



The Exchange of Early Career Researchers between Universities and Businesses in the UK

A report to Research Councils UK

DECEMBER 2015

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Acknowledgements

This report is a collective effort of NCUB with above partners and RCUK colleagues, particularly the steering group, Iain Cameron and Clare Bhunnoo. At NCUB, David Docherty and Joan Wilson personally contributed to improving the report in subsequent revisions. We are grateful to all for continued support.

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Executive Summary

“Academics search for jobs that have as job title the words of their PhD Thesis”

Ric Parker (Rolls Royce)

- The mobility of researchers between universities and business enables researchers to directly apply academic knowledge in non-academic roles and environments. With an increasing supply of academic researchers in UK Higher Education Institutions (HEIs), many will find careers that are wholly or partially developed outside the academic environment. Despite clear benefits and need, this intelligence appears to not reach researchers effectively, resulting in insufficient mobility between academia and industry.
- We revisit the evidence on mobility of researchers between academia and industry in the UK, with the aid of original views of senior research managers in 11 universities and 9 businesses about the importance of this mobility, and about how universities and businesses can work together to expand and reward this important channel for translation of research into impact.
- Although the term “Early Career Researcher” (ECR) is not familiar among businesses, academic researchers are recognised as valuable resources in and out of academia. For HEIs, ECRs perform mostly research but increasingly teaching roles, they bring independent funding and independent thinking, and they contribute tangibly to the research performance of the HEI. For non-academic employers, academic researchers bring specialist knowledge combined with higher level skills in research methods, problem solving and programme management; they are trained to attract research funding, and have a portfolio of academic contacts.
- Academic researchers typically perform roles of their own research specialism within academia but less so in business. A more realistic and mutual understanding is needed regarding the opportunities available outside academia to perform highly specialised niche research. A significant expansion of the take up of academic researchers to work outside academia may only be possible in broader specialism and/or in non-research roles. Employers use collaborative agreements with HEIs to offer work experience and capture academics to work in industry.
- For senior managers of research in and out of academia the main barrier to the mobility of researchers between universities and business is a lack of appreciation for industry experience in academic reward structures. Industry experience is seen as a substitute not as a complement to the academic career and (dis)regarded accordingly. Evaluating research roles on the basis of refereed publications and limiting the value of non-academic achievements hinders the exchange of researchers between universities and businesses.
- Information gaps and misunderstandings of what researchers do in industry and in university limit mobility further. Academics are ill-informed about careers available in industry. Businesses are ill-informed about the skills and expertise held within academia. Academic researchers expect non-academic jobs to reflect their research interests, or else the move to a non-academic career is deemed a loss. Businesses seeking new expert talent find academic information systems more geared to academic careers, and this discourages them from searching beyond who is already known to them.
- Insufficient funding for researchers to gain experience outside academia impose additional costs of encouraging mobility for researchers and for employers, academic and not. Placements and temporary assignments are effective and popular but resource consuming for universities and businesses.
- In light of these findings recommendations for action aim to tackle poor rewards with a national charter for HEIs and businesses open to exchanging people, and improve information systems with digital brokerage services.

01. Introduction

Researchers and their capabilities are a fundamental asset of the national innovation system and underpin all of the aspirations of the Government's Plan for Growth: Science and Innovation (BIS, 2014a). Researchers drive the openness of the innovation system and the excellence of the science base, they deploy, develop, and maintain the excellent research facilities that make the UK a research destination for foreign talent, and they carry the weight of collaboration and knowledge exchange. Despite this key role in the translation of science into welfare, few of the actions in the Plan are aimed at researchers directly, and more specifically at how to enable researchers to build a career that fulfils this role. Only recently, the Dowling Review of University Business Collaboration (BIS, 2015), acknowledges the critical function of researchers as direct translators of the excellent knowledge created within the UK research base into economic growth and welfare.

This report, commissioned by RCUK, brings a better understanding of the challenges and opportunities faced at work by those who start their career in a research role in academia. Those known as Early Career Researchers (ECRs) in UK Higher Education Institutions (HEIs). The evidence, drawn from collaborating universities and business, backs findings reported by the researchers themselves (e.g. Vitae, 2013a and 2013b), in demonstrating that career paths for researchers are diverse and enriching in any sector, and that not all roads ought to lead to a professorship. Better information, dedicated resources, and a recognition of the benefits of inter-sectoral mobility, were identified by those engaged in this study as areas of opportunity to support the exchange of researchers with academia.

The UK HE system is developing exceptional research talent at a pace and it is well known that a lot of this talent will achieve maximum impact working outside the academic environment. Figures from the latest HESA Destinations of Leavers of Higher Education release show that 79% of postgraduate (teaching and research) qualifiers transitioned to employment within 6 months of graduation, but 40% of these remain employed within the education sector (HESA, 2014), therefore, only half of postgraduate qualifiers move to roles outside the education sector.

Work undertaken by Vitae over the years demonstrates that these official statistics on destinations of graduates are insufficient for capturing the breadth of careers available for highly qualified research staff. This is especially so for post-doctoral and early career researchers, who are increasing in number and importance among the specialised workforce in and out of academia, and in both sectors, they perform a variety of highly valued roles (Vitae, 2015). See, for example, the RCUK/HEFCE study of the impact of doctoral graduates for recent original evidence of the value of their competencies to business across all sectors (RCUK, 2014).

To add to the above without duplicating, we gathered views of employers and managers of these researchers in HEIs and non-academic employers¹, canvassing their policies and practices towards these academic researchers. Recent studies covered for our literature review (Appendix A) note that host institutions and host employers can play a fundamental role in the career choices of research staff. This report highlights the role of the employing organisations (academic and not) in driving the mobility of researchers in and out of academia.

Appendix B describes the methods we used for selecting the participating organisations, 11 HEIs and 9 non-academic employers of researchers, to discuss with us the policies and practices they have in relation to the recruitment and retention of experienced researchers. While we had limited control over the selection of participants, we aimed to ensure that the 20 organisations consulted were different enough from one another, and covered a good breadth of academic and non-academic employers of ECRs. The diversity and breadth of coverage in such a small sample contributes to the credibility of the qualitative evidence gathered through interviews.

¹ Throughout this report we use "business" and "industry" to include a wider set of employers in research and heritage sectors that are not-for-profit and even in receipt of public funds but are defined as "non-academic" meaning they are not a UK HEI. The public sector for example would be a non-academic employer of ECRs.

Early on in the literature review and during interview it became clear that the notion of an ECR was diverse across HEIs and non-existent outside academia. For industry, we proposed that an academic researcher is simply someone who starts their career in academia, upon finishing postgraduate education. HEIs consistently refer to ECRs as the group of staff that includes post-doctoral researchers. For some HEIs, PhD students were deemed as ECRs, but not for all. Businesses also referred to post-docs, rather than ECRs. All of these differences are discussed in the next section together with the roles these researchers perform and the prevailing policies for and practices of inter-sectoral mobility, where applicable to the responding organisation.

