Equality, Diversity and Inclusion in Academic Information and Communications Technologies

Findings and actions in response to Understanding the Status of under-Represented Groups in the Information and Communication Technologies report

Currently, approximately 25 per cent of the ICT student population, and 18 per cent of the research staff in computer sciences and electronic and electrical engineering, are women. Anecdotal evidence points to ethnicity and age being issues in computing sciences in higher education though statistics are less clear with very little data available.

Understanding why these issues exist is important. Not only is ensuring diversity the right thing to do, diversity in research is important for creativity and improving decision making. It is also important for attracting and holding onto talented researchers and there is an urgent need for this. The 2016 ONS Ecommerce Survey found that 34 per cent of UK enterprises experienced difficulties in recruiting IT staff. The UK needs the skills that those discouraged from furthering their careers could bring to the sector.

With no single professional body covering the spread of topics within ICT, the Engineering and Physical Sciences Research Council (EPSRC), the British Computer Society (BCS), the Institution of Engineering and Technology (IET), the UK Computing Research Committee (UKCRC), Council of Professors and Heads of Computing (CPHC) and TechWorks agreed to commission a study from the Employment Research Institute at Edinburgh Napier University to understand the nature of these issues - Understanding the Status of under-Represented Groups in the Information and Communication Technologies https://epsrc.ukri.org/newsevents/pubs/napierdiversityreport/

Working together, we want this study to be a catalyst for change. To this end, we have discussed the key findings and recommendations from the study with members of the community, including Heads of Department, at two workshops in 2017. This Action Plan has emerged from those discussions. We want it to serve as a roadmap for ourselves and the community to ensure that change happens and those who want to pursue careers in ICT are not discouraged.

Issues around equality, diversity and inclusion are not limited to the ICT research community and EPSRC and the other councils within UK Research and Innovation (UKRI) are committed to leading and supporting change across the research base. The commissioning of this study is in line with the RCUK Action Plan for Equality Diversity and Inclusion which commits the councils to showing leadership to change the culture, practices and makeup of the research community https://www.ukri.org/files/legacy/documents/actionplan2016-pdf/
Key findings [From the Understanding the Status of under-Represented Groups in the Information and Communication Technologies report]

1. Motivation for pursuing an academic career
Women’s motivations for entering a career in academic ICT research were more likely than men’s to be instrumental (i.e., they see it as an intellectual opportunity), while men’s were more likely than women’s to be intrinsic (i.e., a longstanding interest in technology). Understanding the motivation to pursue a career in academia can help explain why women drop out.

2. Working conditions
Poor working conditions in academia are due to a long-hours culture and many competing responsibilities from different sources. Some of these pressures were found to represent a greater challenge to women, and to those with a limiting health condition or disability, in continuing with their academic career. There was also a sense that women were more likely to take on additional tasks, particularly ‘good citizen’ activities, which can displace other more prestigious or career enhancing activities.

3. Confidence
Confidence was found to be a key issue – women exhibited less confidence across a range of tasks, at staff and postgraduate level. This was particularly true of ethnic minority women.

4. Support and working relationships
Good working relationships and feeling supported by colleagues are key sources of job satisfaction and could foster retention. However, informal social events outside working hours were found to present barriers and exclude people from developing work relationships. In particular, ‘pub culture’ was found to be alienating to those who could not attend due to caring responsibilities, or who did not drink alcohol. Around a quarter of staff and students reported feeling isolated within their department, and women, ethnic minorities, those with a limiting health condition or disability, and older postgraduates were more likely to notice a feeling of ‘difference’ between themselves and others in their department.

5. Caring responsibilities
Jobs, promotions, and funding are awarded based on the applicant’s accomplishments, but this advantages a certain type of person, who both wants and is able to dedicate excessive time and attention to the job. This is impossible for someone who has caring responsibilities, which impose hard boundaries on the amount of time that can be spent on work. Women were more likely to work part-time, and those who worked part-time were less likely to say it was their preferred option than those who worked full-time. The tension between caring and academic responsibilities was experienced to a similar degree among male and female survey respondents. However, women were more likely to have caring responsibilities, and to have made use of flexible working arrangements, or taken a career break, and women were more likely to feel that this had had an impact on their job security or productivity. Those who had taken absence from work due to maternity leave reported that this can be difficult to manage for those with research grants or supervisory responsibilities, and on returning to work it can be difficult to re-establish research activity at the same time as resuming a full teaching load.

6. Discrimination
Discrimination and negative attitudes exist and need to be challenged. Discrimination and harassment examples were widely reported in the online survey, while interviews revealed a more complex phenomenon of ‘indirect’ or ‘unquantifiable’ experiences of sexism and other prejudice. Women in the research also recounted various instances of their competence being questioned in ways their male colleagues do not experience.

7. Future career plans
Most respondents saw many positives about their career, but with some ambivalence about its demands, and an attractive offer from industry could tempt them away – particularly for students and early career researchers. A career in academia was seen as a trade-off, with less pay and security traded for greater autonomy and more interesting work. Future planning was restricted by caring responsibilities, partners’ jobs and location of family. Short term contracts and the need to be mobile in pursuing postdoctoral opportunities were also found to be restricting future plans. The younger age groups responding to the survey were particularly sceptical about pursuing an academic career, with clear reservations about career progression opportunities and working conditions.

