Strengthening the UK research workforce to beat cancer

January 2024

CANCER RESEARCH UK

Together we are beating cancer

Contents

List of acronyms

CEDARS – Culture, Employment and Development in Academic Research Survey
DSIT – Department for Science Innovation and Technology
EDI – Equality, Diversity and Inclusion
EEA – European Economic Area
EU – European Union
GTV – Global Talent Visa
HESA – Higher Education Statistics Agency
IHS – Immigration Health Surcharge
R&I – Research and Innovation
REF – Research Excellence Framework
STEM – Science, technology, engineering and maths
SWV – Skilled Worker Visa
UKRI – UK Research and Innovation

Executive summary

People are at the heart of cancer research, and beating cancer sooner will require the brightest minds, doing research in an environment that enables them to thrive. Current shortfalls in the UK research workforce must be addressed if the UK Government is to meet its ambition to be a leading science nation in an increasingly competitive environment. It is vital to attract, develop and retain more researchers, by making careers accessible and rewarding, attracting international talent, and building a diverse research community. These issues require system-wide action, and the UK Government has a vital role to ensure the resilience of the UK research ecosystem.

Cancer is a growing world-wide issue and requires a global effort to improve outcomes. International researchers make significant contributions to UK research, but there are barriers to cross-border mobility, in particular the cost and complexity of the immigration system. The EU/EEA has been a significant talent pool for cancer research, but since the UK left, it has been harder to recruit this talent. Access to talent is put at further risk by recent UK Government increases to immigration costs which threaten to undermine its own ambitions on science. Urgent change is needed – primarily by reducing costs – to ensure the UK is an attractive and affordable destination for researchers.

Change is also needed to improve the culture within research – by increasing stability, flexibility, and inclusivity – to build on progress to attract, develop and retain a more diverse and skilled workforce and enable even better research.

Academic assessment systems that rely too heavily on traditional metrics perpetuate a research culture that focuses on individual publication rate and grant history. This can impact researchers' careers and wellbeing, and the quality and reproducibility of research outputs. There is often greater impact on under-represented groups, perpetuating inequalities. There have been positive changes in recent years to address these issues, but ongoing evaluation and consultation is needed.

A lack of stable and flexible career paths in academia can result in a loss of talented individuals, to industry or out of research altogether. Sectoral mobility can benefit individuals and the whole system – by improving skills and collaboration – but barriers to re-entering academia mean these benefits aren't always realised.

A diverse research community is vital, but society is not fairly represented in research. To make meaningful progress, a greater understanding is needed of inequalities, barriers that perpetuate them and effective interventions to tackle them. This requires collaborative effort, contributed to by the UK Government improving data monitoring and setting out clear action plans.

Together these actions by the UK Government can contribute to momentum for change that will strengthen the research community, and the research it can carry out.

We recommend:

- By the end of the next Parliament, the Home Office should reduce overall and upfront immigration costs for researchers, so they are competitive with comparable leading research nations. To support this, by 2026, the Home Office should work with DSIT to initiate a review on the impact of the immigration system on the recruitment of international research staff.
- DSIT should work with UKRI to strengthen the UK's research culture. This should include action to increase the stability of roles, support sectoral mobility, and ensure incentives for universities to improve research culture are considered in the development of REF2029.
- DSIT should increase the value of the data collected in future versions of the R&I workforce survey by improving coverage, data collection and disaggregation to provide a comprehensive nationwide overview of equality, diversity and inclusion in research. DSIT should then publish an action plan to address the inequalities in the research workforce that have been identified.

A full summary of our recommendations can be found in the annex.

Introduction

Making scientific progress to better prevent, diagnose, and treat cancer cannot happen without the dedication of the researchers designing and carrying out studies and investigations. It's essential to provide the best possible environment to support these researchers so they can contribute to life-changing breakthroughs.

However, to meet the UK Government's ambitions to grow as a scientific nation, challenges facing the research workforce must be addressed. Attracting, developing and retaining talent is central to this endeavour. Research careers must be accessible for everyone, barriers to attracting international research talent removed, and a diverse and inclusive research community should be built to address the full range of questions in cancer research.

Here we address the issues of:

1. **Global mobility of research talent:** Optimising the UK immigration system to ensure UK research can attract and retain international talent.
2. **Research culture and careers:** Improving culture, Equality, Diversity and Inclusion (EDI) and career stability, flexibility and mobility to make research careers more attractive, accessible and rewarding.

These issues are broad ranging and challenging to tackle, they require concerted and continued efforts from all stakeholders – government, funders, research institutions, academia, the private sector and individuals.

This policy report is part of policy development for **Longer, better lives: A programme for UK Government for cancer research and care**, which sets out actionable, practical policies for the future UK Government to beat cancer, sooner. Recommendations are therefore focussed on steps the UK Government should take to catalyse and coordinate these efforts. They were developed through engagement with our research community and policy experts across the sector.

While our focus is on the workforce contributing to cancer research, discoveries and developments from a wide range of disciplines can directly or indirectly contribute to improved cancer outcomes and many of the issues discussed here cut across R&D, especially STEM. Because of this we have kept the focus broad – making recommendations across the research environment in the UK.

