Innovate UK
KTP Awards

12 OCTOBER 2022

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FOREWORD

Richard Lamb
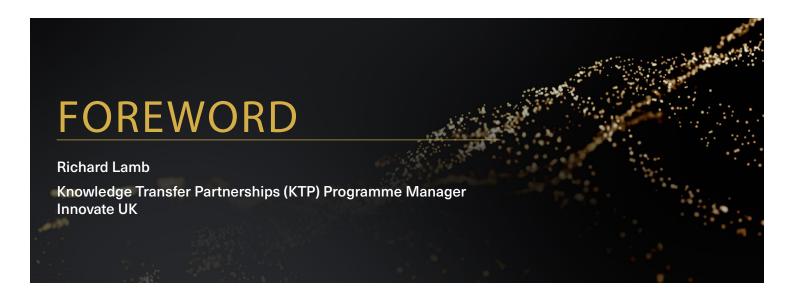
Knowledge Transfer Partnerships (KTP) Programme Manager
Innovate UK

Many congratulations to all our fantastic KTP Awards 2022 winners and nominees. I would also like to thank our incredible teams, speakers and everyone who was involved in organising and delivering such an engaging awards ceremony, celebrating the great impact and achievements enabled by these collaborative partnerships.
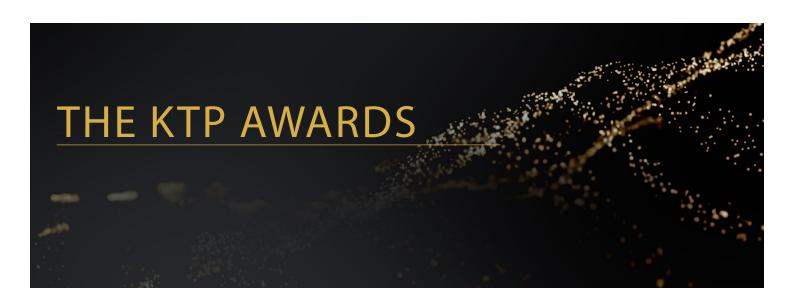
There is a reason why the KTP programme has endured for nearly half a century. Impact. From developing life-changing medical treatments for disease, to working with ground-breaking new materials, to helping people and goods move around more efficiently. These projects are examples of how we are driving productivity and economic growth by supporting businesses to develop and realise the potential of new ideas, including those from the UK's world-class research base.

The KTP Programme offers mutual benefit to all the members of the partnership. For associates, they have a unique opportunity to become future leaders, who are delivering meaningful commercially led innovation projects within a business setting.

For the knowledge base (university, research organisation or catapult), it gives the chance to apply the latest academic thinking to address real-world commercial challenges. And for the business, forming a trusted partnership with a knowledge base provides direct access to world-leading experts who will embed their academic 'know-how' as a new capability within the company.

The UK's strong research base is noted as an important foundation in our Plan for Action and so we will actively work with partners across UKRI and beyond to drive and support the commercialisation of great ideas. We will develop our products and services and work across our domains, catapults, Knowledge Transfer and Edge business advisory networks to help business to do this. We also have ambitious plans to increase the number of KTP projects we support, from over 700 which are currently active, our aim is to grow this to 1200 partnerships by 2025.

If you would like to learn more about KTP and how it can help your business solve some of your innovation challenges, please get in touch with the team by visiting **https://www.ktp-uk.org/**

THE KTP AWARDS

Held at the beautiful St. George's Hall in Liverpool, as well as online, this year's KTP awards were hosted by the fantastic Suzannah Lipscomb. There were additional awards up for grabs this year, and we were treated to even more stories from across the KTP community.

Best Knowledge Transfer Partnership Award

Recognising teams who demonstrate exceptional achievements across all three Partners: Business; Academic; and Associate

Technical Excellence Award

Recognising partnerships which demonstrate excellence in the application of science, technology, engineering or maths

Business Impact and Transformation Award

Recognising those that have demonstrated a transformative commercial and helped companies to expand their commercial capabilities and exploit market opportunities

Changing the World Award

Recognising teams who have delivered a societal, social, or environmental impact

Best Knowledge Base KTP Support Team Award

Recognising teams that have influenced and supported sustained high-quality performance in KTP

KTP Academic of the Year Award

Recognising the outstanding contribution made to KTP by a member of academic staff and the role that they have had in influencing the uptake of KTP throughout their institution

Future Leaders Award

Recognising associates who have shown exceptional skills, above and beyond the normal expectations of a KTP Associate, in driving and delivering innovation strategy; demonstrating great teamwork and outstanding leadership potential

FUTURE LEADER - WINNER

Catherine Campbell
Sustainability & Quality Engineer | AG

The Project

AG is a family-owned business specialising in hard landscaping and building products. It partnered in a KTP with Queen's University Belfast to develop a surface protection system for concrete paving and flags that eliminates efflorescence and staining, enabling easier in-situ cleaning, whilst reducing the overall carbon footprint.

