

# The Role of Technicians in Knowledge Exchange

An explorative study



Technician **Commitment**



# Foreword



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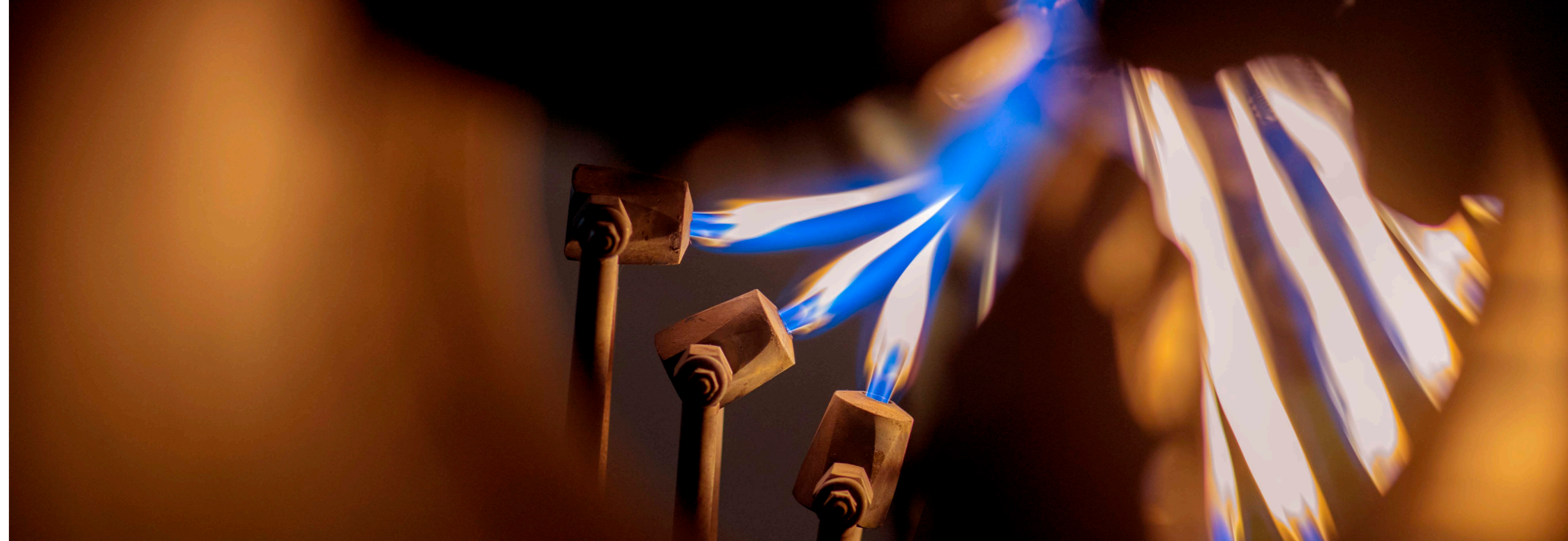
Technicians are essential to research, teaching and Knowledge Exchange (KE) and it is vital that they are valued and supported to realise their potential in all these areas. Increasingly the contribution of technicians is being recognised, thanks to initiatives such as the Technician Commitment and the Research England funded TALENT programme, but until now there has been little documented recognition of the role that technicians play in the sector's knowledge exchange activities.

I welcome this report, delivered by the TALENT programme and Research Consulting, which highlights the significant contribution technicians make to knowledge exchange in UK universities and research institutes. This contribution is through the facilities they manage, the expertise they provide and their ability to bring research ideas to life, often working directly with external partners to provide or contribute to solutions for their challenges.

The report findings highlight that contributions to knowledge exchange are typically implicit in terms of the role, presence, and contribution of our technical staff, even when our institutions are highlighting the cutting-edge facilities we house. As a sector we are not explicitly recognising the contribution made by our technical staff to knowledge exchange either internally or externally in our dialogue with the public and with partners.

I welcome the conclusion that the contribution of the technical workforce to knowledge exchange should be made more explicit and appropriately celebrated. This is important as a way of highlighting the potential variety of roles and activities in a technical career and supporting future recruitment into the sector. Technicians are clearly vital to knowledge exchange and I hope this report, and its recommendations provide the first step to ensuring recognition of their contributions and their future inclusion in this agenda.





# Introduction

This report looks at the role technical staff play in the delivery of KE in universities and research institutes. Technical staff are a group whose expertise, knowledge and capability makes the delivery of world-leading research and teaching possible in universities, and their contribution is significant.

The report brings together views from a range of stakeholders, including technical staff, academic staff and senior leaders, across universities, research institutes and funders.

