



A qualitative deep dive into experiences and attitudes towards the cross-sector mobility of researchers

A research report for NCUB

September 2023

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1. Foreword by the National Centre for Universities and Business (NCUB)

NCUB's 2020 Taskforce report¹ called for UKRI to, 'support universities to develop a strong and diverse pipeline of R&D and innovation talent for the future that flows in and between academia and industry' as, 'the UK does not just need more people with the right skills, but also a culture of collaboration and mobility between academia and industry'.

It remains our view that in the context of restricted international migration, economic volatility and skills shortages across the economy, there is an acute need for greater movement of research staff between businesses and universities. Though this has been the subject of significant attention by policymakers, further action is needed.

NCUB has been endorsed by Research England (UKRI) to bring together senior leaders from academia and industry to explore ways to create more diverse career pathways and collaboration opportunities for researchers, that will in turn benefit universities, businesses, and the UK economy.

This research, delivered by Thinks Insight and Strategy and commissioned by NCUB, forms a valuable part of the evidence collected as part of the Taskforce. Insights from the interviews within this research have developed a 360-degree view of the barriers to, and opportunities within, intersectoral mobility across universities and businesses in the UK.

It establishes exactly how and why institutions enable their research staff to move freely across sector boundaries. It gives researchers a voice, enabling us to understand their journeys and experiences navigating this landscape across their careers.

This report sits alongside two others² in an evidence series supporting the Researcher Mobility Taskforce, and is the basis upon which, alongside widespread sector engagement, the NCUB policy report Pathways to Success³ is formed.

About NCUB

The National Centre for Universities and Business (NCUB) represents a collective voice of leaders across higher education and business and aims to tackle issues of shared interest. The NCUB is an independent and not-for-profit membership organisation that promotes, develops and supports university-business collaboration across the UK.

¹ [R&D Taskforce report: Research to Recovery, \(2020\). NCUB.](#)

² Including the NCUB report, [Building a Data Driven Picture of Researcher Intersectoral Mobility, \(2023\). NCUB.](#)

³ [Pathways to Success: Researcher Career Mobility Taskforce, \(2023\). NCUB.](#)

2. Executive summary

2.1. Background and research objectives

The National Centre for Universities and Business (NCUB) commissioned Thinks Insight & Strategy to explore experiences of mobility of innovation focused staff between universities and businesses.

The overall objectives of the NCUB Mobility Taskforce were to:

- Move beyond a general characterisation of mobility as being a desirable feature, and towards a much clearer understanding of it, why and how mobility aids the UK's wider research and development (R&D) and innovation objectives.
- Develop a more detailed picture of the types, scale and outcomes of mobility between academia and industry in the UK.
- Explore variances in mobility between academia and industry by discipline and sector.
- Consider existing interventions at institutional and national levels and if/ how they are being evaluated.
- Produce a limited number of ambitious but practicable recommendations to achieve realistic improvements in mobility between careers in academia and industry across the UK economy.

In view of the above objectives and to support NCUB's Taskforce, the objectives of this qualitative strand of research utilising in-depth interviews was to:

- Explore understandings and experiences of mobility to form a more nuanced understanding of 'mobility'.
- Describe different modes through which mobility occur.
- Explore the perceptions of opportunities in, and barriers to, mobility in the UK.
- Accumulate insights for improving mobility between sectors in the UK.

2.2. Method

NCUB commissioned Thinks to conduct 29 in-depth, hour-long qualitative interviews with stakeholders from universities and businesses as well as individual researchers between 21st April 2023 and 7th July 2023. Interviews were conducted by video conference (Microsoft Teams), or in-person depending on stakeholder availability and needs.

A qualitative approach was chosen due to the exploratory nature of the research objectives. Thinks recommended a qualitative approach to:

- Allow the participant's perspective to influence the direction of the discussion.
- Provide more 'personal' and descriptive insights about the subject matter.
- Ensure that the interview surfaced issues of importance to the audience which might not have been foreseen by the researcher.

The qualitative nature of this report is not aiming to provide a representative cross-section of the experiences of all businesses and universities, but instead to illustrate and bring to life some of the on the ground experiences of mobility for universities, businesses, and individual researchers. The findings presented in this report are intended to be viewed as illustrative as opposed to generalisable.

2.3. Sample

Interviewees were selected for interview either due to their professional responsibilities, or because they had personal experience of intersectoral mobility. Again, due to the qualitative nature of this work we did not aim for a cross-section of all industries and experiences, but a spread across different factors. We ensured there was representation across the regions and nations of the UK, institution size, different industrial sectors, and discipline strengths of both universities and individual researchers.

A bespoke discussion guide was used for each of the three research streams (universities, businesses and individual researchers). These discussion guides, as well as a more detailed description of the methodology and process, can be seen in full in the appendix.

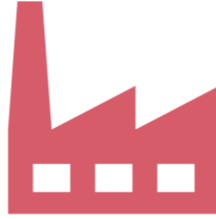
During certain interviews, more than one representative took part to offer further perspectives from the organisation. The sample was split into three streams, comprising:

- **10 universities**, summing 12 interviewees with organisational responsibility for delivering or facilitating mobility.
- **10 businesses**, summing 12 interviewees with organisational responsibility for delivering or facilitating mobility.
- **9 individual researchers**, innovation professionals, all of whom have worked in both university and business settings.

We would like to extend our gratitude to those who took part in the research. A full list of contributors can be found in the appendix.



10 universities



10 businesses



9 researchers



6 males



6 females



9 males



3 females



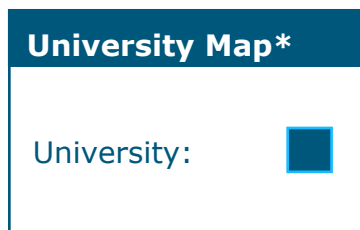
4 males



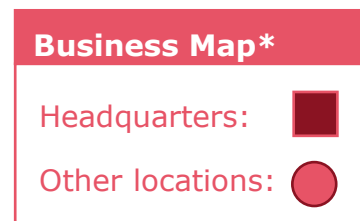
5 females

Geographic breakdown

We interviewed representatives of universities and businesses from regions and nations across the UK (individual researchers are omitted from the map below due to their location being private):



*Where more than one university is located only a single icon is used



*Where more than one business is located only a single icon is used

Sector breakdowns for both business and individual researchers are outlined below. Universities are omitted as they do not fall into one sector, and usually have several disciplinary specialisms. The sectors outlined below have been defined using Companies House data to establish the relevant Standard Industrial Classification (SIC) codes for each business, which has been used to broadly define the relevant sector. We have further defined the sectors for researchers based on their primary area of work and expertise, as well as the industries they have been involved in throughout their careers.

Sector breakdown: Businesses		
Company	Sector	
Airbus	Advanced materials and manufacturing	
Leonardo UK	Advanced materials and manufacturing	
Rolls-Royce	Advanced materials and manufacturing	
Thales	Advanced materials and manufacturing	
Amazon	AI, digital and advanced computing	
Cisco	AI, digital and advanced computing	
IQE	AI, digital and advanced computing	
Northumbrian Water	Energy and environmental	
GSK	Health & Life Sciences	
Pfizer	Health & Life Sciences	
Sector breakdown: Individual researchers		
Researcher	Company	Sector
Dr Duncan Hodges	Leonardo UK	Advanced materials and manufacturing
Dr Andrew Rogoyski	University of Surrey	AI, digital and advanced computing
Dr Charlotte Criscuolo	Drug Discovery Business	Commercial physical and biological research
Dr Zoë Ayres	The Open University	Commercial physical and biological research
Professor Gareth Loudon	Royal College of Art (RCA)	Creative industries
Dr Ashmita Randhawa	Sunderland Software City	Business and domestic software development
Dr Dan Walker	Rio Tinto	Engineering services
Dr Pilar Sepulveda	Catapult Network	Advanced materials and manufacturing
Dr Rasha Al-Lamee	Imperial College London	Medical science

2.4. Overview of key findings

Individual researchers and stakeholders within universities and businesses agree that mobility of researchers is beneficial to research and practices in academia, industry and beyond.

- Mobility of researchers between industry and academia is seen as an essential part of knowledge exchange which increases impact across sectors, and is therefore seen as worth investing in.
- Mobility is seen as having wider impact beyond the confines of each sector, as research contributes to tackling the central challenges society faces, e.g., developing solutions to make practices in industry more environmentally friendly.
- On an individual level, mobility is seen as creating opportunities for professional success for researchers.

Stakeholders and researchers broadly align with the working definition of mobility shared as part of this research: *"The physical [temporary or permanent] mobility of researchers from one sector to another (academia-to-industry, or industry-to-academia)".* **However, each group has slightly different ideas about mobility.**

- University stakeholders note that there is an assumed or 'almost unconscious' understanding of mobility, and neither a formal definition of mobility within their institution, nor a uniform approach to mobility in their strategy. Researcher mobility is often perceived to be organised on a departmental level.
 - Stakeholders point out that the definition should be extended to include the geographical and 'physical' components of mobility, e.g., the location of the university and ease of researcher relocation. Many of the university and business representatives interviewed shared examples of partnerships within their local region and stressed the importance of these collaborations.
- Businesses are more likely to have a formalised understanding of mobility, primarily in relation to ongoing collaborative projects with universities, or through receiving early-career researchers after doctoral or post-doctoral training.
- Individual researchers are typically familiar with the term but hold different interpretations and views depending on their own personal experience, field of research, and professional network.

All stakeholders feel there is a level of confusion as to who is responsible for enabling and delivering researcher mobility across sectors.

- Stakeholders and individual researchers recognise that opportunities for mobility are not always equal, and highlight geography, gender, caring

responsibilities and salary expectations as factors that impact equity of opportunity.

- Stakeholders and researchers see there to be different levels of risk associated with the direction and career stage of mobility. In particular, researchers who move from university to industry are seen as taking a greater risk due to the reduced academic publication opportunities whilst in business. This may affect opportunities to move back to a university where peer reviewed journal articles are part of the required credentials to secure an academic role.
- When the onus is placed on the individual to seek out their own opportunities in other sectors, there is perceived to be less equal access to intersectoral mobility.
- As a result, stakeholders and researchers see the value in formalised cross-sector frameworks and pathways organised by businesses and universities. Stakeholders and researchers mostly believe that part of the future success of researcher mobility lies in creating more formalised pathways which enable it.

Experiences of mobility differ at early, mid and late-career stage. But, whilst the motivations, benefits and barriers of moving sectors differ between academia and industry, stakeholders and researchers follow a similar pattern of mobility for each career stage.

- Permanent, full-time transition is the most commonly reported mobility journey. This is perceived to be typically unidirectional in either early or late-career stage.
- The mid-career stage is seen as the period with the least formalised pathways open to researchers and is perceived to see the fewest researchers moving between sectors.