The Future Leader

Catherine's determination, knowledge, and adaptability have stood her out as a clear Future Leader. She surpassed the original KTP expectations within two years of the three-year project, evidencing her outstanding technical ability and leadership skills. A major output was her development and launch of a new premium flagstone product 'Fiamma', delivering sales of £0.5 million in its first year - a hugely impressive feat, and one that signals immense things to come from Catherine in the future.

Catherine's application of her knowledge of products, materials, and manufacturing processes across all areas of the business is demonstrated in the fact that her opinions and advice are widely sought by her peers and the company management team. Catherine has even overseen AG's investment in R&D increase by 80%, delivering a new R&D lab, for which Catherine took the lead on installation, setup, and day-to-day operation. She is a strong ambassador for AG, and a role model for women in engineering, demonstrating the drive and ability to influence and motivate people to make positive change.

> **"** When looking for jobs, it can be hard if you don't have the requisite experience, but that didn't matter when joining the KTP. I was given a great opportunity and backed by fantastic support, but still allowed the autonomy to make the project mine. I say if you're looking at joining a KTP, just do it! **"**

**Catherine Campbell,
Sustainability &
Quality Engineer,
KTP Future Leader Winner**

FUTURE LEADER - WINNER

Harsh Shah
Data Lead | East Midlands Chamber

The Project

East Midlands Chamber (EMC) represents businesses of all sizes and from a range of sectors in Derbyshire, Nottinghamshire and Leicestershire. It partnered with De Montfort University to build its capabilities in data collation and capacity in applying business intelligence tools to conduct socio-economic modelling and projections with real-world applications. The result of this work has been the creation of a regional business research and intelligence unit, which provides data-driven insights into the East Midlands economy in order to improve its competitiveness and productivity.

The Future Leader

Harsh's growth from being a fresh graduate, with a lack of UK commercial exposure and confidence, to a highly professional and confident innovator who actively seeks marketable opportunities for EMC has made him a very worthy Future Leader Winner. His data-based work on automating and personalising EMC's Quarterly Economic Survey proved immensely influential both in and beyond the East Midlands, garnering interest from the British Chamber of Commerce (BCC) to scale this work across the rest of the UK. He has also presented at a national data strategy event, developed reports for local and national media companies (including the BBC and ITV), and his early meetings with the BCC inspired it to develop an economic data repository.

Furthermore, Harsh took part in the Alan Turing Institute's Data Study Group resolving challenges for Siemens and Rolls-Royce and won the "Data Driven Approach" award for his enthusiasm and determination and has been invited to join their Data Skills Taskforce. He has also been shortlisted as a finalist for the Excellence in Innovation and Technology Award at the Generation Next Awards.

> **"** The KTP has been great for the wider KTN connections and insight it has afforded me, and in particular for its personal development budget, which has massively accelerated my skills and knowledge. If you know where you want to be, the KTP will get you there. **"**

**Harsh Shah,
Data Lead,
KTP Future Leader Winner**

FUTURE LEADER - WINNER

Matthew Holland
Head of Product Development | Innerva

The Project

Innerva designs, manufactures, and sells power-assisted exercise equipment. By collaborating with Manchester Metropolitan University, Innerva aimed to instil biomechanical engineering expertise into its understanding of the exercise needs of wheelchair users and those with limited mobility.

The Future Leader

Matthew is easy to describe as a Future Leader. Throughout his KTP he regularly went beyond the original project objectives to add significant value to the partnership. His leadership and technical excellence in embedding a new product development (NPD) approach drew on an innovative multi-disciplinary combination of CAD and biomechanical analysis. He also had a significant commercial impact by leading Innerva to apply the NPD approach to develop and release two new wheelchair-accessible Innerva machines during the project with more exciting new products expected in the next 2 years.