The report is set in the context of two national policy developments:

- the **Technician Commitment** – an initiative established in 2017 to advance visibility, recognition, career development and sustainability for technical staff in higher education and research
- the **Knowledge Exchange Concordat** – an initiative established in 2020 which aims to support reflection and development of practices in KE addressing capacity building, reward and recognition and continuous improvement

## Defining technical staff

Technicians and technical staff are critical to the success of UK education, research, innovation, and development, and are crucial to the growth of the UK economy.

Technical staff are indispensable to the delivery and infrastructure of both education and research activities within universities and research institutes, contributing to a huge range of disciplines, roles, and responsibilities. Researchers and teaching staff at all levels and discipline areas are dependent on the technical expertise of those who build, repair and service equipment and provide specialist support and expertise.

The technical community has a vast range of job titles – technicians, skills specialists, technologists, experimental officers, laboratory managers to name a few – and is recognised as being critical to the success of UK higher education and research. A highly skilled workforce with a diverse range of expertise, technicians underpin the primary activities of universities and research institutes, providing the technical excellence essential for research, teaching and knowledge transfer. Alongside this, many technicians are researchers and teachers in their own right. They also play a fundamental role in the development of technical skills that students require to pursue a career in research, academia and/or industry.

## Defining knowledge exchange

KE is about enhancing the contribution higher education makes to the economy and society. Engagement with the external world is a key element of KE activity. This includes research partnerships, working with businesses, working with the public and third sector, the development of skills in employers, enterprise and entrepreneurship, local growth and regeneration, Intellectual Property (IP) and research commercialisation and public and community engagement.

Examples of KE include:

- involvement and creation of innovation, invention and IP (for example commercialisation through spin-outs)
- working with business from Small and Medium Enterprises (SMEs) to multi-national companies
- enabling access to facilities and/or providing analysis
- public engagement
- delivering training and development

# Recommendations

The findings from this study indicate that technical staff in higher education and research are critical enablers for KE.

The contributions of technical staff to KE currently have poor visibility and recognition. There is also a lack of understanding of KE, its meaning and what constitutes 'Knowledge Exchange' within the technical community. The following recommendations aim to ensure both institutional and sector-wide visibility and recognition of the role of technical staff in KE, and increased understanding of KE amongst the technical community to ensure a connected and thriving knowledge exchange ecosystem.

- Employers, funders and sector bodies should recognise and capture the contribution that the whole team, including technicians, make to KE by inclusion in KE strategies, funding opportunities and in policy.** For example, at an institutional level this should include re-examination of KE Concordat action plans to assess where appropriate measures to support technical staff and KE can be implemented. This may include explicit eligibility for seed funds for KE, involvement in internal KE capacity building events or better recognition of the contributions and challenges for technical staff in supporting KE, with sharing of best practice.
- Employers of technicians should make KE training available to technicians.** This includes providing information on the different forms of KE, the role of technical staff and how to identify KE contributions, as well as more focused training in areas such as IP.
- Employers of technicians should include technical staff in discussions, reporting and decision making about KE.** This includes representation from technicians on KE strategy boards or other institutional level KE committees where appropriate. Reporting on KE should include reference to technical contributions.
- Employers of technicians should ensure that the contributions technical staff make to KE are appropriately recognised as part of their Technician Commitment action plans.** This includes how KE integrates with technical staff career development to act as an incentive for participating in KE related activities. The scope of this work may extend to opportunities such as secondments to fixed-term project positions and income generation activities for technical staff.
- Employers of technicians should be more explicit in how technical expertise is part of their externally facing activities.** For example, recognising and promoting the input, contribution, and value of technical staff in major facilities through websites, literature and other communications associated with KE.
- The Future Research Assessment Programme should ensure that metrics around KE are inclusive of all roles.** This will explicitly indicate the eligibility for capturing contributions from those in technical roles.
- Technical staff should engage positively with the training and funding opportunities provided related to KE and be proactive in sharing their contributions to KE.** Technical staff and those working with them should raise awareness of opportunities around KE to the technical community. Managers of technical staff should inform and support their teams, encourage participation, and celebrate successes related to KE.
- Professional bodies, associations and networks should recognise and be inclusive of technicians and their roles in KE.** For example, this may be through case studies on websites, featuring technical staff in publications and articles and ensuring inclusion of technical staff in KE professional development opportunities.





## Landscape

Whilst there are some examples and case studies, wider evidence of the contribution of technical staff to KE is lacking. A review of technical staff and innovation for the Gatsby Charitable Foundation<sup>1</sup> describes the significant contributions technicians make to UK innovation in universities, research and industry but highlights that this often goes unrecognised.