Stakeholders and individual researchers see the different ways of working and thinking in universities and businesses as both the central barrier to, and the source of, successful mobility.

- Paradoxically, new ways of working or thinking can be a key asset to both universities and businesses when gaining staff from the other, providing valuable new insights and professional growth.

- However, it can also represent a challenge when moving sector or working in partnership, as researchers are expected to successfully translate their skills for the respective new sector but keep the value of their previous experience.
- More work is required to examine how universities and businesses can further support researchers making this transition to ensure effective skill transfer through structured mechanisms and initiatives.

Stakeholders and researchers believe that in the future, researchers will more commonly work across sectors throughout their careers. They are optimistic that central barriers at each career stage can be addressed.

- Stakeholders and researchers believe that there is a growing awareness of the positive impact and benefits that the mobility of researchers across sectors can bring.
- Some stakeholders believe that the future of mobility will be affected by a generational shift i.e., changing attitude and expectations around working conditions.
- A few stakeholders point out that UK universities may change their institutional make up to not lose research talent to businesses.

The research has identified the following opportunities for the future of researcher mobility:

- A universal, shared definition of mobility across sectors, combined with joint frameworks and pathways for increasing mobility across all career stages.
- A future oriented approach to mobility, i.e., creating contracts and working conditions that are flexible, attractive and future proof.
- Showcasing cross-sector career journeys of individual researchers, as well as research undertaken in universities, businesses, and in joint, cross-sectoral mobility projects.

3. Understanding of researcher mobility

3.1. Current understanding of researcher mobility

Mobility of researchers is broadly recognised as an essential, presupposed and largely beneficial component to research and insight within both universities and businesses. It is seen as something worth investing in, working towards, and thinking about.

All three audiences recognise researcher mobility as a mechanism for knowledge exchange across sector boundaries. Specifically, mobility is seen to:

- Bring together different ways of working and thinking to deliver innovative solutions to new and old problems.
- Have impact beyond the boundaries of each sector, often making valuable contributions to tackling central problems society faces, e.g., climate change, and developing more sustainable modes of production and transport.
- Enable more developed networks that can help stimulate research and innovation, alongside offering career development opportunities.

"Mobility on any level is a good thing, it allows people to learn new things and think differently."

Professor Malcolm Skingle, GSK
(Business representative)

"The network is absolutely the top benefit. You can bring in contacts and knowledge that you've gained alongside ways of working."

Victoria O'Kelly, University of Liverpool
(University representative)

"What you see when you bring together people who are working in different environments, and perhaps want to solve the same challenges, is it sparks innovation and creativity, by bringing these different sectors together and different ways of working and thinking."

Rebecca Edwards, Bournemouth University
(University representative)

3.2. Defining researcher mobility

Researcher mobility is often seen as something that happens ‘almost unconsciously’ across many contexts. As a result, universities and businesses are unlikely to hold a formalised definition of researcher mobility at an institutional level. In addition, the levers through which mobility is completed, such as via university-business partnership or permanent full-time transition, are equally unlikely to have a formalised understanding and vary in prominence across institutions. Throughout the research, we heard reference to ‘permeability’, ‘engagement’, and ‘partnerships’ in place of mobility.

For this reason, and to guide the conversation, we opted to share a working definition of mobility defined as:

"The physical [temporary or permanent] mobility of researchers from one sector to another (academia-to-industry, or industry-to-academia)."

Vandeveld, 2014

This definition was generally accepted and recognised by research participants and broadly aligns with the prior understanding of each audience. However, there are a few key caveats:

- **Universities often lack an institutional approach to, or definition of, researcher mobility**, opting instead for academic departments to take a lead. This has contributed to different approaches to hiring and supporting researchers with an industry background. Several universities have dedicated enterprise, impact, and innovation (EII) roles, in the form of staff who are responsible for overseeing and encouraging engagement and maintaining relationships with industry partners on specific projects and events. This often results in greater attention paid to temporary mobility and knowledge exchange. However, the scope of an EII role does not often encompass strategy towards permanent inward or outward mobility.
- Universities indicate that the working definition offers a good starting point but identify specific aspects of mobility that they see as needing to be highlighted within the definition. **Physical location feels key to intersectoral mobility for many universities**, as proximity to clusters of institutions and industries can be a key facilitator, whilst researchers' individual capacity for geographical mobility can act as a barrier. Universities wanted to see this geographical element reflected in the definition for three key reasons:
 1. Researcher relocation. For more isolated universities, relocation is often a requirement for intersectoral mobility and can act as a barrier both inwardly and outwardly.

2. Potential industry partnerships and relationships feel intertwined with, and can be limited to, the businesses operating in their immediate local area.
3. The location of or existence of shared workspaces, where researchers may be able to come into contact with those in other sectors and develop partnerships and research projects, often rely on physical proximity.

"Mobility is about our efficiency to be able to get out there and to do research with, and really engage with businesses. We work with over 400 businesses across all sectors, with health and social care being huge for us, Warburtons, the BBC, and BA too, all three police services – so that's Lancashire, Cumbria, and Greater Manchester, professional services, and now digital marketing too. We've also got the National Cyber Force moving to just outside Preston next year."

Martin Blunt, University of Central Lancashire
(Business representative)

- **Businesses, on the other hand, are more likely to have a formalised understanding of mobility**, primarily in relation to either ongoing collaborative projects with universities, or through receiving early career researchers (ECRs) after doctoral or post-doctoral training. As reflected elsewhere, **businesses often see mobility as an essential component to recruiting talented staff** from academia early in their careers. This can lead to an impression of mobility, particularly permanent full-time transitions, as unidirectional until later career stages.
- **Individual researchers**, who were selected for interview due to personal experience of moving across sectors, **were often familiar with the term** and held drastically differing interpretations and views depending on their own personal experience, field of research, and professional network. Researchers frequently point to areas where they feel the working definition of mobility does not reflect their experience. This most often manifests in their professional experiences of mobility, such as a move into the public sector or into a new discipline or field of research, but also presents within their personal experiences of factors such as geographical mobility. Therefore, **a researchers personal experiences impact their view on what should be included in a complete definition for mobility**. However, whilst their individual stories, experiences and situations were important in shaping individual researchers own definitions, this research focused specifically on professional intersectional mobility and a working definition thereof.

"You've defined sectors as industry and academia, but within this there is also discipline changes [...] and you've also got geography!"

Dr Ashmita Randhawa, Sunderland Software City
(Individual researcher)

"In this context 'industry' seems to imply businesses in the private sector. There are lots of PhDs and postDocs, like myself, who sought a career path in the public sector. This aspect of mobility doesn't seem to be encompassed within the definition"

Dr Pilar Sepulveda, Catapult Network
(Individual researcher)

"Bright young people looking to start a family, and buy a house find it increasingly hard to justify staying in academia. We tend to recruit more from overseas where academic careers are valued more than in the UK."

Dr Andrew Rogoyski, University of Surrey
(Individual researcher)

This research has identified the following **opportunities for developing a cross-sector definition of mobility**, to facilitate greater movement in the sector:

- Be broad enough to remain relevant to different stakeholders but nuanced enough to offer both the individual and institutional perspectives.
- Refer to wider forms of mobility which also play a key role in building diverse research career paths, such as mobilities of geography and discipline.
- Increase equity through understanding the role that external factors can play in potential mobility.

3.3. Responsibility for mobility

Across each of the three audiences, **mobility is broadly understood as something that occurs between sectors, disciplines, or geographical locations**. However, when it comes to who has responsibility for intersectoral mobility, there is less certainty.

Those working in industry and academic roles who hold responsibility for liaising with other sectors, primarily business and university stakeholders in enterprise, impact and innovation (EII) roles, often have an in-depth knowledge of institutional mobility, and how to facilitate partnerships that encourage cross-sector knowledge or resource exchange on a temporary or more long-term

basis. However, their knowledge of the practicalities required for individual researchers to move between sectors, outlined in Section 4, tends to be more limited.

Individual researchers are only able to take responsibility for their own career path. They are often able to identify mobility pathways on an individual level, and can identify the associated drawbacks and benefits, but are unable to identify or facilitate wider partnerships or projects between sectors. They lack the resources, power, or funding, to drive this forward and instead focus on their own individual career path.

Participants recognise that opportunities for mobility are not always equal, and highlight **geography, gender, caring responsibilities and salary expectations** as factors that impact equity of opportunity. This, in turn, shapes views of who should be responsible for mobility. When placing the onus on the individual to seek out opportunities to be mobile, there is perceived to be less equal access to mobility. As a result, a cross-sector framework and a formalised, shared definition of mobility is seen to have the potential to increase mobility and provide more equal access to mobile careers.

"It certainly seems to be a bigger issue for women, especially if they have a family, to be mobile."

Tim Brundle and Fiona Wills, Ulster University
(University representative)

Many stakeholders and researchers' understanding of mobility is intimately tied to their own personal experiences. There is an opportunity for greater dialogue between both individual researchers and stakeholders in universities and industry to get a better understanding of the barriers and possibilities for mobility, both for longer and shorter terms, and at individual and institutional levels.

4. The mobility journey

4.1. Overview of different modes of mobility

Whilst we recognise that there is no 'one size fits all' mobility pathway between industry and academia, individual researchers and stakeholders from business and universities identify a similar pattern of researcher mobility for each career stage, i.e., early-career, mid-career and late-career. However, the motivations and barriers that enable or limit cross-sector moves, and the benefits these bring, differ between sectors. This research has identified four different modes through which mobility takes place across careers. These are:

- 1. Permanent, full-time transition.** This is the most commonly reported pathway taken by researchers moving between sectors and is typically unidirectional in either early or late-career. Here, researchers from business or academia are moving to a position in their respective new sector for longer periods of time and tend to immerse themselves fully in the new work environment.

"My personal experience is that once you've finished your PhD and you go into industry, then it is a one-way trip. It's really hard to go back."

Dr Paul Gosling, Thales
(Business representative)

"The real interest and challenge lies in the ability to transition from one to the other, and then back again."

Dr Andrew Rogoyski, University of Surrey
(Individual researcher)

- 2. Mobility through formalised, well-established partnerships and KE activities.** Moving between sectors through well-established partnerships between universities and businesses is the second most commonly reported way to engage in mobility. Here, researchers can engage with another sector through a defined programme, project, or by a shared and collaborative way of working, either digitally or physically. Researchers can be physically mobile between spaces in co-working or shared labs.

"Our materials innovations factory was built in collaboration with Unilever in 2017. The idea behind it was to be a co-located open access research facility. We have a floor of it, Unilever has a

floor. The mobility is porous and there is real transparency because there are a number of our academics working for Unilever. It's an example where we have real mobility both ways."