Matthew is a role model for leadership and innovation. His technical expertise, innovative vision, and willingness to go beyond have marked him out as a worthy Future Leader Winner. His work has improved design efficiency to allow for cost savings in Innerva's development processes and he is already looking to the future, drawing on his own experience of leading a KTP to offer guidance, mentoring, and support for the Associate recently appointed to lead Innerva's management KTP.

> " The KTP enabled me to take my academic skills and knowledge and utilise them towards real world outcomes, ones that are making a tangible difference in improving peoples' lives. To me, that's the real value of the KTP. "
>
> **Matthew Holland, Innerva**
> **KTP Future Leader Winner**

FUTURE LEADER - WINNER

Tania Farhat
Software Engineer | Unibrak Ltd

The Project

Unibrak Ltd is one of the UK's largest independent ventilation companies offering a full nationwide service to commercial, new build, and domestic customers. It sought to work with the University of Manchester to design, develop, and embed an Industry 4.0-inspired data-driven business model and management information framework.

The Future Leader

Tania's strategic vision combined with her ability to build and sustain employee commitment to that vision has truly set her apart as a Future Leader. She quickly understood that there can be resistance to the adoption of new technology, along with a potentially steep learning curve. Tania was able to articulate this well, removing any fear that implementing her app-based workflows would place excessive burdens on site-based staff. Her open communication with colleagues was critical in the positive reception and uptake of new processes among Unibrak staff.

Since Tania's implementation of an Industry 4.0 business model, Unibrak has seen average profit margin on projects increase by 6%. All staff now use Tania's web app for updating their works, leading to increased productivity thanks to better information flow to and from site, as well as reduced downtime. Tania's ability to communicate to various stakeholders with such determination, enthusiasm, and empathy, along with her continued delivery of academic papers of the highest standard have rightly earned her the title of KTP Future Leader.

> " The KTP has been exceptional in assisting my personal development. It required me to take ownership of the project, meaning I was empowered to manage it how I saw fit. I've learned a lot of really useful professional skills as a result – the kind employers want to see on a CV. "
>
> **Tania Farhat,**
> **Software Engineer**
> **KTP Future Leader Winner**

THE BEST KNOWLEDGE TRANSFER PARTNERSHIP AWARD

The Best Knowledge Transfer Partnership Award honours the partnership which has brought the greatest benefits to all three participants: Business; Academic; and Associate, exceeding the expectations set out in their KTP proposal, and which best exemplifies innovation through collaboration.

BEST KTP AWARD - WINNER

Business: Cirdan Imaging Ltd
Academic: Queen's University Belfast
Associate: Jonathan Armstrong

Integrating AI and machine learning into medical imaging solutions for highly accurate, cost effective cancer detection.

The Challenge...

Globally, there is a dwindling number of pathologists and biomedical scientists. Couple this with the greater need for early detection testing and an ageing population, and pathologists' workloads are increasing sharply. This can in turn lead to delays in patient treatment and to poorer patient outcomes. To solve this crisis, a solution that increases productivity while maintaining cost effectiveness is required.

The Solution...

Cirdan Imaging designs, manufactures, and supplies innovative pathological imaging solutions. It partnered with Queen's University Belfast to develop and integrate an AI model into its systems for the detection of calcification in mammograms, and to develop an AI model for tumour detection in colon polyp whole slide images.

Jonathan, the KTP Associate, developed two AI products: firstly, an AI algorithm for Cirdan's CoreLite x-ray product. This allows customers worldwide to send a secure image and receive an annotated result. Secondly, in collaboration with a consultant pathologist from the Royal Victoria Hospital Belfast, a 95% accuracy cloud-based AI algorithm for detecting tumours in any polyp image.

The Results...

Due to the success of the KTP's collaborations, Cirdan has evolved into the Pathology Data Analytics and AI sphere. The knowledge transferred in this partnership embedded invaluable expertise in deep learning and cloud base AI solutions, allowing Cirdan to offer AI-enabled products and software to their global healthcare partners.