Other reports<sup>2</sup> consider the wider challenges for this staff group in terms of recognition, value and a lack of understanding of technical skills at a senior leadership level. The contribution of “skills specialists” (individuals outside the classical academic career path, including technical staff) are recognised as being important in terms of team science.<sup>3</sup>

There are estimated to be in the region of 30,000 - 50,000 technicians working across higher education and research.<sup>4</sup> Recent analysis of the research and technical workforce in the UK highlights the criticality of the research and technical workforce to research and innovation.<sup>5</sup>

### Approach and Methodology

This report was informed by desk research, interviews and focus groups, engaging 42 stakeholders from across the UK between April and August 2021.

Participants included senior leaders, academic and technical staff engaged in KE, and those working with the sector. To present an inclusive national picture, participants were drawn from a range of discipline areas, geographies and organisations.

The report considers the contribution of technical staff to KE through the lens of four key pillars of the Technician Commitment:

- visibility
- recognition
- career development
- sustainability

## Visibility

Technical staff make a significant contribution to KE in UK higher education and research. They manage facilities, they provide expertise and they convert ideas into research reality. In many instances technical staff work directly with external partners to deliver impactful research and knowledge exchange.

This contribution can lack visibility and the value that technical staff bring through KE is often only recognised implicitly. The lack of visibility of their role in KE is apparent both internally and externally.

This study found many examples of technical staff contributing to a range of KE activities that spanned different sectors and disciplines. These contributions were visible and known within a localised department or group context, but the visibility of this more widely across institutions was typically less clear.

“

**We call ourselves lab fairies, the elves and the shoemakers, people come down and the shoes are there, ready to be sold, nobody knows how they were made. Honestly, people seem to think that happens by magic.**

”

Participants cited many specific examples of contributions to, and delivery of KE. However, narratives that articulated this contribution at scale and across activity types were typically lacking. In some KE areas, such as Intellectual Property, contributions are captured at institutional levels, but the reporting and communication of this is not always present and the forum to receive such communication is not always clear.

A contributory factor to this could be a lack of understanding amongst the technical community of what KE is. This research has identified that “Knowledge Exchange” as a term is not widely used and understood by technical staff who define their key activities as research and/or teaching. Interviews identified several possible reasons for this lack of visibility, including:

- technical staff have little incentive to promote and evidence their contribution to KE and their role in working with external partners
- there is a relatively poor connection between technical staff and professional services teams working on KE
- there is a lack of provision and access to internal support measures for KE that are relevant to technical staff
- technical staff are infrequently involved in shaping institutional strategy and there is poor technical representation on internal KE fora and committees

Examples of good practice were reported during this study. Overall, the findings indicate a requirement to do more.

In external presentation and communication, the value of the contribution of technical staff is typically implicit. For example, technicians are implicitly included as part of research teams, facilities and supporting KE activities, but their particular expertise and contribution is often not mentioned explicitly. This is observed in case studies, news articles and webpages. This study identified examples that reference the academic expertise and facility itself, but often lacked reference or evidence relating to the expertise and experience of the technical staff operating that facility.

“**We see technicians as sometimes just extensions of the physical assets (the person who knows to work the machine) rather than the other way round. We need to value the human capability of someone who can make collaborations happen through a piece kit or equipment.**”

There is an opportunity to improve the connectivity and visibility of technical staff within sector organisations that support and champion KE, for example, PraxisAuril and the National Centre for Universities and Business (NCUB). A joint approach, with organisations that represent technical staff, to enhance visibility and skills development opportunities for technical staff involved in KE is one option for progress. Benefits may include increased networking, opportunities for skills development and recognition of good practice in KE delivery. In doing so, it will also benefit career development and recruitment of technical staff.

### Recommendations

- **Employers of technicians should be more explicit in how technical expertise is part of their externally facing activities.** For example, recognising and promoting the input, contribution, and value of technical staff in major facilities through websites, literature and other communications associated with KE.
- **Employers, funders and sector bodies should recognise and capture the contribution that the whole team, including technicians, make to KE by inclusion in KE strategies, funding opportunities and in policy.** For example, at an institutional level this should include re-examination of KE Concordat action plans to assess where appropriate measures to support technical staff and KE can be implemented. This may include explicit eligibility for seed funds for KE, involvement in internal KE capacity building events or better recognition of the contributions and challenges for technical staff in supporting KE, with sharing of best practice.
- **Employers of technicians should include technical staff in discussions, reporting and decision making about KE.** This includes representation from technicians on KE strategy boards or other institutional level KE committees where appropriate. Reporting on KE should include reference to technical contributions.
- **Professional bodies, associations and networks should recognise and be inclusive of technicians and their roles in KE.** For example, this may be through case studies on websites, featuring technical staff in publications and articles and ensuring inclusion of technical staff in KE professional development opportunities.





