

Submission by the Daphne Jackson Trust to the All-Party Parliamentary Group on Diversity and Inclusion in Science, Technology, Engineering and Maths (STEM) Inquiry into Equity in the UK STEM workforce

The Daphne Jackson Trust is the UK's leading organisation dedicated to realising the potential of returners to research careers following a career break of two years or more taken for a family, caring or health reason. The Trust was established in 1992 in memory of Professor Daphne Jackson – the UK's first female Professor of Physics.

The Trust offers Fellowships across all fields of research in universities, research institutions and industry across the UK and Republic of Ireland. It has supported over 400 individuals to return to research careers. Up to 25 new Fellowships are awarded each year, over 60 are currently in place with our partner institutions.

1. What are the demographics of STEM workers in your organisation or sector? Are there gaps in the quality of evidence, monitoring or reporting?

The Trust gathers only limited demographic information across its Fellows, however the data reveal significantly higher proportions of women (96%) than men (4%) undertaking Daphne Jackson Fellowships¹. This is not unexpected – women are more likely (but by no means exclusively) to take career breaks for family reasons – one of the central components of our Fellowship eligibility criteria. It does however highlight how the lack of a supportive and flexible STEM environment for research returners, particularly women, is a barrier. Often a Daphne Jackson Fellowship is a returner's only real prospect of re-entering the STEM research workforce. This is a contributing factor to the well documented STEM demographic imbalances presented in the accompanying Data Analysis Brief².

Collecting robust demographic data is a challenge for the Trust. The requirements of the Data Protection Act (2018)³ to collect and store only the minimum amount of personal data must be balanced against the need to understand the broader demographics of our Fellows. An outcome of this inquiry could be to develop guidance on what data (quantitative and qualitative) all organisations working in STEM should collect and how it should be reported. Harmonising a sector-wide approach would increase understanding of equality, diversity and inclusion (EDI) across STEM. It should however be developed

¹ <https://daphnejackson.org/wp-content/uploads/2018/07/Leading-the-way-for-returners-A-survey-of-former-Daphne-Jackson-Fellows-2015.pdf>

² <https://www.britishtscienceassociation.org/Handlers/Download.ashx?IDMF=d7899dce-22d5-4880-bbcf-669c0c35bda6>

³ <https://www.legislation.gov.uk/ukpga/2018/12/contents/enacted>

carefully to avoid potential pitfalls such as organisations comparing themselves with others. This would be inaccurate and could create perverse incentives for organisations to make their data look 'good' rather than tackling underlying reasons for EDI disparities.

2. Where is there inequity across the different protected characteristics and how are different communities impacted across different:

- STEM disciplines or sector/subsectors
- types of organisation (e.g. private, public, non-profit)
- type of STEM activity (e.g. academic research, education, engagement, commercial, funding)
- job levels and/or qualification.

The Daphne Jackson Trust is cognisant of inequity across demographics, disciplines, organisations and sectors. Specifically in relation to the mission of the Trust, our focus is on the disparities faced by returners to research careers, predominantly within higher education. In the fast-moving world of STEM research, highly qualified and skilled individuals that temporarily step back from their research area quickly find themselves lagging behind their peers. When seeking to return to work, they often struggle to find research-based employment that fully utilises their knowledge and experience. It leads to many researchers leaving their preferred profession entirely or forced to take jobs outside of their area of expertise and skill level. This issue impacts significantly (though not exclusively) on women, who often find themselves taking a career break to raise a family or to care for a relative. The deleterious effect of a career break can be compounded by issues such as relocation, dealing with complex health issues and when a planned maternity break extends into a longer career break due to unforeseen life events.

Returning individuals to STEM research careers is complex. Individuals require more than a brief and intensive skills update. Instead, they often need a longer and in-depth immersion in the area of knowledge in which they previously operated. Training is required to refresh, refine and develop existing technical skills and learn new techniques and technologies. It also takes time to accumulate more recent research outputs and scientific impacts. This creates significant inequity for returners and all Daphne Jackson Fellows have faced a combination of these significant issues. Without the opportunity and support offered by schemes such as Daphne Jackson Fellowships, this inequity would be further exacerbated, and the majority would be lost to the sector.

The prevalence of fixed-term research contracts combined with current research assessment criteria being heavily focussed on cumulated research outputs and impacts does not create a supportive sectoral environment for early career researchers that do take a break. Research culture and the way that researchers are assessed should change to be more supportive of returners and flexible career pathways. This is vital for supporting a diverse and dynamic 21st Century research workforce.

