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- International Delegates Reception
- European Knowledge Transfer: innovative approaches
- IP: beyond the Fringe
- Knowledge Exchange: the hidden and real value
- Surviving a reorganisation
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FROM THE EDITOR

The skills, roles and contributions of Knowledge Exchange and Commercialisation professionals are increasingly important to the academic and external organisations, and indeed to the dynamism and innovativeness of the UK as a whole. As our Policy Piece highlights, this contribution supports not just the economy but also our global standing; which in turn creates opportunities for the UK to take this expertise overseas – see our report from PraxisUnico’s International Director for details.

KEC professionals deliver activities with a broad remit, including but not limited to technology transfer. This shift has been reflected as the term “Technology Transfer Office” is increasingly replaced by “Research and Enterprise Office”, as you can see in our feature on KEC structures in the UK. KEC work is usually co-ordinated by central departments offering dedicated skills and services, but the form of these functions varies widely, reflecting differences in institutional size and mission. Individuals working within KEC are highly skilled, and

PraxisUnico’s practitioner-led training is dedicated to developing these specific skill-sets, to help lead the profession to further and greater successes.

There is a lot of success to be celebrated – and in this magazine, we bring you some highlights of outstanding KEC practice, including how the strategic input of a Warwick Ventures’ KEC professional literally changed history, and how Coventry University’s Institute of Advanced Manufacturing & Engineering is integrating KEC at an ever deeper level, to mutual – and international – benefit with external organisations and universities.

Knowledge Exchange and Commercialisation is a challenging, important and ultimately fulfilling role, with a key part to play in delivering social and economic impact from research, and supporting the growth of the UK’s economy and global reputation. In short – KEC Matters.



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**£201
million**

Amount spent by SMEs with university partners in 2013-14, an increase of 11.2% year-on-year.



2nd

The UK ranks 2nd in the Global Innovation Index (2015) and 4th internationally for university-industry collaboration in R&D.



£9.70

Higher Education Innovation Funding leverages at least £9.70 from users for every £1 of public money invested, of which £7.30 economic benefit and £2.40 non-financial benefit.

THE POLICY PIECE

KEC: UK HEALTH CHECK

The focus on taking research knowledge into commercial products and services, policy and social interventions is intense. PraxisUnico has represented professionals working at the interface between researchers and external organisations for almost 15 years. During that time we have seen the work of such intermediaries become increasingly recognised and respected but also scrutinised as the ‘third leg’ of the university mission alongside research and teaching.

This scrutiny plays against a background of success in knowledge exchange. The Government’s Productivity Plan in July 2015 identified science and innovation as a UK strength, noting that the UK is ranked 4th in the world for business and university collaboration. The government’s ambition is that universities should ‘continue to increase their collaboration with industry to drive research commercialisation’ and increase the income they earn from working with business and others to £5 billion by 2025. That should be achievable: according to HE-BCI data the number of formalised transactions and their value has increased year-on-year since tracking started in 2000. For the academic year 2013-14 total income across all categories was almost £4 billion.

There is a constant drive to do more, to generate more activity with more diverse partners, in different sectors, with SMEs as well as multinationals. Universities have responded by growing and formalising their knowledge exchange and commercialisation teams to, we estimate, a cohort of around 6000 full and part-time staff. The expertise and experience contained within the profession (many of whom have careers of 10+ years) makes it well placed to support universities in their response to external pressures, for example, by developing innovative consortia models (SETsquared), drafting ‘ease of use’ toolkits (Lambert), or explaining complex regulations (State Aid).

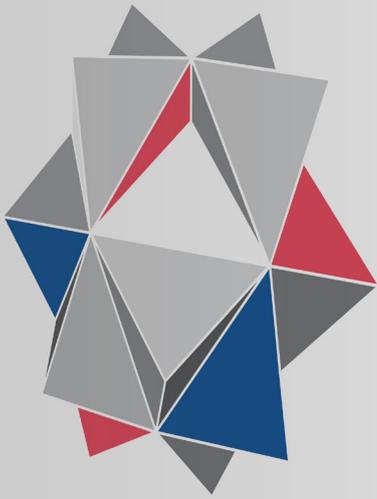
This cohort of professionals with specific skills relating to business development, the treatment of intellectual property, relationship management, and enterprise funding has grown up within universities to cater for the growth in demand for external collaboration. The increased expectations of universities nationally (productivity and skills) and locally (enterprise and growth) have brought changes to these professionals: a large scale and broader scope of activity, new skills focusing on long-term relationships and business development, more relevance to institutional goals, and

greater visibility across disciplines (the latter partly thanks to the REF).

Many surveys of ‘third stream’ activity fail to consult the university-based intermediary alongside company and/or academic partners, which is one of the reasons that we wanted to dig deeper with our research report, “KEC: The State of the Profession in Higher Education”, into what the profession looks like today and provide an evidence base that can complement other metrics and case studies produced by and on behalf of the sector. The research report which we have produced shows the other side of the story, and is one which is well worth telling.