## Case Study 1



University of  
Nottingham  
UK | CHINA | MALAYSIA

Tim Self is the Head of the School of Life Sciences' Imaging Facility in the Faculty of Medicine & Health Sciences at the University of Nottingham. Tim is also the Chair of the university's Facility Managers group, - a forum established by Tim and colleagues to improve how facilities communicate, both internally and externally, and to provide increased voice and visibility within the university. The group also provides an opportunity to improve interaction with commercial organisations, by creating a clear source of information on facilities via the university website.

Over recent years the group has experienced increased contact with external companies looking to commission contract or service work. One example is the Imaging Facility's work with Chemical Intelligence in 2018. The company had created anti-microbial latex gloves but needed a way of visualising how the gloves worked, to show bacteria being killed on the surface of the glove. They approached Tim and his colleague Robert Marcus, who designed experiments on one of their microscopes to visualise the bacteria dying. This was captured by film crews and Tim and Robert performed practical demonstrations live on stage at the world launch for the product at the Royal Society of Medicine. They were later invited to Brazil to lead live demonstrations at South America's largest health conference.

“ **What was great about it was that we were able to apply our expertise and technology to quite a difficult, practical problem. But also what was very pleasing, we felt that we were part of something that's important, healthcare wise, because a huge amount of infections are actually transmitted by the hands within the clinic within the hospital. And if this technology is making a small difference in the clinic, it will be saving the possibilities of billions of infections being passed around the world.** ”

”

## Case Study 2



Manchester  
Metropolitan  
University

Gary Buller is a Technical Officer at PrintCity, an additive and digital manufacturing facility at Manchester Metropolitan University. PrintCity provides both services for businesses and staff and students at the university, as well as providing education sessions for schools and training for those looking to gain skills in Computer Aided Design (CAD).

Gary previously had worked in commercial 3D print, having engaged with PrintCity in that role before joining the university. He helps to run and maintain the machines, processes jobs from university and external clients, offering advice on materials and design, and manages the production schedule. He works with businesses from a variety of sectors including artists, engineering, and medical technologists. The PrintCity website provides a dedicated page for 'Staff Profiles', which allows for greater visibility of all staff who work there – including the technicians – and provides a short profile demonstrating their previous experience and skill set.

Pre-Covid, training workshops were planned to take place in-person; however, these were then moved online during the pandemic. This included the additive manufacturing workshops delivered to industry as part of the wider 'Fast Track Digital Workforce Fund' with Made Smarter and Fabricon Design Ltd. There were 14 attendees, who were mostly SMEs from a variety of backgrounds including product design, architectural and CAD. These workshops were designed to teach employees technological skills, enabling businesses to realise the potential of additive manufacturing.

Gary worked on an average of one SME project per week and he felt valued for his expertise as a technician and is proud of the work he has done. In terms of his own skills and experience, Gary notes that fashion is a particularly interesting area of 3D prints, as it tests his skills and allows him to continue developing professionally.

“ **I am always engaging with SMEs as much as possible to help them understand the possibilities of 3D prints to achieve their desired results and how it can help their company develop.** ”

”

# Recognition

This section focuses on how the contribution technical staff make to KE is recognised and perceived to be recognised. Recognition is considered broadly, and includes awards, how colleagues recognise the contribution made by technical staff, acknowledgement of credit and how the expertise and experience of technical staff is recognised through influence and representation in shaping strategy.

There is a strong alignment between visibility and recognition, greater visibility provides a platform for improved recognition. It was frequently noted that the technical staff community do not communicate and showcase their skills and knowledge in the same way that academic staff do. This is an area for improvement, linked to increased recognition of their skills/experience.

“ **We could do better to understand the technician role in KE, not just in research or teaching activity - their role in transferring knowledge out of the institution - really identifying our strengths in the areas of KE.** ”

At local levels (e.g. research group or department) recognition of technical input to KE is more consistently evident. Throughout this study there was evidence of KE being strongly supported and encouraged. However, these positive examples were noted to be highly dependent on the local management.

“ **A big part of how much recognition you get is not dependent on you at all, it's dependent on the boss and whether they value your skill.** ”

There were also examples where contributions, for example to IP, have been actively diminished. This was contrasted by one institution's technology transfer office being able to quickly identify a portfolio of examples where technical staff were named as contributors in IP disclosures alongside academics, supported by inclusive institutional policies.