" Being a finalist in the KTP Awards is really exciting. It proves that the work we did here in Lisburn really has a far greater meaning across healthcare and across the UK as a whole. It's using AI for good; it's using AI to reduce some of the workload from clinicians, and to help them in their day-to-day practice. "

Jonathan Armstrong, KTP Associate – Cirdan Imaging Limited

" Cirdan has been a big proponent of KTP all the way through the history of our company. We are great believers in the KTP programme for the knowledge transfer, the way that the knowledge transfer is set up, and the ability to get that knowledge transferred. It's second to none. "

**Jonathan Armstrong,
KTP Associate –
Cirdan Imaging Limited**

TECHNICAL EXCELLENCE AWARD

The Technical Excellence Award recognises partnerships that have demonstrated excellence in the application of engineering skills - interpreted in the broadest sense - to recognise the continuing evolution of this field.

TECHNICAL EXCELLENCE AWARD - WINNER

Business: South West Water Limited
Academic: University of Exeter
Associate: Joshua Myrans

Automating sewer surveys to ensure the ongoing security of the UK's sewage network while enhancing workplace safety and effectiveness for staff.

The Challenge...

Manually identifying and annotating sewer defects is a timely process and one subject to significant human error (c.40%). Only the most skilled operatives are capable of annotating footage whilst the surveying camera is in motion, for example, but this improved human efficiency only compounds the chance of error. Without automation, improving this process, and thus the sewer network, is a limited endeavour.

The Solution...

South West Water Limited partnered with the University of Exeter to develop a suite of tools unlike any other currently available on the market. They utilise powerful machine learning and computer vision techniques to identify the presence, type, and details of a sewer fault. This makes it possible to automate the identification of sewer defects using standard CCTV surveys for the first time across the UK water industry.

The Results...

On a large, but limited, set of data, the tool can detect the presence of faults (90%) and classify the fault type (70%) in a sewer pipe. Continuing onwards and working on a significantly larger dataset of coded and validated images, the KTP plans to further optimise the software and machine learning tools to exceed the Manual of Sewer Condition Classification (MSCC) standards expected of a human surveyor. This will enable the automatic identification and coding of sewer faults applicable to all UK water and sewerage companies.

Doing so will enable the completion of more surveys across the wastewater network, in turn improving the quality of data that can be used to prioritise sewer maintenance and rehabilitation work. Not only will this support technological innovation and cost savings, but this solution will also benefit CCTV surveyors, reducing exposure to hazardous surveying environments over the longer term.

" [Using AI] not only makes [surveyors'] jobs a lot easier, it makes them a lot safer, and they can really concentrate on the task at hand which is performing the survey itself, rather than the annotation. "

Joshua Myrans, KTP Associate – South West Water Limited

" The KTP project is the flagship of our network intelligence programme. For me, and for the whole South West Water team, it has provided a platform for learning about data science, and adopting it into our day-to-day operational routines. "

Radenko Danilovic, Programme Manager – South West Water Limited

CHANGING THE WORLD AWARD

The Changing the World Award recognises the wider impacts of KTP – those projects which have delivered significant societal, social, or environmental benefits.

CHANGING THE WORLD AWARD - WINNER

Business: Network 2 Supplies (N2S) Ltd
Academic: Coventry University
Associate: Mahsa Baniasadi

Making better sense of e-waste through commercial bioleaching and innovative new recycling and recovery processes for valuable metals and elements.

The Challenge...

Over 50 million tons of electronic waste are generated globally each year. With typically only 20% recycled, e-waste is routinely shipped overseas for disposal where it is burned through inefficient extraction processes, exposing workers and ecosystems to toxic by-products.

Worldwide, rare metals - including gold, silver, copper, and platinum - worth an estimated €55bn, are lost annually. Not only is this a major issue for the planet, but also for society, which is running out of critical materials.

The Solution...

This KTP, in collaboration with Coventry University, aimed to develop an in-house bioleaching-based capability using bacteria for the recovery of precious metals from e-waste on site, whilst preserving the environment and preventing health-related issues.

The Results...

The development of a sustainable solution for the recovery of precious metals from printed circuit boards has allowed Network 2 Supplies to become one of the first companies in the UK to use processes that don't involve incineration or large quantities of chemicals and acids to recover these metallic elements.

As a result of this KTP, N2S's staff are now able to test printed circuit boards recovered from e-waste and assess their composition and value. This has allowed them to pave the way for sustainable processes for the recycling and recovery of valuable metals and elements, using methods and techniques acquired as part of the KTP.

