THE
BEHAVIOURAL
INSIGHTS
TEAM

What works to attract and retain people into Research and Development careers

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The Behavioural Insights Team

The Behavioural Insights Team (BIT) is a global social purpose company that generates and applies behavioural insights to inform policy, improve public services, and deliver results for citizens and society.

About this report

This project was commissioned by the Department for Science Innovation and Technology (DSIT) as part of their efforts to understand the evidence base on what works to attract and retain people in Research and Development (R&D).

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Executive summary

The Department for Science, Technology and Innovation (DSIT) aims to accelerate innovation, investment and productivity through world-class science, ensure that new and existing technologies are safely developed and deployed across the UK and drive forward a modern digital government for the benefit of its citizens. Key to meeting this ambition is attracting, developing and retaining the best talent to build a skilled Research and Development (R&D) workforce. Recognising that behavioural factors are integral in influencing career progression, the Department for Science, Innovation and Technology (DSIT) has commissioned The Behavioural Insights Team (BIT) to understand the barriers and potential suggestions to attract, develop, and retain people in R&D careers.

BIT is a research and innovation consultancy applying expertise in human behaviour, drawing from psychology, economics, and behavioural economics, to improve products, services, processes, and policies. While individuals have agency, their choices are heavily constrained and influenced by context. Small changes in the environment can significantly impact behaviour. For example, featuring role models from underrepresented groups in R&D career promotions is a 'nudge' that subtly shifts perceptions without removing choice. This report addresses the challenge of attracting, developing and retaining R&D workers through this behavioural insights lens.

Our approach began with a literature review to understand what works to attract, develop and retain individuals in R&D careers. We reviewed papers included government reports - such as reports on the analysis of large-scale R&I workforce surveys, as well as academic studies. To deepen our understanding of the trends and patterns identified, we conducted 24 in-depth interviews with both current R&D professionals and individuals with R&D skills who chose alternative career paths. These detailed conversations provided deeper insights into the personal motivations and barriers faced by individuals that influence their R&D career decisions. Finally, we held a co-design workshop that brought together 18 stakeholders from across the R&D sector, including government departments, universities, and research funding organisations to reflect on findings and collaboratively shape solution ideas.

Below is a summary of the four barriers identified, along with behaviourally-informed suggestions to address them. We focus on suggestions for higher education and employment, with suggestions aimed at school aged students being out of scope.

The suggestions represent a starting point for next steps. They can broadly be categorised into three areas:

1. **Proven impact.** These are suggestions which are already well evidenced and should be more widely adopted.
2. **High potential.** These are suggestions where we have some evidence of impact, but need further evaluation.

3. **More evidence needed.** These are the sparks of initial ideas where we think there could be potential, but we need to build the evidence-base. e.g. reducing the proportion of fixed-term contracts.

In this report we present our research findings related to the key barriers people face that prevent them from entering or staying in R&D, alongside promising suggestions. The report specifically considers barriers to entry and retention in R&D careers for people who have or are in the process of gaining the necessary qualifications and skills, rather than seeking to understand how to increase uptake of R&D skills and qualifications. For this reason, recommendations focus on those studying relevant disciplines in higher education and beyond.

Barrier 1: Lack of awareness and understanding of R&D

One of the most significant barriers to working in R&D that emerged is that individuals lack awareness and understanding of R&D jobs. Many people, including those working in R&D, have a limited understanding of R&D and related jobs.[1] Women report lower levels of knowledge of R&D than men.[2] This lack of awareness, influenced by negative R&D stereotypes, hinders individuals from pursuing diverse and sustainable R&D careers.[3,4]

The table below outlines behaviourally-informed suggestions to improve awareness of R&D jobs, aimed at organisations running communication campaigns and those offering career services, industry placements, or mentoring programs.

Table 1 - Summary of suggestions addressing barrier 1

Behavioural science suggestion	Key stakeholders	Evidence Strength	How this could support attraction and/or retention in R&D	Feasibility considerations
Suggestion 1: Targeted communications to increase awareness and improve perceptions of R&D to encourage HE students to pursue careers in R&D	Suggestions apply to any organisation running communication campaigns. This could include government agencies, professional bodies, industry leaders, and universities.	2. High potential	Increasing information available on specific R&D roles can support understanding and intentions to pursue R&D. However, communications alone are often insufficient at changing behaviour.	Relatively low-cost to implement. However, maximising the potential for impact does introduce more complexity, as messages need to, for example, harness relatable messengers or showcase the aspects of R&D roles expected to appeal to the broadest audience.
Suggestion 2: Optimise career services to increase effectiveness, engagement, and access	Government can encourage institutions (e.g. in higher education) to improve career and employment services through funding, guidance, and support.	2. High potential	Career services have demonstrated benefits for employment, but suffer from low engagement. Embedding career and employability courses into curricula has the potential to greatly increase uptake of these services.	Embedding courses in curricula may be resource intensive or logistically challenging, especially if materials are designed to be bespoke for different disciplines. However, some institutions are already taking advantage of this approach, demonstrating its feasibility.

Suggestion 3: Increase access to hands on experience of R&D through internships and work placements	Higher education institutions can increase access to and take-up of internships. Government can support industry-education partnerships.	2. High potential	Potential to greatly increase exposure to R&D jobs to support awareness, understanding and skill development. This approach also may address potential misperceptions about R&D.	The feasibility of this suggestion depends on education institutions and employers being able to offer a sufficient number of work placement experiences. Third party support from intermediaries will likely be important.
Suggestion 4: Increase access to mentors during study and for R&D workers, such as by assigning students or new-starter employees mentors by default	Mentorship schemes can be provided by a range of organisations, such as higher education institutions, R&D employers, or voluntary and charity sector organisations.	1. Proven impact	Assigning mentors from the R&D sector can improve access to career guidance, professional networks, and insider information, covering role expectations, required qualifications, and experience. This is particularly beneficial for women and certain ethnic minorities who tend to have smaller professional networks in R&D.	The feasibility of this suggestion depends on institutions and employers having the resources to implement mentoring schemes, in addition to sufficient interest from R&D professionals to act as mentors.

Barrier 2: Lack of diversity and inclusion in R&D

Lack of diversity and inclusion (D&I) across R&D roles in the UK is a challenge, with women and certain ethnic groups underrepresented.[5] For example, Black ethnic people are the least represented ethnic minority group, making up only 2% of the UK's R&D workforce in 2020.[6]

Suggestions for barrier 1 focus on improving D&I through awareness, career support, work placements, and mentorship. This section highlights the role of employers and funders in supporting aspiring R&D professionals. The table below presents behaviourally-informed suggestions for enhancing D&I in R&D, targeting employers and organisations influencing employment practices, such as government, industry, and research bodies.

Table 2 - Summary of suggestions addressing barrier 2

Behavioural science suggestion	Key stakeholders	Evidence Strength	How this could support attraction and/or retention in R&D	Feasibility considerations
Suggestion 5: Raise awareness and commitment among employers to implement evidence-based recruitment practices	Government, industry, and professional bodies play key roles in providing targeted communications to employers to support recruitment behaviour change.	1. Proven impact	Better recruitment practices increase the likelihood of underrepresented candidates applying to work in R&D. These actions will make it more likely that employers improve their recruitment practices.	In most cases, these suggestions are easy and low-cost to implement. However, they require sufficient awareness, buy-in and commitment from employers. Increasing the transparency of employer practices is one way to encourage uptake – for example, via job sites (see below) or for universities, in their performance metrics.
Suggestion 6: Change employer behaviour via job sites	Job sites play an important role in nudging employers to advertise roles in a way that will increase their visibility and attractiveness to jobseekers such as highlighting flexibility of learning and development opportunities.	1. Proven impact	Potential to greatly increase the salience and attractiveness of R&D roles and therefore encourage a larger number of (more diverse) applicants. Increasing the transparency of employer practices can also increase competition between employers to be better and improve their practices.	Feasibility is constrained by job sites being willing to make changes to their sites to enable this suggestion, in the face of other competing priorities.
Suggestion 7: Pilot innovative funding allocation practices, such as randomised funding	Research institutions and funders can tackle potential bias in funding allocation decisions by taking innovative approaches	2. High potential	Potential to remove some of the bias around academic funding because part of the decision-making process (where differences between quality are	It would require technology adoption, alongside safeguards to ensure it is not exploited by those excessively using a 'scattergun' approach to secure funding purely by luck.

	which support diversity in R&D.		marginal) is decided by lottery rather than by people whose choices can be biassed.	

Barrier 3: Poor working conditions

Improving working conditions is critical to supporting retention in R&D. Our evidence review identified several aspects of job quality or working conditions that are relevant to attraction and retention in R&D. These include: job insecurity linked to short term contracts for early career academic researchers in particular;[7] unnecessary bureaucracy, notably tied to funding;[8] and experiencing bullying and harassment in the workplace.[9]

The table below summarises the behaviourally-informed suggestions to improve working conditions in R&D. In this report we focused on how to improve working conditions within academic research. Our recommendations apply to higher education institutions as well as funding bodies, regulators, government agencies, and intermediary organisations.

Table 3 - Summary of suggestions addressing barrier 3

Behavioural science suggestion	Key stakeholders	Evidence Strength	How this could support attraction and/or retention in R&D	Feasibility considerations
Suggestion 8: Improve the quality of work contracts in academia to increase job security	Higher education institutions can improve job security and diversity among researchers by improving the terms and conditions of contracts.	3. More evidence needed	Potential to make it easier for underrepresented groups to work in academic roles.	Feasibility may be constrained by universities' business and funding models. However, as mentioned above, increasing transparency of employer practices, such as by including these metrics in an institution's performance metrics may encourage universities to make changes where they are able to.