Our 2023 survey of the UK clinical research workforce, which will be published shortly, explores challenges related to recruitment and retention for clinical research, so those issues are not covered here.

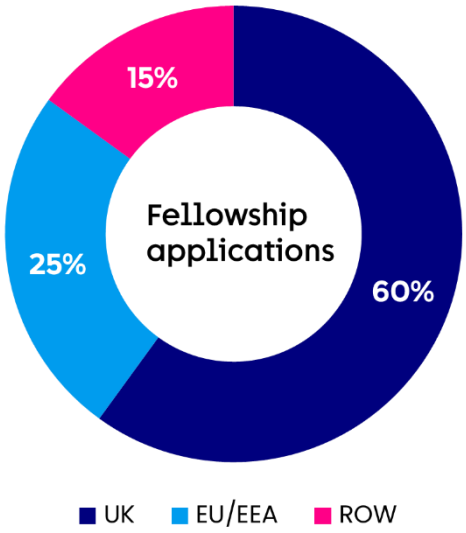
As the largest independent funder of cancer research in the UK, we are also aiming to lead on taking actions to address some of these issues, which we provide examples of.

1. Global mobility of research talent

Optimising the UK immigration system to attract and retain international researchers

Research is an inherently global endeavour – cancer is a growing world-wide issue[1], which requires a global effort to improve outcomes. This collaboration is strengthened by the mobility of researchers, their skills and ideas.

Figure 1: Nationality of CRUK Fellowship applicants, 2020-23, internal data



The research workforce in the UK is international and mobile. The 2022 Research and Innovation Workforce Survey of the UK research workforce, now led by the Department for Science Innovation and Technology (DSIT), found over half of respondents had worked abroad during their career and a quarter hold non-British citizenship[2], increasing to 37% in academia. International researchers make up a large proportion of our researchers. In applications for our Fellowships in 2020-23, 40% were international, with 25% from the EU, and 15% from the rest of the world.[3]

UK research thrives from this mobility – evidence from the UKRI Global Mobility Evidence Report 2022 shows that mobility has a positive impact on researchers and outputs[4]. It allows UK research organisations to draw from a pool of the best global talent, who bring skills, experience, and networks of international connections for collaboration[5].

While efforts to increase training of domestic talent are important, there is also an immediate need to recruit internationally, including because it takes time for domestic talent to emerge from an improved training pipeline to fill current skills gaps. International talent is therefore necessary to meet the UK Government's own estimate of needing 380,000 additional researchers by 2027.[6]

Since the UK left the EU, the UK immigration system has been through significant overhaul. As the new immigration system was developed, Cancer Research UK published recommendations on how it should be streamlined, affordable and accessible to enable the UK to compete with other major research nations to attract and retain global research talent at all career stages.[7]

Changes to UK immigration since the UK left the EU

- The end of free movement for EU/EEA citizens on 1st January 2021
- Overhaul of work and study visas

Table 1 summarises visas relevant for the research community. The most used visas by researchers currently are the Skilled Worker Visa (SWV), Global Talent Visa (GTV) or student visa for PhD students.

Table 1. UK visa offering relevant for researchers

Visa type	Requirements	Notes
Skilled Worker Visa[8] (replaced Tier 2 – general visa) Up to 5 years (possibility of extension and permanent settlement)	• Job offer from registered sponsor. • Skill, salary and language levels. The Shortage Occupation List has a lower minimum salary. • Proof of personal savings.	• Visa is tied to job, so requires new visa to move jobs. • Visa number capped.
Global Talent Visa[9] (replaced Tier 1 – exceptional talent visa) 1-5 years (possibility of extension and permanent settlement)	• 'Leaders' or 'potential' leaders in their field. • Endorsement by an official body • No minimum salary threshold or language level. • No job offer or employer sponsorship	• Not tied to job, giving freedom to move jobs. • Lower cost than SWV, and no cap on numbers.
High Potential Individual Visa[10] 2 years, no extension or permanent settlement	• Degree from eligible university from the last 5 years, based on global top 50 universities – mostly in US and China. • Proof of personal savings.	• Allows individuals to come to the UK without a job. • Limited access
Government Authorised Exchange Visa[11] Up to 2 years	• Licenced sponsor. • Cannot take a permanent job.	• Suitable for short-term mobility e.g., research projects, conferences, internships, trainings, giving lectures.
Innovator Visa[12]/Scale-Up Worker Visa[13] 3 years (IV), 2 years (SUW), possibility of extension and permanent settlement	• Job offer for an approved scale-up business (Scale-Up Worker visa) • Language, savings level.	• To establish or work for a fast-growing business
Student Visa[14] Dependent on length of course	• Offer for a course at a licenced student sponsor, and proof of savings and language level	• Suitable for PhD students

What has been the impact of these changes on research?

Directly assessing the impact of changes on international recruitment is challenging, due to limited data and the interwoven effects on mobility and the economy in recent years of the COVID-19 pandemic and cost-of-living crisis.

However, it is becoming clear that the end of free movement is impacting recruitment from the EU/EEA. The EU/EEA was previously a large talent pool for UK research, through close links with European scientific institutions and high-quality training programmes. There are concerns that the effects of the UK exiting the EU may erode connections and collaborations, and recruitment could continue to decline, damaging UK research.