The pressure for the UK to be among the best – if not the best – at innovation and enterprise remains intense. KEC professionals have an important role to play in this and PraxisUnico will continue to campaign to make the sector’s voice heard through our policy and Advocacy activity.

Tamsin Mann is the Policy Officer at PraxisUnico. Further information about our recent input to consultations is on our website: www.praxisunico.org.uk.



INSTITUTE FOR ADVANCED MANUFACTURING AND ENGINEERING

The AME: taking integrated KEC to new levels

The chancellor George Osborne, and the business secretary, Sajid Javid, chose the Institute for Advanced Manufacturing and Engineering (AME) in Coventry to announce the West Midlands devolution deal. The institute – a collaboration between Coventry University and Unipart Manufacturing Group (UMG) – represents a new, integrated approach to KEC, and one which has retained investment in UK and created a skilled workforce for local area.

The AME has secured millions of pounds of investment from local UK business through the application of high impact research through strategic partnerships with brands such as Aston Martin, Ford and Unipart. One project on which the AME worked with Ford has generated over £15M of new manufacturing business in the UK, which may otherwise have gone overseas.

Coventry University's vice-chancellor, John Latham, said "It's a testament to the growing reputation of our Institute for Advanced Manufacturing and Engineering that the government

chose the facility to host the signing of this significant initiative for the West Midlands."

Carl Perrin, Director of AME, previously worked at Rolls Royce as Head of Technology. He was attracted to join the AME from an industry background due to the unique opportunities the Institute presented, to combine industry and research experience. Carl said, "The Institute for Advanced Manufacturing and Engineering is a different model for developing engineering talent. Bringing the teaching and research environment on to the factory floor generates a unique experience for students and fresh thinking for industry. It is a means of developing industry ready graduates, boosting UK economic growth and accelerating the process from innovation to commercial realisation."

KEC is facilitated by this collaboration, which came about by partnering with local employer Unipart, and with financial support from the HEFCE Catalyst fund. Coventry University set up a brand new state-of-the-art building on the Unipart manufacturing site, which provides

students and researchers access to numerous technologies, and delivers highly skilled work ready graduates for the local area.

Carl emphasises that the benefits go both ways: "Its aim is to deliver partnerships that benefit both Coventry University and Unipart, to deliver impact through knowledge exchange. As a two-way process with industry, knowledge exchange needs to work collaboratively, and to facilitate that collaboration as equal partners. By siting this facility with a manufacturer rather than on campus, it removed both cultural and physical barriers."

With 3 core strands, AME delivers across Training, Skills & Education; Research; and Growth & Impact. The long-term embedded partnership between academia and industry accelerates innovation and commercialisation by overcoming cultural and physical barriers, and helps deliver against Coventry University's goal of continuing to grow and deliver excellent impact and research.

WHAT IS THIS KNOWLEDGE EXCHANGE?



Lana Semykina

Knowledge Exchange & Commercialisation Officer at TGAC

The funny thing about exchanging knowledge is that, while it occurs on a daily basis through interactions with colleagues, collaborators, and even in your personal life, in order to be considered a knowledge exchange activity it must have an impact and require active effort (HA! and you thought it was easy!).

For example, in a collaborative project, after discussing and sharing experiences, the partners should notice a “transformative effect”. This effect can manifest in new products, policies, processes, skills or understanding; attributable to a collaborative effort. So in the end, everyone is better off for having engaged. Knowledge exchange (KE) – is all about forging cross-disciplinary ideas. To be considered KE, these new ideas should:

- Occur between academic researchers and businesses (or other non-academic communities)
- Benefit partners
- Lead to new knowledge, processes, mechanisms, technologies, networks or relationships (obviously not an exhaustive list) – i.e. innovation or improvement

Improvement can range from: inventing something cool; or developing a more sensitive pipeline for single-cell DNA extraction; or a better way to compile your code or mine data more efficiently,

to anything that can be classed as progress. Some examples of typical knowledge exchange activities within a research organisation:

- Collaborative projects
- Industry or other non-academic organisation-facing events
- Training
- Providing a consultancy service
- Contract research
- Undertaking secondment/ placement

Knowledge exchange leads to different kinds of wins for all people involved. For example, for academia-business interactions, which are a KE activity, research shows that, “On all measures, faculty with industry relationships published significantly more and published at a greater rate than respondents without such connections.”¹

Other examples of knowledge exchange activity are Knowledge Transfer Partnerships (KTPs), which involve business and academia getting some money from the scheme to hire a person to work on a collaborative project. An independent review showed that 74 per cent of University partners won more grants after participating in a KTP and three quarters of researchers with a KTP were able to reap other financial benefits (e.g. increased income from teaching and consultancy work).²

Joint projects often give access to extensive datasets, expertise, equipment, new skills and confidential information.