We then consider the career progression of ECRs, with a particular focus on mobility between academic and non-academic posts, the importance of these moves, and the barriers and opportunities for mobility perceived by respondents. We finish with perceptions of trends in inter-sectoral mobility across respondents, a summary of schemes mentioned as fostering mobility, and suggestions made in policy and practice that could help improve the current stance.

02. Definition of researchers, their roles, and mobility across sectors

2.1. Researchers and their roles

It is important to note at the outset that across HE and private sectors there are no standard or harmonised definitions of what constitutes an “early career” or “academic” researcher. This in itself is a valuable finding but to avoid biasing responses to one or another definition, no specific denomination of “researcher” was imposed for the interviews. Rather, respondents in academic and non-academic organisations were first asked to talk about the relevance and progression of research staff that had some seniority, but were still in the process of establishing a career. After the relevant staff in that organisation were identified, respondents were asked about the inter-sectoral mobility of these researchers specifically.

The term early career researcher (ECR) is widely used but with diverse meaning across HEIs. Businesses are not familiar with the term ECR and use post-doc instead.

For the smaller scale HEIs, with up to 100 research staff in total, ECRs included PhD students and recent graduates. For the larger scale HEIs with 1,000 research staff or more, PhDs were a separate group to ECRs. University respondents agreed that a rigid definition could be counterproductive, because the policies and practices available for career progression and mobility were not the exclusive remit of one or another group of staff, but open to all. When asked about the roles ECRs perform, all HEIs reported that ECRs predominantly perform research roles although 4 out of 11 HEIs noted increasing availability of teaching roles for their own definition of ECR. The nature of research roles were reportedly linked to the research project that the ECR was attached to: some roles required lab research, other roles required field trips, other roles required user engagement with the beneficiaries, be those business, consumers or learners.

Among the smaller and the specialist universities consulted, the roles and characteristics of ECRs could be differentiated. In the smaller scale HEIs all staff have to do research and teaching, including the early career academics, thus ECRs include teaching staff. In the specialist institutions they are bound to know and follow the employment practices of the sectors they specialise in. For example, at one HEI it was common for staff to hold part-time academic roles, spanning research, teaching, and knowledge exchange, together with part-time practitioner roles. In this HEI, ECRs are already part-time practitioners, and this renders the need to foster mobility between academic and non-academic roles less applicable, as it is part of the sector employment practices.

All HEIs reported that ECRs were mostly on fixed-term contracts (see also Appendix A) but many of these are “rolling contracts”, linked to consecutive grant awards, and do not imply a certain exit at the end of the term. Despite the diversity of opinion over what constitutes an ECR across the selected HEIs, independence was a distinctive trait mentioned by all in relation to these researchers, most often independent meant financially as in externally funded, but respondents also meant independent thinking and solution seeking. All HEIs emphasized the importance of ECRs in university performance: they are a fundamental piece of the complex pipeline of developing research talent. Some respondents could be quite specific about the contribution of ECRs to the HEI’s research performance: one had estimated that up to 80% of REF submitted outputs had an ECR as a co-author in some units of assessment.

ECRs bring to the HEI independent funding and independent thinking and improve performance rankings. They are “the” future.

The definition of researcher is even broader outside academia. Businesses were not familiar with the term “Early Career Researcher” and tended to refer to them as post-docs, but generally they just thought of researchers as members of staff in certain roles. Despite admitting that these researchers with academic experience are a small and special segment of staff, senior managers outside academia recognised the unique value they bring for their organisations. Whether to fill generic established posts or to fill specific needs for particular projects, researchers are recruited from academia into a range of roles, with the majority of businesses hiring academic researchers into general management roles as well as research roles. These academic researchers are valued for their specialism as well as competencies such as problem solving, leadership, communication, and project management skills, all of which they acquire through postdoctoral research. A couple of the non-academic employers reported that they hire academic researchers for their high problem solving capabilities, which can be applied in different divisions of the company, rather than their expertise in a particular discipline. These broader skills sets were noted as particularly important for the longer-term career progression among larger multinational corporate respondents.

2.2. Mobility and its benefits

When prompted about mobility, all respondents (academic and not) talked about temporary exchanges as well as permanent moves of researchers from academia to industry, and vice versa. Although all respondents were aware of and actively involved in inter-sectoral mobility, none of the selected organisations in either sector had a formal policy or strategy to foster the mobility of research staff in and/or out of academia. Businesses reported that academic researchers enter their sector either through the standard recruitment processes, or through collaborative projects with academic partners. The latter were reported as the main vehicle by which researchers come to work outside academia on a temporary basis. HEIs lent support to this premise that knowledge exchange activities (collaborative projects, consultancy) are an important enabler of inter-sectoral mobility, while at the same time serving as a source of income for the researcher. None of the senior managers consulted in HEIs hesitated to state that that inter-sectoral mobility is an integral part of university life. To demonstrate this fact, 6 out of 11 HEIs offered multiple references to published strategy documents of the HEI, policies and signed concordats stating their institution’s commitments to developing staff, knowledge exchange and impact, innovation, local development and so on. These public written commitments were offered as proof that mobility to non-academic roles is standard practice in HEIs.

In addition to documented commitments, all respondents (academic and not) were engaged in mobility, as part of hiring and developing academic researchers, and emphasized the benefits that inter-sectoral mobility bring to researchers, HEIs and businesses. According to senior managers in HEIs, getting exposure to the world of work in industry offers academics the chance to think outside ‘the academic bubble’ and to learn about the differences between theoretical and applied research. These benefits were acknowledged across all HEIs, who described how industry experience is a significant element of their commitment to broadening the career options of research staff. Some but not all HEIs explicitly linked these commitments to the Concordat to Support the Career Development of Researchers (Vitae, 2011).

The view that mobility improves career progression was seconded by businesses, all of whom talked about how temporary industry experience opens up opportunities for longer term employment, and how this exposure is very important for starting a career outside academia. All employers outside academia reported that a majority of their academic researchers had worked with the company before in an industrial placement, or a collaborative training scheme, or some other short-term research projects. This work experience gave researchers a better insight into the issues and challenges that the company faces and improved their worth to work outside academia².

Academic researchers are seen by businesses as adept at conducting research but in need of additional investment in commercial work skills, which can be developed working in industry.

Reporting on the benefits that mobility brings to non-academic employers, respondents explained that in academic researchers employers seek highly specialised skills to work on projects with set timescales or as part of collaborative activities. Occasionally, some of these temporary staff progress to a permanent role, however, most of them leave when the project ends. Businesses stressed the importance of mobility in enabling access to the latest research at universities and fresh thinking, which is crucial for maintaining competitiveness. In addition, businesses highlighted the importance of the connections and networks that researchers from academia bring to the organisation. This is particularly so for academics with some experience compared to recent doctorate graduates. For example, experienced academics were said to bring awareness and expertise for funding opportunities that others do not have. Managers outside academia also believed that mobility offers a valuable opportunity to intermingle their current researchers with those coming from academia, which creates important channels for learning and developing new ideas.