EU/EEA citizens now require visas to conduct research in the UK - a change that risks reducing their motivation and ability to come, as they can continue to move within the EU scientific area for free. In our recent survey of cancer researchers, 76% of respondents said they had faced difficulties in recruitment and retention of staff due to the new UK-EU relationship.[15] Many commented that they receive fewer applications from EU/EEA researchers with cited reasons including visa costs, Horizon Europe association and hostility, and that this loss of talent is not sufficiently made up for from other regions.

We are concerned that this limits our access to this talent pool and is damaging UK research. Recruitment and visa issues are also introducing delays to projects, as it takes longer to recruit into posts.

Alongside the impact of the loss of free movement, the current system limits our ability to attract and recruit research talent from across the world to the UK.

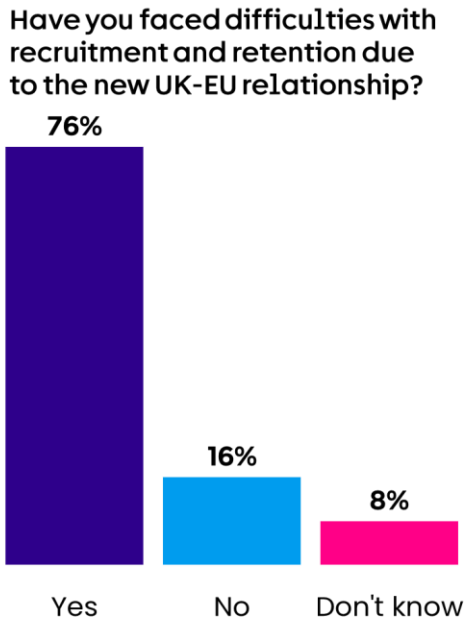


Figure 2: Responses to our researcher survey on International Research Collaboration (N=79). Conducted September 2023.

"Key talent doesn't want to move to the UK - both due to general uncertainties, due to the administrative barriers, and due to the costs involved."

Respondent to our survey of researchers on international research collaboration 2023

"When we have made offers to EU postdocs, [there have been] long delays in getting visas (three months in some cases) leading to significant downtime in projects."

Respondent to our survey of researchers on international research collaboration 2023

Recent changes are further damaging recruitment

Over the past year, the Government has made changes to immigration rules further exacerbate barriers to attracting and recruiting international researchers.

Immigration costs: In October, the Government increased the fees for work and study visas by 15% and 20%, and the Immigration Health Surcharge will increase by 66% in Spring 2024. This means it will cost £5,890 for a researcher to come on a 5-year Global Talent Visa, and £20,980 if they brought 3 family members. These costs can be a barrier to researchers and research organisations may struggle to cover the increase.

Minimum salary thresholds: The Government announced an increase to the minimum salary for workers from £26,200 to £38,700, due to take effect in Spring 2024. Vital roles in research, like technicians and research assistants, often have salaries below this new threshold, so this is likely to impact recruitment.

Changes for dependents: The minimum income for people to allow their families to join them is increasing (initially to £29,000, and incrementally to £38,700) and international students no longer have the right to bring dependents, unless on postgraduate research courses.

How can the system be improved for research?

The high cost of the UK visa system compared to other leading science nations, along with issues around the accessibility and complexity of the immigration system, act as barriers and are impacting the attractiveness of the UK for global research talent. There are particular challenges for early-career researchers, for those with dependents and for those from lower income settings.

Here we make recommendations to the UK Government of changes to the immigration system that would help to ensure that the UK can recruit the best research talent from across the world.

1.1 Ensure the UK visa system is affordable

The UK has one of the most expensive visa systems in the world, which is the primary barrier to attracting and recruiting international talent. Costs include visa fees and the Immigration Health Surcharge (IHS). In July 2023, the UK Government announced a 66% increase to the IHS and 15-20% increases to work or study visa application fees.[16] This has exacerbated existing issues with high costs.

➔ Visa fees

UK visas relevant to research, especially the Global Talent Visa (GTV) and Skilled Worker Visa, are significantly more costly than comparable research-intensive countries, such as the US, Canada, France and Germany (Table 2). Increases to visa fees came into effect in October 2023.

Table 2. Comparison of UK visa fees relevant to researchers with comparable countries, sorted by average cost across visas listed

	Global Talent	Graduate Route	Skilled Worker	High Potential Individual
Australia	£2,378	£956	£2,342	£376
New Zealand	£391	£365	£1,110	£2,857
UK	**£716**	**£822**	**£719-£1500***	**£822**
USA	£377	£336	£574	£574
Canada	£93	£153	£93	£153
France	£232	£85	£85	£232
Portugal	£78	£78	£78	£78

Source: from the UK Government Response to the House of Lords Science and Technology Select Committee Inquiry into people and skills in UK STEM – with 4th October 2023 changes.[17]
**Depending on length*

➔ Immigration Health Surcharge (IHS)

