, staff respondents, n=406

Women more likely to feel
'different' within their
departments

Feelings of difference
reported by other groups:
ethnic minorities, those
with a disability, older
postgraduates

Q: To what extent do you agree
with the following statements?



Source: Online survey, staff respondents (n=432) and
postgraduate respondents (n=244)

Not necessarily outright hostility, but feelings of being different or being treated differently

*“People are generally, you know, really friendly towards me but I still, like, although I’m included, I do get treated a bit differently. Maybe, like, the **attitudes towards me** are a little bit different than to everyone else... Maybe it’s just me being paranoid, but **I just feel like I stand out a little bit.**”*

Source: Interview respondent, female



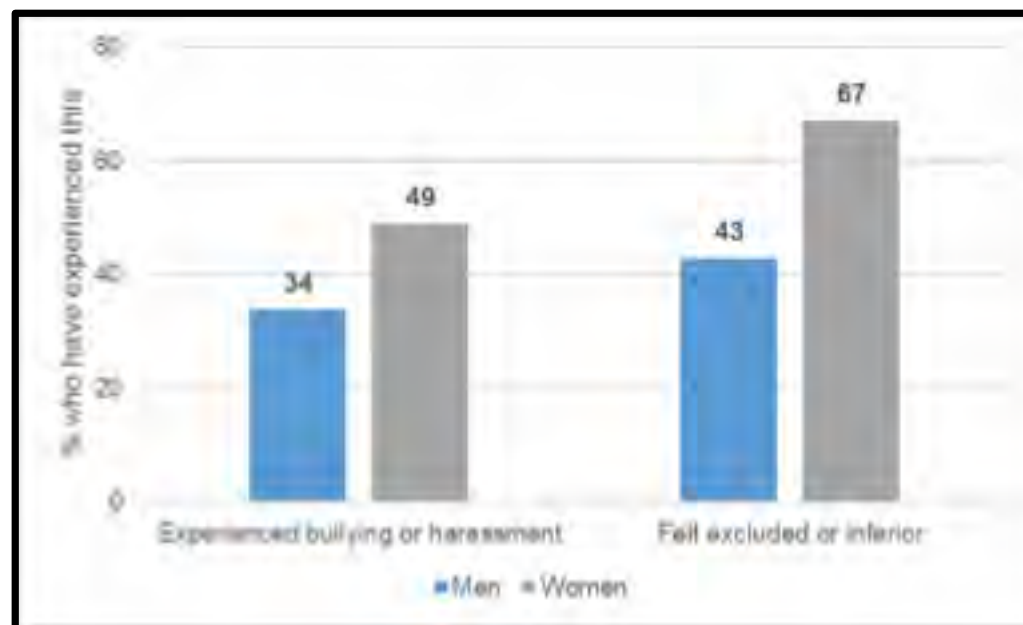
Discrimination and Harrassment

Women are more likely to experience bullying, harassment and micro-aggression

During your time in academia...

Q: Have you ever experienced harassment and/or bullying?

Q: Have you ever felt excluded or inferior because of something a colleague has said (even if they did not mean to make you feel this way)?



Source: Online survey, staff respondents, n=432

Discrimination and Harrassment

Experiences of sexual
harassment (often at early
stage of career)

“When I started my PhD, in my office of 9 men, most of them had page 3 girls as screen savers, and they would make sexual comments about pretty much every female PhD student in the dept. I was also propositioned quite a lot”

“Sexual harassment online from other students who are part of the same doctoral training centre... Being threatened and called a snitch when complaints have been made of sexual harassment (although the complaints were not from me)”

Source: Online survey respondents, female



Discrimination and harassment

Sex discrimination is often
maternity related

Possibly a lack of clarity
around what provision is
available when a PI or
researcher takes leave during
a project

"Expressions of interest were requested for an internal role. I was the only one who responded. Was told that someone else was invited to job share it with me in case I 'became pregnant again'."

"[I was] asked not to get pregnant again by my doctoral training centre as they don't have any money in the budget for maternity leave."