03. Policies and practices for recruiting and retaining research staff

ECRs are treated as members of staff across all employers consulted, and do not have separate human resource practices and/or employment conditions and benefits. Recruitment practices described by HEIs were similar to those used for all academic posts. The larger scale HEIs recruited ECRs internally and externally as vacancies opened, predominantly in response to the availability of funding for a research post. For the smaller and specialist HEIs with a smaller pool of resources, the recruitment and retention of research staff intended to keep “the best and brightest” talent within academia, seeking academic jobs in-house or in another HEI for all their research staff. All HEIs praised the benefits of national and international

² This resonates similar findings for work placements of undergraduate HE students, used often as a recruitment tool by employers to try candidates for a job (see Docherty and Fernandez, 2015).

initiatives, such as the Concordat (op cit.) or the Athena SWAN Charter³, to certify that researchers enjoy fair and equal treatment, and that their career development is fully integrated in the university structure.

The primary responsibility for the career development of ECRs in HEIs falls within the HR and Research Career Offices, some of which were set up with the aid of resources made available after the Roberts review⁴. All HEIs in this study have dedicated research career managers, but no career development initiative was exclusively for ECRs. All HEIs strive to retain their best research staff but admitted that not all of their current research talent could be academics at their current host university⁵. Expectations for retention varied widely across the consulted HEIs: for some, up to 85% of ECRs would not be retained beyond five years, while for others the expectation was to find a place and resources to keep all ECRs in academia. These two extremes of very limited and full retention illustrate diverse implications for management practices, since to fulfil an expectation of 100% retention, recruitment and mobility policies need to effectively target what talent can be kept in-house. Such need is less important when the expectation is 15% retention.

Although the HEIs consulted considered permanent moves or exits from academia to industry as a part of HR strategy for retention and progression, they also recognise that career choices are personal decisions of the researcher. For HEIs, exposing staff to industry experience carries a risk of losing research talent for the university and this poses a potential conflict of interest.

HEIs have a responsibility to expose ECRs to the non-academic sector, so that they can make informed choices, but not to usher ECRs to choose one or another career path.

For businesses, on the other hand, recruiting researchers is a niche market. Outside academia the number of researchers targeted and recruited to permanent roles is small, yet all respondents were engaged in taking up academic researchers into temporary roles, typically for an internal or externally-funded research project. Non academic employers mentioned diverse practices to recruit researchers into permanent roles, for example:

Academic researchers join industry through general recruitment channels, after applying directly to vacancies advertised on the organisation's, or university's website, or via other online job portals. Through this route academic researchers enter research and non-research roles. Two of the larger organisations noted that they had in the past singled out academic researchers with experience for recruitment into non advertised areas of expertise, but only after the candidate had applied to the general call.

- Businesses target and build relationships with universities that offer expertise in relevant areas by engaging in various collaboration activities such Knowledge Transfer Partnerships or joint research partnerships such as ICAM in Manchester or the Warwick Manufacturing Group. These connections are particularly valuable and are used by industry to target and employ specific skills and specialist talent that they need.
- Attending specialist conferences and on-campus events gives business access to qualified experts and the opportunity to discuss with academics the challenges and opportunities of working in industry. This recruitment channel offers the advantage of being led by the research rather than the HR team and, particularly for smaller employers, this is cost-effective a way for identifying potential recruits with relevant specialism.
- Various organisations from heritage to utilities have dedicated funding streams for post-doctoral students within the organisation and use these to identify future employees.
- Possibly due to the costs involved in recruitment and selection, smaller companies use innovative ways to find specialist staff such as social networking portals (e.g. LinkedIn or Meetups).

³ www.ecu.ac.uk/equality-charters/athena-swan

⁴ Two HEIs specifically said that funding from the Roberts Money had been allocated to provide a centrally coordinated careers advisory service or mentor. This is contemplated in the Hodge Review (RCUK, 2010).

⁵ Recent reports by AHR (2014) and The Royal Society (2014) also consider how well the expectations held by postdocs about careers in academia match the actual progression in their fields.

Despite the absence of comparable practices for the recruitment and retention of researchers, both businesses and universities reported being broadly satisfied with the extent of inter-sectoral mobility in their own organisation, particularly in terms of permanent moves. When asked to identify groups of HEI staff that were more prone or more exposed to inter-sectoral mobility, all interviewed HEIs acknowledged that more opportunities are available in STEM related subjects, which is reflected in a higher take-up in these areas. This is in keeping with the findings that resource and opportunity are the drivers of collaboration, and STEM subjects and STEM employers outside academia offer more resources and opportunities than non-STEM sectors. In line with the experience of HEIs, non-academic respondents reported receiving sufficient quality and quantity of academic researchers and high retention rates for them. These high levels of satisfaction may be a result of the limited number of new opportunities open to academic researchers to work in industry. Even respondents from leading research departments in large organisations reported that the number of opportunities and new recruits they take each year is small, and that recruitment of specialist researchers is expensive.

The sector needs to build a realistic understanding of the opportunities available in non-academic sectors for highly specialised research staff. Expanding the take up of ECRs outside academia may only be possible by including non-research roles as destinations.

All organisations, academic and not, were asked about their policies and practices for recruiting experts from industry back into academia, separately from ERCs. Practitioners returning back to academia provide a graphic demonstration that mobility to a non-academic job need not be a one way street. HEIs acknowledged that recruiting experts from industry to academia was increasingly common practice, and that while in some traditional disciplines, such as law or medicine, practising academics were a necessity, nowadays most other disciplines, such as computer science, engineering, art and design, agricultural sciences, and business studies (as mentioned by respondents) entail elements of practice, for which HEIs recruit practitioners for teaching and research.

Despite acknowledging a need, when it came to explaining the recruitment of practitioners into academic roles, even the specialist HEIs for whom practice-based learning is a must, reported difficulties. The one obstacle to recruiting practitioners cited by all HEIs was adapting the current reward systems in the academic profession to reflect the skills of these practitioners, which do not match the publication records of academics. The same reward structures based on academic excellence and publication also limit the ability of practitioners to securing research funding to develop their research portfolio. Practitioners do not compete for academic posts on a levelled ground, and HEIs acknowledged that although an increasing practice, the recruitment of experts from industry to academic posts is still uncommon.

Businesses on the other hand saw no difficulty with practitioners returning to academia, certainly not for those who held only temporary positions outside academia in specific collaboration projects, but neither for those with years of experience in the business who want to “give something back” and seek academic positions. Business respondents emphasized however that in order to return it is crucial to stay in touch with the academic community and take part in debates, workshops, and continue publishing. Non-academic employers concurred with HEIs that going back to academia to solely research roles can be more difficult due to the different reward structures in the two sectors.