Victoria O'Kelly, University of Liverpool
(University representative)

3. Short-term, temporary movements of researchers between sectors. This pathway is far less reported amongst stakeholders and individual researchers and, when it does occur, tends to be sought out by individuals rather than formalised schemes. When temporary researcher mobility happens, it happens in the form of consultancy work in addition to full-time work responsibilities, or via a secondment.

- **Consultancy work in addition to contractual responsibilities** is a path mostly undertaken by university researchers. These roles are often on top of a full-time employment contract which makes them less sustainable over a longer period of time.

"This is not the case for all academics, there are some out there who are incredibly entrepreneurial in partnering with large companies and have perhaps even founded their own start-ups. These academics are effortless for industry to partner with, but in the UK, they are not the majority."

Dr Dan Walker, Rio Tinto
(Business representative)

- **Secondments**, contractual arrangements for researchers to be temporarily employed elsewhere, are also less prevalent, primarily because flexible contracts and schemes are not perceived to be widely available. University stakeholders specifically point out that contracts are not made to easily accommodate secondments and therefore do not allow for researchers to easily move across sectors without creating staff shortage in the department they leave behind.

"[Secondment opportunities] are really hard to find unless you do it through some sort of temporary contract. As a sector, we're very keen to move away from that temporary, risky, fragile employment model. Things are best where they're planned well in advance."

Ben Sumner, University of Nottingham
(University representative)

4. Co-contracting, i.e. the permanent contractual splitting of time between a university and business. This is reportedly an uncommon way of working and seen as a rare mode through which to engage in mobility across sectors. Stakeholders of universities and businesses report that, once established, their contractual frameworks do not often allow for researchers to split their time across two different institutions. Co-contracting is more common in early-career and tends to occur when a researcher's PhD or postdoc research is in part supervised by an industry expert and sponsored by a business.

However, where co-contracting happens, it is seen as a valuable opportunity to continuously network and share knowledge across sectors. For universities in particular, co-contracting is seen as an opportunity to retain promising talent. Whereas businesses value co-contracting as a way to engage their staff in explorative and reflective research that may inform their work and processes.

"[On securing a part time academic contract] I was scared of losing that mobility. I still wanted to really be grounded in industry. I felt I couldn't do the best for the students unless I was still really on top of what's happening in industry."

Professor Gareth Loudon, RCA
(Individual researcher)

The mobility of technicians between sectors

Whilst this research primarily focuses on researcher mobility, we have also spoken to two university representatives to better understand the mobility journey of technicians.

The career journey of technicians differs to that of researchers. Overall, technicians are seen to fulfil an essential role in the research economy of businesses and universities as they keep labs running, drive research and development, and deliver valuable contributions for the progress and success of research and innovation.

We heard that a central driver for technicians to change sectors is career progression. University representatives note that technicians tend to move to industry, or back to universities, when they do not see opportunities to progress in their respective role. As such, university representatives see an opportunity for universities and businesses to redefine and reimagine technicians' career pathways, such as by mirroring the progression opportunities of academics via establishing professorships for technical staff.

Stakeholders point out that developing new opportunities for career progression can help retain staff and counteract recruitment challenges,

especially for universities who typically find it hard to recruit skilled and experienced technicians at wages that are lower than in industry.

"Technicians are a pretty loyal bunch in academia but increasingly they've seen a lack of career pathway. The biggest group at the time were mid-career technicians who felt they hit a ceiling and they tended to be late 20s and early 30s. I don't know where they went. I know anecdotally some went to industry, but that data isn't there. I was quite shocked by that. It was due to a lack of perceived career progression and opportunities in academia."

Dr Kelly Vere (Technician representative)

4.2. Drivers of researcher mobility

Amongst those interviewed, there is perceived to be four key drivers for practicing researcher mobility: two which motivate individual researchers themselves, and two which motivate universities and businesses.

From individuals:	From universities and businesses:
• Researchers are motivated to move between roles to contribute to practical problem solving. As researcher mobility enables knowledge exchange, researchers use mobility to push the boundaries of knowledge. Contributing skills and knowledge for the greater good is seen as an essential responsibility by most researchers. • The other key motivator is the opportunity to shape their career according to individual goals and circumstances, with factors such as flexible working hours, receiving a competitive salary package in business, or having a secure work contract in a senior university position.	• Universities and businesses see gaining staff from the other sector as a valuable opportunity for exchanging knowledge and skills that can potentially advance their research and impact. For universities this could mean a research breakthrough that could be patented, and for businesses it could mean a product or process that sets them apart from competitors. • The motivation to make a difference is also strong. Businesses and universities have a vested interest in tackling and contributing to solving the most pressing challenges of our time, e.g. tackling climate change with research.
<i>"If you've had an academic background yourself you can see why it would be</i>	<i>"One of the key things that I see with our junior academic members of staff is</i>

<i>attractive to finish off your career and bring all of your industrial knowledge to somewhere it can help and change things for the better. When it comes down to, it seems like people are leaving to go back to academia at the end of their career to end on a high note to kind of like give back."</i> Dr Angela MacOscar, Northumbrian Water Group (Business representative)	<i>that they want to make a difference through their research. The key drivers tend to all be around income and impact. So, it's accelerating the amount of income that we're bringing in and the amount of impact we can have."</i> Rebecca Edwards, Bournemouth University (University representative)
Key implications for researcher mobility across sectors	
• 'Having impact' and 'making a difference' are shared drivers between businesses, universities and researchers. As a result, universities and business are in a good position to emphasise the impact researcher mobility generates. This can raise awareness to the opportunities mobility presents, helping to attract promising talent, nurturing mobility across sectors and functioning as a lever to deliver knowledge exchange and other associated benefits. • Flexible working conditions and competitive contracts can attract diverse talent and researchers with a greater variety of skills and expertise. Flexible positions may increase the impact of researchers by enabling them to work across sectors. ○ For universities this means offering contracts that allow researchers to easily apply for secondments or opportunities to split their time permanently between the university and a business. ○ For businesses this means adapting working patterns to facilitate researchers in contributing a portion of their time to engage with academic research.	

4.3. Overview of barriers to researcher mobility

Whilst many researchers may be interested in moving between sectors, there are key barriers, often beyond their control, that complicate or even prevent

mobility. This research identified that researchers may face structural, institutional and individual barriers:

Structural barriers	Institutional barriers	Individual barriers
Societal inequalities are perceived to limit researchers' opportunities, for example the structural underrepresentation of women in innovation and STEM. - Some of the barriers that lead to the underrepresentation of women in STEM may also present barriers to researcher mobility. As such it is key that universities are perceived to be providing adequate support. - In some circumstances, barriers to intersectoral mobility, such as a need for geographical relocation or long commute times, may be harder to overcome for female researchers.	Inflexible work contracts and the different skills required for making a move can be a central barrier. - For example, researchers from business are perceived to not always have the credentials needed, such as a PhD, or peer reviewed journal articles, to be considered for a university position. - Conversely, most academics have little experience in central aspects of day-to-day work in businesses and are often perceived to lack essential skills for a career in industry, e.g. people and project management skills.	Researchers do not always find themselves able to move between sectors due to: ...personal reasons, e.g. family responsibilities can make the geographical relocation necessary for intersectoral mobility difficult, if not impossible. ...financial reasons, e.g. business researchers tend to have higher salaries than university researchers, making mobility from a business to a university a move many may not be able to afford.
"People talk about not having enough women in STEM. I think	"As people progress through their	"There's also geographical

<i>universities need to take a good hard look at themselves in terms of how they're positioned in terms of support that's needed."</i> Dr Ashmita Randawa, Sunderland Software City (Individual researcher)	<i>careers then I'd say the barriers get higher. Do you jump off an academic tenure track onto an industrial one? That's a big gamble."</i> Professor Mark Jeffries, Rolls-Royce (Business representative)	<i>mobility - even moving university can be a significant deal because it means moving geographically. If you have a partner and kids, moving house is a significant barrier."</i> Professor David Bogle, UCL (University representative)
Key implications for researcher mobility across sectors		
As highlighted earlier, individual researchers and stakeholders believe that it is a central responsibility of universities and businesses to facilitate mobility. They are therefore seen to be in a position to address these barriers. On a structural level - Universities and businesses can further embrace and push diversity when hiring staff from other sectors and seeking partnerships with individual researchers. On an institutional level - Universities and businesses can offer workshops and pathways to upskill translational skills, i.e. areas which are seen as valuable by both sectors, including management and communication skills. - Stakeholders and researchers point out that there is an opportunity for universities and businesses to jointly work on a framework that allows for direct comparison of achievements, career-stages, and skills across sectors to enable more researcher mobility. On an individual level - Universities and businesses can have an open dialogue with individual researchers to aim to find a solution for their particular individual challenges and aspirations.		

4.4. Representation of mobility trends

As part of the wider research supporting the Researcher Mobility Taskforce, NCUB analysed HESA data on staff leavers and starters.⁴ This data allows for comparison of the perception of trends around the numbers of joiners and leavers from other sectors, to the real numbers. This allows us to better understand attitudes to mobility.

HESA data implies there is a significant inflow of researchers into academia from industry at the early career stage. The data shows that, of all academic staff under the age of 35, 5% of them are reported to have recently joined from the private sector, making this the largest academic entry point for researchers. Conversely, 1.4% of all researchers aged 35 or under are reported to have recently left academia to take on a role in the private sector, making this stage equally the largest industry entry point for researchers.

In the middle and later career stages, mobility drops substantially, and mobility into academia from industry remains the most common route. 2.3% of industry staff between the ages 36-55 joined from academia, compared to just 0.6% of academic staff joining from industry. Of those aged 55+, 1.5% joined industry from academia, compared to 0.5% joining academia from industry.

4.5. Early-career stage researcher mobility

Stakeholders from businesses and universities, as well as individual researchers, report that researchers are more likely to be mobile in their early and late career stage than in the middle of their career. This observed trend matches NCUB's analysis of HESA data.

At the early-career stage (PhD or post-doc level), mobility is most frequently reported as unidirectional: from universities to businesses.

This perception contradicts data on researcher mobility from HESA, which finds greater numbers of researchers join academia from industry at this time than the numbers who leave academia to go into industry. Despite this, entry numbers into industry from academia are at their greatest rate at this stage comparative to later career stages, which could influence perception. This demonstrates the tendency to notice staff loss, and the perception of losing talent to industry in the early-career stage which persists in academia.

Interestingly, academic representatives perceived there to be little to no movement of researchers from business into early career academic positions and

⁴ See full analysis in the NCUB quantitative research report, [Building a Data Driven Picture of Researcher Intersectoral Mobility, \(2023\). NCUB.](#)

suggest this is due to these researchers not having the academic credentials necessary for an academic career, most notably a PhD.