At a national policy level, the Technician Commitment has helped to raise awareness of technical staff within universities and research institutions. Signatory organisations complete and submit action plans for their commitment to improve the environment for technical staff by advancing visibility, recognition, career development and sustainability. However, KE-related measures within existing published institutional action plans are infrequently observed thus far.

Other important policy areas, including the KE Concordat and the development of the concept of team science are implicitly inclusive of technical staff. A notable contrast is observed in how other staff groups are explicitly referenced in some of the associated documentation and reports. The KE Concordat provides an important opportunity to identify actions for technical staff as part of institutional KE action plans, and this study heard evidence where some institutions are actively doing this.

A good example of technical staff being explicitly mentioned is Queen's University Belfast, where there has been an internal alignment of their Technician Commitment action plan, the Research Culture action plan, and Athena Swan to ensure technicians are visible across the piece.

An important aspect of recognising the value of technical staff contributions to KE is how they contribute to the development of KE practice, strategy and success within institutions. Technical staff are rarely featured or quoted in press releases and representation of technical staff on institutional KE strategy/advisory groups is limited.

Participants generally reported that this was weakly addressed in terms of representative roles and participation in relevant KE boards and strategy groups at institutional level, including those established to address the KE Concordat.

There is evidence of this changing, influenced by the Technician Commitment. At the University of Glasgow, technical representation is now in place on every key board/committee and it was felt that this successfully gave technicians an institutional voice. The University of Birmingham also provided evidence of good practice in moving from localised departmental discussions to faculty and institutional wide discussions, where the technical team co-created module content with academics and attended module discussion meetings to assist in shaping the future direction.







At an institutional level, consistent measures to understand and provide a coherent perspective on contributions to KE by technical staff appear to be absent. It presents a gap in institutional thinking and strategy around the future development and provision for KE.

A wider perspective suggests that the professional experience and expertise of technical staff is perhaps undervalued and not recognised. Experienced technical staff reported perceptions that their status was viewed poorly.

“ **Junior postdoc staff are given a higher status within the university, than very experienced technical staff.** ”

“ **If there is representation of technical staff on key boards, they can raise their voice at the top level, and they raised the point that they're lacking recognition.** ”

The development of suitable celebratory awards and special recognition processes that are inclusive of technical staff contributions to KE are felt to be important. The Papin Prizes were established in 2015 and are national awards that recognise technical excellence in academia and research. Technical staff can be nominated in categories including contributions to research and outreach/community, with judging criteria aligned to success criteria in KE (including innovation, leadership within the field of work and leadership), although there is not a category solely focused on KE.

There was less evidence from participants of institutional awards that celebrated technical staff and their contributions specifically to KE. Although KE awards are relatively common across institutions, there was little evidence of technical staff participation in these.

Experience from outside HE illustrated how exceptional contributions can be visibly recognised within organisations as part of the staff reward and recognition processes.

The importance of recognising contributions through credit and acknowledgements in publications and other forms of public communication was consistently noted. Participants reported positive progress in terms of policies and guidelines for ensuring technical staff

are credited on research papers. However, there was a recognition that there was more to do in implementing these guidelines consistently across institutions, with a continuing need to socialise this practice to have a lasting impact.

Their work can mean that technical staff make direct contributions to the development of IP. The project team heard contrasting evidence on this issue, including examples where technical staff perceived that their contribution was actively minimised through to evidence of inclusive policies working at institutional scale to capture and recognise the contribution of technical staff, aligned to reward policies for IP.

### Recommendations

- **Employers of technicians should include technical staff in discussions, reporting and decision making about KE.** This includes representation from technicians on KE strategy boards or other institutional level KE committees where appropriate. Reporting on KE should include reference to technical contributions.
- **Employers of technicians should ensure that the contributions technical staff make to KE are appropriately recognised as part of their Technician Commitment action plans.** This includes how KE integrates with technical staff career development to act as an incentive for participating in KE related activities. The scope of this work may extend to

opportunities such as secondments to fixed-term project positions and income generation activities for technical staff.

- **Employers of technicians should be more explicit in how technical expertise is part of their externally facing activities.** For example, recognising and promoting the input, contribution, and value of technical staff in major facilities through websites, literature and other communications associated with KE.
- **Professional bodies, associations and networks should recognise and be inclusive of technicians and their roles in KE.** For example, this may be through case studies on websites, featuring technical staff in publications and articles and ensuring inclusion of technical staff in KE professional development opportunities.