Suggestion 9: Reduce unnecessary bureaucracy	Funding bodies, universities, and regulators all have a role to play in reducing the administrative burden on those working in R&D.	3. More evidence needed	Potential to reduce the unnecessary bureaucracy around research funding and regulation, improving the efficiency and returns from research, as well as the work experience for researchers.	Streamlining assurance processes and standardising funding applications and contracts would require coordination across the sector. However, a blueprint for change is already available via the Independent Review of Research Bureaucracy.
Suggestion 10: Improve line management capability and accountability to tackle bullying and harassment	The Human Resource departments of academic institutions have a key role to play in setting management training policies, and shaping the incentives around people management through performance reviews.	2. High potential	By requiring training for line managers and creating incentives for positive conduct, these suggestions build capability and create accountability for bullying and harassment among ling managers. This has the potential to change the culture and perception of the culture in academia, which could then increase interest to apply for academic roles.	Introducing mandatory line management training and revising performance management processes would require buy-in from universities.
Suggestion 11: Tackle bullying and harassment in academic institutions by creating transparency and	The Human Resource departments of academic institutions have a key role to play in setting policies and offering anonymous routes for reporting.	2. High potential	By improving both the access to and the content of bullying and harassment policies, these suggestions, providing anonymous routes to reporting, and helping people to identify their own or others' experiences as bullying or harassment, these	Providing more information on what counts as bullying and harassment and how to report it would be a low-cost suggestion. However, it would require universities to take ownership of this and raise awareness.

improving ease of reporting	Funding bodies also have a critical role to play in supporting institutions to understand what works.		suggestions create transparency and improve ease of reporting. This could help retain staff by showing that academic institutions take bullying and harassment seriously.	

Barrier 4: Skills gaps

Improving skill development in R&D is a critical issue. Analysis of job vacancy data finds that R&D-related roles have notably high skill turnover, suggesting that upskilling is especially important for development and progression. Meanwhile, the UK Innovation Strategy highlights the challenge of attracting global talent, as well as retaining UK talent. The strategy also notes that employers and funders need to go further to support researchers to take their skills and experience into new areas.

The table below outlines our recommended behaviourally-informed suggestions to enhance skill development in R&D. While this report doesn't cover the broader landscape of skill supply and demand or the role of education in providing relevant training, it focuses on how employers can upskill the current workforce and the use of the of immigration system in addressing short-term skill gaps with international talent while the sector works to fill future gaps by upskilling the resident workforce.

Table 4 - Summary of suggestions addressing barrier 4

Behavioural science suggestion	Key stakeholders	Evidence Strength	How this could support attraction and/or retention in R&D	Feasibility considerations

Suggestion 12: Encourage sector mobility and access to training to support upskilling by creating opportunities for worker exchange and changing the research incentives	Government, funding bodies, and intermediary organisations can connect employers to relevant training providers and funding opportunities.	2. High potential	Increasing mobility between academia and industry is a promising suggestion to address the critical skills gap across the R&D workforce.	Secondments or sabbaticals could be feasibly set up via industry-academic collaborations. Structural changes to how research is recognised across sectors would be more difficult and slow to achieve.
Suggestion 13: Attract high skilled international R&D workers by ensuring they are supported to navigate the visa system	Government, more specifically DSIT, but also wider research funders and organisations recruiting high skilled R&D talent internationally	3. More evidence needed	Potential to attract greater numbers of and more skilled international research talent, talent to complement domestic skilled R&D talent, in turn attracting more international funding to the UK.	Requires some collaboration between various government departments and research funders.

Introduction

Background

The Department for Science, Technology and Innovation (DSIT) aims to accelerate innovation, investment and productivity through world-class science, research and development. Key to meeting this ambition is attracting, developing and retaining the best talent to build a skilled R&D workforce. This will be a challenge given the worker and skills shortages and mismatches seen in parts of the UK labour market. According to projections made in 2022, the UK could have a shortfall of 2.6 million workers by 2030.[10] Additionally, there is a critical shortage of science, technology, engineering, and mathematics (STEM), and digital skills,[11] which are considered crucial to progress in R&D. This shortage is exacerbated by other sectors also competing for candidates with STEM and digital skills. There is, therefore, an urgent need to attract, retain, develop, and value the full diversity of people who have the skill and knowledge requirements for R&D occupations.

To support our understanding of how this can be achieved, the Behavioural Insights Team (BIT) was commissioned by DSIT to explore what works to support attraction, development and retention of talent in R&D.

In this report we present our research findings related to the key barriers people face that prevent them from entering or staying in R&D, alongside promising suggestions. The report specifically considers barriers to entry and retention in R&D careers for people who have or are in the process of gaining the necessary qualifications and skills, rather than seeking to understand how to increase uptake of R&D skills and qualifications. For this reason, suggestions focus on those studying relevant disciplines in higher education and beyond.

Our insights are based on the following sources:

1. **An evidence review** summarising existing evidence on the barriers to working in R&D and possible interventions to address these barriers. We reviewed both academic and grey literature.[12]
2. **In-depth interviews** to explore a range of experiences and perspectives regarding entry, progression, and retention in R&D. Interviews were conducted with 16 British and non-British/ International workers currently working in the UK R&D sector and 8 individuals with R&D skills but who are not working in R&D careers.
3. **Stakeholder workshop** attended by a range of organisations within the R&D ecosystem, such as UK Research and Innovation (UKRI), Catapults and several academic institutions, to deepen our understanding of the key issues based on their lived experiences.
4. **Suggestion development** in collaboration with DSIT policy teams.

Definitions

Research and development (R&D)

Throughout this project, we use a definition of R&D which is adapted from, but broader than the OECD Frascati definition,[13] and is consistent with DSIT's 2022 Research and Innovation Workforce survey.[14] This project defines R&D as work that involves:

- **Generation of new knowledge**, for example, by doing research or scientific studies carried out by researchers in university and industry settings.
- **Applying scientific or technical knowledge** to a particular organisation.
- **Designing, testing or developing new or significantly improved products or processes**, such as electrical, electronic, or mechanical engineers, laboratory technicians, or plant and machine operatives in manufacturing.
- **Introducing new technologies to a market.**
- **Helping firms to adopt or apply new technologies**, for example, IT professionals.
- **Leading or managing teams or projects** that do any of the above.

Research and development skills

A key part of this project is considering why those with R&D skills may not pursue a career in R&D. There is no universal definition of what constitutes R&D skills. Evidence suggests that STEM and technical skills are in high demand.[15] However, the R&D workforce needs a multitude of other skills to keep up with the demands of R&D jobs. Evidence commissioned by UKRI emphasises the importance of project, change management, and leadership skills to drive the adoption of new technologies and practices, and communication skills for educators tasked with upskilling and promoting the use of R&D skills.[16,17,18]

Behavioural Insights

Behavioural insights shed light on how people behave and make choices in practice – drawing from fields such as psychology, economics, and behavioural economics – to design better products, services, processes, and policies.

While individuals have agency to make choices, their choices will be constrained and influenced by context. Indeed, cognitive and social psychology theories, such as Daniel Kahneman's Dual-Processing Theory and related research,[19] illustrate how decision-making is often non-conscious and rooted in automatic responses to cues in our social and physical environment. Examples of such influences include:

- **Social norms and influences:** Humans are social beings and are heavily influenced by what others do and say, especially those close to us. Highlighting what most people are doing (i.e. pointing out existing social norms) can encourage others to do the same. The extent to which individuals see those around them pursuing careers in R&D will have a strong influence on their likelihood to do so themselves.
- **Availability heuristic:** The tendency to rely on information that comes more easily to mind when making decisions. For example, how easily individuals can bring to mind specific examples of R&D careers will influence their understanding of these roles and how attractive they consider them to be.

Even small changes to the social or physical environment can have a large impact on behaviour. This is also known as a ‘nudge’ or subtle encouragement that aims to influence behaviour in a predictable way without taking away options or significantly changing hard incentives in the decision. For example, strategically using role models from underrepresented groups in promotional materials for R&D careers. This nudge aims to shift the perception and attitudes towards R&D careers without removing the autonomy of choice.

In this report we highlight how suggestion ideas draw on behavioural insights to enhance their effectiveness.

Barriers and solutions

In this section we synthesise the findings on barriers to entering R&D careers and possible suggestions from across our evidence review, qualitative interviews, and the stakeholder workshop.

1. Lack of awareness and understanding of R&D

One of the most significant barriers that emerged is that individuals lack awareness and understanding of R&D jobs.

There is low awareness of what R&D is and what R&D jobs entail among both the general population as well as those in R&D. For example, a survey carried out by the Campaign for Science and Engineering (CaSE) in 2023 found that 52% of people did not know what the acronym “R&D” meant or what R&D jobs entail. Their findings also highlighted a gender gap in understanding of what R&D skills are, with 18% of women indicating that they know nothing about R&D compared with just 9% of men.[20] The R&D People and Culture strategy also highlights how even for those in the R&D sector, low awareness of the variety of career opportunities is a key issue preventing individuals from entering varied and sustainable career paths.[21]

Limited awareness of the diverse career options available in R&D may result in understanding being more heavily influenced by stereotypes. Research shows that R&D and STEM careers are often perceived as 'geeky,' and for socially awkward and intellectual individuals – traits also more stereotypically associated with or valued in men.[22,23,24,25] These stereotypes are especially harmful to women who may believe they do not fit the mould of a successful R&D worker and so opt out of applying for such positions.[26] This perception of what constitutes an ‘R&D worker' also featured in our interviews. For example, some participants who did not pursue a career in R&D spoke about how R&D roles did not suit their personality, and that they may be better suited to people who are “less socially minded” and “introverted”.