04. Identifying challenges and building opportunities for research staff

The organisations consulted for this study, academic and not, agreed on what are the barriers to inter-sectoral mobility, and their answers can be classified into three groups: reward structures, resources and funding, and information gaps. We consider reasons and implications of each in turn.

4.1. Academic reward structures do not include the expertise acquired in non-academic roles

Two related but separable areas of conflict between the academic career and gaining experience in business were identified among the HEIs.

1. As with any other career break, on return from a non-academic role, the researchers are assessed on the grounds of academic achievement only. As a result of this, resources invested in business experience are perceived as a 'drag' on career development. The lack of rewards to mobility means that these non-academic activities are a substitute rather than a complement to academic achievement.
2. Many ECRs are employed under research grants with specific deadlines and delivery outputs. Where time in business is not built into the ECR funding it may be at odds with the delivery schedule. Respondents offered the examples of ECRs taking up teaching or other roles within academia, as akin to business experience in presenting time/delivery burdens in the development as academic researchers.

Businesses concurred with HEIs that a lack of appreciation of non-academic experience is a barrier to mobility, citing too narrow a focus on academic publications in specific journals as the only worthy output in academic rewards. All participating non-academic organisations have internationally renowned research divisions, and good publication records in these divisions, and yet, they acknowledged that outside academia, publications are by far not their ultimate goal. One respondent proposed the example that, in their fast moving sector, having a paper accepted to certain competitive international conferences, known for bringing the best practitioners together, was far more important than a publication. This was because at this conference they could see the latest advances as they happened, while papers can take too long to publish compared to the speed of advance in this sector.

Other examples of outputs and deliverables - other than publications - offered by non-academic respondents to add to the reward structures for mobile academics, included, curating exhibitions, attending practitioner conferences, leading projects in industry, and having gained funding for working outside academia, either from public funds or from other sources within the sector.

4.2. Insufficient funding for researchers to gain experience outside academia

While all HEIs and businesses could identify multiple schemes they offer and use for encouraging inter-sectoral mobility (examples in next section), they also agreed that mobility is costly, particularly temporary mobility, e.g. for projects, consultancy, industry placements, or secondments, and it needs dedicated resources.

These resources are needed not just for agreeing employment conditions; which some businesses reported as taxing, especially in relation to having to fit HEI demands in temporary placements⁶, but also, where grant funding is provided by the university or the business, administrative resources are needed for monitoring the use of funds and the quality of the work experience. All non-academic employers of researchers could name one or several schemes of public funding for researchers to gain industry experience, and they all had positive views about the benefits of these initiatives for mobility (and for their company). For some businesses, just being able to identify that the academic was not really geared to a career outside academia was a benefit of temporary mobility/placements. It allowed both sides to make better informed decisions at minimum cost.

Career progression has to be a choice of the researcher and no single path fits all.

The benefits of temporary exchanges of researchers for empowering researchers to make informed career decisions is an area of agreement that may justify public support for these exchanges. More and better resourced opportunities for researchers to experience non-academic work, and for business to identify those that are best suited for their posts, can increase the satisfaction of both researchers and employers with the outcomes, and tackle the misconception that there are no rewarding job opportunities for researchers outside the academic environment.

Where a lack of funding is a barrier to temporary exchanges, involving researchers in academic consultancy was suggested by universities and businesses as a good alternative to organising actual moves for researchers to work outside academia. This in addition brings resources for the university and specific solutions to well defined problems for non-academic partners.

4.3. Information gaps about careers of researchers in and out of academia

All respondents, but particularly among the businesses, noted that researchers are acutely unaware of their value outside academia, and of the diversity of roles available for them. Researchers do not behave as if they are conscious that academic recruitment practices and competencies do not overlap fully with the practices and competencies that will land them a job outside academia, for example, CVs have very different formats in and out of academia. Vitae and others before us have highlighted the inadequacy of information available for researchers to make choices about their careers. To their work we add the experience of senior managers of research and people, starting with non-academic employers.

Although all businesses reported satisfaction with the candidates and the skills possessed by the academic researchers they had employed, they also noted that the process of seeking a specialist for a particular area of need can be difficult. Despite being aware of multiple funding schemes, doctoral schemes, university-industry research centres and other means to link up businesses with academics, respondents noted there are big differences in how university-industry cooperation and mobility takes place, even across departments within a university. This makes the task of finding a match for a specialist job difficult, because the search has to be tailored to the department. A majority of businesses who are successfully filling their posts with researchers acknowledged that they stick to what they know, and use long-term partnerships in research to identify the right people. For one respondent that, despite being a large multinational, is just starting to

⁶ Five of the nine businesses mentioned difficulties with organising migration visas for foreign research staff and/or organising IP agreements for temporary placements.

engage with academic resources in the UK, the prospect of where to and how to go about targeting particular experts among academics is daunting. They effectively acknowledge that they would rather grow them “in house” than facing the task of finding them within UK academia.

Some respondents suggested that there may be a role for RCUK, as funders of many of these researchers, to work with non-academic employers to find ways of organising the information that is already available, in a way that is practical for employers, by area of non-academic application rather than by university, for example.

Information systems for finding expertise among the academic community are not optimised for business to venture off who they already know to identify the talent they need.

Businesses coincide with HEIs that researchers within academia have a restrictive view, or misunderstanding, of what careers are available in industry and what skills they offer that are valuable in a non-academic environment. Academic researchers tend to perceive their research and area specific skills to be of key importance, and discount their other skills that are relevant to industry, such as problem solving, leadership, communication, people management. Outside academia, qualifications might determine the starting point but not the further progression, which is more to do with flexibility and responsiveness to the business need.

While all HEIs were aware of the work of Vitae in this area and they had all signed the Concordat to Support Career Development, none of the businesses mentioned these efforts. This potentially opens another door for RCUK to consider with signatories whether reaching out to the non-academic sector may improve the functionality of the Concordat in fostering inter-sectoral mobility.

Businesses offered a balancing view of the barriers reported by HEIs specifically in relation to reported insufficient entry routes for experienced researchers from academia that are separate from those for graduates. For academic researchers, the prospect of being “demoted” to PhD graduate is a deterrent to mobility. To this claim businesses made a distinction between temporary placements, for which they do seek specific research specialists, often using existing contacts, and permanent jobs. Businesses confirmed they do not have specific recruitment channels for academic researchers in a narrow specialism because few of these are recruited a year. Non-academic employers contested the claim that a job “entry point” could be had for each researcher’s specific area of research. For longer term hires, even in a research post, businesses seek research competencies that will last, and the flexibility of moving research topics with need over time.

To enjoy a successful career outside academia the researcher needs to be flexible and responsive to the employer needs.