## Case Study 3



Andy Robertson has completed his academic studies (Undergraduate, Masters and most recently starting a PhD) at Cardiff University, as well as holding a position as a technician for a Knowledge Transfer Partnership (KTP) project from 2017 to 2019. As part of this KTP, Andy's role focused on undertaking diverse antimicrobial standard tests, which allowed him opportunities to develop new skills and use new facilities. Whilst working on the KTP he was also able to work on a number of smaller projects with different industrial partners, which he enjoyed.

“**It's interesting to see the dynamic of what industry wants, and what academic partners want and finding a balance in that. The difference in what's interesting academically and commercially can often differ.**”

Although currently completing his PhD (his project has an industrial collaborator), due to his experience working as a technician he values the benefits that can be achieved by working with industry and would consider it as a future career, or always involving them as partners in his work at the university.

“**It's important to get the science out there... [industry] have their good and bad points, but it comes with so much weight, the real-world changes they can make.**”

At Cardiff Andy has worked with several industrial partners, with additional projects developing from those industrial relationships.

Andy has also had the opportunity to contribute to, and be a named author, on several academic papers, and first author on one paper. One article concerned the effectiveness of different methods for safely reprocessing face masks which at the time was impactful in view of PPE shortage.

“**The technical work has had such a massive impact and has been taken up by the World Health Organisation (WHO).**”





## Career Development

In discussing how KE participation can support career development or presents different opportunities, respondents frequently identified two wider issues of concern:

- career pathways for technical staff that allow progression and enhancement of skills and experience whilst retaining technical expertise critical to operational/functional areas; and
- the overall landscape and trends for the numbers of technical staff within institutions and how this impacts on capacity to participate in KE.

Both of these issues are wider than the remit of this study, but they raise a question on how participation in KE might support or enhance career progression options for technical staff that can address these issues. Increasingly institutional capacity for KE, and for income generation via KE, is an opportunity to consider.

Some technical staff reported that they had been specifically allocated part of their role to work on external projects or hired specifically to work on KE activity with external clients. Nottingham Trent University's Medical Technologies Innovation Facility

(MTIF), a new institutional initiative anchored in KE, is a good example of this, but it was found to be the exception and not the rule across the sector.

KE provides an opportunity to develop technical staff within their current position. It can offer a different perspective on career development, providing the scope to grow within a role as opposed to only aspiring to reach the next pay grade. It has been noted that participation in KE activities has led to opportunities for technicians to develop skills (both personal and professional) and increased exposure that they would not have had chance to gain otherwise. This has led to an increase in soft skills such as project and relationship management, an appreciation for the difference between academic and industry projects and increased levels in confidence and job satisfaction.

“ I am much more confident now... I have proved to myself I can do more things, things I wasn't aware of before. It's allowed me to grow as a scientist... it's been a very good learning curve. ”

There are examples of creating opportunities to experience other technical environments, with schemes in place for secondments to other internal teams or to other universities.

“ My current manager has been really supportive of this secondment opportunity, and a structured CPD plan helped me to develop in areas like commercial report writing and managing the expectations of external partners. ”

However, this study found limited evidence that this extends into industry or other relevant organisations. An opportunity to deepen and extend external partnerships is through secondments and placements of technical staff into, or hosted from, external partners.

In terms of funding development for technicians, the Apprenticeship Levy has been repeatedly noted as incredibly helpful in providing opportunities for training and development for technical staff. Developing the skills and capabilities of technical staff can increase the opportunities available to them to engage across a range of KE activities. For example, upskilling their technical knowledge and skills can provide additional capacity to work on a variety of projects with industry, public engagement opportunities or providing training to external partners (CPD).

“ The Apprenticeship Levy has been incredibly helpful in helping to train and provide opportunities for training and development for the technicians. ”

### Recommendations:

- Employers of technicians should make available training on KE to technicians. This includes providing understandings of the different forms of KE, the role of technical staff and how to spot KE contributions, as well as more focused training in areas such as IP.
- Technical staff should engage positively with the training and funding opportunities provided related to KE and be proactive in sharing their contributions to KE. Technical staff and those working with them should raise awareness of opportunities around KE to the technical community. Managers of technical staff should inform and support their teams, encourage participation, and celebrate successes related to KE.

## Case Study 4


**University of East Anglia**

Matthew Bennett is a Laboratory Coordinator at the University of East Anglia, leading the Chemistry and Pharmacy Laboratories' 'SmartCondensing' initiative. As part of his role, since 2015 Matthew has been working with industry to develop innovative new elements for their existing equipment to increase efficiency and reduce water wastage. Matthew has been responsible for the whole project cycle, including understanding the requirements, coming up with the designs, performing testing and working with both the client and various internal teams (research and innovation, central sustainability, and academic staff).