A great example – Dr Tim Stitt, TGAC’s Head of Scientific Computing, came across an article on Optalysys exascale computing that could be powered from a standard mains supply. When Tim realised that bioinformatics computing tasks could be a great use case for this exciting new technology, he approached Optalysys. This has led to a partnership being established, with the help of yours truly (i.e. TGAC’s KEC team), AND a successful £0.5million Innovate UK application in Scalable Energy Efficient Computing with more to come. The final product promises potential energy cost reduction of 95% – diminishing the environmental impact of running High Performance Computing and saving the organisation more than £40,000 per annum. This is happening thanks to one researcher taking initiative.

Yes, KEC activities can and will influence you, your work, and your world positively. Most of us like a challenge so we (our equivalent at your organisation) will be happy to help you with anything, really. Our purpose is to serve you, especially if it involves making the world a better place.

Read more of PraxisUnico's blog on www.praxisunico.org.uk.



UK KEC: OPENING UP OPPORTUNITIES OVERSEAS

Nessa Carey, International Director at PraxisUnico, travels across the world to deliver training to Knowledge Exchange & Commercialisation practitioners, to share the UK's expertise, build links and bring back learning to inform best practice.

Knowledge exchange and commercialisation is important in supporting and developing the new industries of the future, delivering social benefits and helping to drive the growth of the economy and keep a competitive edge in global markets through research and innovation.

Numerous studies have shown how the transfer of publicly funded research outcomes can improve business productivity, sales, and performance in product, service and process innovation¹, across sectors as well as across geographies.

KEC professionals play an important role in enabling the realisation of social and economic impact, and their expertise in overcoming obstacles and finding creative solutions to practical problems delivers significant value to collaborative work between academia and industry.

An example is Public Health England's KEC activity, which received several

awards for its leadership and contribution to the development of vaccines, therapeutics and diagnostics in the fight against Ebola. They won the PraxisUnico and RCUK Impact Award for Contribution to Society for "Knowledge Exchange on the Frontline: responding to the Ebola outbreak", in which KEC professionals enabled UK and international collaboration, co-ordinating work on vaccines, therapeutics and diagnostics and bringing the knowledge community together to develop an effective response.

The UK can successfully lead such initiatives because of the strong KEC community. PraxisUnico has worked across the world, in Brazil, China, Japan, Saudi Arabia, Portugal, Columbia, and other regions which are seeking to develop their KEC activity. Through training, we can give international KEC practitioners tools to help them solve the challenges they face. While the challenges are unique to each country, skills like landscaping the

business environment and identifying the potential customer base for the technologies they are trying to commercialise are eminently transferable.

To give just one example, we were recently delivering training in Shanghai, where it was striking that two of the three projects delegates were working on were technologies related to water treatment, and the production of clean drinking water. Water availability is a major issue in China and is a consequence of many factors, ranging from the rapid increase in high population densities, to the toxic by-products resulting from the generation of traditional Chinese medicines. Water technologies and expertise are in high demand in China, creating potential opportunities for partnerships with UK organisations at the leading edge in this area.

By working together, we can achieve impacts that benefit not only the UK, but make a real difference in solving global problems.

1. UK-Innovation Research Centre (2014) The economic significance of the UK science base, a report for the Campaign for Science and Engineering ; Department for Business, Innovation and Skills (2014) Estimating the effect of UK direct public support for Innovation; Howells J; Ramlogan R; Cheng S (2012) Universities in an open innovation system: a UK perspective, International Journal of Entrepreneurial Behaviour & Research, Vol. 18 Iss: 4, pp.440–456; Swann, 2009, cited in Schmuecker K; Cook W (2009) Beyond bricks and mortar boards: universities' role in building regional economies, a report for Universities UK and the Institute for Public Policy Research IPPR, 2009

PraxisUnico's Fundamentals of Technology Transfer Course

Technology transfer professionals need to not only have the level of understanding to know what technical questions to ask, but the imagination to think about what can be achieved with a new idea coupled to the ability to persuade and lead academics towards identified goals. A point often emphasised is that it is the skills of the individual that will make or break deals. As one of the PraxisUnico trainers says, "When an impersonal analysis is done of the market, IP, and opportunity, success ultimately comes down to the individuals involved."

It's important, therefore, that individuals are fully skilled and tooled up for success. Fundamentals of Technology Transfer has always been one of the most popular PraxisUnico courses, covering the scope of this important sub-set of KEC, including how to use design techniques to aid the technology transfer process, when to use licensing agreements, non-patent IP, design rights, how to market

your technology transfer activities, and finishes off with a healthy dose of negotiation skills training.