To change this perception of insufficient entry points to business, there is a need to broaden the expectation that a post-doctorate career is confined to a specific academic topic, to include research methods, programme and time management, and research funding and delivery. This requires building a culture of mutual appreciation of skills and roles of academic researchers in different contexts, but also recognising that some researchers have the potential to bring as valuable a contribution in commercial environments as in academic research.

For HEIs a so called “deficit culture” whereby an experienced researcher who chooses a career path outside academia is perceived as having failed or sold-out could be an important reputational deterrent to mobility. Business respondents claimed that such perceptions were more prevalent in the past than nowadays, but admitted that some misinformation remains over the quality of research, and the value of roles performed by researchers outside academia. Admittedly, the selected group of businesses included in this report have established reputations for conducting high quality research, including publications.

They are thus adamant that academics recruited to work as researchers in these businesses are involved in sector-leading research, and do not consider the move as a failure. While we cannot claim this will be the view of all employers of academic researchers, there is an opportunity for the sector to coordinate efforts better, so as to change the perception that a career in business is a residual choice when academia is no longer an option. More temporary exchanges of researchers give insights on the quality of research undertaken in these sector leaders, and can help dispel this myth. Wider campaigns to include smaller employers in the research sector, working across learned societies and professional associations, can help engage employers more effectively in demonstrating the value of all career paths for academic researchers.

The sector should work together to change any remaining perception that a career in business is a residual choice when academia is no longer an option.

Despite these barriers, all HEIs observe positive changes in the UK system towards a definitive better appreciation of industry experience as part of the academic life, as well as definitive and successful action to increase inter-sectoral mobility.

05. Trends in inter-sectoral mobility

When prompted about observed trends in the inter-sectoral mobility of researchers, respondents from academia and from business noted an increase in incentives and funding schemes for people exchanges in recent times, which in their view are linked to the wider impact agenda (REF and Pathways to Impact). These initiatives have resulted in a growing interest in the application of research and the recognition of people exchanges as a means to build partnerships, prompt collaborations, and ultimately provide good case studies for impact in REF. This was the case in all sectors but was felt more strongly in sectors where the dissemination of the impact of academic research is less prevalent, such as the cultural sector.

However there were also balancing views among some HEIs, which noted that an overreliance on excellence for research funding can deter HEIs from recruiting practitioners to academic positions, if perceived they are not going to improve on the excellence rating. The same overreliance on excellence could also deter SMEs from engaging with HEIs, if SMEs feel they do not need or cannot afford to have 4* researchers among their staff.

In line with reports from HEIs, for whom new generations of researchers are much more open to consider non-academic careers, respondents other than HEIs noted that in recent years there has been a greater awareness of research careers outside academia among PhDs and post-doctoral fellows, and a better understanding of these alternative career paths. This awareness heralds positive hopes for more inter-sectoral mobility in the future. In addition, businesses observed that universities are increasingly appointing people from outside academia to teaching roles, as a result of the recognition that this might boost their reputation and ranking for the recruitment of students.

Respondents identified many different schemes provided by themselves, both universities and business, as well as schemes funded by the Research Councils, Innovate UK and university led initiatives.

- Knowledge Transfer Networks (KTN); Knowledge Transfer Partnerships (KTP) and Doctoral Training Centres (DTC) were credited for making mobility happen and improving the employability of researchers.
- Grants that carry a need to spend time in industry such as those offered by BBSRC, Marie Curie and the Wellcome Trust tackle the potential trade of time in university for time in industry when funded by a research grant.

- Impact Acceleration Accounts (IAAs) encourage and facilitate the exchange of research in both directions between industry and academia.
- Joint University-Industry research centres such as ICAM in Manchester, GLAZGo in Glasgow, the Warwick Manufacturing Group and Medical Technologies at Leeds were mentioned by universities and industry as highly effective in rewarding and therefore enabling mobility as part of the academic career.
- The Breakthrough Information Technology Exchange (BITE) Impact Acceleration hub facilitates and funds placements in industry for early career researchers.
- Digital Heritage has helped to bring together the arts and humanities research community with the researchers in digital technology industry.
- The Rural Connective initiative is developing collaborations between academics, small businesses and local communities to champion the use of digital technologies and superfast broadband access in rural environments.
- Dedicated industry fellowships, such as those offered by the Royal Society, provide the reputation that time in industry alone does not always have.
- All HEIs cited having some funding schemes and competitions at the Department Faculty/School for a type of “field work” that could be used to fund time spent acquiring non-academic work experience.
- Targeted schemes for specific groups, such as SMEs, can attract new opportunities for mobility for example through First Step Awards in Scotland.
- The Scotland Food & Drink Skills Academy (SFDSA) funded by the Scottish Funding Council, Skills Development Scotland and Scottish Enterprise. The Academy is managed by Abertay University in partnership with industry leadership organisation, Scotland Food & Drink. The SFDSA will provide a central point for employers to gain access to high quality, relevant training for their staff.
- Interface - a central hub connecting businesses from a wide variety of national and international industries to Scotland’s 23 higher education and research institutes.
- CFA Institute Research Challenge -promoting best practices in equity research among the next generation of analysts by funding collaborative academic research projects.
- The Research Networking Scheme facilitates interactions between researchers and stakeholders through, for example, a short-term series of workshops, seminars, networking activities or other events.

All respondents would like to see more of any of the above but cautioned that additional placements to work in industry, and other mobility initiatives, require investments in money and resources. Any collaborative schemes must consider carefully how they are to be financed, which is even more significant in the current restrained expenditure and funding environment.

Contributors to this study however conveyed a willingness to work collaboratively and share responsibility and resources for tackling barriers to mobility with better and more accurate information sharing between universities and business about career progression for ERCs in and out of academia.

06. Conclusion and recommendations

While the fieldwork in this study reached only 11 HEIs and 9 employers of researchers there was enough breadth among them in terms of size, specialism and sector for the common views to be indicative of policies, practices and perceptions held more broadly than themselves.

Language remains an area where collaborating universities and businesses could work together to improve mutual understanding in the mobility of researchers. For example, while across HEIs the term Early Career Researcher is used widely, it does not include the same categories of staff for all HEIs, and the same term is not used by businesses at all. The questionnaires we developed had to be adapted to take this into account, lest it would have been difficult to recruit non-academic participants (see Appendix B). A lack of common understanding of who they are targeting or trying to help move or recruit may equally hinder the success of collaborations aimed at improving mobility.

All HEIs and non-academic employers that participated in this study are engaged in mobility, and they do so because it is beneficial for them. We cannot assume the same benefits cited in this study will apply to other organisations, but some benefits are general enough to credibly apply more widely. For HEIs, ECRs perform predominantly research but increasingly also teaching roles, they bring independent funding and independent thinking, and they contribute noticeably to the research performance of the HEI. For non-academic employers, academic researchers bring specialist knowledge combined with highly developed skills in research methods, problem solving and project management, an ability to attract research funding and a portfolio of academic contacts.