This section presents suggestions to improve awareness and understanding of R&D roles involving:

1.1 Improving understanding and awareness of R&D careers through information and guidance.
1.2 Increasing exposure to R&D jobs via hands-on experiences.
1.3 Increasing access to professional networks via forms of mentoring.

1.1 Improving understanding and awareness of R&D careers through information and guidance

Improving information, advice, and guidance has an important role to play in improving awareness and understanding of R&D careers. Both the evidence review and interviews highlighted that improved advice and guidance to support understanding of R&D careers would be beneficial. For example, 35% of researchers surveyed in Wellcome Trust research emphasised the significant role of advice and guidance in overcoming barriers to achieving a successful research career.[27] Our interviewees also spoke about challenges regarding

knowing “what is out there” with regards to career opportunities, and highlighted that higher education was a key touchpoint for more information about such opportunities. One interviewee said that career events were extremely helpful because she “could see that there's so many opportunities there” and “you could understand the huge variety of things you can do.”

Suggestion 1: Targeted communications to increase awareness and improve perceptions of R&D to encourage HE students to pursue careers in R&D

Improving communication campaigns around R&D

Several types of organisations might run communication campaigns aimed at encouraging HE students to pursue careers in R&D, such as government agencies, professional bodies, industry leaders, and universities. Our suggestions for any communication campaigns include:

- Focusing on specific jobs or sectors, rather than R&D as a whole, as individuals have limited understanding of R&D.
- Harnessing the power of relatable and aspirational messengers to increase perceptions of achievability and value attached to R&D jobs.
- Focusing on the career benefits of a job rather than meaningful or social impacts, however, different messages may appeal to different groups and message framings may generally have only limited effect.
- Increasing the visibility of labour market information to correct misperceptions and encourage young people to consider a broader range of career options.
- Including an effective “call to action” in communication campaigns to prompt immediate response or next steps from the target audience.
- Targeting messaging to those who are more likely to be receptive, such as those already studying R&D related subjects.
- Harnessing local regions and communities to highlight real-world applications of R&D that resonate with local interests and challenges.

Communication campaigns are a commonly used tool to raise awareness and change attitudes. A number of factors will influence the effectiveness of communications in terms of supporting behaviour change. Broadly, these can be considered as ways to increase the relevance of a message, through use of relatable messengers and content, as well as the clarity of the message to increase agency.

The term ‘R&D’ may not be the most effective terminology to use in communications. Individuals tend to have a narrow understanding R&D.[28] This is true even for those who work in R&D – our interviewees’ understanding tended to be focused on their own specific experience. Given the limited understanding people have of R&D as a concept, the term may not be engaging for HE students when used in communications. Instead, it may be more effective to refer to specific subjects, courses, jobs, or industries to support awareness and understanding. This presents an opportunity to strategically focus communications on the portfolio of critical technologies identified by DSIT’s Science and Technology Framework.[29]

Use relatable and aspirational messengers to foster a stronger connection with the audience and influence their motivation and goals.

Relatable messengers act as role models, and can influence people's motivation and goals by increasing the expectancy and value they attach to R&D jobs.[30] Qualitative research looking into how messages affect people's interest in a tech career shows that people prefer getting information from those who they have something in common with. This can be things like similar life experiences, being around the same age, sharing the same ethnic background, or having successfully followed a career path similar to the one they are considering.[31]

Theorists suggest that different approaches to role modelling are necessary when trying to motivate people into new goals versus towards existing goals. For example, when trying to motivate women into R&D jobs, role models should serve as representations of the possible and as inspirations to increase the attainability and desirability of this goal. In contrast, when trying to retain women in R&D jobs, role models should serve as behavioural models of how to succeed to increase expectations of success. Role models are especially relevant in the context of underrepresented or stigmatised groups who face unique obstacles such as lacking a sense of belonging, experiencing stereotype threat, or facing discrimination. Furthermore, evidence suggests role models generally have larger effects on minority groups than majority groups.[32]

Focus on the career benefits of a job rather than meaningful or social impacts but be aware that message framings may generally have only limited effect.
Although three in four respondents to the Research and Innovation (R&I) workforce survey reported that they pursued a career in R&D due to a desire to work towards something meaningful, research suggests that emphasising social impacts is generally insufficient to convince others into the career. For example, an online study testing the impact of different communications on intentions to take part in green skills training on recent graduates found no differences in messages that emphasised the social impact of green jobs versus job security or even a control message.[33] Other research has also found no difference between message framings in comparison to a control in influencing recent graduates' career intentions to go into tech.[34] Nevertheless, there is evidence that focusing on the career benefits of a job, such as job security or the challenge, may specifically encourage underrepresented groups to apply for careers in R&D. A US study found that emphasising career benefits over social impact was more effective in encouraging ethnic minority and female candidates to apply for roles in the police force.[35] Furthermore, a study investigating messages to encourage individuals into tech careers found that a message highlighting that tech skills would allow people to go into, and switch between, various sectors which women tend to be more interested in (e.g. education, healthcare) was one of the most effective messages at increasing female A/T level students' intentions to take up tech courses and careers. It reduced the gap in intent between male and female students by 12 percentage points.[36] Therefore, messages that highlight career benefits, could similarly encourage underrepresented groups to apply for careers in R&D, particularly when earlier in their career journey.

Increase the visibility of labour market information, such as salary and demands for different pathways and professions.
Evidence suggests that the provision of such information can encourage young people to meaningfully engage with career support and consider a broader range of career options. For example, in a randomised controlled trial focused on technical education with over 2,000 12-

16 year-old secondary school students, the provision of labour market information was associated with increased receptivity to technical education options, as well as improved recall of information about careers and technical routes into them.[37] This may be because the information addressed misperceptions about technical careers being less well paid. If this is also true of R&D roles, similar messaging about labour market outcomes may increase receptivity to R&D.

Include an effective "call to action" in communication campaigns.
A call-to-action statement aims to encourage or persuade the intended audience to take a particular action. To be effective, calls to action should prompt an immediate response or next step from the target audience and succinctly guide them on what to do next, whether this is to visit a website, sign up for an internship, or join a network. Effective calls to action will boost engagement by making the next step easily identifiable to the audience.

Target messages at those with a higher likelihood of being receptive.
Given that communications are a light-touch approach to behaviour change, it is important to consider the existing preferences of the audience to understand the likelihood of them being impacted by the messaging. For example, research suggests that the effectiveness of a 'nudge' varies depending on people's preferences, forming an inverted U shape. This means people with very strong preferences, whether they oppose or agree with the nudge, are the least influenced by it.[38] For example, messages that aim to encourage individuals into R&D careers are more likely to have impact if aimed at groups of people who have pre-existing preferences that overlap with R&D careers. This might include students studying closely related subjects to the UK's identified critical technologies, such as data science or engineering, or professionals working in related innovative or technical fields.[39]

Harness the power of local regions.
As other research has highlighted, an effective strategy to raise awareness of R&D opportunities might be to take a local place-based approach. This may help highlight real-world applications of R&D that resonate with local interests and challenges, making these feel more relevant and appealing to the community.[40] Harnessing a community-centric approach may also be fruitful in terms of providing more relatable role models for individuals considering R&D careers by seeing people who share similar life experiences or backgrounds in such careers.

Suggestion 2: Optimise career services to increase effectiveness, engagement, and access

Improving the take-up and quality of career services

Career services in higher education play a key role in supporting awareness and understanding of specific career paths. Government could encourage institutions to improve career and employment services in relation to R&D roles through funding, guidance, and support. Insights from the general literature on how to improve uptake and quality of career services include:

- Make use of timely and targeted messaging to encourage student attendance at career events.
- Increase the reach of career and employability programmes by making them part of course commitments or embedding them into curricula.
- Be cautious with targeted support to avoid stigmatisation and low take-up of

services among disadvantaged groups.
- Use diverse role models in career support to increase engagement among underrepresented groups.
- Provide quality labour market information as well as information about further study, with a focus on finance, employability, and future earning potential.
- Provide personalised support. Providing one to one support increases confidence but may be resource-intensive, whereas, AI may be able to achieve personalised support in a less resource-intensive way.

Individuals form ideas about potential careers from a young age, as school teachers and parents/carers shape their awareness, understanding, and perceptions of certain subjects and jobs.[41] To illustrate this, as one interviewee working in R&D said "I chose to study psychology because I was lost and my favourite teacher was in psychology." What students are exposed to and the advice they receive during school is critical. However, in this report we focus on those who are already gaining relevant R&D skills in higher education, and how they can be encouraged to pursue careers in R&D. Indeed, our interviews revealed that higher education is a crucial moment when they discover possible career paths. This section considers how to optimise career services to encourage students to consider careers in R&D.

Career services increase earnings[42] and employment[43] for students after university but often face the challenge of low engagement, particularly from those who would benefit the most.[44]
Only 8% of the 7,400 responses to the annual Higher Education Statistics Agency (HESA) survey found employment via their university's career advice. However, those that did were earning more than peers who found work via different routes. Institutions can support access and engagement with career advice in a number of ways.

Timely and motivating reminders can increase attendance at career appointments and events.
A trial found that a simple appointment reminder text message that also aimed to boost student self-belief ('No one is born with a perfect career. Time & effort can boost your skills & CV…') reduced the number of missed appointments with the National Careers service by 24%.[45] This approach could be applied to communications to promote uptake of career support initiatives such as career talks and fairs.