The course reflects the importance of including all stakeholders; the courses include industry speakers, to make sure delegates understand what it is that business looks to tech transfer professionals to provide. None of the world-leading technologies we take for granted today (ultrasound, electron microscope, polio vaccine, liquid crystal displays) would have improved society if the private sector hadn't invested cash at some point in the process - the commercial world has to be involved.

The role of technology transfer professional as "Matchmaker and Educator" is very clear, as industry leader Louise Cruickshanks of DCC Health and Beauty Solutions Ltd, commented, "Technology transfer professionals are relationship managers and counsellors who mediate between commercial needs

and university pulls". Delegates learn about realistic expectations, and making sure those expectations are set at the beginning with all partners involved, on both sides of the academic/commercial fence.

The course also highlights the role of IP as a means to an end, rather than something to be protected at all costs: the emphasis is on driving the uptake of innovative properties coming out of research. The strategic mind-set is important when dealing with IP - it's often easy to patent, but is it strategic?

The role of technology transfer can be hugely rewarding, and is ideal for anyone who likes finding solutions to complex challenges. The career profiles on the PraxisUnico website demonstrate how fulfilling it can be, and investing in training, such as this Fundamentals of Technology Transfer course, is an essential investment to make in enabling excellence in this profession.



KEC CAREER PROFILE



Michael Bath RTTP

Knowledge Exchange and Commercialisation can be a fulfilling and enjoyable career. There is no "one size" fits all progression route, but this feature looks at the paths individuals in KEC have taken.

This issue: Michael Bath, Chair of PraxisUnico's Conference Committee and Technology Transfer Manager for the Physical Sciences, Durham University. Michael has been working in KEC for 15 years.

How did you get into KEC?

Prior to my involvement with KEC, I spent 12 years in various Manufacturing, Engineering and Materials Management roles, mainly at Rolls-Royce. Some projects used Intellectual Property to improve products and processes. This led to a general interest in the area and my first specific KEC role at RTC North Ltd in 1999.

I have a BEng in Mechanical Engineering from Huddersfield Polytechnic and an MSc in Manufacturing Systems Engineering and Marketing which was funded by Rolls-Royce and completed part-time during my employment there.

How has your career progressed from that point to where you are today?

During my employment at RTC North, I helped local SMEs, individual entrepreneurs and the NHS commercialise research outcomes. With my then boss, Richard Hoare, I set up NHS Innovations North. This was one of the first fully functioning NHS Innovation Hubs in the UK and was my main focus until 2005 when I joined Durham.

What training have you had which has been particularly useful?

PraxisUnico's "Advanced Licensing Skills" and "Spin-out Company Formation" courses have been very helpful in building my skill-set.

" I enjoy working with world leading academics and business people."

What does your day-to-day role involve?

I lead the commercial exploitation of Durham's Engineering and Physical Sciences by securing patents, raising finance, negotiating licenses and creating spin-out companies. I also act as a General Manager for spin-out companies when required. I've raised £13.4m of funds for spin-out companies and £5.7m for spin-out-related university projects.

Which achievements would you describe as career highlights?