“ **This has really helped my development and expanded my skill set. I have learnt a lot in terms of the processes and the different elements involved in these types of partnerships – including mechanisms to make them successful.** ”

Being part of this initiative opened up new doors for Matthew, who following the initial project, was successful in completing a 14-month part-time secondment in the sustainability team, as Sustainable Labs Manager. He is keen to continue working with industry to improve the sustainability of laboratory equipment.

“ **The mutual benefits are stark, particularly in this area where we need development tools and innovation to improve sustainability.** ”

Having already established industry partners ensures there is an established route to share findings and developments, whether that is through the creation of a whitepaper or new product.

## Case Study 5


**University of Brighton**

The University of Brighton's School of Art and School of Media has worked on a variety of knowledge exchange projects, stretching from local community projects to international enterprise and recycling activities in South Africa.

Following a number of project opportunities being missed due to lack of capacity for technicians to support because of teaching commitments, a workshop manager position was created which includes a 40% externally facing element. This role provides specialist technical support and manages aspects of non-programme based projects, research and conferences both internally and externally. Projects are mostly established through existing relationships with industry.

Grangemead Garden is a community project working with the local council to improve and enhance the outdoor space at a care home supporting vulnerable individuals in a sustainable way by using recyclable materials. The technician on this project Jim Wilson, is an integral part of the design and development process, as well as supporting the legal, health and safety and logistical requirements for safe field work. He was able to understand and accommodate the research context as well as the technical demand that gives voice to partners ideas through material outputs and processes.

“ **We often rely, as creative academics, on creative technical support that makes our university 'offer' distinctive and gives confidence to external partners as a trusted collaborator.** ”





## Sustainability

There were a number of key issues raised throughout this study that have led to challenges in ensuring the sustainability of technical staff and skills.

These have included:

- a perception that short term contracts have become the standard way to recruit technical staff
- some institutions have previously experienced cuts to budgets for technical staff, losing skills and increased workloads for those who remain
- perceived low pay in relation to comparator roles in industry
- falling levels of experience for jobs due to lack of training and development opportunities

Sustaining high quality technical input for research and teaching was frequently cited as a background issue for institutions, funders, and technical staff based on the issues identified above. The loss of technical knowledge and ability can greatly affect the capability and offer of an institution, particularly in reference to the utilisation of equipment and facilities.

“ **A lot of technical knowledge has been lost. We’re having to drag people out of retirement to use our equipment because we don’t have people who can use it.** ”

Ensuring the continuity of technical staff allows for the efficient use of both the facilities and equipment at an institution for staff, students and external clients. Loss of technical expertise was also seen through career progression, as for technical staff this often meant taking on additional responsibility such as line management or changing roles completely and therefore loss of technical knowledge and skills from the functional area.

Thought has been given to the wider role of funders and their responsibility in this area. Funders need to ensure that project grant funding is creating the right behaviours that they want to see from applicants, as well as allowing for career progression for technical staff where possible.

In this context, the contribution of technical staff to KE has a number of important aspects:

- supporting the generation of income from a diversified range of sources, particularly industry, helping to create self-sustaining technical roles.
- creating roles and development opportunities that succeed in attracting and retaining technical staff: the opportunity to work with external partners was widely (but not universally) seen as a positive. A range of skills and development needs are evident but access to these is not consistent.

- establishing career pathways that can support progression and development whilst retaining critical expertise within the institution/group. This is an issue that goes beyond KE, but the contribution of technical staff to KE provides a further opportunity to consider.
- developing and recognising the leadership in technical staff in KE for example:
  - high volume consultancy/services rendered areas
  - business development and industry engagement, developing networks of technical connections in external organisations that complement
  - creating the internal networks and good practice forums that support leadership development
  - leading on demonstrations of techniques and practices for both external clients and public engagement activities

- As part of local/regional economic development, institutions can provide greater leadership in shaping the demand and pathways for technical roles into universities, industry and other organisations. This could include the levelling-up agenda or contributing to the numerous local skills agendas across the UK.
- Opportunities for KE to enhance career development and roles. Working with external partners, project management and short-term solutions for industry.

This area of the study raises a number of key points. Firstly, how important the Technician Commitment and Knowledge Exchange Concordat (KE Concordat ) are likely to be in the development and progression of technical careers within institutions. The action plans associated with both are important aspects in the development of understanding, skills and capacity for knowledge exchange. It is observed that many of the current action plans associated with the Technician Commitment do not explicitly reference knowledge exchange or actions linked to supporting knowledge exchange. It remains to be seen to what extent the action plans associated with the KE Concordat do so, but the project team are aware of examples that do have explicit actions supporting technical staff in KE work.