Taking a whole institution approach – embedding careers and employment programmes into course curricula to improve uptake.
Several providers from the same study reported including career advice and employability programmes into course commitments. For example, introducing mandatory career components into lectures and seminars – bringing this advice directly to students instead of relying on students to seek it out. For example, one university now requires all first-year students to attend sessions on career advice and job skills. This approach likely leads to more students getting involved and learning about careers.[46]

Be cautious with targeted support.

A recent consultation with 27 career service providers from universities and further education colleges highlighted concerns regarding targeted support for specific disadvantaged groups, such as students who are from an ethnic minority, carers, disabled, or from low socioeconomic backgrounds, on the basis that they could contribute to stigmatisation and often suffer from poor take-up.[47] One provider noted the challenge of students not seeing themselves as being disadvantaged and, therefore, not wishing to engage with targeted support. This fits with wider evidence which finds that disabled people do not always identify as disabled, or do not feel comfortable identifying as 'disabled'.[48] This means that they are less likely to engage with any information that is specifically directed at 'disabled people'. Instead, careers services should focus on designing programmes and marketing them in a way that addresses the barriers or interests of disadvantaged groups, without explicitly framing this as targeted support.

Include diverse role models in R&D to provide career advice.
Seeing relatable individuals working in R&D made it more likely that women and other underrepresented groups could imagine themselves doing similar roles. For example, female students were more likely to choose a major degree in STEM when they had a female professor.[49] In another study, aiming to widen the participation of ethnic minority students in postgraduate taught study, students were provided with information on finance and employability in relation to pursuing a Masters. Qualitative insights from the study showed how students found it beneficial to hear from academic staff and current Masters students, who "represented a diverse range of backgrounds and areas of study".[50]

Improve understanding of career pathways into R&D, including information about postgraduate study and funding support as part of career services.
As above, provision of labour market information can support student awareness of and receptiveness to certain careers. In a study looking at how to widen access into postgraduate taught study, key knowledge gaps from student surveys were about the employability benefits of further study, common career paths, and salary information.[51] Making this information more easily accessible and visible, such as through sessions built into the curriculum (as above), or via careers websites, will help demystify certain career pathways, such as those into research.

Increasing confidence through one-to-one and individualised support is key to improving disadvantaged or disengaged young people's engagement with career services.
It is particularly valuable to prevent disadvantaged students from dropping out of the R&D pipeline and, consequently, for increasing the diversity of the R&D profession. Evidence suggests that individualised coaching to build self-efficacy and study skills increases retention among disadvantaged college students in the US, and is a more cost effective intervention than increasing financial aid.[52] Similar findings from the UK show how tailored, one-to-one programmes can build confidence among students not employed or in education or training (NEET), supporting them to return to education, training, or employment. While individualised support is costly, it is estimated that young people NEET cost the UK £2.7 billion each year in benefits, as well as experiencing poorer mental and physical health outcomes.[53] One-to-one mentoring has also been found to deliver particular career progression benefits for individuals from disadvantaged backgrounds, which is discussed in greater detail below.

Maximise access to support via artificial intelligence (AI).
AI offers a promising way to increase access to personalised career advice that may be less resource intensive than coaching or mentoring. AI tools already exist that can help refine CVs[54] or support career decisions that are tailored to the needs and skills of the individual.[55] More research is needed to understand the effectiveness of these tools, but it is likely that their sophistication will significantly increase in the near future.

1.2 Increasing exposure to R&D jobs via hands-on experiences

Information alone is often insufficient to achieve behaviour change. This section focuses on the importance of directly changing an individual's environment and experience, and specifically giving them direct experience of R&D roles in order to increase their awareness and understanding.[56] These hands-on experiences of R&D are perhaps most relevant during study, such as while at university, but may also support mobility at different career stages.

Hands-on experience of R&D can be in the form of internships (also referred to as work placements[57]) or sandwich courses, and there is a strong evidence base for their positive impact on employment outcomes.[58,59,60] Internships are relatively short industry placements, such as three months or over a summer. They can be mandatory course requirements or pursued by students of their own volition.[61] Interns are entitled to national minimum wage if they are classified as a worker, but not if they are volunteering, work shadowing, or completing the internship as a requirement of a HE or FE course.[62] Sandwich courses are structured programmes which blend academic study with industry placements and, unlike conventional degrees, have been shown to reduce employment disparities between disadvantaged and advantaged students. The researchers suggested defaulting students into sandwich courses rather than making them opt-in, as disadvantaged groups were less likely to enrol in sandwich course placements of their own volition due to the social and monetary capital required to secure and pursue such placements.[63]

Evidence suggests that 'thin' sandwich (multiple short work placements spread out during the course of the degree) have better employment outcomes than 'thick' sandwich courses (which involve single lengthy placement).[64] Researchers speculate that this is because working with different employers may offer a broader network of contacts and skills development. Finally, by tapping into networks through the workplace, and contributing to knowledge production, placements can support confidence and self-efficacy, which may in turn also influence entrepreneurship intent.[65,66,67]

Suggestion 3: Increase access to hands on experience of R&D

Increasing exposure to R&D jobs via hands-on experience

Many organisations play a role in supporting access to hands-on experience of the workplace. We divide suggestions into those most applicable to education institutions and those more relevant to government.

Higher education institutions can:

- Work closely with employers to facilitate placements and ensure that they meet academic requirements and learning outcomes.

- Making it easier to access internships by building in time for students to complete applications and looking for ways to simplify the process.
- Making participation in R&D work placements the default as part of the curriculum for R&D-related subjects to support equal access and exposure to industry experiences.
- Increasing mandatory student internships as part of the curriculum for certain R&D subjects.
- Developing and evaluating flexible formats of work experience, such as virtual internships.

Government can support by:

- Fostering industry-education partnerships in R&D sectors where there is a need for skilled graduates.
- Providing support for R&D employers to help them navigate provision of work placements.

Make it easier for students to access internships.
Simplifying the process of applying for internships, through reducing the amount of paperwork needed and making guidance materials more accessible, have been shown to increase the number of successful internship applications.[68] A centralised portal for finding and applying to internships could further reduce frictions. Furthermore, simply creating more time and space for applications or automatically building experiences into study for all students is likely to support wider access. AI tools can also be harnessed to help match students with appropriate internship opportunities.[69]

Increase mandatory student internships in R&D.
A study conducted in Germany looked at data from 13,630 students and found that students are 58% more likely to complete an internship if it's a mandatory part of their course, compared to if it is voluntary. Furthermore, completion of an internship (whether voluntary or mandatory) was associated with significantly better labour market outcomes than no internship.[70] This suggests that mandatory student internships will support increased access to industry experience and the consequent employment outcomes, however, further research is needed to understand the extent to which internships in R&D impact career outcomes.

Develop and evaluate flexible formats of work experience.
For example, virtual internships, which are done remotely, support the participation of those from underserved regions to gain experience without the need for relocation.[71] Our interviews and stakeholder workshop highlighted the challenges faced by PhD students in being able to undertake work experience, due to restrictions on how many hours they can work outside of academic studies. One interviewee paused his PhD study for six months to do an internship at Amazon AI which proved to be “a great opportunity to acquire some skills that I wouldn't be able to acquire otherwise.” Institutions, such as the University of Oxford and London School of Economics, offer micro-internship programmes or experiences, lasting between two and five days. If found to be effective, institutions and R&D employers should be encouraged to offer such placements.

Ensure sufficient financial support to those on work placements during study
Students completing internships for less than 1 year as a requirement of a FE or HE course are not entitled to the national minimum wage.[72] According to the 2023 Student Academic Experience Survey, the proportion of students taking on paid employment has increased significantly over the years due to the cost of living crisis.[73] Unpaid internships create barriers for individuals from diverse backgrounds who cannot afford to work without income, further creating diversity issues within the field and severely hindering social mobility.[74] Unpaid internships have also been associated with lower annual incomes after 3.5 years compared to those who went into paid work.[75] Institutions should ensure that internships they facilitate are fairly paid, and that students on sandwich courses receive support via travel bursaries or similar, which some universities already have clear policies on.[76] This suggestion is supported by both DBT's 2017 Taylor Review of Modern Working Practices and the Social Mobility Commission's 2016 State of the Nation report.[77]

Provide support to employers to offer high quality placements.
Employers, especially SMEs, may not offer internships or apprenticeships due to associated costs and limited time and bandwidth to navigate and manage complex initiatives.[78] This could be achieved by funding intermediaries to support SMEs to liaise with academic institutions, or reduce the administrative burden involved in setting up and implementing placements. Government could also support the fostering of industry-education partnerships, focusing on sectors relevant to the UK's prioritised areas of science and technology.[79]

1.3 Increasing professional networks in R&D

Professional networks play a critical role in supporting career choices, career development, as well as sense of belonging.[80] Networks support individuals by setting expectations of the sector, disseminating information, offering feedback, providing support, and providing access to role models.[81] However, some groups, such as individuals from ethnic minority backgrounds and women in male-dominated fields, tend to have smaller professional networks, or find it more challenging to create networks. This may limit their access to information and professional growth opportunities. Underrepresented groups are also more likely to experience lack of belonging and social connection in the workplace, which is important for performance and retention.[82,83,84]

Mentoring schemes are one way of supporting the development of a professional network, and evidence suggests they can influence career choices and career progression. For example, in a trial conducted during an entrepreneurship course at a US university, students who were randomly assigned an entrepreneur mentor were approximately 20% more likely to pursue an entrepreneurial career two years after graduation than their peers whose mentor was not an entrepreneur. The effect of mentorship was concentrated among students whose parents were not entrepreneurs – providing evidence for the idea that mentoring levels the playing field for people who do not already have insider networks. It is unclear, however, from the research whether the increased likelihood to pursue an entrepreneurial career operated through knowledge and skill transfer, business network sharing, role modelling, or a combination.[85] Mentoring also improves career progression – including those in STEM fields and research roles[86,87] – and can be particularly beneficial for progression among women,[88] ethnic minorities,[89,90] and disabled people.[91] However, while many large organisations offer mentoring schemes, the individuals most in need of it tend to not take it up.[92]

Suggestion 4: Increase access to mentors during study and for R&D workers

Increasing access to professional networks

Mentorship schemes that support attraction, development, and retention in R&D can be provided by a number of organisations, such as higher education institutions aimed at their students, R&D employers aimed at their staff, or voluntary and charity sector organisations aimed at supporting the progression of individuals into R&D careers.