Source: Online survey respondents, female



‘Feminine’ sub-disciplines
in computer science
considered by some to be
inferior

*“There’s always an element of ‘it’s not the technical side of computer science therefore she’s a second class citizen’, there’s still some dinosaurs that have that attitude, and therefore you’re maybe **not seen as being technical** by some people and therefore they look down on some of the work you do.”*

Source: Interview respondent, female



Discrimination and Harrassment

Indirect sexism,
and a reluctance
to call out or
escalate minor
incidents

*"It's **not exactly quantifiable**, you know, but sometimes you get the feeling, so to speak, that sometimes your male co-workers talk over you... You don't see them doing it with their male co-workers as much. So it's little things like that which sort of **tend to add up** all the time, and again, you know, **it's not like they mean to**, you know ... it's not that it's done intentionally, it's **almost subconscious** for them as well, so it's really hard to point it out"*

*"I feel like if I went to someone and said, 'This person made this sexist comment,' they'd be like, 'That doesn't sound that bad. It **didn't affect your performance**.' So I don't really feel like I can deal with them in any way. I usually just laugh along with them and then I go and complain to my supervisor as a friend, rather than as a work thing... I don't ever really think about escalating it because it's never **what I think an HR-type person would consider sexual harassment**. It's just sexist comments that are **demeaning without people realising it**, I think is the key."*

Source: Online survey respondents, female



Why are women/other groups less likely to enter/stay in academic ICT?

- More likely to experience bullying, harassment and micro-aggression – direct and indirect sexism (or racism, xenophobia, able-ism, etc.)
- More likely to take part-time/flexible working patterns that can limit career – affects how they are perceived, and incompatible with expectations regarding outputs
- More likely to take on academic ‘housework’ at personal cost
- Lower confidence in abilities
- Feeling ‘different’
- Different motivation for pursuing (and thus staying in/leaving) career



Need for a proactive response not always appreciated by male colleagues

- Some supportive in principle but complacent in practice
- Seen as women's (or minorities') problem to solve

"But the male staff are all saying, "Oh, yes, yes, you know, we're very equitable minded," and all the rest of it, but I don't think they understand the difference between personally kind of advocating that this should be done and the changes which have to be made."

"Because I am a female in STEM I am expected to spend some part of my time working on the women in STEM issue... Through my whole career I have spent countless hours on the topic at the expense of personal research and growth goals. As I write this I am in the middle of sorting out a cake for an Athena SWAN event while the guy in the next office is writing a grant ... And yes it is 10pm."

Source: Interview respondents, female



At worst, women
experience backlash from
male colleagues

This was also evident from
the online survey
responses of some men

- Hostility to positive
action measures
- Dismissing or trivialising
negative workplace
environment

"When I received a grant ahead of a male colleague, he said it was only because I was a woman and he wasn't."

Source: Interview respondent, female

"Posts were advertised as especially welcoming applications from persons of a background other than my own, rather than as looking for the best person for the role."

"I think this [micro-aggression] is the least of the concerns."

Source: Interview respondents, male



What next? The Action Plan

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discovery and innovation

EPSRC

Engineering and Physical Sciences
Research Council



CPHC

The Council of Professors
and Heads of Computing



The Institution of
Engineering and Technology



UK
**COMPUTING
RESEARCH**
COMMITTEE

■ ■ ■ Building on findings, 4 commitments for the period March 2019:

- ■ ■ Establishing a baseline against which to measure progress
- ■ ■ Workshop including academia and Government to identify and share examples of best practice
- ■ ■ EPSRC will coordinate discussions to develop and publicise Case Studies to celebrate success
- ■ ■ EPSRC, working with partners in UKRI will explore what work is being done on tackling discrimination, harassment and aggression and if appropriate partner with them and work together

- Over the coming months we will be:
- Collating information on what all our partners are doing in this area such as events, so that we can look for synergies
- developing smarter case studies
- organising a meeting to explore how we can collect baseline data as well as to prioritise the key findings and what actions we can begin to take.
- We are also exploring the possibility of commissioning a further study to understand the levels of bullying, discrimination and harassment. Before starting this, however, we are in the process of trying to find out what work is already being done in departments and by other organisations



Thank you