"Currently we sponsor 55 PhDs around the UK and have strategic partnerships with 3 universities. We don't sponsor PhDs as a recruitment exercise, we sponsor PhDs because of the research they do, but if they do decide they want to work with us afterwards then that is a bonus."

Dr Paul Gosling, Thales
(Business representative)

"I think what would have been more valuable to the university is if I had been able to do some of that [work in industry] earlier and bring it back. Otherwise, they train me, then I take that expertise elsewhere. I have a lot of PhD students now who are at that point where they're thinking 'Are we going to stay on these salaries forever? Are we going to have a job like hers forever? Or are we going to jump ship?' There's lots of chat about jumping ship. What if they could just go and spend a few years in industry, and then come back and share this knowledge instead?"

Dr Rasha Al-Lamee, Imperial College London
(Individual researcher)

Due to the perception that many more researchers leave academia at early-career stage than join it, stakeholders shared reasons why they perceive this to be the case. Stakeholders and individual researchers suggest that the central factors motivating mobility out of academia and into industry at this stage are the opportunity to have greater impact, and more competitive salaries. Reasons for this can be summarised as follows:

<i>Reasons early-career researchers leave academia – the researcher view</i>	<i>Reasons early-career researchers leave academia – the academic view</i>	<i>Reasons businesses are interested in recruiting early-career professionals from academia</i>
• Early-career researchers are attracted by the competitive salaries businesses can offer. • Businesses are in a position to offer more secure and permanent (or long-term) contracts which allows early-career researchers to plan for their futures.	• Universities perceive that early-career researchers are attracted by the competitive salaries businesses can offer. • Universities understand that businesses are better situated to offer more secure and permanent (or long-term) contracts which allow early-career researchers to plan for their futures.	Early-career researchers are seen as: • relatively agile in adapting to different working environments, making it easier to upskill academics in areas typically not taught at universities (e.g. stakeholder management). • contributing innovative perspectives and specialist knowledge which brings value to the business.
<i>"I've worked at Pfizer for over 20 years. I started my relationship with them when I was an industrial trainee in my first degree and then they sponsored my PhD."</i> Dr Elizabeth Collins, Pfizer (Business representative)	<i>"Those who do return to the university do so for a passion in an area of research they are in. They may go to industry but feel drawn back to their own research. Salaries are substantially higher in industry, particularly for early career researchers."</i> Tim Brundle and Fiona Wills, Ulster University (University representative)	<i>"I find that PhDs come out very organised and capable and attractive to industry. PhDs effectively have to deliver and manage a project. I actually find that PhD students tend to be pretty good project managers."</i> Dr Paul Gosling, Thales (Business representative)

Some felt that there was little mobility at this stage as a whole. Perceived barriers to moving sectors in the early-career stage are seen to be the lack of centralised frameworks and underdeveloped professional networks, pointing to the need for developing these further to formalise and nurture opportunities for researcher mobility at this career stage.

New frameworks to support mobility into industry could include contractually protected time that enables researchers to keep publishing when they are working in a business. Enabling early-career researchers in businesses to continue to develop their academic portfolio would equip them with the credentials needed should they decide to re-join universities at a later career stage. This approach is taken by Amazon to attract individual researchers who might otherwise stay in universities.

"There is a motivation to keep people publishing. Not only is it what scientists want to do, but peer-reviewed progress is important to advance the state of the art, contribute to the research community and demonstrate leadership in the various research areas. If I said you can no longer publish, many scientists in my team would resign tomorrow."

Dr Craig Saunders, Amazon
(Business representative)

The researcher perspective, Dr Ashmita Randawa, Head of Innovation at Sunderland Software City (SSC) and Lead for Digital Catapult in Northeast and Tees Valley.

Ashmita began her career working in R&D for Proctor & Gamble (P&G), a company she developed a relationship with during an undergraduate internship programme. She points to this internship as a key driver of her mobility as a researcher. After 6 years working with P&G, she undertook PhD training in education, and became a lecturer at the University of Oxford shortly after. Whilst a lecturer, she also became involved in several research projects for the Department for Education, which led to her current role as Head of Innovation at SSC and Lead for Digital Catapult in Northeast and Tees Valley.

Ashmita was originally trained as a biomedical engineer. Through her role at P&G, she was able to pursue interests in the education sector, specifically in spaces that recognised the value of bringing in staff with industry experience and has successfully transitioned between sectors and disciplines several times. Ashmita feels that mobility has allowed her to build an intellectually fulfilling career that has also facilitated financial stability and an ability to raise a family, something she felt may not have been possible if she worked solely in one sector or one discipline.

The IQE perspective, Dr Iwan Davis, Group Technology Director

Iwan has been with IQE for 35 years and has always worked within businesses. He has spent the last 13 years collaborating with universities on R&D, with IQE being particularly keen on recruiting academics into their business as soon after their PhD as possible.

To facilitate this, they have a partnership with several centres for doctoral training and also offer internships to postgraduate research students. Iwan points to a particular interest in recruiting young academics who are seen to hold fresh perspectives that aid in beneficial knowledge transfer. However, they are also still 'mouldable' and are perceived as having a significantly easier time in picking up key skills needed in business and are often invested in doing so with the company that hires them.

IQE have good relationships with universities, and since 2010 have also worked on joint proposals for PhD students to conduct research whilst also having PhD students who are based within IQE.

The Ulster University perspective, Tim Brundle, Director of Research and Impact & Fiona Wills, Partnerships and Services Manager

Tim & Fiona both pointed to Ulster University's unique geographic position in Northern Ireland as a key barrier to intersectoral mobility, both inward and outward. They feel it can often be harder to attract researchers, but once established they are also less likely to want to move elsewhere.

Staff retention is a key priority, and it feels like a loss when early career researchers are unable to secure a suitable contract within the university and move into industry permanently.

They see academic researchers moving into industry most frequently after the completion of their PhD or post-doctoral research. Due to Brexit and the associated end of freedom of movement, the job market has shrunk and researchers with a right to work in NI are in higher demand. Readily available roles are seen as driving early-career researchers into industry.

They are keen to retain staff, whilst also facilitating temporary mobility and increasing impact, through partnerships with businesses and the public sector. Within working contracts, professional progression is measured by three key criteria: teaching, research and innovation, and civic impact. Civic impact is quantified through how skills, knowledge, and networks are used for the benefit of society, with a primary driver of this being partnerships, which the university supports and facilitates.

4.6. Mid-career stage mobility

At the mid-career stage stakeholders perceive a reduction in the number of researchers moving across sector boundaries, i.e. already established professionals with 5+ years of experience in their field. This trend correlates with data from HESA⁵, which found mobility to decrease in both directions at this stage.

Many stakeholders and researchers see mid-career mobility as an institutional blind spot, with fewer formalised pathways open to researchers at this stage, which in turn feeds into fewer moving across sectors. As such, stakeholders and researchers see it as important to actively address mid-career mobility in institutional conversations.

"My observation is not too many of our staff switch employment to work in a university. Some do, especially later in their career and post-retirement, but by the time they get to mid-career they're working in industry because they like this mode of working, as opposed to working on one research topic. I think people settle into those things."

Professor Mark Jefferies, Rolls-Royce
(Business representative)

"At the end of a career it is relatively straightforward to draw in more experienced professionals, but it has always been more difficult in mid-career. Now it is very rare and it's very difficult to recruit [people at that career stage]."

Professor David Bogle, UCL
(University representative)

"The recruiter said that this company, and a few others, are trying to target people at my [mid-senior] level. Previously they have had people coming in much earlier, and frankly not being as useful to them in imparting as much extra knowledge as those with only industry experience, or much later where they may not have quite as much energy, and perhaps not as much active credibility. There's a big move to get people in their 40s, but, as I explained to them, the reason it might be hard to recruit at that stage is most of us are trying to get the final big promotion [to become a professor]."

⁵ [Building a Data Driven Picture of Researcher Intersectoral Mobility, \(2023\). NCUB.](#)

Dr Rasha Al-Lamee, Imperial College London
(Individual researcher)

When researchers at mid-career stage do move sectors, they do so via already established links between businesses and universities, i.e. where they have a joint interest in a project and are co-working in labs. Here, mobility tends to be perceived as part of researchers' everyday work, rather than a considered or targeted career move.

"The mobility we have seen with the Royal Academy and the Royal Society Industrial fellowship - mostly it is people from industry who want to work part-time in academia. We've made those things work and one of the early Royal Society fellowships that we set up with Manchester has spawned a 20-year relationship in research. It's a good way of fostering relations."

Dr Paul Gosling Thales
(Business representative)

"How it seems to happen is that during their career they get interested in doing specific research within industry, so they develop a relationship with the university, and then if the university offers them some kind of part-time professorship they move into the university. It's all conducted through very personal relationships."

Victoria O'Kelly, University of Liverpool
(University representative)

Although mid-career mobility is more limited, stakeholders and researchers point to drivers that motivate businesses and universities to recruit staff at this stage:

Reasons mid-career researchers are interested in mobility	Reasons universities are interested in mid-career researchers	Reasons businesses are interested in mid-career researchers
For university researchers: • Having greater impact by contributing skills to practical problem solving in businesses for a limited time. • Generating additional income in a consultancy role. For university and business researchers: • Building or further advancing partnerships between universities and businesses to generate funds and interest for joint projects.	• Extending both their staffs and the institute's professional networks for potential future collaborations. • 'Making a difference' and demonstrating this impact by showcasing how university research contributes to active problem solving in joint business/university projects.	• 'Making a difference' and financially profiting from projects that can only be realised with university researchers' support. • Solving a specific problem, i.e. benefitting from the specialist knowledge of a university researcher that is already established in their field.
<i>"The more senior you become, the less hands-on you are. You end up doing your own research through others. Having moved up quickly, I still wanted to do more of my own research, so I returned to academia."</i> Dr Duncan Hodges, Leonardo UK (Individual researcher)	<i>"We're extremely receptive in terms of gaining staff. We're very much applied, and industry-facing, so we have a big emphasis in terms of professional practice. A lot of our academic community have come from industry and perhaps are doing PhDs alongside their academic role."</i> Rebecca Edwards, Bournemouth University	<i>"There are certain things universities will always do much better than big companies like RIO. If you think about the energy transition for us and delivering the materials to drive the transition, to do it the most sustainably – there are major technical challenges. Some of those challenges are better</i>

	(University representative)	<i>solved within unis with the time and space to think and work freely and to experiment and fail and learn."</i> Dr Dan Walker, Rio Tinto (Business representative)
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A **key barrier to mid-career mobility** is that neither universities nor businesses are perceived to **equip their researchers with skills that are seen as essential for succeeding in the other sector.**

Businesses are interested in recruiting mid-career researchers from universities. However, they often perceive academic researchers to not have the necessary business skills to work in industry, such as project management skills, stakeholder communication skills, and commercial financial understanding. Business stakeholders believe this makes the recruitment process more difficult. This, coupled with inflexible contracts that do not facilitate secondments (due to difficulty backfilling posts in universities), limit mid-career mobility. For many stakeholders and researchers, this barrier highlights the need to develop frameworks that offer researchers the opportunity to develop translational skills; which are not just beneficial for succeeding in their current role, but also in the respective other sector, i.e. communication and management skills.