Individuals must pay the IHS to access NHS services, alongside usual income taxes for working researchers. It is currently £624 per year, with a discounted rate of £470 for students and dependents under 18. It must be paid for all years upfront for the total length of the visa. While individuals may pay for health insurance in other nations, this is often paid monthly or annually, spreading costs. The IHS yearly charge is set to increase to £1,035 (£776 for the discounted rate), in Spring 2024.[18]

➔ Total upfront costs

Upfront costs were already high, and the increases announced in 2023 further exacerbate this barrier to international talent. The Royal Society modelled that the cost for a researcher to come to the UK on the 5-year Global Talent visa will now be £5,890, an increase of 58% since 2021.[19] If a researcher were to bring 3 family members, this will cost £20,980.[20]

£5,890

Upfront cost for a researcher on a 5-year **Global Talent Visa**, with fee and Immigration Health Surcharge increases[19]

£20,980

Upfront cost for a researcher to also bring **three family members** on a 5-year **Global Talent Visa**[20]

When the burden of these costs falls on individuals, they are often unable to afford to move to the UK and may choose to take roles in countries with strong research environments, but lower costs, thus reducing our ability to compete for talent. When the burden falls on employers, such as a research institute, it reduces the amount of research they can fund. Organisations may also choose to recruit domestically, to avoid costs, which reduces the talent pool and may leave roles that require niche skill sets unfilled.

The UK Government has clear ambitions to be a leading science nation. To achieve this will require access to the best research talent in the world. In their recent response to a Lords Science and Technology Committee 2022 Inquiry into People and Skills in UK STEM, which strongly criticised visa costs[21], DSIT claimed immigration costs are "broadly competitive" and ensured the immigration system is funded by the user not the taxpayer[22]. DSIT also stated that a staggered payment system would be too complex to administer.

As evidenced here – and previously acknowledged in the UK Government's R&D Roadmap[23] – the costs are not competitive, and with proposed increases have

become even less so. International researchers bring significant value to UK research, alongside contributing to the economy as employees and taxpayers, and this should be reflected our immigration policies. There is strong public support for this, with 73% supporting the UK Government making it easier for medical researchers and scientists to come to the UK for work.[24]

Current policies are damaging our access to this talent, strongly undermining the UK's position as a leading science nation. Without reducing costs, the UK sits behind a visa wall that means we will be unable to attract talent from across the world, nor compete with EU/EEA Member States for EU/EEA research talent.

Policy recommendations – visa system costs

- By the end of the next parliament the Home Office should reduce overall immigration costs for researchers, so they are competitive with comparable leading research nations.
- The Home Office should establish a staggered payment system for the IHS, to reduce upfront costs.

1.2 Improve the accessibility of visa routes for research

The UK visa system needs sufficient routes for research talent to enter in all roles and career stages, and visas should be globally accessible. Some aspects of the new system have been welcomed, such as the introduction of the GTV, which is designed for specific sectors including R&I. Reductions to the skill level and minimum salary for the Skilled Worker Visa during the immigration system overhaul increased accessibility for technicians. However, in December 2023 the UK Government announced a planned increase to the minimum salary for the SWV from £26,200 to £38,700. While many research roles are in theory covered by the GTV, there can be barriers and lack of comprehension around eligibility. As a result the SWV is used for research and the increase in minimum salary may affect recruitment. The UK Government must clarify and communicate the eligibility for the GTV, and ensure the immigration system has routes to allow recruitment into all research roles.

There is limited data on the accessibility of UK visas for researchers. From our research, it seems that the system works for senior established talent, but should be optimised to increase accessibility for early- and mid-career researchers. The Home Office evaluation of the GTV in 2022, found relatively positive responses about the cost and application process from successful GTV holders. Some found the GTV process more straightforward than other visas, which is a positive step. However, because it was limited to successful applicants, this evaluation did not capture those that struggled with the system or were put off by visa costs.

DSIT and the Home Office should monitor the demographics of researchers applying for UK visas to determine who is using each route (by age, career stage, origin country). They should evaluate who research organisations struggle to recruit using the available routes and adapt the immigration system accordingly.

Policy recommendations – visa routes and accessibility

- By 2026, the Home Office should work with DSIT to initiate a review on the impact of the immigration system on the recruitment of international research staff.
- Based on this, the visa system should be adapted ensure it is accessible to people of all backgrounds and all career stages.

1.3 Reduce complexity and increase support

The visa system is complex and support for researchers is limited. The language used in the visa system makes it challenging to navigate, and difficult to keep up to date with rule changes. This costs employer time, especially for those with limited HR capacity or that previously mostly employed EU/EEA researchers so may have limited experience with the system. Responsibility for updating the GOV.UK website lies across UK Government departments, which can be poorly coordinated and result in information not reflecting changes.

While support resources exist such as the 'Check if you need a UK visa' form on the gov.uk website, and the GREAT Talent Campaign, more could be done to help researchers to identify and apply for the most suitable visa for their circumstances. Considering the UK Government's 'science superpower' ambition, DSIT should make researcher-specific resources available through the GREAT Talent Campaign, taking inspiration from examples such as the 'Make it in Germany' website, which provides video explainers and dedicated resources.