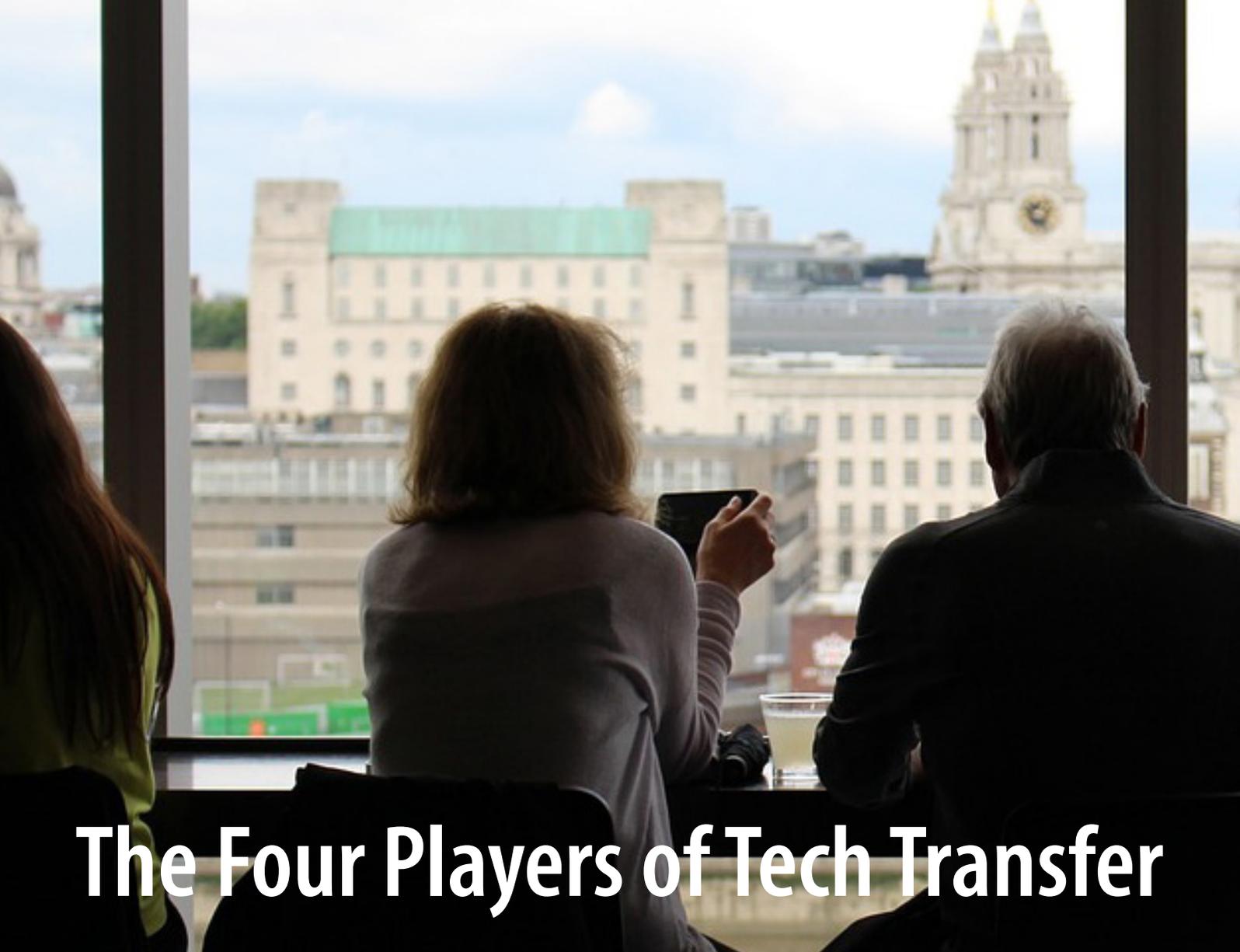
The creation of Applied Graphene Materials (AGM) PLC - originally called Durham Graphene Science, this company was formed around an invention from Durham Chemistry's Prof Karl Coleman. The invention (a novel graphene production method) was disclosed to me in 2009 and I took the idea from disclosure to stock market listing in 4 years. I took sole responsibility for AGM's General Management until the second round of investment. After this, more Directors were able to join Karl and me on the Board. I stepped down from the Board in July 2013 and AGM floated on AIM shortly afterwards. It currently employs 34 people and has a market capitalisation of around £50m. This indicates a fifteen-fold return to the original investor.

What do you enjoy most about your role?

I enjoy seeing tangible results in the form of new businesses and new products. I also enjoy working with world leading academics and business people.

What advice would you give anyone looking to start out in KEC today?

Build a solid understanding of industry and commerce by working in industry for 5 years or more. This will give you insights that academics don't normally have. The good ones will welcome your slightly different perspective of the world.



The Four Players of Tech Transfer

It is easy to sum up tech transfer as a university activity but, in truth, there are four major players. There is obviously the university itself, but what any institution is essentially doing is taking taxpayer cash and turning it into innovations, and therefore government also has a major role. Then there is the end goal of getting it out to the investor and industry communities. In a recent interview with Global University Venturing, Tom Hockaday, outgoing of Isis Innovations, provided parting advice to these players gained over his 27 years of experience.

“The real thing for governments is consistency and continuity,” he said. “When you look at what various governments have done over the past 15 years, there are in fact a lot of real positives, especially the Higher Education Innovation Funding (HEIF) programme. HEIF is the envy of many countries around the world in terms of straight cash support for universities to help them develop their knowledge exchange activities.”

Hockaday said government must try to resist the understandable temptation to change things and bring in new initiatives, citing HEIF as a good example.

“The program has been going for some time, and it is really important for universities to have that strong foundation upon which to conduct these activities,” he said, adding: “Another thing I would say is that when you get a report as strong as the recent Dowling Report, act on the recommendations rather than commission yet another review.”

For universities, Hockaday said it was crucial to continue to recognise that the commercial route by which the outputs of university research find their way into business and become better products and services is entirely valid and important. “It is an appropriate part of what universities are there to do. The commercial routes that we take in tech transfer are, very often, the best ways that research output can have an impact on society.”



For investors, he said the most important thing was to get to know the people you are dealing with. “Get to know each other. Get to understand each other. Realise that you have to live with each other’s imperfections if you want to stick around and operate in this space. University researchers are always going to be different types of people to the investment community, entrepreneurs, university administrators, tech transfer people, and therefore all sides need recognise that and figure out how to not let that be a problem.”