Mentorship schemes can maximise their impact by:

- Assigning individuals mentors by default. For example, educational institutions assign students - or R&D employers assign new starters - a mentor automatically. This removes frictions associated with finding and applying to a scheme and ensure that those who would benefit from it most are able to access it.
- Matching mentors and mentees based on shared priorities and goals, not shared characteristics, such as gender or ethnicity.
- Ensuring mentors in formal programmes have training and meet with mentees for at least 6 months.
- Testing different ways to increase networks beyond traditional mentoring, such as micro-mentoring or randomised social interactions.

Government and funders can also support by:

- Providing funding to support mentorships as well as funding evaluations to understand ‘what works’ from existing schemes that aim to support R&D careers.

Providing students and individuals in R&D organisations with mentors by default is one way to ensure equitable access.
Application processes to mentor schemes rely on individuals self-nominating, which some underrepresented groups are less likely to do. There is some evidence that automatically assigning employees to a mentor, rather than requiring them to self-nominate, makes them more likely to participate in the scheme and supports their performance.[93] Mentors for students can be found by tapping into alumni networks and partner R&D organisations.

Match mentors and mentees based on shared priorities and goals, not shared characteristics.
A randomised controlled trial found that female academics who received mentoring based on their career goals (for example, balancing childcare and a career, or being awarded grant funding) were more likely to stay at the organisation and be promoted.[94] However, qualitative research with ethnic minority mentees suggests that while being mentored by an employee from the same ethnic minority background had some benefits such as promoting a sense of belonging, it either does not change the mentee’s prospects or actually reduces them.[95]

Mentors will be more effective in supporting progression of underrepresented groups when they receive formal training and when the relationship lasts longer than six months.

Several randomised controlled trials on the effects of mentor training for ethnic minority employees show that mentorship programmes are particularly effective when the mentors receive formal training.[96,97,98] A review of 22 studies looking at the effects of mentoring on young disabled workers found that they were more effective at promoting job retention when they lasted more than six months.[99]

Test innovative ways of implementing mentoring schemes, such as micro-mentoring. Given the time and cost challenges in implementing universal mentoring schemes, it is important to consider alternative ways to support the development of professional networks. Given that mentors are often born out of everyday interactions, and that these informal mentors can play a more influential role in terms of professional development,[100] giving individuals opportunities to make multiple connections will support their access to a wider range of expertise and support. Peer mentors, for example, have been found in some contexts to be particularly valuable for providing useful insights, supporting access to resources, and providing connections to others.[101] For this reason, 'mirco-mentoring' or virtual informal interactions may be a more feasible method of effectively increasing connections. A recent mixed-methods study looked at the impact of assigning interns to different kinds of virtual interactions, such as with peers only or with peers and a senior manager. The study found that a weekly 30-minute informal chat with peers *and a senior manager* was associated with improved chances of being offered a job at the end of the internship. While the small size of the study means that these findings are not robust, qualitative insights from intern feedback suggest that contact with senior management may have been associated with more feedback and feelings of commitment.

Evaluate existing programmes to understand what features are important in R&D. Finally, mentoring schemes do exist that aim to support individuals into R&D such as In2research Programme[102] and the Windsor Fellowship.[103] More work is needed to understand the effects of mentoring and networking programmes, and whether they need to have particular features in order to be successful in supporting individuals into R&D.

2. Lack of diversity and inclusion in R&D

Lack of diversity and inclusion (D&I) is a challenge in R&D, with women and black ethnic groups significantly underrepresented. Less than 30% of R&D workers are women,[104] with numbers staying consistent over the last 10 years.[105] Women make up just 14% of the workforce in cloud computing, 20% in engineering, and 32% in data and AI according to the World Economic Forum Global Gender Gap Report 2021.[106] According to recent research by Nesta, only 14% of research papers on AI are authored by women.[107].[108] Black ethnic people are the least represented ethnic minority group, made up only 2% of the UK's R&D workforce in 2020.[109] Concerns about the underrepresentation of black ethnic groups in the R&D workforce were also raised in our qualitative research. For example, an interviewee working in academia said "*I tend to be like the only black person in the room. I think it would feel nicer if I worked in an industry where I could see more people that looked like me."*

Many interventions already mentioned in this report aim to support greater D&I in R&D through awareness raising, career support, work placements, and mentors. These intervention ideas aim to increase understanding and interest from underrepresented groups

in pursuing careers in R&D. In this section we focus on the role of employers and funders in supporting individuals who want to work in R&D, such as through:

2.1 Recruitment practices that support the attraction and hiring of specific groups.
2.2 Working conditions, such as reducing fixed-term contracts and bureaucracy.
2.3 Workplace culture, specifically tackling bullying and harassment in academia.
2.4 Funding practices that support the progression of underrepresented groups.

2.1 Improving employer recruitment practices

The under-representation of women and black ethnic groups partly reflects differences in subject choices. For example, women in higher education continue to be underrepresented in core STEM subjects (31% are women). For black students there are disparities in educational outcomes, such as degree completion rates and degree outcomes. However, there is also a significant drop-off between study and employment. For example, according to analysis of LinkedIn data, women are less likely than men to go into STEM careers after studying STEM subjects. Similarly, black postgraduate students see a large drop-off between postgraduate study (7% of entrants are black) and careers in academia (2% of academia staff are black).

Wider organisational and behavioural science suggests that certain employment systems and processes can allow unfair bias to creep in and influence recruitment decisions, and studies find evidence of such biassed recruitment practices in R&D occupations.[110] BIT's own work summarises the following evidence-based actions that have been shown to improve recruitment outcomes.[111]

AREA OF FOCUS	SUGGESTION	OVERALL RATING	EVIDENCE STRENGTH
Finding applicants	Target underrepresented groups to apply by: ● placing job adverts where they are more likely to be seen by minority applicants ● using targeted referrals, where current employees are encouraged to share vacancies with underrepresented groups ● making university visits		Proven impact
Job adverts	State the exact salary or the salary range in the job advert		Proven impact
Job adverts	Offer flexible working by default in job adverts		Proven impact
Job adverts	Clearly list the specific behaviours and competencies needed for the role in the job description so that all applicants equally		Proven impact

	understand what is involved in the role and what is expected of them.		
Job adverts	Remove biased language from job adverts		Promising impact
Application process	Anonymise applications		Promising impact
Application process	Make it possible to list experience in terms of years not dates in CVs		Promising impact
Selection process	Use structured interviews, i.e. ask all candidates the same set of questions, and grade all candidates' responses using pre-specified, standardised evaluation criteria		Proven impact
Selection process	Use a task other than an interview to assess candidates' job related skills, e.g. a work sample, role play, written exercise or problem-solving task		Promising impact

However, these actions could fail due to poor awareness and engagement from employers. Workshop participants reflected on how employers can lack understanding of the basics of robust recruitment and the benefits of such recruitment. We, therefore, make several suggestions for how employers can adopt the above evidence-based practices.

Suggestion 5: Raise awareness and commitment among employers to implement evidence-based recruitment practices

Encourage employers to adopt evidence-based practices

Government, industry, and professional bodies play a key role in providing targeted communications to employers to support behaviour change. Ways they can do this include:

- Simplifying communications with businesses, using easy-to-digest chunks and including clear next steps on websites, letters, and emails.
- Encouraging them to make a public commitment and to appoint diversity leads and/ or diversity task forces to support accountability.
- Facilitating peer networks to help spread best practices, share resources, and use social norms to encourage behaviour change.
- Increasing transparency of employer policies and processes and making it easy for staff and job seekers to compare employers' recruitment practices and performance.

Employers could be encouraged to adopt evidence-based practices to support D&I through targeted communications, for example from industry bodies, Catapult centres,[112] and other funders. Below we list the key suggestions.