Policy recommendations – complexity and support

- The Home Office should work with DSIT to make the system easier to navigate by using clear language and ensuring up-to-date web presence.
- Researcher-specific resources should be provided, through the GREAT Talent Campaign and inspiration should be taken from other research nations.

1.4 Ensure the UK is attractive to international talent

The UK has a high standing in international research, with leading universities, research facilities and funders. The UKRI Global Mobility Evidence report[4] and DSIT R&I Workforce Survey[2] found that these factors, along with UK culture and quality of

life, make it an attractive destination for international talent. However, there are issues that should be tackled to ensure that drawbacks of moving to the UK do not outweigh these positives.

"I am actively considering academic positions outside the UK and moving my research group to the EU."

Respondent to our survey of researchers on international research collaboration 2023

Changes to the UK research landscape as a result of the UK leaving the EU, including the loss of free movement for EU/EEA researchers and years of uncertainty around international collaboration and access to prestigious funding through association to Horizon Europe have been damaging the UK's research reputation.

Along with putting up substantive barriers, recent announcements of changes to the immigration system risk setting an unwelcoming tone to the global research talent we need to beat cancer sooner. This reduces the attractiveness of the UK to international talent, and our study of researchers on international research collaboration found that researchers are considering leaving the UK[25].

Policy recommendations - attractiveness

- DSIT and the Home Office should work together to ensure the UK has an immigration system that doesn't deter global research talent and provides an attractive offering, by reducing costs and complexity.
- The UK Government should ensure UK remains part of established European research community, e.g., through its participation in Horizon Europe and future European funding schemes.

2. Research culture and careers

Making research careers more attractive, accessible and rewarding

To attract, develop and retain diverse individuals through research careers, the environment in which they work needs to be supportive, accessible and rewarding. This section discusses issues around research culture, the representation of society in research and the trajectories of research careers – and the factors which contribute to the loss of talented individuals from research. These are complex and interlinking issues, with overlapping themes between sections.

2.1 Changing assessment to improve culture

How does assessment impact researchers and their research?

"Research culture encompasses the behaviours, values, expectations, attitudes and norms of our research communities. It influences researchers' career paths and determines the way that research is conducted and communicated." The Royal Society.

Research by the Wellcome Trust into UK research culture found that, while research outputs are generally considered to be strong, there are concerns that the culture that has developed is poor and unsustainable. This is risking the integrity of research and is having a detrimental impact on researchers.[26]

Traditional reward and recognition systems in academic research, that use markers such as publication rate, grant award history and journal impact factor as a proxy for quality, have generated a research culture that focuses on individual success. This happens on an individual level, to secure funding or progress through academic positions, and on an institutional level, through the Research Excellence Framework (REF) which determines university funding.

This focus has negatively impacted research culture:

- **For individuals:** It has led to a *"publish or perish"* culture, where individuals cannot secure competitive funding, roles and career stability without a recent history of paper authorship. These pressures impact researcher wellbeing (e.g. due to long working hours and job precarity) and career progression. This reduces re-entry into academia after career breaks or time in other sectors, reducing the mobility of people and ideas. There is often greater impact on

under-represented groups, perpetuating inequalities and reducing workforce diversity[26].

- **For research teams:** As research is increasingly multidisciplinary, it does not fully reflect team science and the contributions of roles such as technicians and project managers to research, who are typically not recognised in paper authorship.
- **For wider contributions to research:** It does not acknowledge the importance of other activities that positively contribute towards research such as engagement, mentoring and knowledge exchange.
- **For science:** It can reduce the quality and reproducibility of research outputs, as speed may be prioritised over robustness, and limit the space for creativity and blue-sky research.

How can assessment be changed to improve research culture?

The 2021 R&D People and Culture Strategy acknowledged these pressures and set out how to ensure incentives and assessment of individuals and institutions values a wider range of contributions [27]. Positive steps have since been taken by DSIT, UKRI and other funders like Cancer Research UK. These include driving the use of narrative CVs and revising assessment criteria to explicitly value a broad range of outputs. We welcomed the announcement of the shift in focus of the next Research Excellence Framework from individuals to broader institution-level measures of research excellence and culture.

➔ Narrative CVs

The narrative CV approach was developed by the Royal Society, to replace traditional metrics-based academic CVs which focus on publication rates, journal impact factor and previous grant awards. This format allows written descriptions of contributions and achievements to demonstrate a broader range of academic contributions, focusing on the process and impact of the research.

Funders such as Cancer Research UK and UKRI have been introducing narrative CVs to applications. UKRI have convened research funders and organisations to coordinate consistent implementation to reduce bureaucracy for researchers, provide mutual support and monitor and evaluate impact, ensuring this new system does not exacerbate pressures or expectations on researchers.

➔ Research Excellence Framework (REF)

The REF, or its previous equivalents, is conducted roughly every seven years by the four UK higher education funding bodies to assess universities' research quality to allocate public funding to support the end-to-end funding for research. This is vital

to universities who are currently experiencing high financial instability.