Interviews and engagement with stakeholders identified significant differences in the experiences of technical staff across UK universities and research institutes. These were evident in terms of how they manage and perceive engagement in KE, reward and recognition for their contributions, as well as the ability to engage in development activities.

However, there were also strong examples of developing good practice and participation in areas such as intellectual property and supporting the delivery of KE to external partners.

#### Recommendations:

- **Employers of technicians should ensure that the contributions technical staff make to KE are appropriately recognised as part of their Technician Commitment action plans.** This includes how KE integrates with technical staff career development to act as an incentive for participating in KE related activities. The scope of this work may extend to opportunities such as secondments to fixed-term project positions and income generation activities for technical staff.
- **Professional bodies, associations and networks should recognise and be inclusive of technicians and their roles in KE.** For example, this may be through case studies on websites, featuring technical staff in publications and articles and ensuring inclusion of technical staff in KE professional development opportunities.





## Case Study 6

**Sheffield  
Hallam  
University**



For Vinay Patel KE and working with industry has been a consistent feature of his work in higher education and importantly one that has been strongly supported by training and development opportunities. During his seven years at Sheffield Hallam he supported work in materials characterisation and failure analysis which include around 100 consultancy-type projects with industry partners. Vinay joined the University of Leicester in 2014 and continued to build on this experience, most recently through starting 12-month secondment to the SPRINT project - dedicated to supporting the growth of small to medium enterprises (SMEs) in the UK through the commercial exploitation of space data and technologies.

Vinay's academic colleagues and technical line managers have strongly supported his engagement in KE. This has enabled him to build his skills to handle industry projects in areas such as commercial reporting writing, delivery to tight timescales and managing the expectations of external partners. Currently he's

developing further skills around intellectual property, contracts, due diligence and managing larger budgets/projects.

During his career Vinay has been named author of seven publications, where he created the data and in some cases supported the writing process.

“**I've been really fortunate to have been able to contribute to over 300 consultancy-type projects with a range of external partners including the MoD, Rolls-Royce, Tata Steel and even a Formula 1 company. The challenge and problem-solving nature of these has made working in universities really interesting, I've worked on projects addressing failure analysis, materials testing, innovation which have had a big impact on those companies.**”

## Case Study 7

**OXFORD  
BROOKES  
UNIVERSITY**

Dr Sarah Irons is the Manager of the Bioinnovation Hub at Oxford Brookes University. The hub hosts research space for academics as well as renting out space to industry, which can include university or external start-ups and spin-outs. The underpinning idea is that the hub needs to benefit the student experience and so companies have to provide some form of lecture, project or work-experience. The other aim is to encourage engagement between industry and academics, to build projects that link directly with industry.

The hub is currently faculty funded, with some HEIF support, but more recently is involved in an OxLEP funded project for the next stage of growth. This includes the labs getting an injection of funding for equipment and refurbishment which will be matched by the university. In parallel, an Enterprise Centre is being built next to the hub, with high spec office space and high-speed computing to appeal to non-lab-based companies as well. The ambition is to be a place where student-based companies can grow alongside industry and the university.

On-site there are two full time technicians and Sarah. On a day-to-day basis, the technical staff provide waste management for the hub companies, admin support and training on equipment. They also provide the training for health and safety inductions and have a rolling programme of planned maintenance and validation for the equipment.

When discussing the benefits of working with industry, Sarah said:

“**It is good to step out from the academic silo of everything being university focused, see what applied science can look like, and how fast it can move compared to university pace.**”

Engaging with industry has also realised internal benefits, with Sarah's softer skills and internal networking improving as she has had to liaise with legal and estates, departments she would previously not have had to contact. Pre-Covid, before the coronavirus pandemic, networking externally was a key component of raising the hub's profile and this pushed her out of her comfort zone but has benefitted her skills in the long run.

# Conclusions and Summary of Recommendations

A key challenge resulting from this study is to make the role and contribution of technical staff towards KE more explicit. This needs to be both internally at an institutional level, within the technical staff communities and networks, and also externally. This is in terms of valuing the role, the potential for their roles, and also to support the future recruitment of a staff group who are critical to the successful operation of our universities and research institutes.

The findings from this study indicate that technical staff within universities and research institutes are critical enablers for KE. Their expertise, knowledge and the facilities they manage underpin the entire spectrum of knowledge exchange activity. However, for a multitude of reasons, this contribution generally has low visibility and levels of recognition. This has led to the recommendations, outlined earlier in this report, to address this challenge, but also to encourage the continuation of the good practice already taking place.

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