Hockaday had a similar message for corporates, adding that corporates could show more flexibility when engaging with universities.

“I am obviously biased, but if you were to look at the way universities have made huge leaps and bounds in their ability to interact with corporates, and compare this to corporates, then I am not sure corporates have put in the equivalent effort. I think this is a big theme for the future – how can corporates help themselves, but how can everybody encourage corporates to engage more with universities because it is such an important

thing to do. But they are only going to do it if they get it and they think it is a good idea, and innovation communities need to convince them of that.”

Hockaday sees the solution continuing to make the case for what TTOs do for the universities. “They must ensure that having impact and making those connections from the university to the outside world via the commercial route is seen, quite rightly, as valid, important and justified.

“Every research university in the UK now has a tech transfer capability, and they have built up track records and successes. Using that, they can explain that their activities have both financial benefit, but also non-financial benefits. What they need to make clear to university leaders is that it is the pursuit of these non-financial benefits that could also lead to more financial returns.”

This is an extract from the full article. Read more online at www.globaluniversityventuring.com.

KEC IN THE UK: STRUCTURES FOR SUCCESS

In the UK, publicly funded research takes place within Public Sector Research Establishments such as The National Physical Laboratory and within Higher Education Institutions. In this issue we look at the profile of KEC functions within the University sector.

There are distinct segments within UK universities. The 6 universities at the top of the Russell Group are quite different, being larger operations – these include the Universities of Cambridge, Oxford, Manchester, Edinburgh, UCL and Imperial College London, and are much more likely to have a dedicated commercialisation arm (e.g. Cambridge Enterprise, Imperial Innovations, etc.).

The other 18 Russell Group universities are research intensive, but more likely to have a combined Research & Enterprise function. Universities which were established post 1992 are unlikely to have a commercialisation arm, but this is not to say that knowledge exchange is not an important and successful part of their remit, as the research impact ratings in the REF demonstrate. For instance, Bournemouth University, which we look at in this issue, had 70% of its research impact deemed to be “outstanding (4*) or very considerable (3*)” in the recent REF results.

Universities pre-1992 are a heterogeneous group of 45 universities established prior to the Further and Higher Education Act 1992 but which are not part of the Russell Group. In addition there are 19 Higher Education Institutions which are smaller than non-specialist HEIs and include institutions such as the Royal College of Art.

We take a look at how award-winning universities from different segments, recognised for their KEC success, structure their activity. This diverse, vibrant landscape caters for varying needs of industry and society, while allowing institutions to best enable and support interactions between business and communities, appropriate to their expertise, heritage and size. KEC success and contribution to the UK takes many forms, and is an asset we can be proud of.



CAMBRIDGE UNIVERSITY



- **University research income: £397m**
- **Number of academics: 4869 (includes 1783 academics and 3085 researchers)**
- **Number of Knowledge Exchange & Commercialisation (KEC) staff: Approx 60 within Cambridge Enterprise**
- **Location and KEC structure within institution:**
The University has a dedicated commercialisation function, Cambridge Enterprise, with other staff embedded within departments of the university.
- **77% of research rated world-leading or internationally excellent.**

As a research intensive university, the University of Cambridge's KEC work is typically STEM focused. Cambridge Enterprise had a record 2015 for spin-out investment from its £16 million seed fund, launching 13 promising companies. In the same year, Cambridge Enterprise Seed Funds returned £3.7m to the fund from the sale of shares in three companies. To find out more or get in touch visit www.enterprise.cam.ac.uk.



- **University research income: £7.8m**
- **Number of academics: 1355**
- **Number of Knowledge Exchange & Commercialisation staff: 19**
- **Location & KEC structure of the organisation: Strathclyde's KEC team is located within the University, in Research & Knowledge Exchange Services.**
- **78% of research rated world leading or internationally excellent.**

Strathclyde works closely with two Catapults, and is the home of the first UK Fraunhofer Centre, in applied photonics. In 2015 Strathclyde was short-listed for both the Contribution to Business (for Cascade Technologies) and Contribution to Society (for prospective sight-saving spin-out PEEK) Awards in PraxisUnico and RCUK's Impact Awards for KEC professionals. The University is part of Interface, a central knowledge connection hub for business, connecting organisations from a wide variety of national and international industries to Scotland's 23 higher education and research institutes: <https://www.strath.ac.uk/workwithus/> <http://www.interface-online.org.uk/>

BOURNEMOUTH UNIVERSITY



- **University research income: £9.2m**
- **Number of academics: 736**
- **Number of KEC staff: 8**
- **Location and structure of KEC within institution: Bournemouth University's KEC is based within the Research and Knowledge Exchange Office and more broadly within the Services to Business provision at the University.**
- **96% of research rated world-leading or internationally excellent.**

Established in 1992, Bournemouth University received the highest possible award from the Quality Assurance Agency for Higher Education in 2013 and has recently been awarded Athena Swan Bronze accreditation. Bournemouth University works with organisations across the local region and nationally to share knowledge created through BU's research and develop new research projects. In the last Research Excellence Framework (REF) assessment, 96% of BU's research was rated at an international level, with 18% of that deemed to be world-leading. BU runs an annual Festival of Learning aims to share Bournemouth University's knowledge, research and expertise with the local community in an engaging and accessible way. BU is currently launching a Student Project Bank to further cultivate knowledge exchange via the student body and local organisations.