Communicate simply and clearly to businesses.
Complex information and language are difficult to understand and digest.[113] Businesses often do not know what policymakers specifically mean when they talk about abstract concepts such as 'innovation'.[114] When we want businesses to take a specific action, it can help to break down information into easy-to-digest chunks and straightforward, specific next steps to help them navigate the process.[115] For example, in collaboration with Turkey's Ministry of Trade, BIT found that sending businesses a message that was upfront about the effort businesses would need to invest to apply for an export support programme and providing a step-by-step guide on how to receive assistance increased businesses' likelihood of applying by 27%.[116]

Encourage employers to make a public commitment and appoint diversity leads and/or task forces.
Behavioural science suggests that making a public commitment to adopting an action (that is, a commitment that is visible to staff) makes it more likely that action will be taken up and sends signals both internally and externally that the organisation is serious about achieving it.[117] Having a diversity lead is associated with better representation of women and minority groups in management in organisations.[118,119,120] However, simply appointing a diversity lead or taskforce is not enough. To create accountability, diversity leads and task forces should be able to review recruitment and hiring decisions and ask for justifications for them. When people know their decisions may be reviewed by a senior manager or taskforce, they pay closer attention to the information they are basing their decisions on, and make less biassed decisions.[121]

Harness existing employer networks, such as those created by Catapult centres to help spread best practices and share resources.
Businesses in the same peer network could discuss challenges and ways of overcoming them. While there is currently no evidence on the effectiveness of this approach, evidence suggests that businesses are also influenced by social norms. For example, BIT's work in the US found that emphasising that the majority of their business peers already had an online account doubled the number of businesses who registered to use the business tax portal.[122] These networks could be used to share recruitment resources, such as the UKRI's Resume for Research and Innovation (R4RI).[123]

Increasing transparency on recruitment practices may encourage employer action.
For example, when the UK government published a league table of departments' energy use, it dropped by an average of 13.8%. The introduction of gender pay gap reporting had a similar effect: shedding light on existing inequalities reduced the pay gap between men and women.[124] Indeed, simply letting people or organisations know their actions are observed can have an impact.

Suggestion 6: Change employer behaviour via job sites

Change employer behaviour via job sites

Job sites serve as a critical interface linking job seekers to roles. Job sites play an important role in nudging employers to advertise roles in a way that will increase their attractiveness

to job seekers. Ways that job sites could support increasing the attractiveness of R&D roles include:

- Prompting R&D employers to clearly list specific flexible working options to improve transparency and reduce ambiguity aversion for candidates.
- Exploring ways in which job sites could be used to increase the salience or attractiveness of R&D roles, such as by increasing transparency of salary information or progression opportunities, considering how jobs are ordered on the platform, using job badges, or providing the jobseeker with suggested roles in R&D based on search behaviour.
- Prompting job sites to list flexible working options as default to reduce friction and make it easier for hiring managers to include these details, and to signal that flexible working is normative.

Job sites play a fundamental role in today's labour market. They are one of the primary gatekeepers to employment, affecting the roles jobseekers come across and apply to. How jobs are presented to job seekers can have a large impact on the likelihood that they will apply to roles. For example, in one study where jobseekers either searched using a standard interface, or an interface which showed them jobs in fields related to their initial search, the broader interface led to jobseekers obtaining 44% more interviews.[125] Additionally, advertising roles as flexible supports more diverse applications. For example, when roles were advertised as flexible by default at John Lewis, this increased application rates by 50%, with 35% more applications from women.[126] Similarly, advertising roles as flexible by default increased the proportion of women applying to senior roles by 19% at Zurich Insurance.[127]

Many employers already offer flexible working arrangements,[128] but fail to communicate these on their job adverts. In 2023, just 31% of jobs were advertised with flexible working options.[129] Job sites are an important vehicle to encourage a much larger range of employers to advertise their roles as flexible. For example, in a previous trial with Indeed, the UKs largest job site, we found that prompting employers to advertise specific flexible working options increased the number of jobs advertised as flexible by 20% and increased the total number of applications by up to 30%.[130] Increasing the visibility of this information can also encourage organisations to improve their work to meet or surpass benchmarks in R&D recruitment. This visibility not only captures current performance but can also act as a catalyst for ongoing improvement and advancement.

Beyond flexible working, job sites could also be a tool to increase the visibility of R&D jobs, for example, by having R&D jobs listed at the top of searches or having advertised roles badged as "career advancement" or "innovative company." Other possible opportunities include using AI to show individuals roles in R&D that they likely have the skills for based on their search behaviour.[131] Additionally, R&D is one of the industries with the least salary and progression transparency.[132] Given that R&D professionals report that monetary compensation is the most important factor to them in choosing a job,[133] Job sites could be used to increase the attractiveness of R&D jobs by prompting employers to include salary information or progression opportunities in job adverts.

2.2 Improving equity in funding outcomes

Female academic researchers apply for smaller amounts of funding and also receive less funding from UKRI than men.[134] The success rate for ethnic minority applicants to the Wellcome Trust is 6% lower than that for white applicants,[135] with UKRI data showing that aggregated ethnicity data masks deeper problems for researchers in certain ethnic groups (particularly black applicants).[136] Reduced access to funding hinders progression and representation in the academic R&D sector, negatively impacting retention.

Suggestion 7: Consider innovative funding allocation practices

Improve equity in funding outcomes

Tackling potential bias in how funding allocation decisions are made will support diversity in R&D. One way this can be achieve is by:

- 'Randomising' funding decisions in academia. One way to retain elements of quality control while introducing randomisation is to divide proposals for funding into three groups – a top category which are all funded, a bottom category which are never funded, and a middle category where funding is allocated at random. This reduces bias by reducing how far funding decisions rely on flawed and bias-prone people, particularly for proposals that are more ambiguous.

Allocating funding at random is one way of reducing bias in academic funding decisions.

While this may at first sight seem to run counter to the quest for academic excellence, there are ways of introducing randomisation whilst retaining elements of quality control. For example, under one such system, proposals might be divided into three groups – a top category which are all funded, a bottom category which are never funded, and a middle category where everyone is equally eligible to receive funding, and funding is allocated at random.

This method removes some of the bias around funding because the decision is made by lottery rather than by potentially biased individuals. Some organisations are already experimenting with this approach. The New Zealand Health Research Council randomly distributed some of its Explorer Grants that are meant to support more adventurous ideas.[137] Innovate UK used a lottery to distribute vouchers to help pay for expert advice, subject to checks on scope and eligibility.[138] In a similar way, Nigeria ran a successful programme of randomised grants for entrepreneurs,[139] and the Volkswagen Foundation partially randomised funding of their 'Experiment!' grants that were created to find audacious new research.[140] To maintain an element of quality control, a committee first assesses all funding applications for whether they have met the criteria and the quality of the proposals. Only those who are equally eligible for funding could then be randomly selected to receive the funding.[141,142]

Evidence suggests that this new approach can reach a more diverse pool of applicants. For example, Nesta compared the new randomised funding approach to previous years where applications were reviewed by senior staff, and found that it increased applications from women by 15%, suggesting that this form of funding makes researchers feel they have a

higher chance of being selected.[143] However, more research is needed to understand whether this approach also improves the quality and the productivity of those selected, as well as diversity.

This approach does raise concerns. For example, there are fears that it may encourage a 'scattergun' approach from those hoping to secure funding purely by luck. However, measures such as grants being awarded at 80% of the full economic cost reduces the risk of this, as academic institutions will approve applications given their requirements to fund the 20% gap. Nevertheless, it will be important to measure the extent to which this occurs and deploy effective demand management measures to prevent it.

3. Working conditions

In addition to improving recruitment and funding practices to support widening of access into R&D, our evidence review also identified a number of aspects of job quality or working conditions that are relevant to attraction and retention in R&D. These include:

3.1 Job insecurity linked to short term contracts for early career academic researchers in particular.
3.2 Unnecessary bureaucracy, notably tied to funding.
3.3 Experiencing bullying and harassment in the workplace.

3.1 Improving job security

It is established practice among UK universities to use fixed-term contracts, which about a third of higher education staff are on,[144] to help them to manage costs and better adapt staffing needs to changes in demand. Among research-only staff, two-thirds are on fixed-term contracts,[145] and women and part-time workers are also more likely to be on fixed-term contracts.[146] This contrasts strongly with the wider UK labour force, across which 95% of all working age employees are in permanent employment.[147] The insecurity of short fixed-term contracts is a recognised issue impacting attraction and retention in R&D careers. Surveys of researchers find that only 29% of individuals currently engaged in research felt secure in pursuing a career in this field.[148] This was also highlighted in our interviews. As one R&D worker in academia said – *"Job insecurity is a massive turn-off. It's a big reason for why I left physics... it incentivises you to do quite short-term work with potentially less impact."*

Suggestion 8: Improve the quality of work contracts in academia to increase job security

Improving job security via changes to work contracts in academia

Job security of academics could be improved by improving terms and conditions of fixed term contracts, as well as addressing cultural and structural barriers to increase the availability of permanent contracts. For example:

- Improve parental leave policies for individuals on fixed term contracts in academia, such that these individuals are also entitled to enhanced pay to support their longer-term retention. This could be supported by activities to increase women in senior positions, as well as by incentivising institutions to improve employment practices by feeding this data into performance metrics.

- Increasing the number of permanent roles in academia might involve changes to funding or regulation, such as increasing long-term, non-project based university funding, or regulating institutions to limit the use of fixed term contracts to a maximum threshold.

Short-term contracts also have an impact on D&I. As highlighted in the R&D People Strategy, the ongoing struggle to secure funding contributes to job instability, especially for those in the early stages of their careers. This instability is particularly pronounced in academia, where team dynamics and the prevalence of short-term contracts for post-doctoral roles contribute to a highly uncertain work environment. This may deter many people, especially women and individuals from underprivileged backgrounds, from seeking long-term careers in research.[149]

Research that looked at maternity policies of fixed-term contracts found that women often do not meet criteria for enhanced maternity pay from their institution, contributing to women leaving academia. The researchers suggest this situation perpetuates the profile of the "ideal" academic as someone who lacks family obligations, and that improving maternity policies for temporary staff is an important step in changing gender norms in universities. Finally, the same research found that although all 24 Russell Group universities surveyed in their study had committed to the Athena Swan Charter's principles for gender equality[150] – seven institutions (almost all holding Silver awards) could not provide specific data on maternity return rates and contract renewals – a requirement of Athena Swan.[151] Therefore, addressing the deeper structural and cultural barriers within academia may take more than initiatives like Athena Swan.