"We tend not to recruit more experienced academic researchers, as we tend to need people that are not just specialists. The type we take on have not just deep technical skills but other leadership attributes, management skills, or business acumen. It tends to be the ones that are more recently post-doctoral and haven't evolved their careers as far so they can shift and become those leaders or can deepen their technical expertise through the company and move up through our fellowship ladder."

Professor Mark Jefferies, Rolls-Royce
(Business representative)

Universities seldom recruit mid-career industry researchers. If they do, researchers are likely to encounter institutional barriers during the vetting and employment process. University stakeholders report that mid-career industry researchers often do not possess the credentials that are seen as necessary to succeed in a university position, e.g. a PhD, published peer reviewed journal articles, and teaching experience.

"We're extremely receptive in terms of gaining staff, I would say. But the mechanisms that we have in terms of practice are more challenging. So, you would be more likely to see industry staff

coming into the university through things like a visiting professorship or it could be quite informal arrangements like coming in and using laboratory spaces and equipment.”

Rebecca Edwards, Bournemouth University
(University representative)

In addition to the sector-specific barriers to mobility, **university and business stakeholders perceive researchers’ life stage as the biggest barrier to mid-career mobility**. Stakeholders see mid-career researchers as typically at a life stage that makes mobility more challenging, e.g. researchers are more likely to have roots in an area, such as a house and a family, which makes relocating for a new role more difficult.

The researcher perspective, Professor Gareth Loudon, Professor of Creativity at Royal College of Art (RCA).

Gareth holds a PhD in biomedical engineering and moved into an industry role in his early career. Working as an engineer for big technology companies, primarily in handwriting recognition and AI, Gareth became a leading figure in his field. He later returned to academia, motivated to conduct his own research projects.

Despite this early career success, in his mid-career Gareth felt drawn back to academia for several reasons. Primarily, he wanted to conduct his own research projects and felt that within business you are *given* a project to work on, whereas within the university you *develop* your own topic. This was alongside the motivation that he wanted to return to Wales to allow his children to have the same cultural experience that he had growing up.

Gareth feels that key barriers to mobility are the lack of understanding each sector has for the other’s accomplishments and measures – and particularly relates this to PhD training. He felt that many industry professionals see a PhD as a waste of time, whereas academia views them as a necessity. Academia values publications, but due to IP many industry researchers struggle to demonstrate impact within the REF system.

The greatest barrier he identified for researchers working within businesses and looking to move back into universities is salary. His salary was higher 25 years ago when he worked within businesses than it is now, despite being in a far more senior role. To offset this, Gareth set up his own consultancy firm alongside his move into academia. This was supported by the University of Cardiff offering a part-time contract, something he felt a business would not have facilitated.

The University of Nottingham perspective, Ben Sumner, Director of Research Development and Business Engagement

Ben's department has two main goals:

1. To increase research income by developing partnerships with industry to attract investment.
2. To increase impact through driving real world change via societal or economic outcomes.

To achieve these aims, they have major partnerships with several global businesses, such as Rolls-Royce, Unilever, and Siemens. As part of these partnerships, there is a 'people exchange' that places university researchers physically within Rolls-Royce, or places technical staff from Rolls-Royce within university labs. This facilitates collaboration and knowledge exchange between the organisations and sectors.

Despite these ambitions and schemes, Ben feels that the university lacks a formal approach to mobility, and it is said to be done more 'unconsciously', with partnerships and mobility being something worth working towards.

In terms of permanent mobility of staff, Ben recognised that there were many individual examples of research staff coming from or going to work within businesses, but felt overall it is hard for somebody who has no prior experience working in a university to join. Despite feeling that it is getting easier for researchers to work across sectors, the cultural shift, renegotiating a career development framework, and the importance of publications were all seen as barriers to more permanent mobility.

The GSK perspective, Malcolm Skingle, Director & Academic Liaison

Malcolm has run the academic liaison for GSK for over 20 years, in a team that negotiates around 600 researcher contracts per year across sites in Stevenage (UK) and Philadelphia (USA). They collaborate and seek partnerships with 'anyone who funds research', working across research councils, medical charities, and universities.

Malcolm's observation is that people will readily go from academia to industry, and that mobility on any level is a good thing which allows organisations to learn new things and think differently. They want to have real diversity of views and access to different ways of thinking about the same academic challenges. Mobility also allows GSK access to subject matter experts, people who have a real depth of understanding on one topic. Mobility also facilitates impact, not just from an economic perspective but also on different scientific disciplines. GSK had a higher citation impact factor than the University of

Oxford a few years ago, a point which Malcolm is keen to point out when negotiating partnerships.

Mobility in early career stages is common, with placements for postgraduate research students within GSK often facilitating future careers. Of the researchers GSK hire, all have some academic experience as they will all be required to hold an advanced degree or PhD.

When identifying potential barriers to mobility for those with more university experience looking to succeed in industry, he points to concerns around cultural factors and the need for people who are 'good team players', which can sometimes be an issue for researchers who are used to primarily working alone. Despite these barriers, Malcolm struggles to see any downsides to researcher mobility even if there are some frustrations at times.

4.7. Late-career stage mobility

In the late career stage (defined for the purpose of this study as an established career of 20+ years), interviewees reported that they largely observed researchers moving from businesses to universities. HESA data shows that again, greater numbers move into industry at this point than into academia, whilst numbers joining industry from academia remain consistent to the mid-career levels, making this perception interesting.

When exploring why senior researchers make a sector move, those who move from a business role reported to have been actively seeking this sector shift, and felt universities are open to recruiting them on an individual basis at this time. Conversely, despite the trends, it is perceived as unlikely that a senior university researcher will transition to a senior role in business, unless it is in a consulting capacity.

"I wanted to give back a bit. I'm at a stage of life where the kids are fledged, I'm financially stable and I no longer needed to work in a commercial environment, so I wanted to do something to feed into my wider ambitions of exploration in science. To give back to younger students too, early-stage academics, and coach them in ways that may have big impact in their future careers."

Dr Andrew Rogoyski, University of Surrey
(Individual researcher)

Reasons late-career researchers are interested in mobility	Reasons universities are interested in late-career researchers	Reasons businesses are interested in late-career researchers
For business researchers: • 'Giving back' to the research community by sharing industry knowledge. • Having more freedom in the subject they research and, ideally, contributing to a topic they themselves are passionate about. • Engaging with a different work rhythm, that is perceived to be slower in an academic environment, as business projects and clients no longer structure the workday. For university researchers: • Having greater impact by contributing skills to practical problem solving in businesses	• Showcasing career opportunities to students and early-career researchers, i.e., that university education can lead to a successful industry career. • Demonstrating the practical aspects of research, e.g., through showcasing their work to staff and students and demonstrating how university expertise is applied in businesses. • Building future opportunities for mobility and joint business-university research by benefiting from researchers' networks. • Securing a reputational advantage for the university that lies in attracting high-calibre business researchers.	• Solving a specific problem, i.e. benefitting from the specialist knowledge of a senior university researcher that is well-established in their field. • 'Making a difference' and financially profiting off projects that can only be realised with a senior university researcher's support. • Reputational gain for the business by showcasing which influential researchers they have strong relationships with.
<i>"Bringing people in that have focused on industry-based research... know how to bring research to life. All</i>	<i>"We've had real success for people there having the confidence to move. It's reputational. It's</i>	<i>"There are advantages of specifically employing academics. We work with universities for a lot of reasons but a few of</i>

<i>those lived experiences create challenging and innovative research. Bringing people in that have different perspectives enriches the research and creates much more powerful solutions."</i> Professor Richard Dashwood, Coventry University (University representative)	<i>good for the university."</i> Victoria O'Kelly, University of Liverpool (University representative)	<i>the reasons are the diversity of thought, the rigour in thinking, the intellectual power."</i> Professor Mark Jefferies, Rolls Royce (Business representative)
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Similarly to mid-career researchers, it is clear that sector-specific skills can become barriers in late-career researchers' opportunity to move sectors.

Stakeholders and individual researchers believe barriers predominantly affect university researchers who would like to join industry beyond a temporary consultancy role. Here the central barriers are seen to be that businesses are less likely to consider senior academics for a full-time role as they are viewed to be lacking essential skills necessary to succeed at senior business level, e.g. advanced managerial skills, business and finance skills, and the lack of frameworks to support the transition to industry.

There are perceived to be few barriers for industry researchers joining universities. At this career stage, a publication record is considered to be of less importance, with recruiters looking instead at the researchers' long-term industry career in place of the usual recruitment credentials.

The researcher perspective, Dr Andrew Rogoyski, Director of Innovation (Institute for People Centred AI) at University of Surrey

After his PhD, Andrew Rogoyski worked within academia in a postdoctoral role, but made the move to industry early in his career. Here he worked as a researcher for AI companies focusing on space and defence and later on in cyber security. He feels his move to industry came about due to being 'stuck in academic limbo' without a secure contract or decent pay as a postdoctoral researcher. When he was at the stage in his life where he wanted to buy a house and start a family, he did not feel this would be possible whilst working as an early-career researcher in academia.

After 30 years working in industry, and once his children became financially stable themselves, he felt he wanted to 'give back a bit' whilst exploring his wider ambitions in research. He felt like working with early-career academics

and coaching them on the skills they need to have successful careers would be a rewarding way to spend the latter part of his career.

Andrew recognises that money is the primary barrier for industry researchers moving to academia, particularly in the AI sector where salaries are often 5-10x that what they would be in academia. Another key barrier relates to universities focusing on citable articles. Due to IP issues, much of Andrew's work was unable to be published in this way. He felt lucky to move to an institution that recognised and took an interest in his experience and saw the value it could bring to both teaching and research within the university.

The Imperial College perspective, Professor Mary Ryan, Vice-Provost of Research and Enterprise

Mary's role involves interfacing with research funding councils to help academics and industry work together. There are several ways in which Imperial encourages mobility, due to seeing the value mobility has in delivering broader research impact and bringing diverse ways of thinking both in to and sharing out of the university. This is done through encouraging industry sabbaticals for outward mobility, and a scheme called 'Professors of Practice' which enables senior industry researchers to move into the university at a more senior position than they may have otherwise been able to.