LANCASTER UNIVERSITY



- **University research income: £26m**
- **Number of academics: 1,032**
- **Number of KEC staff: 30**
- **Location and structure of KEC staff: Research & Enterprise Service (RES) is based in Bowland Main on the main parkland campus to the south of the city of Lancaster.**
- **77% of research rated world-leading or internationally excellent.**

Lancaster University was established in 1964, and has a well-developed Research & Enterprise Service. RES coordinates and delivers services for business, industry, entrepreneurs and the public and third sector for the University. Under the RES team, over 5,000 companies have worked with the University since 2010, and the University has partnered in over £50M of research projects directly with industry in the same period. It is estimated that the value of this to the local economy is greater than £300 million per year. <http://www.lancaster.ac.uk/researchenterprise>



Focusing on slashing a 10 year route to revenue generation to an achievable 3 year projection, and saving millions of pounds of funding in the process, is the hidden success story behind the Medherant: the first transdermal patch containing ibuprofen, and the next generation in pain relief.

Medherant's business hinges on a patented adhesive patch technology that delivers a high doses of a wide variety of drugs through an embedded polymer matrix which sticks to the patient's skin. The world's first ibuprofen patch has been developed using this technology in just 6 months and a range of other analgesic patches are also currently under development. Medherant's technology can deliver 5 to 10 times the amount of analgesic than other patches and creams with a steady release profile over up to 12 hours to treat conditions such as back pain, arthritis and neuralgia. The breakthrough in developing the ibuprofen patch has been celebrated around the world online, in top newspapers and on TV.

The unsung hero of this story is Dr Andrew Lee, Business Development Manager at Warwick Ventures, the KEC professional, without whom this would not have happened.

When Andrew was first introduced to an early stage project involving the development of novel chemistry and its subsequent formulation into a patch to

The KEC choices that made spin-out Medherant happen

treat arthritis sufferers he knew that the road to get novel molecules into market was arduous, expensive, and protracted. With the level of technical complexity, regulatory hurdles and the funds required and time-scale involved, there was a real risk of failure of the project along the line for either the technical or financial reasons – with the project likely to burn millions in cash with a low chance of ever getting to market.

With 11 years experience in KEC, and a strong scientific background including a PhD in Molecular Immunology, Andrew recognised that this “high science” project was going nowhere. Wanting to capitalise on the extensive polymer chemistry expertise at Warwick he investigated the possibility of developing a patch technology into which one could load generic drugs; specifically identifying that there was currently no ibuprofen patch in the marketplace and that this could be a massive opportunity for the university. It was this decision that set in motion the success that then followed Medherant.

Through discussion with his colleague Phillip Smith, who was then part of the Corporate Relations team at Warwick University, he was made aware that long-term Warwick collaborators Bostik were keen to enter the medical sector. Phillip and Andrew then set up a meeting with the European R&D Director of Bostik to propose the Medherant spin-out – with Professor David Haddleton of Warwick leading the

scientific discussions

The meeting with Bostik resulted in them allowing Prof Haddleton to test some novel polymers they had developed as potential drug delivery vehicle. The first simple experiments, designed by Andrew and Prof Haddleton, involved mixing ibuprofen and methyl salicylate with melted polymers to then make patches which were stuck to a joint of pork (as pig skin is very similar to human skin). The loading and release of the drugs were then monitored over a 6-hour timecourse. The results were amazing – showing loading of up to 30% w/v and a steady release profile was achieved over 6 hours.

These results lead very rapidly to Warwick Ventures setting up the Medherant spin-out and the subsequent securing of a global exclusive licence for Bostik’s polymer technology for transdermal & topical drug delivery by Medherant. Andrew then identified and brought on board an experienced management team who then successfully pitched for £300k seed funding from Mercia Fund Management venture capital group. In the nine months since being funded Medherant has set up its own lab, taken on two technical staff and has gone on to hit (and in fact exceed) all of its technical milestones.

The success of Medherant has led to increased profile for Warwick University - with the ibuprofen patch

being launched globally via a Warwick press release which directly lead to six “Big Pharma” companies contacting Medherant and entering discussions with them around licensing the ibuprofen technology and/or the future use of the Medherant platform in developing transdermal products for their novel drugs. Partnering with pharma Medherant expect their new ibuprofen product to be on the market within 2-3 years and having the potential to revolutionise pain relief. The company are close to establishing such commercial partnerships and is already in a robust financial position. All in all Medherant looks set for global success.