This assessment has been based on individual publication-centric outputs, and has been criticised for perpetuating an unhealthy research culture[26]. The four UK higher education funding bodies are currently looking to find an assessment model which supports and enables a healthier research system, for when the next REF takes place (now set for 2029)[28]. The initial decisions for the next REF were announced in June 2023, placing greater emphasis on 'people, culture and environment' and shifting focus from individuals' outputs to institution-level[29]. This should incentivise institutions to promote a healthier research environment and reduce the pressure on individuals, but specific effort and consultation is needed to ensure changes make a positive impact and to mitigate any unintended negative effects.

Changes to academic recognition and application systems will also benefit those working in team science, enabling them to get more recognition and thus promoting collaborative working. REF2021 also encouraged the submission of team-based outputs.

It is vital that the UK Government continue to coordinate sector-wide improvements to research culture and turn the ambitions set out in the People and Culture Strategy into actions.

Policy recommendations – improving research assessment

- DSIT should continue to work with UKRI to drive improvements to research culture, including through proper consultation and evaluation on the roll out of narrative CVs and the REF2029 shift in focus from individual to institutional-level measures of research excellence and culture.

2.2 Improving equality, diversity and inclusion in the research workforce

The importance of a diverse and equal workforce

Ensuring equality, diversity and inclusion (EDI) in the research workforce is crucial to allow for equal opportunities for individuals to contribute to and succeed in research. A diverse research workforce can draw on wide ranging backgrounds and experiences to maximise scientific creativity and excellence, resulting in better research outcomes. Greater diversity in the research workforce is needed to conduct research that is more inclusive of the whole of society, considering health issues that affect groups that have been historically overlooked, which can go on to reduce health inequalities.

However, society is currently not equally represented in research. Cancer Research UK funding data shows a consistent picture with sector-wide data, with lower representation of women, Black researchers and those with disabilities, and attrition through seniority levels[30].

Progress is not fast enough – and is hampered by a lack of comprehensive data and evaluated implementation of coordinated initiatives to address barriers that perpetuate inequalities.

How can it be improved?

A broad range of factors impact the diversity of individuals entering and progressing through research careers, including systemic underrepresentation, research culture, prejudice and bias, bullying and harassment.

A greater understanding of inequalities, the barriers that perpetuate them and effective interventions to address them is needed to make meaningful progress. This requires collaborative effort from the whole system – research institutions, industry, funders, policymakers, individuals, and the UK Government.

➔ Data collection

We welcome the systemic data collection in the DSIT Research and Innovation Workforce Survey 2022, which provided a UK-wide cross-system analysis of the workforce's characteristics, work, skills and outputs[2]. This has the potential to give a bigger picture of EDI across the sector, so should be continued annually to provide an assessment of trends. However, the scale and scope of data collection means the results were not broken down by sector, field or seniority level, masking known differences in representation. The engagement method, primarily through UKRI grant holders, means the sample was skewed and limited the coverage of the true

R&I workforce in the UK. The report lacked analysis, reflection on the results, or consideration of the factors that contribute to identified differences.

In our research, we heard that funders and research organisations are working to improve their EDI data collection, but challenges include limitations of data collection systems, and trust in the use of data (which is thought to contribute to low disability disclosure rates). Data collection should be more extensive and harmonised, using inclusive monitoring methods such as using Diversity and Inclusion Survey (DAISY) question guidance[31].

Government should play a role to support improved data collection on EDI across the research and innovation landscape (including the private sector) – and continue to conduct and adapt the R&I workforce survey to improve the quality and usefulness of this resource.

➔ Addressing barriers to progression

At each stage of a research career, barriers exist to progression which have a greater impact on underrepresented groups, including issues with research culture as described above. An evidence review conducted by Advance HE on behalf of UKRI found that there are a wide range of interventions to address inequalities used across the sector (including training, strategies, policies, career development programmes, recognition schemes and employer outreach). However, the quality of evaluation of intervention varies, making it difficult to assess the effectiveness of interventions in different contexts[32]. Many are also limited to gender, with fewer to address underrepresentation of certain ethnicities, socioeconomic background, and people with disabilities.

As a major funder, we are looking to lead by example. We are making a concerted effort to monitor and address inequalities that exist in our awarding of funding and research positions. Organisations such as UKRI are also taking a proactive approach to develop EDI action plans and developing positive action schemes.

Government should take a role in coordinating this across the sector. In 2021, the UK Government published its Research and Development People and Culture Strategy[27] to set out how it planned to ensure the UK had a diverse research workforce, with a positive and inclusive culture, but a monitorable action plan has not been published, and progress is hard to monitor and limited[33].

➔ Celebrating the value of a diverse research community

Celebrating the value that is brought to research by a multitude of experiences, skills and perspectives in research communities is vital. This can help to increase commitment to action by raising awareness of inequalities and demonstrating the importance of tapping into the broadest possible talent pool. It can help create a more inclusive culture and empower and inspire a more diverse cross-section of

society to enter and continue in research careers, to help reach a more equal environment.

Again, this is an action that should be taken by all parts of the system, and the UK Government should champion this in its messaging around research.

Policy recommendations – improving EDI in research

- DSIT should increase the value of future versions of the R&I workforce survey by improving coverage, data collection and disaggregation, to provide a comprehensive nationwide overview of EDI in research.
- DSIT should publish an action plan in line with the results of the R&I workforce survey and the P&C strategy to set out how it plans to tackle the inequalities identified.