The mobility of academic researchers enables them to identify and nurture the competencies they have that are of value in research and non-research roles outside academia, many of which they acquired through their research roles within academia. Researchers who did not experience mobility are often unaware of what these competencies are and how to demonstrate them in non-academic recruitment.

Neither HEIs nor business have special arrangements for the recruitment and retention of ECRs that are distinct from other staff. In both sectors these researchers are treated as other members of staff.

Barriers to mobility, particularly to temporary mobility or placements, were identified alongside three separate lines of action:

- Academic rewards are designed for academic achievements only with a focus on publications. This puts investment in non-academic roles and activities at odds with the academic career and deters mobility. Businesses were particularly critical of this, stating that academic rewards based on publications are narrow, and do not reflect the breadth of delivery outputs that a research career entails in or out of academia.
- Information gaps about careers available outside academia and expertise within academia hinder the better allocation of research talent through mobility. Academic researchers expect the non-academic sector to reflect their research interests, and their academic drive makes them appear inflexible and lacking business acumen to employers. Businesses seeking new expert talent find academic information systems complex and geared to academic careers and, as a result, stick to who they already know when searching for new talent. These information gaps drive a wedge between the two sectors that deters the movement of talent back and forth.
- Insufficient resources for researchers to gain work experience outside academia. All respondents could identify multiple schemes to encourage inter-sectoral mobility, but they equally acknowledge that the practice is costly for the researcher and for the academic and non-academic employer.

Despite the barriers, all participants in this study were positive about recent trends in the image and the take-up of inter-sectoral mobility. Multiple examples of successful schemes were offered and the recent policy emphasis on impact is noticeably changing perceptions. New generations of researchers are more open to a career outside academia, but more could be done to ease out the task of finding a suitable job outside academia for researchers, and the task of finding and hiring relevant expert talent within academia for businesses.

Since individually, organisations report being satisfied but collectively they see a need to encourage more mobility there is a need to make good practice more visible, and to commit publicly to expanding reward structures, so that mobility is a voluntary complement, not a substitute, in academic career development.

Recommendations

Based on the facts and perceptions provided by our partners in this study, we offer the following recommendations for action.

- 1.** For HEIs, the Concordat to Support the Career Development of Researchers (Vitae, 2011) represents their commitment to inter-sectoral mobility. None of the consulted non-academic organisations were aware of this Concordat. To make the commitment of HEIs more visible the sector should consider expanding the Concordat or develop a new charter specifically for inter-sectoral mobility with input and signatories from businesses, so that the commitment from both sides is contained and shown in a single document known to all involved.
- 2.** Given that all respondents agree that there are not enough rewards for inter-sectoral mobility within academic structures, and that this hinders mobility, a competition of a similar style to Impact Awards but dedicated to mobility between academia and business, could provide a direct and visible reward to mobility without interfering with the autonomy of HEIs. The recommendations of the Dowling Review (BIS, 2015) highlighting the importance of people for collaboration (typically recommendations 2 through to 9) are also practical solutions for including people exchanges in funding formulas for HEIs, and balancing the relative worth of experience in and out of academia for the recruitment and promotion of academic staff.
- 3.** Improve the visibility of existing and new opportunities and schemes aimed at fostering and funding mobility of researchers between academic and non-academic positions. The NCUB Brokerage Platform, among others, should have a dedicated section for showcasing people exchanges.
- 4.** Outreach communications in the academic sectors should, as much as possible, be geared to what the non-academic users need and evolve with those needs. Businesses suggested using simpler language in outreach platforms e.g. the term Early Career Researcher is not geared to reach out to businesses.

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Appendix A: Literature and Evidence Review

The incidence and benefits of people exchanges between universities and business have been approached from two points of view that correspond well with demand and supply. The demand side traditionally represented by the receiving industry organisations and the impact of people exchanges on firm performance. The supply side typically following the careers of researchers when they opt in to a spell of industry experience, whether temporary or permanently.

Demonstrating benefits of exchanging researchers fits within the wider context of university industry collaboration and the impact of publicly funded science and research investments outside academia (BIS, 2013; EU, 2014). There are many channels for science and research to translate into prosperity and welfare and the employment of researchers outside the academic environment is but one of them. It is thus worth noting that by focussing only on inter-sectoral mobility we will give a partial view of the general benefits of research but we aim to give as complete a view of this one channel of impact as we can gather.

Taking the point of view of researchers (akin to supply side), national and international agencies are increasingly interested in understanding career paths for PhDs and researchers in general.

- In the EU, the MORE Survey⁷ sought a better understanding of mobility patterns for researchers working in academia and outside academia in the participating countries. Three separate surveys were carried out for researchers working in HEIs, in Research Institutes and in Industry, albeit with limited representation and comparability in each sector and across countries. While the main object of study was the factors influencing geographical mobility of researchers in different employers, some findings refer to job-to-job mobility where the destination job is in a different sector (academic, research institute, industry) than origin. This type of mobility was found to be much less prevalent than geographical mobility for all, but more likely for those in natural sciences and those who had been exposed to industry during their study.
- The OECD/UNESCO/Institute for Statistics/Eurostat Careers of Doctoral Holders (CDH)⁸ project follows career experiences of doctoral holders across the OECD and shows wide variation in observed and reported inter-sectoral mobility but across countries it also finds a general widening of job destinations of PhD holders beyond academia.
- In the UK Vitae's work through the Careers in Research Online (Vitae, 2013a) and Principal Investigators and Research Leaders (Vitae, 2013b) surveys follow careers and aspirations of academic researchers in the UK. These two also demonstrate increasing integration with the non-academic sector despite not having a focus on inter-sectoral mobility. Of specific relevance for this study are the findings that many more respondents would like to have industry experience than actually do; but also that many more respondents aim to maintain a career in academia than actually do. Both these findings show higher supply from researchers for exchanges, and lower demand than initially expected from academic institutions for employing their own researchers.
- Various other papers consider only a selection of researchers or PhD students, making their findings limitedly applicable to other groups of researchers. Salient findings from these include the observation that researchers who stay in academia tend to have a "taste for science" (choice of topic and timeline), that is less prevalent in those who leave academia (Roach & Sauermann, 2010), and some researchers even pay a premium for that freedom, earning less in academia than in industry (Stern, 2004). These studies indicate a certain self-selection of certain scientists out of academia for personal preferences or constraints.