The scheme enables recognition and recruitment of industry skills and facilitates late-stage career mobility. There are still barriers, however, particularly surrounding the tension between promoting academic staff who may have developed skills and knowledge within the university compared to hiring new staff who may bring fresh perspectives and ideas.

The Northumbrian Water perspective, Dr Angela MacOscar, Head of Innovation

Angela has worked for 5 years in the water sector, which is facing a lot of pressure and investment due to environmental crises. Angela's role involves collaboration with academia and other industry partners. She sees mobility as key to breaking down 'siloes thinking' and enabling knowledge exchange. They do so by funding partnerships and projects.

Angela has noticed that gaining staff from academia is quite common in their early careers but becomes less common during the mid- and late-career stages. She feels that the pace of work, reduced flexibility to taking time off, and freedom to pursue one's own research topics are all potential barriers for those who become more established within academia before moving to industry.

Angela has observed that late-career stage researchers from universities often enter the business without a clear idea of what the job will look like day to day, and it sometimes does not match their expectations. Compared to the university environment which is seen as 'freer', Angela feels businesses are more direct in how researchers should spend their time and operate in an environment that is higher pressure and has more rules.

Another key barrier Angela sees is communication style, both between colleagues and managers, but also in writing and presentation of information – shifting from a more technical writing style to more of a storytelling mode that can hold the attention of people, particularly those who may not be fellow experts.

5. Differences between academia and industry

Speaking with university and business stakeholders as well as individual researchers it became obvious that the **different ways of working and thinking between sectors can be equally a central barrier stopping researchers from moving across sectors, and a source for success within a new role.**

"A lot of the people like myself, we've been specifically recruited because we come from outside of academia and have that business connection and the experience of working outside academia and I think that brings new perspectives."

Victoria O'Kelly, University of Liverpool
(University representative)

One of the central barriers limiting mobility between universities and businesses that emerged from this research is the perception each sector has about the other. This study showed that misconceptions and stereotypes continue to persist in both academia and industry, such as the assumption that academics are 'comfortably sitting in ivory towers', or that researchers in business are mostly driven by profit. But whilst both stakeholders and businesses point to some assumptions regarding cultural differences **the barriers addressed primarily point to the different skills, ways of working and thinking, and comparability of achievements.**

"I just think in academia, you are generally an absolute specialist in a wafer-thin space, whereas in a corporate environment you become a generalist."

Dr Angela MacOscar, Northumbrian Water Group
(Business representative)

Stakeholders and individual researchers point to the following aspects necessary for succeeding in each sector which are, conversely, believed to be lacking in the other sector.

Criteria	Stakeholders perceive that to succeed in universities a researcher needs...	Stakeholders perceive that to succeed in businesses a researcher needs...
Skills	• Teaching skills, i.e. to confidently lead, deliver and mark content • Student management skills reaching from pastoral advice for students to supervising students in their final projects	• Communication skills, i.e. being confident in effective internal and client facing communication • Writing skills, i.e. to express themselves in a clear, simple and ideally captivating way to e.g. win over clients

Ways of working	• Confidently juggling the many responsibilities of an academic, i.e. delivering high class research, whilst teaching and undertaking administrative duties • Feeling comfortable taking individual responsibility and ownership over teaching duties	• Comfortable to work in fast-paced solution-oriented environment, i.e. delivering results according to deadlines • Team working skills for joint problem solving • Management skills for confidently managing teams and projects
Ways of thinking	• Explorative, free and critical thinking to press boundaries of research	• Solution oriented, quick thinking for delivering solutions in a timely manner
Comparability of achievements	• Peer reviewed articles to prove impact as a central measure of success • Teaching credentials e.g. the skill to develop new modules and an impactful curriculum	• Portfolio of projects that clearly outlines the impact • Dissemination of research through e.g. interviews, blogs, and newspaper articles to prove reach of impact

To overcome these barriers, stakeholders and researchers suggest:

- **Establishing pathways** to upskill new joiners.
- **Offering workshops and modules in each sector to teach essential skills** that may be needed for practising mobility in the future.

"We can usually find roles for people to make that adjustment. Generally, industry is much more understanding of how to help graduates and first jobbers transition from academic into industry. There's a lot more support these days in all large companies for making those transition."

Dr Paul Gosling, Thales
(Business representative)

Despite barriers, **the perceived benefits of mobility outweigh the efforts for overcoming the difficulties of making the move.** Stakeholders and researchers recognise knowledge exchange as the crux of mobility. In order to reap the benefits of this exchange, and minimise barriers, stakeholders and researchers we spoke to advocate for bringing stakeholders and researchers of universities and businesses in one room to:

- **Frequently exchange research updates**, e.g. in conference or workshop style.
- **Give industry and universities a space** to facilitate networking.
- **Establish an agreed achievement framework** to recognise successes cross-sector.

6. The future of researcher mobility

With overall positive perceptions of researcher mobility, stakeholders and individual researchers believe that mobility has a promising future in the UK.

Stakeholders and researchers believe that there will be more researcher mobility across sectors in the future and are optimistic that central barriers at each career stage can be addressed. Further collaboration between universities and businesses, in the form of joint projects but also establishing intersectoral frameworks that allow for more researcher mobility, are believed to be central for reducing the barriers which limit cross-sector career moves and increasing mobility. Stakeholders and researchers alike believe that a main driver for increased levels of staff mobility is the desire and need to solve the big challenges society faces, e.g. climate change.

"I think the marriage of academia and industry experience is really important. Those who can bridge these worlds often have significant impact."

Dr Dan Walker, Rio Tinto
(Business representative)

Stakeholders and researchers believe that there will be a growing awareness of the positive impact and benefits mobility can bring. They expect that businesses and universities will seek to identify new ways of working together to increase shared benefits, such as increased impact and financial gains. With growing awareness of the benefits of mobility, stakeholders believe that businesses who were once hesitant to engage with universities or university researchers will actively seek partnerships to increase their competitive edge.

"In terms of the future of mobility, I think it will increase. The ways of working post covid have changed dramatically and I think anything where there are more relationships where the level of trust is built up between academic institutions and businesses can only be a good thing."

Professor Malcolm Skingle, GSK
(Business representative)

Some stakeholders believe that future mobility will be affected by a generational shift, i.e. changing attitudes and expectations around working conditions, **that will need to be taken into consideration when planning for the future of mobility.** Some stakeholders point out that the future workforce is less likely to stay with one institution for longer periods of time and have greater expectations for flexible working conditions. In addition, the future workforce is expected to choose more consciously who they work for as they align workplace choices with personal values, such as environmental sustainability. Stakeholders believe that future pathways need to allow for more frequent movement across sectors.

"I've got children at the start of their careers, or academic careers, and they will have many, many more jobs than I've had. The way that they see their employer, whether that be academic or corporate, is through a lens of 'what's in it for me'. So, I think we'll be seeing a lot more mobility, which will be great for that transference of knowledge."

Dr Angela MacOscar, Northumbrian Water Group
(Business representative)

A few stakeholders feel that UK universities may change their institutional make up to become more business-like, in order to attract the best talent and to not lose promising researchers to industry. This shift is seen as likely unless there is considerate investment in the UK to establish bridge organisations between universities and businesses. These types of organisations are seen as well established in the USA, France and Germany. Some stakeholders point to the German Fraunhofer-Gesellschaft, a leading organisation for applied science in Europe, as a best-in-class example for facilitating researcher mobility that the UK could learn from. Researchers of all stages, early, mid and late career, are seen as potentially benefitting from such an organisation as it enables frequent movement and knowledge exchange across sectors.

"If I think about how the US operates, there are several structures with large grants such as NSF and many individual collaborations. Universities tend to be geared up towards generating income in this fashion and are effectively their own business. Previously in the UK and with EU frameworks there were a raft of structures for involving government funding, large businesses and small SMEs. I would hope we could continue that model, but I wonder if we are drifting more towards the U.S. model and forcing more on the universities to be their own business."

Dr Craig Saunders, Amazon
(Business representative)

New work models like hybrid and digital working arrangements are expected to change some aspects of the daily work experience of researchers partaking in mobility. Whilst the majority of researcher mobility in STEM and innovation is seen as place-bound, there is seen to be room to develop hybrid working patterns. Here, researchers would only need to be on-site for some elements of their role, e.g. lab days, allowing them to work from home or in office hubs that are closer to their home. This would help to enable mobility amongst researchers who cannot fully relocate for a position.

"I think hybrid working has really been an eye opener in terms of how digital approaches can be utilised for everything. Also, the

awareness that overusing those approaches can lead to mental health problems. There's been a lot of learning through covid."

Dr Pilar Sepulveda, Catapult Network
(Individual researcher)

"I think we've learnt a lot during covid about physical vs virtual ways of working. [In the context of industry-university KE] I think the physical location of the individual within the university is important because they need to build relationships with the people in the department, walk the corridors and have the conversations. It's important for that person to go around the department and get to know the staff face to face. The rest of their time spent in industry, that doesn't need to be as much in person due to having already established these relationships."

Dr Paul Gosling, Thales
(Business representative)

7. Conclusions

Overall, business and university stakeholders, as well as individual researchers, express positive perceptions of mobility and emphasise that there is both a desire and need to promote mobility more across sectors and career stages.

The stakeholders and individual researchers interviewed perceive researcher mobility to be an opportunity for universities, businesses and individuals alike to learn from one another, and achieve greater depth in research and increased impact as a result.

This research has identified the following opportunities for intersectoral researcher mobility:

- **Stakeholders and individual researchers see a need for a universal definition of mobility across sectors, as well as joint frameworks and pathways for increasing researcher mobility across all career stages.**
 - Stakeholders see an opportunity to increase the numbers of researchers working across sector boundaries throughout their careers by raising awareness and bringing a formalised understanding across departments within their institution.
 - Frameworks are expected to be developed on an intersectoral level to offer equitable access to mobility, i.e. establishing an impartial framework that allows comparison on researchers' achievements in business and universities.
 - These frameworks are also expected to solve the question of who is primarily responsible for delivering mobility. A clear definition and transparency on institutions' intentions to pursue mobility is seen as helpful.
 - As part of these frameworks, pathways are expected to be established to overcome the skills gap identified between universities and business, making it easier for researchers to move sectors and ease into a new work environment (this is felt to be potentially most beneficial to mid-career researchers).
- **Both stakeholders and researchers see a need to develop frameworks and recruitment criteria that consider the barriers and motivations for intersectoral mobility at each career stage.**
 - New frameworks to support early-career researchers to move sector could include enabling early-career researchers in businesses to continue to develop their academic portfolio, therefore equipping them with the credentials needed should they decide to re-join academia.
 - Mid-career researchers are also likely to meet barriers when seeking to move sector full time, as their skills or credentials are often not considered transferable. As such there is a need to

develop frameworks that offer researchers the opportunity to develop translational skills, which are not just beneficial for succeeding in their current role, but also in the respective other sector, i.e. communication and management skills.