Our efforts to tackle inequalities in our funded research

Whilst the UK Government must support the improvement of equality, diversity and inclusion across the whole of UK research, we recognise that tackling inequalities requires a collaborative effort from all parts of the system. As the largest independent funder of cancer research, we know that we have a responsibility to lead by example. We are committed to understanding and acting to improve diversity in our research including in how we fund, who we fund, and what we fund.

- **We now annually monitor and publish data on the diversity in our grant funding**, using Diversity and Inclusion Survey (DAISY) question guidance, to identify barriers and assess how we can take effective action.[34]
- **We set out an EDI in research action plan for 2021-2023** to lay out our commitments to tackle inequalities that are identified in this data, including by ensuring fair and inclusive funding processes, providing career development and support, and pursuing inclusive research design.[35]
- **We run positive action schemes** to provide support for people from underrepresented or disadvantaged groups, including the Black Leaders in Cancer PhD Programme[36] and the Women of Influence mentoring scheme[37].

We are proud of the progress we are making. But we are not complacent and know that most of our priorities aren't quick wins. We'll continue to hold ourselves to account and strive for significant long-term change.

2.3 Improving career stability, flexibility and mobility

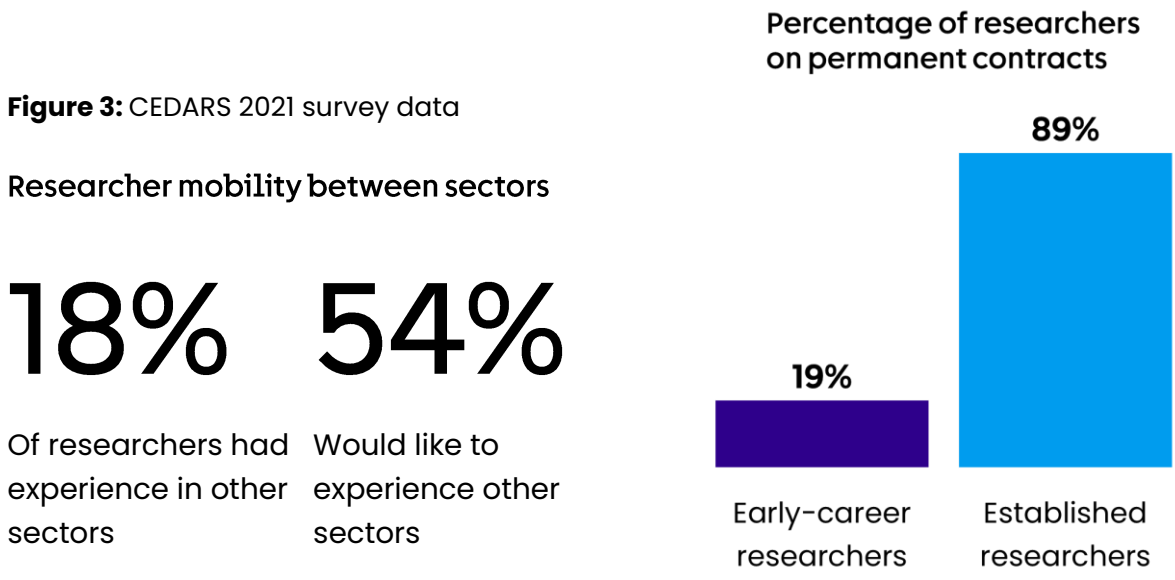
A lack of stability and the rigidity of pathways in academic careers results in loss of highly trained individuals, limits re-entry and mobility and impacts EDI.

What causes inflexibility and what is the impact?

The scarcity of funding and the limited growth of university Quality Related funding (including the Charity Research Support Fund) has meant that the availability of stable, permanent contracts is low, particularly for early- and mid-career researchers. The Culture, Employment and Development in Academic Research Survey (CEDARS) 2021 survey of 12,500 academics found that only 19% of early-career respondents were on permanent contracts, compared to 89% of established researchers[38]. Traditional steep academic career paths that lead to a limited number of intermediate and Principal Investigator positions limits flexibility in career paths, creates high competition for progression.

Issues in academia including the lack of stability, the 'publish or perish' culture, and limitations on re-entry into academic roles can contribute to a unidirectional loss of talent from academia, making it challenging to return from career breaks or time in other sectors. Sectoral mobility, where researchers move across academia, industry and other sectors, has benefits for individuals and the whole system – improving skills, knowledge transfer and collaboration.[39] The CEDARS 2021 results also indicate that only 18% of researchers have had experience of working in other sectors. At the 2023 Cancer Research UK meeting of clinical and research fellows, attendees highlighted that they wanted longer term support and cross-sector funding opportunities to address precarity and enable cross-sector mobility.

Figure 3: CEDARS 2021 survey data



How can this be addressed?

To ensure research in the UK can continue to thrive, and to meet targets to increase R&D capacity, it is vital to increase the stability and flexibility of research careers to retain talent and attract more people into research. Solutions to both career instability and mobility should be explored by Government and public funders. For example, diversifying role types and routes through academia and increasing recognition for technical roles. Harmonised secondment, exchange, and joint appointment schemes could also help tackle concerns with unidirectional sectoral mobility (academia-industry).