❝ The aim of the KTP was building a [bioleaching] lab in the company, developing the methods, and embedding the processes within the company. Then, at the end, it was about training the staff for the future of the company. ❞

Mahsa Baniasadi, KTP Associate – Network 2 Supplies (N2S) Ltd

❝ This project has allowed us to transfer our knowledge to society, to be applied in real life, and this is thanks to the collaboration. I really want to thank N2S for allowing us to do that. Without them we would probably be unable to transfer this knowledge out of the lab, so this is really the highlight for me. ❞

**Sebastien Farnaud,
Professor of Enterprise
and Innovation in Healthcare
Technology – Coventry
University**

BUSINESS IMPACT AND TRANSFORMATION AWARD

The Business Impact and Transformation Award recognises the partnership that has continued to demonstrate outstanding impact. By transforming the commercial outlook and accessing academic knowledge to deepen expertise, companies are able to expand their commercial capabilities and exploit market opportunities.

BUSINESS IMPACT AND TRANSFORMATION AWARD - WINNER

Business: SC Group-Global Limited
Academic: University of Exeter
Associate: Matthew Harvey

Previously overlooked categories of vehicles achieving wider sustainability goals in an industry-sensitive way, with no loss in power and performance.

The Challenge...

As the shift towards electrification in personal vehicles becomes increasingly commonplace, the accompanying shift in defence and rescue vehicles appears to be lagging behind. Rather than ignoring the turn to electric, can a solution be found to enhance the environmental credentials and sustainability of such highly specialised, workload intensive vehicles?

The Solution...

Supacat, a division of SC Group-Global Limited, partnered with the University of Exeter to establish the All-Terrain Mobility Platform (ATMP) hybrid drive project. The project has developed the expertise required for the electrification of propulsion, control, and associated ancillary systems for a 'go anywhere' high mobility vehicle for use in hazardous environments, including the defence and emergency services sectors.

The Results...

The KTP has ensured that the company strategy and processes have accelerated to face innovation opportunities, well exceeding expectations.

A team has now been established with the necessary infrastructure to develop and manufacture high performance off-road vehicles, to cross a variety of terrains. As a result, SC Group has gained significant contemporary expertise on hybrid electric powertrains. Various sectors can utilise this technology to improve operational capability whilst protecting the planet, e.g., defence, utilities, medical services, emergency services, and forestry. The new technology is also being applied to other SC Group products.

" The impact of the work done has been substantial in our company. It has made us a leader in a vehicle electrification in different markets, e.g., military and rescue services, and we're now seen as a go-to company for that sort of work. **"**

Matt Harvey, KTP Associate –SC Group – Global Limited

" The KTP has had an incredible impact at Supacat. It really opens the door to understanding the users of [defence] vehicles and how they work, and it also goes beyond just defence into all kinds of other vehicles. The KTP has been very disruptive in the sector; I think it's widely accepted that electrification [of defence vehicles] is a reality, and Supacat is now at the forefront of that. **"**

**Prof. Chris Smith,
Leader of Centre for Clean Mobility – University of Exeter**

ACADEMIC OF THE YEAR AWARD

A new award for 2022, the Academic of the Year Award recognises the outstanding contribution made to KTP by a member of academic staff and the role they have had in influencing the uptake of KTP throughout their institution.

ACADEMIC OF THE YEAR AWARD - WINNER

Business: Mediterranean Shipping Company (MSC)
Academic: Dr Faiyaz Doctor, University of Essex
Associate: Ahmad Khaliq

Embracing the purpose and ethos of KTP to show what great successes can be achieved through sustained collaboration.

The Academic of the Year...

Dr Faiyaz Doctor is an academic, innovator and applied technology specialist with over 15 years of experience in the development and application of Artificial Intelligence (AI) techniques in research and commercial areas.

Faiyaz has extensive experience in working with Knowledge Transfer Partnerships and has led projects across several sectors, including healthcare, property, digital marketing, and facilities management.

His expertise in knowledge transfer and effective partnership-building has been fundamental to the development of the University of Essex's relationship with Mediterranean Shipping Company (MSC).

A former KTP Associate himself, Faiyaz's contribution to the KTP with MSC has been exceptional, from successfully leading a cross-discipline project working across faculties with other academics from the Department of Mathematics, to mentoring the KTP Associate.