- As barriers at late-career stage are predominantly felt to affect university researchers who would like to join industry beyond a temporary consultancy role, frameworks that formalise the cross-sectoral skills of experienced and successful academics could aid their recruitment.
- **Taking a future oriented approach to mobility, i.e. creating contracts and working conditions that are flexible and future proof.**
 - Hybrid and digital working conditions are expected to minimise some of the individual barriers some researchers experience, e.g. having to geographically relocate in order to pursue a new role.
 - Flexible contracts that allow for movement across sectors may help universities to retain promising talent who otherwise may permanently leave to join businesses.
 - Opportunities that facilitate future trends for workers, e.g. greater emphasis on work-life balance, are likely to support mobility.
- **Showcasing research and researcher mobility in frequent and joint events of businesses and universities, to bring together stakeholders from a wide range of locations, industries and institutions.**
 - This will demonstrate the impact of research in other sectors and further highlight the need for mobility, facilitate networking for potential future projects between universities and businesses, and bring business and academic researchers together in one room to minimise the perceived sectoral cultural differences.
 - The MIT Energy Initiative hosted by Massachusetts Institute of Technology was highlighted as an example of the benefits of these joint events. The initiative runs a variety of annual events and demonstrates the benefits of bringing together stakeholders from different sectors, providing funding, recruitment and learning opportunities.

Appendix

Appendix 1. Contributors to the research

Contributor	Organisation	Role	Stakeholder Type
Dr Allan Colquhoun	Leonardo UK	University Liaison and Emerging Technologies Manager	Business representative
Claudette Botros	Airbus	Dean of Experts	Business representative
Dr Craig Saunders	Amazon	Director of Machine Learning	Business representative
Dr Elizabeth Collins	Pfizer	Pharmaceutical Sciences Team Leader	Business representative
Dr Iwan Davies	IQE	Group Technology Director	Business representative
Professor Malcolm Skingle	GSK	Director of Academia Liaison	Business representative
Dr Paul Gosling	Thales	Chief Technology Officer UK	Business representative
Patrick Soyer	Airbus	University Relations Manager	Business representative
Professor Mark Jefferies	Rolls-Royce	Chief of University Research Liaison	Business representative
Rob Martin	Airbus	Employer Brand and Marketing Manager	Business representative
Tom Kneen	Cisco	Head of Academic, Research & Technology Partnerships	Business representative
Dr Angela MacOscar	Northumbrian Water	Head of Innovation	Business representative
Ben Sumner	University of Nottingham	Director of Research Development and Business Engagement	University representative

Dr Catherine Headley	University of Manchester	Head of Business Engagement and Knowledge Exchange	University representative
Professor Colin Bain	Durham University	Pro-Vice-Chancellor (Research)	University representative
Fiona Wills	Ulster University	Partnerships & Services Manager	University representative
Professor Jane Macnaughton	Durham University	Director of the Institute for Medical Humanities	University representative
Martin Blunt	University of Central Lancashire (UCLan)	Head of Enterprise & Engagement Unit	University representative
Professor David Bogle	University College London (UCL)	Pro-Vice-Provost	University representative
Professor Mary Ryan	Imperial College London	Vice Provost for Research and Enterprise	University representative
Professor Richard Dashwood	Coventry University	Deputy Vice-Chancellor for Research	University representative
Rebecca Edwards	Bournemouth University	Senior Research Development & Support Manager	University representative
Tim Brundle	Ulster University	Director of Research & Impact	University representative
Victoria O'Kelly	University of Liverpool	Senior Partnerships and Innovation Manager	University representative
Dr Charlotte Criscuolo	Drug Discovery Business	Senior Scientist 1	Individual researcher
Dr Andrew Rogoyski	University of Surrey	Director of Innovation and Partnerships	Individual researcher
Dr Ashmita Randhawa	Sunderland Software City	Head of Innovation	Individual researcher
Dr Dan Walker	Rio Tinto	Deputy Group Chief Scientist	Individual researcher

Dr Duncan Hodges	Leonardo UK	Capability Lead	Individual researcher
Dr Rasha Al-Lamee	Imperial College London	Clinical Senior Lecturer	Individual researcher
Professor Gareth Loudon	Royal College of Art (RCA)	Professor of Creativity	Individual researcher
Dr Pilar Sepulveda	Catapult Network	Director of the Catapult Network Development Office	Individual researcher
Dr Zoë Ayres	The Open University	Head of Laboratory Facilities	Individual researcher
Dr Ian Hancox MBE	University of Warwick	Director of Research Technology and Technical Strategy	Technician representative
Dr Kelly Vere	University of Nottingham	Director of Technical Strategy	Technician representative
Emma Dunbar	Swansea University	Director of Research, Engagement, and Innovation	Pilot study participant
Professor Gareth Jenkins	Swansea University	Associate Dean for Research, Innovation, and Impact	Pilot study participant
Jess Hughes	Swansea University	Business Engagement Officer	Pilot study participant
Steve Owen	Swansea University	Head of the Digital Office	Pilot study participant
Professor Peter Dunstan	Swansea University	Professor and Deputy Pro Vice Chancellor	Pilot study participant
Professor Louisa Huxtable-Thomas	Swansea University	Lead for Enterprise, Partnerships, and Innovation	Pilot study participant
Dr Mark Penny	Swansea University	Hub Manager, Faculty of Science & Engineering	Pilot study participant
Dr Martin Steggall	University of South Wales	Vice Chancellor Research and Student Experience	Pilot study participant

Dr Louise Bright	University of South Wales	Director of Research and Business Engagement	Pilot study participant
Julie Bellamy	University of South Wales	Director of Engagement, Research and Commercial Services	Pilot study participant
Dr Elaine Huntley	University of South Wales	Graduate School Manager	Pilot study participant

Appendix 2. Detailed methodology

The pilot stage of the research provided NCUB with a clear picture of which stakeholders needed to be interviewed to gain further insight into mobility patterns within the UK. NCUB identified interview targets through their membership base, and wider sector engagement, to identify specific people for recruitment. Following this, NCUB sent out initial warm-up letters to stakeholders and researchers who were recruited to take part in the qualitative stage of the research based on their current role and personal experiences of mobility. This helped to reassure potential participants that the research was genuine. Upon agreeing to take part, these 'warm' leads were then shared with Thinks to complete the recruitment process by sending a formal invitation and scheduling the interview.

One-on-one interviews were 60 minutes in length, with interviews with two or three people extended to 75 minutes. A discussion guide was used to structure the interview and ensure maximum value was drawn from the conversations. All interviews were recorded for note taking and data analysis purposes.

Data analysis took the form of an initial content analysis to classify responses from each interview by topic and question. Content was drawn from audio recordings of each interview and placed in a grid format. A thematic analysis was then conducted to draw out themes, insights and supporting evidence within each topic and question. Quotations from individual participants were noted, and transcribed verbatim, where they illustrated relevant themes and insights. Several of these have been used throughout the report where consent was given for their publication by the stakeholder.

Appendix 3. Discussion guide summary

Universities and Businesses Discussion Guide: Where necessary academia/industry and university/business were swapped to allow the flexible use of this guide for both university stakeholders and business stakeholders, however the structure and questions remained otherwise the same.

Section and aim	Key questions and probes	Time	Total
Introduction and warm-up	My name is [XXX] and I'm a researcher from an independent research agency called Thinks Insight & Strategy. Thinks Insight is conducting this research on behalf of the National Centre for Universities and Business (NCUB). This research aims to explore experiences of researchers when they move between innovation and research roles in universities and businesses. This interview seeks to gain insights into staff	5	5

	mobility within your university and your views on cross-sector staff mobility more generally. As part of this research, we are also interviewing other professionals like yourself. To start with, could you tell me a little bit about the university you work at, your professional role, and how long you have worked there?		
Defining mobility	I'd like to ask you a bit more about your universities approach to researcher mobility. Firstly, how would you/your university define mobility? ○ Do you have/use a formalised definition? ○ Is there another term that your company would use? By mobility we refer to "<i>The physical, temporary or permanent, mobility of researchers from one sector to another – academia-to-industry, or industry-to-academia.</i>" • Firstly, how does this definition of 'mobility' compare to your institution's understanding of it? ○ Is there anything missing? ○ Are there any other forms of cross-sector working that you recognise? ○ Is there a term, other than 'mobility', that you would use to describe researchers transition from universities and businesses and vice versa?	5	10
Inward mobility (gaining staff from industry)	Next, I'd like to talk to you about inward mobility, as in gaining staff from/with experience in industry. • What is your university's general attitude towards gaining staff from industry? Why?	15	25

	• How much of a conscious effort is there a to attract staff from industry/with industry experience? Why? ○ What type of organisations do they typically come from? <i>Probe on sector, organisation size and role type, and if business is local.</i> ○ Is there a 'typical' level in their career that they have reached? ▪ After how many years in industry do they typically join or re-join academia? <i>If there is effort to attract staff, ask:</i> • How does your university attract innovation staff from/with experience in industry? ○ What initiatives, incentives, or partnerships to attract industry staff does your university have, or use? ▪ How easy is it to keep a relationship with an industry partner? ▪ Who owns these relationships – individual research staff or departments? What impact does that have, if any? ○ Have you had any research staff join you from industry on a part time mobility scheme, such as a placement, or secondment? <i>If formalised schemes are used:</i> • What do staff think of these schemes? ○ How, if at all, do these schemes benefit the university? ○ What, if any, limitations do these schemes have? • Based on what you've heard, do you think there would be appetite for		
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	more opportunities to participate in these schemes? • What, if any, benefits does your university, or department, get by recruiting staff from industry/with industry experience? ○ How, if at all, does the expertise of staff joining from industry translate into success for the department/university? ○ How efficient, if at all, are universities in translating industry/business/research expertise into innovation strands for departments/universities? Why? <i>Probe on how freely staff can create</i> • What, if any, difficulties does your university, or department, face in recruiting staff from industry/with industry experience? ○ What downsides/challenges do you think there are to hiring staff with an industry background? ○ <i>If participant spontaneously raises REF (Research Excellence Framework). probe on role of REF in the adjustment of staff</i> • How, if at all, do universities need to make adjustments for new staff joining from industry to facilitate a smooth transition between sectors? ○ What internal pathways, if any, are in place to support the transition period? ○ Is there a staff member responsible for this, and for staff mobility more widely?		
Outward mobility (staff going into an industry)	We are now going to move on to outward mobility, meaning university staff going into an industry role. Firstly, let's talk about your research staff who engage with industry part time (i.e.	15	40