3. Where are there evidenced inclusive behaviours and policies within different organisations, subsectors, sectors and countries on:

- Recruitment; and/or
- Retention

There are very few Fellowships that support returners (at least in STEM) in the same way that Daphne Jackson Fellowships do. The ongoing one-to-one support provided by the Trust, combined with the assisted development of a competitive research proposal, provides a unique opportunity for a returning researcher. Opportunities such as this are a vital lifeline to aid the retention and ultimately the return of these highly skilled researchers to their careers. The Trust relies on the continued support of funders, host organisations and supervisors to bring about these Fellowships. We would encourage all organisations across STEM to work with us and reduce losses to the STEM workforce pipeline.

4. Are there policies or activities undertaken by the UK Government, or its agencies, that advance or inhibit equity and inclusive cultures within the STEM workforce?

- Where could policy change or sector action lead to addressing the equity of opportunity within the UK's STEM workforce?

Highly trained STEM researchers that do not return to their careers are a substantial loss to UK PLC. The economic benefit of addressing the professional women career break penalty is calculated as providing an additional £1.7bn to the country's economic output⁴. However the majority of returners have very few, if any, opportunities to do this. The convergence of overarching issues such as the post-Brexit focus of the UK economy, the R&D sector recovery post Covid-19, the goals of the Government's Industrial Strategy and the wider appetite for continued culture change within the sector offers an opportune moment for Government to identify mechanisms to leverage and scale up initiatives that return researchers to STEM careers.

The Daphne Jackson Trust recommends that an outcome of this Inquiry will be to call upon organisations, such as ours, to facilitate this. The Trust has previous experience of working with select committees (2014:- Science & Technology Committee enquiry into Women in Scientific Careers; 2014:- BIS feasibility study on transitioning engineers back into engineering careers; 2013:- Sir John Perkins' Review of Engineering Skills) and would be pleased to engage at this critical juncture.

Specific consideration could be given to the following:

- Increased Government funding and support for existing research returners schemes, with the appropriate Minister(s) and Department(s) championing the cause of returners, codifying best practice, promoting initiatives that encourage sustained change, awarding success and identifying high profile champions;

⁴ <https://www.pwc.co.uk/economic-services/women-returners/pwc-research-women-returners-nov-2016.pdf>

- Kite marks for commitment to equality to be established within all employment sectors along the lines of Advance HE's Athena SWAN charter;
- A voucher scheme to enable returners to access sectoral-specific retraining, via appropriate professional bodies, trade associations and charities.

5. What are the impacts of COVID-19 on equity for STEM workers (including job and income security, contract type etc) in the short- and medium-term? Which communities, groups, organisations or sectors are being most impacted?

The impact of Covid-19 has affected all aspects of research and the Trust is concerned that significant numbers of researchers will experience interruption, disruption and breaks to their careers due to the pandemic.

Short term impacts are already being experienced. Data from the Association of Medical Research Charities⁵, which represents over 150 funders of medical research suggest a 41% decrease in medical research spend this year compared with last. Such disinvestment will have profound effects on researchers working in this sector. More generally, competition for funding sources will increase throughout the sector and ultimately more will lose out.

Medium term impacts are likely to see researchers spending less time on their research and more time looking for funding. Some, inevitably, will be unsuccessful which by this stage may increase the prospect of an enforced career break, or leaving research entirely. This would be a huge loss to the sector – both in terms of knowledge and expertise, but also economic value.

Organisations must work together to support as many individuals as possible - both by avoiding researchers being forced into a career break in the first place, but also by returning those that do.

6. What are the implications and opportunities of new policies and employer action in the next 5-10 years following COVID-19 and Brexit? What will the future impacts be for communities, groups, organisations or sectors?

Additional support is needed for researchers returning to their careers after a break. Without this, we face the possibility of a damaging exodus of knowledge, skills and experience from the sector. Covid-19 has taught us that research expertise is vital for the nation. After the pandemic, pre-existing (as well as new) challenges will remain – from tackling climate change to disease, technological advancement to food production – we need as many skilled and talented researchers as possible. Research returners are a vital component to this.

There are however opportunities to change the wider culture and dynamics of the research environment more profoundly. These opportunities could involve:

⁵ <https://www.amrc.org.uk/covid-19-the-risk-to-charity-funded-researchers>

- Changing the criteria for the recruitment and assessment of researchers to encourage part-time and flexible working and to recognise that career breaks are normal. Career progression and success should not be sacrificed for family, caring or health reasons.
- Making it easier to diversify career pathways and increase opportunities for researchers outside of academia. Greater collaboration and cohesion with industry and the charity sector – with researchers interchanging roles between them – should be seen as normal. This would complement the Government's Research and Development Roadmap.
- Reforming the REF to move away from an over-reliance on traditional assessment criteria to a more nuanced definition of what 'excellence' really means.

Finally, the impact of global drivers on employment - technological change, the green economy, digital skills, the aging population, climate change – coupled with the allied impetus to greater international collaboration between subjects, departments and organisations will create new opportunities and a truly interdisciplinary research workforce. All of us within the research sector must work together, with Government, to ensure that the UK is positioned to maximise its contribution to benefit from such opportunities.