" It is truly an honour to be nominated for the academic of the year award. This is testament to our continued work and the relationship we have forged with MSC since 2019. And also the fantastic associate we have, the academic team, and the commercial team that is working with us on this project. **"**
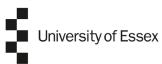
Dr Faiyaz Doctor, Senior Lecturer in Computer Science – University of Essex

" The major highlight of this project [with MSC] has been seeing the transformation of MSC as a business from one which is very much based on human experience and intuition, to a company that is embracing data-driven insights using cutting edge machine learning and simulation tools that will for the first time provide end-to-end visibility of the entire shipping and haulage supply chain. It truly impacts on reducing asset shortages and meeting all the demands for its global customer base. **"**

Dr Faiyaz Doctor,
Senior Lecturer in Computer Science – University of Essex

BEST KNOWLEDGE BASE KTP SUPPORT TEAM AWARD

The Best Knowledge Base KTP Support Team Award recognises a team that has influenced and supported the sustained high-quality performance in KTP.

BEST KNOWLEDGE BASE KTP SUPPORT TEAM AWARD - WINNER

Knowledge Base: University of the West of Scotland
KTP Officer: Stuart Mckay

Sustained engagement with KTP and a true commitment to embodying its values for the betterment of all.

The Team...

The KTP Centre at the University of the West of Scotland (UWS) currently comprises five staff, providing both pre- and post-award support to UWS academics, KTP Associates, and business partners across the UK and overseas.

As a comparatively small university with around 600 academic staff, UWS punch well above their weight in the UK league table for KTP, and it's because of this, they and their invaluable contribution to the programme are being recognised with this award.

The KTP centre has a high success rate in bids (100% over the last 2 years) with academic colleagues, company partners, and referring intermediaries assured of both excellence of service and good return on investment in terms of bid development.

100%	250+	£50 MILLION+
bid success rate over the last 2 years	KTP projects established	secured in funding

The quality of service from UWS is maintained post-award of a KTP, which was demonstrated most vividly by the KTP Centre and UWS's assistance during the pandemic. They offered a range of support from payment holidays to project breaks, supporting associates and businesses at a time when they were under exceptional financial stress and worry.

Several of the businesses supported by UWS during this period have gone on to secure A-graded projects as well as industry awards.

" We genuinely believe in partnership working and everything with KTP at UWS is more than a transactional engagement with industry. We believe in strategic partnership agreements and all of our KTPs are strategic. In 15 years [we've had] over 250 projects, over £50 million in funding, a vast number of fantastic company engagements, and amazing associates that I've had the privilege and honour to work with. That really is what inspires me and keeps me going. "

Stuart Mckay, KTP Manager – University of the West of Scotland

" The UWS KTP team have made their KTP Associates a community, sustained numerous support initiatives throughout the pandemic, helping their well-being and effectiveness. Every business partner feels the weight of the whole university supporting them and in return becomes champions helping to drive the portfolio. Overall, the team have operationalised the University's strategic commitment to KTP, shown great initiative and achieved great success. "

Gerry Black, Senior KTA

ABOUT KTPs

Unique, three-way collaborations powering innovation

KTPs are designed to build long-lasting and mutually beneficial collaborations between the working and learning worlds.

In every Knowledge Base (university, research organisation or catapult) around the UK, there's a wealth of talent and innovative thinking. KTP applies these vital resources to businesses, by uniting people to create positive change through innovation.

KTPs ARE TRUE PARTNERSHIPS, DESIGNED TO BENEFIT ALL THREE PARTNERS

Associate	University or research organisation	UK business or not for profit organisation
Lead change, deliver innovation and apply academic knowledge to a real world challenge	Create business-relevant teaching, research, and publishing opportunities	Drive innovation, increase productivity and improve business performance

If you're a business, forming a long-term partnership with a Knowledge Base offers direct access to research expertise and graduate talent, embedding knowledge and research for long term benefit. If you're a university, research organisation or catapult, a KTP is a chance to apply research to a real-world challenge, contributing research impact, opening up commercial possibilities and tapping into additional funding. And if you're a graduate, this programme could accelerate your career and put you at the beating heart of your chosen speciality.

KTPs – and the newer Management KTPs, focused on expanding management capability – are here to facilitate these relationships, matching the right businesses and institutions to work together and maximise the benefits for everyone. And those benefits are not just economic. KTP delivers positive environmental and societal impact too.

Visit the **KTP website** to find out more.

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