role) – part time	those who are employed by the university and also have an industry contract, or staff members who have been/are on industry placements and secondments). • How far, if at all, does your university encourage staff to gain experiences in/collaborate with industry as part of their contract? Why? ○ What is the university's attitude on placing staff in industry? <i>If university does encourage staff, ask:</i> • What motivates your university to encourage their staff to gain industry experience? • How, if at all, does the university benefit from placing staff in/with industry? <i>Probe on institutional benefits vs individual career benefits. Are the benefits realised?</i> • Does your university face any barriers when placing staff in/with industry? • How easy or difficult is it for universities/university staff to find opportunities and placements with industry? ○ Is this usually permanent / part-time / a secondment? ○ Are there any strategic partnerships in place? ○ Do placements ever result in staff loss? <i>Probe to establish if there is any institutional fear around this.</i> • Do you use formalised schemes when (if) you do this? What are they? ○ <i>Listen out for take note of specific schemes and fellowships.</i>		
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	○ <i>Probe on scheme characteristics – is it sector specific?</i> <i>If formalised schemes are used:</i> • What do staff think of these schemes? ○ How, if at all, do these schemes benefit the university? ○ What, if any, limitations do these schemes have? • Based on what you’ve heard, do you think there would be appetite for more opportunities to participate in these schemes? What downsides, if any, do you see when one of your university staff begins an industry role on a fixed-term or part time basis alongside their university contract? • What internal pathways, if any, are in place to support departments covering for staff that begin an industry role? <i>Probe on difference between fixed-term and part time.</i> What differences, if any, do you think there are between mobility of staff in different sectors? What defines these differences? <i>Are there differences across the levels of mobility (either part time or fully), between researchers across these sectors? Are some sectors more porous? Probe on</i> ▪ Advanced materials and manufacturing ▪ AI, digital and advanced computing ▪ Energy and environmental technologies ▪ Health and life sciences		
Outward mobility (staff going	Next, let’s talk about when research staff leave the university full time to move into an industry role.	7	47

into an industry role) – full time	• How often, when research staff leave the university, do they go to industry roles? • How easy, if at all, is it for staff to move to industry full time? <i>Probe on if staff are attractive employees to industry employers if they have the 'right' experiences and qualifications.</i> • Is there a career stage where this move happens most frequently? • When research staff move into industry roles full time, and leave the university, to what extent does your university face difficulties? • To what extent, if at all, is the university, or their department, seeking to continue engagement with a staff member that left for an industry role? <i>Probe on difference between fixed-term, part time and permanent</i> Again, are there differences between sectors? What defines these differences? ▪ Advanced materials and manufacturing ▪ AI, digital and advanced computing ▪ Energy and environmental technologies ▪ Health and life sciences		
Defining mobility and final reflections	Considering everything we have talked about if you had to summarise: • How would you 'sum up' the transition between academia and industry for innovation/research staff? • How viable do you believe a career is across both academia and industry?	10	57

	○ How far is there a culture/expectation to have worked in both academia and industry, or even continuously across sectors? ○ <i>Probe whether there is an emphasis on either inward or outward mobility</i> ○ What are the benefits and barriers to a career across both academia and industry? • What different opportunities do you know of for mid-career and more senior staff? ○ How do these opportunities differ along/at different stages of career progression [if any difference]? Thinking about the HE sector, how valuable would you say mobility is? Why? • What impact, if any, does mobility – inward and outward facing – bring to your university, and universities more generally? <i>Probe on e.g. knowledge, skills, funding promise, access to networks etc.</i> • How would you describe the overall success of schemes that encourage/facilitate mobility in the UK? ○ How, if at all, has staff mobility impacted local businesses/industries? ○ How, if at all, has staff mobility affected inward investment? • Are there best practice examples of how to encourage a stronger dialogue and exchange between the sectors? ○ Are you aware of any difference in other institutions and/or countries? If so which ones?		
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	• What do you think the future of mobility will look like? ◦ <i>Probe on 'watch outs', e.g. changing work environment towards hybrid working, changing contracts/contract frameworks in universities, changing institutional landscape.</i>		
Final reflections and wrap up	• Are there any thoughts on mobility you would like to address that we have not covered? Thank you and close.	3	60

Individual Researcher Discussion Guide:

Section and aim	Key questions and probes	Time	Total
Introduction and warm-up	My name is [XXX] and I'm a researcher from an independent research agency called Thinks Insight & Strategy. Thinks Insight is conducting this research on behalf of the National Centre for Universities and Business (NCUB). This research aims to explore experiences of researchers like yourself when you move between innovation and research roles in universities and businesses. As part of this research, we are also interviewing other professionals like yourself. To start with, could you tell me a little bit about your work, your professional role, and how long you have worked in your current position? Probe on • Do you work flexibly? • Are you able to work remotely (i.e. does your research require you to be in person, or does your role require/allow hybrid working)?	5	5

First-hand experience and views on researcher mobility (inward and outward)	<i>Note: It is likely that the interviewees will have experiences of varying degrees cross-sector mobility. The following questions function as a guide that should help to cover and generate sufficient data on cross sector mobility, should the interviewee not naturally address these.</i> I'd like to ask about your experiences of mobility. By mobility we refer to "The physical, temporary or permanent, mobility of researchers from one sector to another – academia-to-industry, or industry-to-academia." • Firstly, how does this definition of 'mobility' compare to your understanding of it? ○ Is there anything missing? ○ Is there a term, other than 'mobility', that you would use to describe researchers transition from universities and businesses and vice versa? • Could you tell us about your personal experience of mobility – between industry and academia? <i>Listen for inward, and outward and cross mobility, take notes and probe accordingly with following questions</i> Can you give me a brief overview of your career to date, with a particular focus on where you have moved between industry/academia?	10	15
Moving from industry to academia	You mentioned your move from industry to university. What were the motivating factors for you to pursue this move? • At what time in your career did you join the university? • Why did you move at that particular point in your career? <i>After how many years in industry do professionals like you typically join or re-join academia?</i>	15	30

	• Was this a full-time position or part time? <i>Probe on contract/scheme</i> • How did you hear about the position? ○ How much, if at all, do you think there is a conscious effort to attract staff from industry into universities? Why? ○ Do you think that universities face difficulties recruiting staff from industries? Why? When you joined your university, how would you describe your transition process to the new institution? • How far, if at all, did your expectations match the reality? Why? • Were there any processes in place to support the transition of industry staff? What were these and how effective were they? ○ How, if at all, do universities need to make adjustments for new staff joining from industry to facilitate a smooth transition between sectors? • What, if any, difficulties have you faced? <i>Listen for any mentions of REF, how freely they can create</i> ○ <i>When disclosing any difficulties (e.g. implications on research, private life) What were the consequences of this? What, if any, adjustments were made?</i> • In which ways, if at all, has your industry experience brought you an advantage working in university? • How, if at all, does your expertise from industry translate into success for the department/university? • What do you think is (your) industry's general attitude towards		
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	staff like you joining universities? Why? ○ How do you think a university, or department, benefits from recruiting a professional like you?		
Moving from industry to academia	You mentioned your move from academia to industry. I'd like to understand a bit more about this move. • Firstly, what motivated you to take on a role in industry? • Was/is this a full-time position or part time? <i>Probe on contract/scheme</i> • At what time in your career did you move to industry? • Why did you move at that particular point in your career <i>After how many years in university do professionals like you typically join or re-join industry?</i> • How did you become aware of this position? <i>Listen for secondment, part-time, contractual etc.</i> ○ How much, if at all, do you think there is a conscious effort to attract academic staff into industry? Why? ○ Do you think that industry faces difficulties recruiting staff from academia? Why? When you joined industry, how would you describe your transition process to the new organisation? • How far, if at all, did your expectations match the reality? Why? • Were there any processes in place to support the transition of people coming from university? What were these and how effective were they? ○ How, if at all, does the industry need to make adjustments for new staff joining from university to	15	45

	facilitate a smooth transition between sectors? • What, if any, difficulties have you faced? ◦ <i>When disclosing any difficulties (e.g. implications on research, private life) What were the consequences of this? What, if any, adjustments were made?</i> • In which ways, if at all, has your university experience brought you an advantage working in industry? • How, if at all, does your expertise from university translate into success for the business or wider industry sector you work in? • In which ways, if at all, did your university encourage you to gain experiences in industry as part of your contract and/or collaboration work? Why? • How, if at all, does the university benefit from placing staff like you in/with industry? <i>Probe on institutional benefits vs individual career benefits</i> • What are the barriers your university faces/faced when placing staff in/with industry?		
Defining mobility and final reflections	Considering everything we have talked about, if you had to summarise: • What benefits, if any, does mobility – inward, outward-facing and across sectors – have? <i>Probe on e.g. knowledge, skills, funding promise, access to networks etc.</i> • What help, if at all, do you believe should be provided by central institutions, e.g. UK Government or UKRI, for professionals that work across sectors? Why? • How important would you say that mobility has been for your career?	10	55

	○ How much mobility is positive for your career? Is it possible to move too much or too little? ○ How far, if at all, do you feel that you felt the benefits of mobility professionally? Why? ○ Are you in touch with organisations (universities or businesses) that you've previously worked at? Why? • Thinking about both the HE sector and industry, how valuable would you say mobility is? Why? • <i>If researcher had exposure to schemes, ask: From your experience, how would you describe the overall success of schemes that encourage/facilitate mobility in the UK?</i> ○ How, if at all, has staff mobility impacted local businesses/industries? ○ How, if at all, has staff mobility affected inward investment? • Are there best practice examples of how to encourage a stronger dialogue and exchange between the sectors? ○ Are you aware of any difference in other institutions and/or countries? If so which ones? • <i>Adjust question accordingly You mentioned you worked 'hybrid/full-time in-person' / 'full time remote'. How has this impacted your mobility between roles?</i> ○ Are there some roles which are easier/harder to move between because of the way the working contracts are designed?		
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	○ Do you think this will change in the future? <i>Probe on e.g. changing work environment towards hybrid working</i> • What do you think the future of mobility will look like? ○ <i>Probe on 'watch outs', e.g. changing contracts/contract frameworks in universities, changing institutional landscape</i> ○ What needs to change to improve mobility in the future? • <i>[If time allows]</i> Lastly, data on career pathways show a 'U' trend in mobility levels, where researchers are highly mobile at the beginning of their career, settle in the mid-stage, then greater mobility occurs later in career stages. Do you recognise this trend? ○ Do you recognise it as one-directional? What direction? ○ What barriers do you think reduce mobility at the middle career phase? ○ How do you think these could be overcome, and do you think getting more mobility at this phase would be a good thing?		
Final reflections and wrap up	• Are there any thoughts on mobility you would like to address that we have not covered? Thank you and close.	5	60