Addressing deeper cultural and structural barriers might involve changes to funding or regulation, such as increasing long-term, non-project based university funding, including building specialist and technical capability through funding for cross-cutting roles not linked too specific grants. Another suggestion might be regulating institutions to limit the use of fixed term contracts to a maximum threshold (as being considered by the European Commission[152]). Beyond regulatory changes, addressing cultural barriers can also help address structural barriers. For example, increasing the number of women in senior decision-making roles has been linked to improved maternity policies.[153] Institutions could also be encouraged to improve employment practices (for example, improved terms and conditions of fixed-term contracts) by having this information form part of university ranking and performance metrics.

3.2 Reducing unnecessary bureaucracy

According to the 2022 R&I workforce survey, 62% of respondents agreed that administrative tasks and processes took up too much time at their organisation. Meanwhile, applying for funding was one of the most cited causes of unnecessary bureaucracy in the Independent Review of Research Bureaucracy's call for evidence.[154] There are many other forms of excessive bureaucracy, such as duplicative assurance requirements, lengthy grant applications, delays in project setup and management, and inconsistent digital systems. Another major issue is the volume of information requested by funders and regulators.

The independent Review of Research Bureaucracy made recommendations to streamline and simplify assurance processes, standardise funding applications and contracts, and

simplify approvals to adapt to research's unpredictable nature.[155] The government published a response to this review in February 2024.

Suggestion 9: Reduce unnecessary bureaucracy

Reducing unnecessary bureaucracy

Funding bodies, universities, and regulators all have a role to play in reducing the administrative burden on those working in R&D. Key activities involve:

- Streamlining and simplifying assurance processes.
- Standardising funding applications and contracts.
- Simplifying approvals.

3.3 Tackling bullying and harassment in academia

Thousands of people working in STEM and the R&D sector in the UK face harassment, bullying, and discrimination at work.[156,157] Some social groups are disproportionately affected. Women are much more likely to experience bullying and harassment compared to men.[158,159,160] There is also evidence that those working in higher education are more likely to experience difficult or challenging interactions at work (which could amount to bullying or harassment) than those working in other sectors.[161]

Discussions around workplace culture also dominated our qualitative research and suggested this was an issue for retention. For example, one interviewee spoke about leaving academia after four months due to being bullied by a professor. The same person also described a lack of oversight and accountability (*"there is no performance management"*). Another interviewee spoke of "*professors who held onto their jobs after serious allegations of [...] sexual assault…Why would I want to be in one of the best universities in the UK when professors are able to stick around despite having done terrible things?"*

The suggestion ideas below aim to tackle bullying and harassment in academia, particularly by improving people's awareness of how they might go about reporting an incident of bullying and harassment to the university, what the resolution process involves, and how to improve oversight and accountability.

Suggestion 10: Improve line management capability and accountability to tackle bullying and harassment

Increase the likelihood that staff will report cases of bullying and harassment

The Human Resources departments of academic research institutions have a key role to play in addressing bullying and harassment within their organisations. For example:

- Introducing mandatory line management training whenever someone starts a new role with managerial responsibilities.
- Ensuring performance management is people as well as performance focussed.

Introduce mandatory line management training whenever someone starts a new role with managerial responsibilities.

This could include a simple checklist to help managers know what counts as bullying and harassment, how to recognise it in conversations with managees, and what to do when someone approaches them to talk about a difficult experience with a colleague.

There is some evidence to suggest that manager training could be effective at reducing bullying and harassment. A meta analysis of campus field studies finds that manager training increases reported trainee efficacy, intention to intervene, and helping behaviour.[162] One study showed increased intention to intervene and confidence about intervening after a year.[163] Four months after, Army trainees were more likely to report having intervened to stop sexual assault or stalking.[164] Analysis of 805 companies also found that manager training encouraged managers to look for signs of bullying and harassment and intervene, which in turn increased the number of women managers.[165]

Ensure performance management is people as well as performance focused
In addition to setting clear expectations around bullying and harassment and providing comprehensive training, a well-designed and effectively implemented performance management process is crucial for creating accountability for negative behaviour and incentivising positive conduct. There is evidence that academic institutions favour a performance based management culture rather than people-focused management - where success is judged more on funding and impact than on wellbeing of employees and students.[166] Incorporating elements such as 360-degree feedback, where both staff and students can provide input on an individual's behaviour, helps to identify issues related to bullying and harassment and reinforces accountability throughout the institution.

Suggestion 11: Tackle bullying and harassment in academic institutions by improving reporting and transparency

Increase the likelihood that staff will report cases of bullying and harassment

The Human Resources departments of academic research institutions have a key role to play in addressing bullying and harassment within their organisations. For example:

- Being clear about how employees might go about reporting an incident of bullying and harassment to the university.
- Using specific examples of bullying and harassment behaviours to communicate what bullying and harassment is.
- Providing anonymous routes for reporting to encourage reporting of bullying and harassment.

Funding bodies also have a critical role in supporting institutions to understand what works to reduce bullying and harassment by funding evaluations of interventions.

Ensure transparency around the process of reporting an incident of bullying and harassment, including what happens after.
This could include providing simple and regular signposting to reporting tools, defining bullying and harassment with specific behaviours, highlighting both formal (e.g. HR) and informal (e.g. peer support) routes to reporting, as well as information about what evidence will be collected during the investigation and how decisions will be made.[167]

While there are no studies that we are aware of on the effectiveness of increased transparency of bullying and harassment processes, evidence suggests that people are less likely to report bullying and harassment when they do not know what would happen when they report, how decisions are made, or believe that procedures are applied differently to people in positions of authority (e.g. senior leaders).[168] Other evidence shows that the amount of information on bullying and harassment varies across universities.[169] Wider behavioural science also suggests that transparency creates accountability. When people know that their decisions may be reviewed by others, and that they may be asked for justifications for them, they pay closer attention to the information they are basing their decisions on.[170]

Use specific examples of bullying and harassment behaviours to communicate what bullying and harassment is and to measure its prevalence.
One way to do this would be to create a shortlist of behaviours which could constitute bullying and harassment. Having tangible and specific behaviours that people can recognise in each other as bullying and harassment could increase the likelihood that individuals feel they can take action (e.g. report) and would be supported by their academic institution. It also has the potential to affect the behaviour of perpetrators who might recognise some of the behaviours in themselves, thus reducing the likelihood of them engaging in these behaviours.

While there is currently no evidence on the impact of a shortlist of bullying and harassment behaviours, evidence suggests it is common for employees to question whether bullying and harassment incidents they have experienced are 'serious enough' to be reported.[171] Labelling tangible and specific behaviours that people can recognise as bullying and harassment could increase the likelihood that individuals feel they can report instances they have experienced or witnessed. Evidence from the organisational literature also suggests that women are more likely to believe they meet job criteria when they rate themselves against specific requirements separately than when they consider the requirements as a whole.[172] This suggests that a checklist of concrete behaviours against which to compare their experiences could provide some clarity, particularly for underrepresented groups, and encourage reporting of bullying and harassment incidents.

Provide anonymous routes for reporting.
Callisto, an online sexual assault reporting tool, is already used by universities in the US. People have the option to lodge a record of their assault should they want to take further action. Secondly, they can send the report they have created directly to their institution to begin an investigation, or they can opt-in to a repeat perpetrator matching escrow system where if another user names the same perpetrator then both are notified, and the information is sent to a university point of contact who will guide them through their options for further action. Similar tools are being developed in universities in the UK.[173,174]

While fully anonymous reporting means that nothing can be taken forward into a formal procedure without targets identifying themselves, Callisto makes it possible to take a report from anonymous to non-anonymous by the individual's choice, while keeping a record of all the evidence in the system. Evidence suggests that Callisto increased the likelihood of reporting of sexual assault.[175] This suggests that a similar anonymous system could increase the likelihood of reporting bullying and harassment. We would therefore recommend using Callisto, or a tool that makes it possible to communicate in an anonymous way with people raising reports, and to provide support.

4. Skills gaps

As mentioned in the introduction, there is a pressing need to fill skills gaps to support the R&D sector. It is beyond the scope of this report to address the issue of better understanding the supply and demand landscape of skills in R&D as well as how to support the education sector to deliver high quality training relevant to R&D. Instead, we focus on the role of employers in upskilling the current workforce as well as the role of immigration in supporting international workers to work in the UK to help fill these gaps.

4.1 Supporting upskilling across the R&D workforce

Improving skill development in R&D is a critical issue. The 2022 R&I workforce survey highlights how highly skilled R&D workers need to develop additional skills, such as commercial skills, specialist knowledge, and skills to use new technology, in order to progress their careers in the UK R&D sector. Indeed, there is evidence that R&D roles experience some of the highest levels of skill turnover.[176] Meanwhile, the UK Innovation Strategy states that "STEM workers are less likely to receive training than those in other roles" and have fewer opportunities to update their skills and adapt to changing employer R&D needs.[177]

Suggestion 12: Encourage mobility and access to training to support upskilling across the R&D workforce

Support upskilling across the R&D workforce

Upskilling of the R&D workforce involves the efforts of various organisations involved in education and training. We focus on the role of employers, government, funding bodies, and intermediary organisations that can connect employers to relevant training providers or funding opportunities.

- Public funding could be used to support employers to provide opportunities for staff to gain experience in other sectors and industries, such as via secondments or industry sabbaticals.
- UKRI could help encourage academic staff to gain industrial research experience by influencing a shift away from publications and citations being the key indicators of research success. Where academic teaching staff gain industry experience, this is also likely to enhance course content and introduce students to practical industry methodologies.
- Intermediary organisations could be funded to support employers in navigating the skills and training landscape to provide staff with quality training.