Academic research forms a significant part of our funding and is vital for discovery research that aims to improve cancer outcomes, so ensuring a strong academic research sector is of importance. Sector mobility is valuable for researcher development and innovation, but we heard that academic research organisations often find they lose research talent to nearby industry as they cannot compete with salaries, and due to culture issues outlined above. We recognise that issues with financial sustainability for universities and funders mean it is challenging to commit to providing longer-term funding to researchers. However, universities should continue and expand provision of options to provide more stability to researchers, such as open-ended limited contracts. By improving the stability, culture and flexibility of career pathways of academic research, this will increase the attractiveness and flexibility to return or enter at a later career stage.

Policy recommendations – improving career stability, flexibility and mobility

DSIT should work with UKRI to increase the stability of roles and support sectoral mobility. This requires tackling the financial sustainability of universities by Research England increasing mainstream Quality Related funding in line with inflation and wider increases to R&D funding and the Charity Research Support Fund.

Specific actions could include:

- Implementing models to fund individuals through innovative fellowship models.
- Expanding and establishing schemes to enable bidirectional movement between sectors.

Our efforts to improve research careers as a funder

Approach to assessing grant applications: We are working to integrate initiatives to improve research culture in our grant application and award processes. This includes introducing **narrative CVs**[40] in our funding applications to give the opportunity to evidence a wider range of skills, experience and contributions in research. This change will help us draw on a variety of backgrounds, perspectives, and experiences to help beat cancer. We have clear guidance for assessing grant applications for Committee and Panel members to ensure our peer review process recognises a full range of research outputs and is objective, fair and free from bias[41].

Support for early- to mid-career researchers: We also provide opportunities for **early- to mid-career researchers to observe funding panels and committee meetings**, to improve understanding of how funding decisions are made to give clarity on the process and support researchers in their approach to preparing applications. We are a signatory of the Researcher Development Concordat[42].

Inclusive funding and research career policies: We promote flexible policies in our funding to support part time work and researchers to take leave if need[43]. Our grant policies include one for ensuring our funded researchers and technicians have protected time and space for professional development per year[44].

Appendix: full list of policy recommendations

1.1 Visa system costs

- By the end of the next parliament the Home Office should reduce overall immigration costs for researchers, so they are competitive with comparable leading research nations.
- The Home Office should establish a staggered payment system for the IHS, to reduce upfront costs.

1.2 Visa routes and accessibility

- By 2026, the Home Office should work with DSIT to initiate a review on the impact of the immigration system on the recruitment of international research staff.
- Based on this, the visa system should be adapted ensure it is accessible to people of all backgrounds and all career stages.

1.3 Visa system complexity and support

- The Home Office should work with DSIT to make the system easier to navigate by using clear language and ensuring up-to-date web presence.
- Researcher-specific resources should be provided, through the GREAT Talent Campaign and inspiration should be taken from other research nations.

1.4 Attractiveness of the UK for research talent

- DSIT and the Home Office should work together to ensure the UK has an immigration that doesn't deter global research talent and provides an attractive offering, by reducing costs and complexity.
- The UK Government should ensure UK remains part of established European research community, e.g., through its participation in Horizon Europe and future European funding schemes.

2.1 Improving research culture

- DSIT should continue to work with UKRI to drive improvements to research culture, including through proper consultation and evaluation on the roll out of narrative CVs and the REF2029 shift in focus from individual to institutional-level measures of research excellence and culture.

2.2 Improving EDI in research

- DSIT should increase the value of future versions of the R&I workforce survey by improving coverage, data collection and disaggregation, to provide a comprehensive nationwide overview of EDI in research.
- DSIT should publish an action plan in line with the results of the R&I workforce survey and the P&C strategy to set out how it plans to tackle the inequalities identified.

2.3 Improving career stability, flexibility and mobility

DSIT should work with UKRI to increase the stability of roles and support sectoral mobility. This requires tackling the financial sustainability of universities by Research England increasing mainstream Quality Related funding in line with inflation and wider increases to R&D funding and the Charity Research Support Fund.

Specific actions could include:

- Implementing models to fund individuals through innovative fellowship models.
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Report production

This policy report was developed in 2023 as part of policy development for Longer, better lives: A manifesto for cancer research and care, and the detailed Programme for UK Government.

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About Cancer Research UK

We're the world's leading cancer charity dedicated to saving and improving lives through research. We fund research into the prevention, detection and treatment of more than 200 types of cancer through the work of over 4,000 scientists, doctors and nurses. In the last 50 years, we've helped double cancer survival in the UK and our research has played a role in around half of the world's essential cancer drugs. Our vision is a world where everybody lives longer, better lives, free from the fear of cancer.

Our values

Our values help guide our behaviour and culture in an ever-changing world, building on the best of what we do today and what we aspire to be in the future. They unite and inspire us to achieve our ambitious plans and our mission of beating cancer, together.

Our values are:

Bold
Act with ambition, courage and determination

Credible
Act with rigour and professionalism

Human
Act to have a positive impact on people

Together
Act inclusively and collaboratively

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