8. Diversity
Existing attempts to address the issue of diversity in STEM have attracted some backlash, which was evident in the comments of some male respondents to the online survey. Female respondents reported being on the receiving end of this; for example, being told they had only succeeded due to reverse discrimination. However, the general feeling was that most of their male colleagues accept the need to increase diversity, but are less aware of the need to take positive action to achieve it. Some respondents felt that existing initiatives such as Athena SWAN were not necessarily picking up on all facets of women’s experiences that make their time in academia more difficult; for example, feelings of isolation or experiences of micro-aggression. There was also a feeling that it is mainly female staff who are shouldering the administrative burden of these diversity initiatives. Finally, some respondents perceived a need to make more room for diversity of thought or approaches, and that there is an inflexible mind-set in academic computing that is in part responsible for reproducing existing characteristics within the academic computing population.
Actions

Addressing findings around ‘Motivation for pursuing an academic career’ and ‘Future career plans’
1. We recognise that the nature of ICT is often misunderstood, perceptions can discourage people from entering study and men and women also may have different motivations. (Key findings 1)

(a) We will organise activities with the academic community to address these findings, including:

- BCS and IET will take the lead in developing best practice in promoting the attractiveness of computer science and ICT courses and research to the widest audience, including how courses are advertised and organised
- EPSRC and the CygnetS network will organise a workshop to identify routes to gather and share data on interventions
- EPSRC will take the lead determining how best to establish a baseline so that changes can be monitored over the next five years

(b) We recognise the importance of raising awareness with the public, with Government and with schools:

- We will continue to promote diversity and inclusion with relevant Government departments such as the Departments for Business, Energy and Industrial Strategy (BEIS), Education (DE), and Communities and Local Government (DCLG)
- BCS and IET will take the lead on seeking ways to coordinate our activities in promoting public engagement with schools (including primary schools) to maximise the impact of such work and improve the number applying to study Computer Science and ICT

(c) EPSRC will coordinate discussions to develop and publicise case studies to celebrate success around diversity as well as individuals.

(d) EPSRC will continue to encourage and promote diversity in research, valuing collaborative research and ensuring that the full range of potential users are being involved in the design and delivery of projects, for example, by promoting the EPSRC People at the Heart of ICT initiative.

Addressing findings around discrimination, harassment and aggression
2. We recognise that some colleagues suffer discrimination, harassment or aggression. We need to create an environment that is respectful of all and see a reduction in the number of people experiencing these behaviours. (Key findings 6, 7)

(a) EPSRC alongside its partners in UKRI, will take the lead in considering which organisations are already progressing work on this topic and how to partner with them, if appropriate, to understand the extent of the problem.

Addressing findings around the cultures that exist in academic Computer Science and ICT departments
3. We recognise that attitudes, cultures and processes in some departments can result in barriers being established preventing the advancement of some people or that make working in the environment an unpleasant experience. There is a need to understand the reasons behind this so that we can work with the wider community to consider how to effect a change in culture. (Key findings 2, 3, 4, 5, 7, 8)

(a) We will organise a workshop (see action point 1) with interested groups, including academia and Government departments to identify and share examples of best practice including:

- processes that are open fair and transparent (for example, decision making processes are clear, meetings and events are inclusive)
- challenging the long hours culture
- recognition, reward and support of those who take up citizenship roles
- taking account of the many styles of leadership and varied career paths
- ways to support the career development of colleagues
- the need to challenge stereotyping (including language used)

(b) EPSRC will ensure that future research leaders such as Directors of EPSRC Programme Grants, Centres for Doctoral Training (CDTs) and Networks, take a role in implementing behavioural change for example by implementing The Equality, Diversity and Inclusion Strategy statement as an expectation on ICT-funded Networks and Programme Grants.

(c) We will continue to build on best practice and recognise the unintended consequences from previous actions and encourage reporting of issues to help drive culture change and avoid problems in the future.

4. We will review and refresh these actions in one year’s time (March 2019) and publish our progress and future plans.
Commitments for 2018/2019

In the coming year we are committed to taking forward the following specific actions:

(a) EPSRC will take the lead in determining how best to establish a baseline so that changes can be monitored over the next five years.

(b) We will organise a workshop (see action point 1) with interested groups including academia and Government departments to identify and share examples of best practice.

(c) EPSRC will coordinate discussions to develop and publicise case studies to celebrate success in diversity.

(d) EPSRC, alongside its partners in UKRI, will take the lead in considering which organisations are already progressing work on discrimination, harassment and aggression and how to partner with them, if appropriate to understand the extent of the problem and work together.

“ICT affects all of us as society becomes more digital. Thus it is even more important that research and teaching reflects society as well as all the other reasons why diversity is important” (Workshop participant)

Footnotes

1 https://epsrc.ukri.org
https://www.bcs.org/
https://www.theiet.org/
https://www.ukcrc.org.uk/
https://cphc.ac.uk/
https://www.techworks.org.uk/

2 In this section ‘We’ refers to the partners in this initiative: EPSRC, CPHC, UKCRC, BCS, IET and TechWorks