Skill development was also highlighted across our research activities as being a critical reason for increased mobility between academia and industry. This issue has been explored by others (such as The National Centre for Universities and Business's 2023 Career Mobility Taskforce report), which recommends that employers help their staff gain experience in other sectors and industries, such as via secondments or industry sabbaticals – an activity which could be supported by public funding.[178] This means that experience gained from industry-based research ought to be evaluated just as importantly as conventional indicators of research success, like publications and citations.[179] Furthermore, industrial research

experience should be encouraged for teaching staff to enhance course content and introduce students to practical industry methodologies and research focuses.

In addition to supporting greater mobility, employers likely need to raise their investment in developing the skills of their workforce via training. Key to this will be supporting employers to navigate the complex skills and training landscape. As recommended by others, this could potentially involve harnessing intermediary organisations to support employers to navigate training and apprenticeships.[180] Pilots such as 'Upskill in Cyber' also appear to show promise in being able to rapidly upskill specific cohorts to plug key skill gaps.[181] Training opportunities can also play a role in attracting international talent to the UK, as can be seen in DSIT's 2021 GREAT Talent Campaign.[182]

4.2 Supporting international workers

International workers are an essential part of the UK R&D system and bring significant skills and expertise. However, as highlighted by the UK R&I workforce survey, as well as our interviews, immigration and visa requirements can make it difficult for some to work in the UK.[183]

One interviewee spoke of how he needed a different visa to carry out an internship during his studies which caused him delays. Similarly, another interview highlighted the impact of leaving the EU on European nationals in the UK who are not protected by the withdrawal agreement. As one of our interviewees said, *'in my field, we had a lot of layoffs. So people are getting scared. People are not going to wait around for their faith to be determined. I think that once they get laid off, they have something like two months that they can stay if they don't have settled status.'*

Suggestion 13: Attract high skilled international R&D workers by ensuring they are supported to navigate the visa system

Attract high skilled international R&D workers

The following suggestions are primarily relevant to Government, more specifically DSIT, but also wider research funders and organisations recruiting high skilled R&D talent internationally:

- Support prospective international R&D workers to better navigate the visa system.
- Support retaining international R&D workers, including EU nationals, in the UK by better navigating existing visa routes.

Conclusion

This project has sought not only to understand the issues faced by individuals in pursuing R&D careers, but also to identify promising opportunities.

A persistent finding throughout our research, spanning across the literature, interviews, and stakeholder workshops, was the need to improve awareness and understanding of the full range of R&D jobs. While communications can be effective in increasing awareness, they are unlikely to be sufficient in changing individuals' behaviour, such as applying for an R&D related course or job. Instead, increasing individuals' direct experiences of R&D jobs via work placements, and providing access to R&D networks via mentoring opportunities, are likely to have a greater impact on their career decision-making.

Universities, employers, and the government have an opportunity to work in partnership to provide the necessary direct experience and support to encourage individuals to pursue and stay in R&D careers. By simplifying application processes, using defaults, and developing flexible options, universities can increase take-up of and access to work placement and mentoring opportunities among R&D students. The government also has a key role to play in supporting high quality work placements and mentoring opportunities by fostering industry-education partnerships in key R&D sectors and supporting employers with the administrative burden associated with these initiatives.

Finally, employers and funders can also widen access into R&D, by adopting processes and practices that reduce bias in job and funding applications. Improving working conditions, particularly in academia, was also highlighted as critical. Both structural and cultural factors are relevant, such as fixed-term contracts causing job insecurity, lack of incentives to encourage mobility between different sectors, hampering skill development, and a lack of processes and practices to address bullying and harassment. Increasing transparency of employment practices, for example by incorporating these indicators into performance metrics, as well as reducing the emphasis on traditional research metrics, such as publications and citations, is likely a promising approach to improving working conditions in R&D.

Appendix i: Methodology and activities

Research questions that directed the research activities

Questions for non-R&D workers with R&D skills:

1. What challenges do people with the right qualifications and skills face to working in R&D?
2. How can the UK broaden career paths and entry routes into R&D?
3. What are the opportunities in the current R&D landscape that can be built upon to increase the R&D workforce?
4. How can the UK attract people who used to work in R&D but changed occupations back to R&D careers? (optional)

Questions for R&D workers (UK workforce and international R&D workers based in UK):

5. What particular obstacles do talented international R&D workers face working in the UK?
6. What incentives matter the most in pursuing a career in UK R&D?
7. What factors motivate people to remain in R&D careers?

Literature review

Objective

To understand what is already known about attracting, developing and retaining individuals in R&D careers.

Methodology

Our rapid evidence assessment followed the principles of a systematic literature review, but with concessions made regarding the breadth of the process, by limiting aspects such as the number of databases searched or time-span of eligible studies. After agreeing the content and scope with DSIT, our review involved the following steps:

- A call out for grey evidence from the R&D sector (for example, National Academies, Catapults, and government departments) to be made aware of any relevant work which may not be published or easily found online.
- Developing an evidence assessment framework to assess the relevance and quality of studies in a structured way. Key information captured in the framework included year published; type of publication; study method e.g. RCT / correlational / longitudinal / qualitative etc; sector; country or region where study took place.
- Identifying search terms, for example, “Research and Development”, “R&D”, “Research and Innovation”, “R&I” ,“Science”, “Careers”, “Recruitment”, “Attraction”, “Development”, “Barriers”, “Skills”, “What works”, “Interventions”, “RCT” “Suggestions” etc. This was an iterative process since optimal search terms became apparent over the course of the search process.
- ‘Snowballing’ to identify further research from key articles, for example by following-up on references within a paper, or using Google Scholar’s “related articles” to find new papers

on a specific theme.
- Defining broad inclusion and exclusion criteria, such as prioritising studies in English, published in the last ten years and those accessible on open platforms.
- Screening & extracting evidence: Hundreds of article titles and abstracts were screened to determine whether they should be included in the second stage of screening. Around 80 titles were then screened in more depth to assess whether they should be included for full review. Approximately 40 articles were read in depth, with relevant information included in the evidence review.
- Synthesising evidence: Information from studies was synthesised to identify the key barriers and suggestions to explore further in the interviews and systems mapping workshops.

In-depth interviews

Objective

Understand a range of experiences and perspectives on entry, progression, and retention in different R&D jobs, across a range of different backgrounds (gender, ethnicity, nationality, education).

Sample

Overall, we conducted semi-structured interviews with 24 employees across different jobs and sectors:

- 8 UK R&D workers
- 8 International R&D workers, based and working in the UK
- 8 non-R&D workers but who had R&D skills

The sample of workers **currently working in the UK R&D sector** consisted of:

- 8 women
- 6 individuals from a black or other ethnic minority background
- 4 individuals working in academia, 4 entrepreneurs and 8 individuals working in industry[184]
- 4 individuals with PhDs, 2 with a Masters degree and 10 with an undergraduate degree
- 14 individuals qualified to work on one of the UK government's 7 key R&D areas.

The sample of **non-R&D workers** consisted of:

- 4 women
- 2 individuals from a black or other ethnic minority background
- 5 individuals who transitioned out of R&D, and 3 who had not worked in R&D but had relevant qualifications
- 1 had an undergraduate degree in a STEM subject

Interviewees were employed across private sector companies focussed on finance or commercial technology, government policy roles (in DSIT), communications, and project management.

Sample limitations

We had limited participation from people working in development and/or innovation who were non-EU or had arrived in the UK after EU-exit– thus, it is possible there are additional barriers to working in the UK R&D sector that we did not uncover.

Deciding on whether a person had R&D skills was difficult – thus, it is possible that some interviewees were not qualified to work in R&D. For this report, we considered someone to have R&D skills if they:

- Had a STEM-related degree (majority holding a postgraduate degree in a STEM subject), or
- Self-identified as capable of working in R&D-related activities

Analysis and reporting

Analysis was conducted using the **framework approach**: a methodology to structure the analysis of qualitative data. With this approach all participants' data is outlined in a matrix divided by specific themes. This approach makes it easier to recognise trends and patterns in the data, as well as inter-group similarities. Verbatim quotations were extracted from interviews to illustrate or highlight particular conclusions.

Stakeholder workshops to inform recommendations

In addition to workshops held between BIT and DSIT throughout the project, for example to agree on issues and suggestion areas to focus on, we also held a workshop with 18 different stakeholders from a range of organisations across the R&D sector to help inform our understanding of the context and provide feedback on our identified issues.

In collaboration with DSIT we agreed to focus on two specific issues in the workshop:

- Awareness and understanding of R&D jobs
- Working culture in academia.

The workshop participants were then facilitated through a number of interactive exercise to provide input into the following questions:

1. What are the individual, organisational or systemic factors that contribute to these issues?
2. Who are the key actors in the R&D system who influence these issues?
3. What are the key actions or behaviours of these actors that influence the issue?
4. What are some suggestion ideas to help address these issues?

A summary of the recommendations that emerged from the workshop are in the Table below. While the ideas from the workshop informed the final report, not all suggestion areas could be covered in depth.

Improving awareness and understanding of R&D at all career stages	Improving workplace culture in academia
• Increasing exposure to R&D jobs	• Building capacity and evidence

during education, including those in post-graduate study. Related to this was developing “brokerage points” to better connect people and organisations. ● Improving career services, especially for post-graduates ● Better visibility on non-academic routes in R&D ● Encouraging mobility between industry and academia via sabbaticals, fellowships and other programmes that improve access	around what works to improve culture ● Rewarding outputs related to culture ● Implementing more inclusive HR policies

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