⁷ http://ec.europa.eu/euraxess/pdf/research_policies/MORE_final_report_final_version.pdf

⁸ www.oecd.org/science/inno/oecdunescoinstituteforstatisticseurostatcareersofdoctorateholderscdhproject.html

By focussing on the outcomes rather than the process of mobility, all of the above rarely consider whether the channels for inter-sectoral mobility are embedded within the strategy of the host institution. This absence of institutional roles in mobility fits well with the conclusions that exchanges between academia and industry are by certain types of pre-disposed researchers, regardless of the host. However, recent evidence from Germany suggests that the host institution plays a role in shaping the future career of its researchers (Hottenrott & Lawson, 2015). Unsurprisingly the source of funding for mobility, whether any funds come from industry or not, is an important enabler of mobility, but also the research orientation of the host department plays a role, some encourage industry experience more than others. Equally, on return from industry experience, researchers can open up new avenues for collaboration (Vitae, 2012), thereby impacting positively on the host institution. Clearly, whether encouraging the mobility through external funding, or research orientation, or benefiting from new partnerships built through industry experience, the host institution has stakes on the inter-sectoral mobility of researchers.

From the industry's point of view, evidence on the impact of employing experienced researchers is less forthcoming as few employers appear to report employment of PhD holders or research staff in general surveys. Typically, empirical studies observe positive relationships between R&D resources and firm performance and from these studies infer that researchers must be among the hidden effects within R&D resources. For some specific countries, matched employer-employee data is available to separate the independent effect of R&D workers on innovation performance. Ejsing et al (2013) find that in Denmark, the mobility of experienced scientists into firms has an independent positive effect on patenting that is larger than hiring recent graduates, but only if the firm has had some experience hiring university researchers. This suggests that reaping the benefits of incoming research talent from academia is an investment that improves with experience hosting these employees. Perhaps because the mutual understanding of the different roles that experienced researchers perform in academia and industry is ironed out with experience, and leads to satisfied employers and employees.

This idea that experience working with academics irons out differences in understanding fits with the belief that a difficulty in encouraging mobility experienced researchers in and out of academia is precisely a lack of a common definition of what they do and their role in either academia or industry. Official statistics provide some context on the features that could define experienced researchers within HEIs in the UK, and also some idea of the prevalence of these staff among the 11 HEIs selected (selection method in Appendix B) for this report.

HESA staff records account for the number and characteristics of staff with a contract at HEIs on a yearly basis. In 2012/13 there were 122,500 full-time and 63,085 part-time staff across all HEIs, and correspondingly 24,075 and 5,750 among the 11 selected for this study. Therefore the selected HEIs accounted for 20% of full-time and 16% of part-time academic employment in the sector in 2012/13. Across all HESA records, staff in HEIs are predominantly wholly institutionally funded (77% of FTE⁹) and employed full-time (70% of FTE); and such is the pattern of staff employed in the 11 HEIs selected for this study.

Typically, researchers in their "early career" are accounted for by cross-tabulating the contractual role (research only) with the source of funding (externally funded). Such cross tabulations reveal that while 24% FTE staff are classified as holding research only posts across the UK (and 44% in the selected HEIs), they are disproportionately represented among those who are not wholly institutionally funded. Research staff make up for 77% of the total FTE under "all other sources of funding", which itself is only 23% of the total academic FTE in 2012/13, so research staff are not evenly distributed among funding categories. This distribution is even more acutely uneven across staff employed in the selected HEIs where 81% of FTE research staff are "all other sources of funding" – although it is worth noting that with a non-random selection of 11 HEIs only, this figure is most likely driven by one or two outliers.

⁹ Full Time Equivalent (FTE) were calculated using a ¾ ratio for part-time headcounts.

Perhaps the most distinctive characteristic of research staff in early career is that they hold fixed-term contracts: 34% FTE of all staff and 75% of FTE research staff hold fixed-term contracts. Some interviewees noted that there are experienced researchers within the category “teaching and research” and “teaching only” positions too. Within the category “teaching only” staff, 35% FTE were in fixed-term contracts while only 10% of staff in “teaching and research” positions held fixed-term contracts. Thus according to role, “teaching and research” roles have the lowest incidence of fixed-term contracts and “research only” the highest.

The causes of this uneven distribution of contractual arrangements are varied, sometimes it is the type of funding for these roles (e.g. time bound research grants), other times it is the type of role (term teaching). Because there are operational reasons for these contracts, it is difficult to establish that their predominance is as a result of an ill functioning labour market, perhaps it is simply a natural consequence of the funding structure and seasonal (term) activity in the sector, or simply as a strategy to identify and retain the best and brightest by the recruiting institution (BIS, 2014a). This reinforces the benefits of providing contextual intelligence on the needs of the HEIs and business as employers of experienced researchers.

The prevalence of fixed-term contracts has been the object of much attention to ascertain the quality of employment offered to highly skilled individuals, both in the UK (Vitae 2014a) and in the EU (EC, 2014b). While the temporary nature of contracts is typically linked to the temporary, nature of some research funding streams, it also indicates a fluid labour market for experienced researchers. One can interpret the extensive use of fixed-term contracts as an indication that institutions find it easier or cheaper to seek new experts at the end of the contract than transferring the experts to an open ended contract. Of particular interest for this study is the fact that because of their timed nature, the prevalence of fixed-term contracts among experienced researchers may facilitate inter-sectoral mobility as an exit route to job insecurity, by moving to industry positions that offer open-ended contracts.

Official statistics also record destinations of staff moves, but caused by the voluntary nature of disclosing this information, these records suffer from high rates of non-response. Because disclosure is voluntary respondents self-select themselves into revealing their destinations, and this renders these accounts not representative of the total, but the low responses throw into sharp contrast the difficulties involved in recording mobility in general. Inflows and Outflows data does not show a high prevalence of moves in to and out of the non HE sector. Mobility between sectors (not within HE) account for around 5% of all recorded moves in any direction. However we only know the origin of 75% and the destination of 57% of those who move in and out - so the figures are partial because they are based on a proportion of self-selected respondents; it could be that among the 43% who moved out and did not disclose a destination, the majority are in industry, these figures cannot tell.

The background evidence overall suggests multiple reasons for asking employers in the academic and industry sectors about the importance of experienced researchers among their staff and about the exchange or mobility of researchers between academia and industry.

Appendix B: Method for selecting participants and interviews

For the selection of HEIs to interview as part of this report, an effort was made to include a diverse set of exemplars in two stages. In the first stage we selected the top 20 and the bottom 43 HEIs when sorted on the basis of their Grand Total Income in HESA financial returns 2012/13. The reason for the uneven distribution of top and bottom counts was to include NCUB members in both sets, this, in effect, meant excluding the bottom 20 HEIs altogether, which were not members of NCUB at the time. In the second stage, 43 HEIs (20 from top and 23 from bottom) were ranked according to Consultancy income as per HE-BCI returns in 2012/13¹⁰. This meant a different ranking within group from that based on Grand Total Income, as Consultancy is the category of KE income with the lowest correlation to Grand Total Income. We then selected NCUB members among the top rankers in each group.

Despite efforts to disconnect the selection of HEIs with their scale, the final selection still included 9 HEIs from the top quartile on scale (grand total income), and this scale skewness needs to be borne in mind when reading results. This inequality in income also reflects in the potential size of the population of researchers within each participant HEI: the larger ones count more than 20 times the number of research only staff of the smaller ones in HESA 2012/13 staff records. The implications of providing for the careers of 100 research staff are different from providing for 2,000 plus research staff.