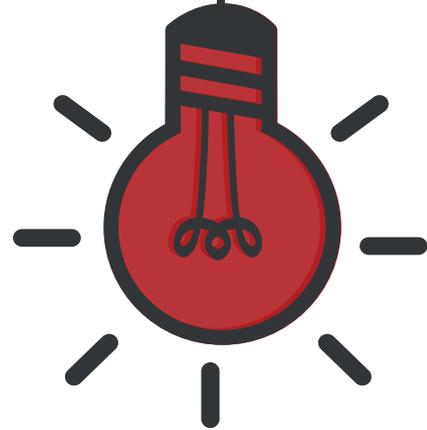
This is all because of what Andrew claims is the “common-sense” decision to shift the spin-out model from being high science with a long development timeline to being one of simpler science that can be taken to market quickly.

Without the KEC professional identifying this optimal (and simpler) business model for this opportunity; identifying the key expertise within the university negotiating the funding, relationships and legalities involved, these benefits would never have been unlocked. Similarly, without the significant backing Andrew received from Warwick Ventures management the idea would never have taken off the ground. It looks like their faith is going to be rewarded.

Such is the power of the KEC professional!

SPOTLIGHT ON

THE KEC EFFECT



While new research and its implications get all the headlines at the early stages, and the new applications change the world at the other end of the pipeline, the KEC professionals role in helping realise the potential social and economic impact of research is often overlooked. That's one of the reasons which PraxisUnico began the Impact Awards, to highlight the contribution which KEC professionals make to this process.

Most recently, we partnered with Research Councils UK in delivering the Impact Awards, to highlight that KEC professionals are a vital part of the research ecosystem, adding value to the work of their academic colleagues in enabling the achievement of social and economic impact.

What makes a great KEC story? In the case of the overall winner for 2015, it was a fantastic collaboration between the university and industry, underpinned by a driven academic and a dynamic KEC lead which enabled obstacles to be

overcome and a globally unique facility to be achieved.

The University of Leicester's Advanced Structural Dynamics Evaluation Centre (ASDEC) offers commercial structural dynamics consultancy and research to industry using 3D laser vibrometry. Located in an automotive cluster, it has created a consultancy service with a healthy pipeline of business from the companies around it. It has made it easier for knowledge exchange to happen, raised the profile of the University as a sector expert, and made working with them more attractive to external businesses.

The secret behind the success was a fantastic collaboration between the university and industry, enabled by a strong KEC lead in Anjuu Trevedi, working with Professor Sarah Hainsworth, lead academic and Director of ASDEC, as part of an effective and dynamic team.

Professor Hainsworth said, "This award recognises the efforts of many people at the University of Leicester, particularly

Anjuu as the KEC professional. The KEC team has been crucial to ASDECs success and in building a lasting long-life project. Anjuu's unwavering enthusiasm and dedication over the four years of the project from the initial conception and market research, and her expertise in grant writing and knowledge of the funding environment, has been crucial. She has also played a very important part in terms of convincing the senior management team at Leicester that the project was well founded and viable."

ASDEC gives UK engineering a genuine competitive advantage as it seeks to compete globally. Backed by the expertise within the University of Leicester, the combination of facilities and expertise have helped establish a consultancy business which benefits both the university and local automotive businesses in the area, who are able to take advantage of this world-leading facility to develop better products. A true success story in every sense of the word.

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Raised profile of
University of Leicester as
an expert in the field.

Became attractive to
external businesses

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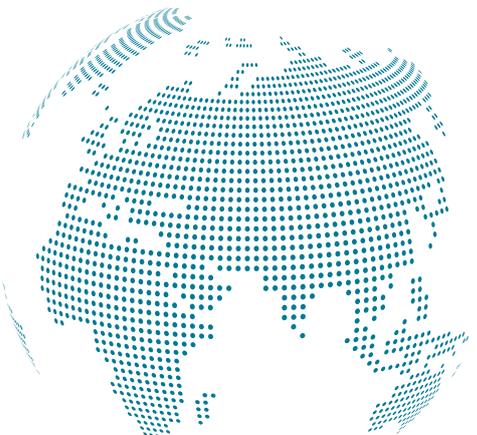
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17 - 19 MAY	Developing Strategic Partnerships
15 - 17 JUN	PraxisUnico 2016 Conference: Develop, Promote, Connect
28 - 30 JUN	Creating and Managing a Consultancy Service
13 - 16 SEP	Research Contracts
20 - 22 SEP	New Venture Creation 1 (When to start a company)
04 - 07 OCT	Fundamentals of Technology Transfer
08 - 10 NOV	Essentials of Business Development
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