We contacted 11 HEIs to allow for some non-response but all invited kindly accepted the offer so in the end we interviewed (in alphabetical order): Cardiff University, Goldsmiths College, Imperial College of Science Technology and Medicine, and the Universities of Abertay, Bristol, Glasgow, Leeds, Nottingham, Oxford, Southampton and Warwick. The views and practices held at each of them were conveyed by senior research staff managers including Vice-Chancellors of Research and/or Innovation, Heads of Schools, Heads of Human Resources and/or Enterprise and, together with some of these, others in senior roles involved in career development of staff in these universities. Fieldwork for HEIs took place in November/December 2014, five of the interviews were face to face, the remaining six were on the phone.

As noted in the literature review and demonstrated in the RCUK impact of doctoral researchers report (RCUK, 2014) it is notoriously difficult to find businesses that target experienced researchers in their recruitment practices, therefore the selection of businesses followed recommendations from RCUK on their own collaborators and NCUB contacts, and in choosing these we exercised judgement over reaching as many different sectors as we could. Even with this restricted selection criteria we contacted 20 non-academic organisations to reach the final selection of 9 business: Arup, Astra Zeneca, the British Museum, BP, BT, Meggitt, Rolls Royce, Signal and Syngenta. The views and practices by business were relayed by vice-presidents and other senior managers, directors of technology and/or research and research leaders. Business fieldwork took place in April-June 2015 and all business interviews took place on the phone.

The NCUB are grateful to all participants for their contributions to help shape the future of collaboration in the UK.

¹⁰ Higher Education Business and Community Interactions survey, www.hefce.ac.uk/kess/hebci/

The Exchange of Early Career Researchers between Universities and Business in the UK

Semi-structured interview for HEIs

The interviews will follow the broad structure outlined below. The purpose of sharing these with you is to enable you to give prior thought to the areas we would like to discuss and to enable the most productive conversation possible. Each interview will last approximately 1 hour.

I. Definition, relevance and prevalence of inter-sectoral mobility

1. Does your institution have a policy/strategy regarding the mobility of research staff between universities and business?

Prompt:

- Is there a particular group of research staff that is more exposed to mobility between universities and business?

2. Does your institution consider early career researchers as a category of staff with its own definition and role?

Prompts:

- Does the institution hold records (other than HESA staff records) on the number of early career researchers by department, academic function, source of finance, term of contract etc?
- Do you follow results from CROS or other initiatives focussed on the prevalence and role of research staff in HEIs?

3. What role do early career researchers fulfil across different academic departments at your institution?

Prompts:

- How and why are these researchers important to your institution?
- How, if at all, does this role differ by seniority, academic function, terms of contract and source of funding?

II. Recruitment, retention and turnover of early career researchers

4. What is your institution's strategy for recruitment, retention and turnover of early career researchers?

Prompts:

- What role does your institution play in influencing the career choices of early career researchers?
- How do you assess effectiveness of these strategies?

5. Does your institution audit or otherwise follow destinations and reasons for exit of early career researchers?

Prompts:

- How important are destinations in the private sector for early career researchers?
- Do destinations and reasons for exit differ from those applicable to established researchers?
- Do destinations and reasons for exit differ across discipline or academic function?

6. How easy (or difficult) is it for early career researchers who have moved to a career in the private sector to return to academia?

Prompts:

- How does this differ by seniority, academic function, terms of contract or source of funding upon return?
- Does your institution have any strategies in place to recruit researchers currently employed in the private sector?

III. Benefits and incentives for mobility of early career researchers between universities and business

7. What role does (or should) mobility of early career researchers between the academic and private sectors play in the management of research resources at your institution?

Prompts:

- What specific benefits does mobility of early career researchers bring to your institution?
- To what extent do you promote and support the inter-sectoral mobility of early career researcher, other than through non-academic placements/secondment programmes?

8. What changes in the mobility of early career research staff would you like to or expect to see in the future?

Prompts:

- What are the drivers of these changes you foresee?
- How does this need/expectation differ by seniority, academic function, terms of contract and source of funding for early career research post(s)?

IV. Challenges and opportunities in mobility of early career researchers between universities and business

9. What are the barriers faced by early career researchers wishing to continue a research career in the private sector?

Prompts:

- Are you aware of constraints faced by early career researchers wishing to continue a research career in the private sector? Are these different for established researchers?
- To what extent can publicly funded initiatives help overcome these barriers?

10. What could business and HEIs do together to facilitate mobility of researchers between the academic and private sectors?

Prompts:

- What are the areas where coordinated or collaborative approaches between HEIs and business can help smooth mobility of early career researchers between academia and private sector?
- What is the role of universities and business in boosting the reputation of careers in the private sector?

Exchanging Researchers between Universities and Business in the UK

Semi-structured interview for Business

The NCUB is exploring how business members use experienced researchers in their operations and strategy. Experienced researchers mean different things for different members and they may or may not hold a research position. NCUB does not seek to establish a definition but to understand the career routes available for researchers who have decided to pursue a career outside academia.

The interview will roughly follow the schedule below and will last 40 minutes

I. Relevance and prevalence of exchange of research talent between universities and business

1. Do you actively recruit experienced researchers from universities (not graduates)?

Prompt:

- Is this for specific roles, or levels of seniority, e.g. do you recruit researchers to research only or/and management roles, or to more experienced positions?
- Would you be able to tell how many of your research staff have had research experience in academia after graduation?

- **Why, or why not, do you recruit experienced academics?**

Prompt:

- What special skills/knowledge do they bring from academia?
- Would you consider developing these skills within your own staff through the exchange of talent with universities?

II. Retention and turnover of research staff

2. What is your organisation's strategy for retention and turnover of researchers?

Prompt:

- Do you have specific points of entry, or career progression, for academic researchers, different from other recruits?

3. Have you found any difficulties in recruiting research staff from universities?

Prompt:

- What barriers are there?
- To what extent do you think these barriers are under your control?

4. Have you had instances of your researcher staff returning to pursue a career in academia?

Prompt:

- Do you think universities are prepared to exploit the benefits of mobility of researchers between academia and businesses?

III. Challenges and opportunities in the exchange of experienced staff between universities and business

5. How satisfied are you with recruitment and retention levels of researchers in your company?

Prompt:

- Do you get enough of sufficient quality applicants?
- What about long standing university researchers seeking a career in the private sector?

6. What trends in the exchange of experienced staff between universities and business would you like to or expect to see in the future?

Prompt:

- What are the drivers of these changes you foresee?

7. What could business and universities do together to facilitate the exchange of research talent between universities and private sectors?

Prompt:

- What are the areas where coordinated or collaborative approaches would help and how?
- What is the role of universities and business in boosting the reputation of careers in the private sector?



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