



# Best of the Best

## KTP Awards 2011

# How we chose the 'Best of the Best'

This publication showcases the best Knowledge Transfer Partnerships completed between 1 April 2009 and 31 March 2010. The overall winner receives a trophy and members of the partnership share a £10k cash prize.

To be eligible for an award, a partnership needed to have achieved an 'outstanding' or 'very good' grade in the final report from the panel of external assessors.

Nominations were submitted jointly by the knowledge base, business partners and by Associates, describing the work undertaken, how issues were overcome and the benefits to each of the participants.

A commentary by the KTP Adviser originally assigned to the nominated partnership provided the awards selection panel with objective feedback.

Our Business Leader of Tomorrow awards recognise outstanding contributions from KTP Associates. Business and knowledge base partners nominated individuals who had identified and championed commercial opportunities, had managed successful delivery and had also inspired and supported others to work to a common objective.

The judges also took into account personal attributes – including judgement, goal orientation, integrity, ability to motivate, drive and initiative, objectivity, astuteness, persuasive ability and resource management.

## Knowledge Transfer Partnerships

Knowledge Transfer Partnerships is a UK-wide programme, funded by the Technology Strategy Board along with 12 other public sector partners.

It helps businesses to improve innovation, competitiveness and productivity through better use of the knowledge, technology and skills available within universities and other parts of the UK knowledge base.

Social enterprises and some public sector organisations also have the opportunity to innovate and improve their performance through KTPs.

Each partnership employs one or more Associates, high-calibre graduates who gain invaluable experience from working in a commercial environment on a project lasting from six months to three years.

Business partners contribute the balance of costs while reaping the benefits from the transfer of skills and expertise from academia and the research community.

Universities gain improved understanding of the challenges facing business and wider recognition for the quality of their research.

# Innovation points the way forward



Iain Gray speaking at the KTP awards ceremony during the Technology Strategy Board's Innovate '11 event.

The Knowledge Transfer Partnerships programme is as relevant now as at any point in the last 35 years – perhaps even more so.

It is ideas and innovation that will provide the inspiration and energy for UK businesses to emerge from these uncertain economic times and to thrive in increasingly competitive global markets.

KTP represents British talent and ingenuity working at its best – the commercial world in partnership with leading academics and drawing on exceptionally gifted Associates.

Our award winners come from the public and private sector and are engaged in fields ranging from bio-sciences and public health care to high-value manufacturing and environmental technologies.

Those featured in this publication represent just a handful of the many outstanding projects undertaken and completed every year in a diverse range of sectors and industries.

KTP matches business leaders to their academic counterparts to deliver collaborative projects that achieve tangible outcomes, often beyond all expectation and with a consequent impact on productivity and profitability.

For the universities it fosters and reinforces relationships with business, opening up other collaborative ventures as well as informing their future research and teaching.

Our Business Leader of Tomorrow awards show how KTP also performs the essential requirement of fast-tracking the best graduate talent, giving them the opportunity to be the next generation of entrepreneurs and industrialists.

Immediately, it generates expansion and profits from innovative ideas and in the longer term provides UK business with leadership and energy to match or even outperform its competitors.

That is why the Knowledge Transfer Partnerships are now an integral part of the Technology Strategy Board's work.

**Iain Gray**  
**Chief Executive,**  
**Technology Strategy Board**

## Cherry Pipes Ltd

Queen's University Belfast and Associates Paul Beaney and Justyna Grabowska

Funded by the Technology Strategy Board and Invest Northern Ireland

Partnership aim: to develop and embed a more scientific and systematic approach to the company's pipe extrusion facilities, implementing quality improvements, rapid factory expansion and an in-house design function.



**“The KTP programme gave me the knowledge and expertise that I required to move from being a technically competent graduate to a member of the senior management team in an exciting, technically challenging company.”**

*Dr Paul Beaney, Technical Manager and former Associate, Cherry Plastics Group*

The story of Cherry Pipes is a remarkable one – how a small firm in Dungannon producing pre-cast concrete drainage pipes was transformed through KTP into one of the top plastics recycling companies in the UK.

When Cherry Pipes embarked on production of plastic pipes back in 2004 they had to look only 40 miles east for advice and expertise, to the internationally renowned Polymer Processing Research Centre (PPRC) at Queen's University Belfast.

As leaders in the field of polymer materials and extrusion processing, they were natural partners for a KTP, which was launched in October 2006 with the appointment of a young graduate, Paul Beaney. He was joined 15 months later by a second Associate, Justyna Grabowska, as the partnership set about embedding a more scientific and systematic approach to the company's pipe extrusion facilities.

This also created the confidence for strategic investment and expansion, with some £10m being spent on new plant, machinery and buildings. This led to an increase in turnover from £2.5m before the KTP to £5.7m by its completion, due mainly to a reduction in production costs, an increase in the client base and the formation of a recycling division called Cherry Polymers. Staff numbers grew from 20 to 60.

The company also set up its first polymer testing and analysis laboratory, which drove improvements in raw material and product quality and saw the PPRC academics playing a vital role in interpreting data and advising on purchase of analysis equipment. A new quality system opened the way to a large increase in sales and led to the appointment of the first quality manager.

But it was in establishing an accredited environmental management system that the



Gerry McNally, director, Polymer Processing Research Centre (PPRC) at Queen's University Belfast (left), Paul Beaney, formerly KTP Associate and now technical manager of Cherry Plastics Group, Alan Clarke, extrusion manager PPRC, and Stefan Cherry, development director Cherry Plastics Group.

company began to re-invent itself, even beyond the original partnership aims. This led to the formation of Cherry Polymers Ltd and the acquisition of a plastics sorting recycling facility in June 2008. Both Associates and the PPRC were instrumental in providing advice and technical knowledge as £6m was invested in the plant over the next 18 months.

By the end of the KTP, with a design engineer in post, Cherry Plastics Group was recognised as the most technically proficient polymer recycler in Ireland.

**“The scheme is excellent value for money and is a great way to boost your ability to innovate.”**

*Stefan Cherry, Business Development Director*

- From zero spend on research in 2006 at the start of this KTP, Cherry Pipes invested more than £200k in R&D during 2010
- The company has recently led a European Framework 7 partnership with three universities and four smaller businesses to develop a more intelligent method of manufacturing products with recycled materials. PPRC is the lead research and technology developer
- The Associates delivered workshops, master classes, seminars and technical conference presentations on a range of subjects including R&D, environmental management, innovation, workplace health and business strategy
- Implementing quality management practice immediately led to a halving of waste to 5% and material waste efficiencies of around 10%, representing an increase in turnover of around £125k.
- Queen's University Belfast was awarded Higher Education Innovation Funding of £250k to expand its collaborative activities with the local polymer processing industry. The partners published four joint papers on polymers, presented at the international annual technical conference of The Society of Plastics Engineers. Two to three applied research projects were carried out each year by undergraduate and postgraduate students at the University
- Both Associates, Paul Beaney and Justyna Grabowska, were appointed to senior managerial positions within the company.

## Logical Glue

The University of Essex and Associate Faiyaz Doctor

Funded by the Technology Strategy Board and the Economic & Social Research Council

Partnership aim: to develop an artificial intelligence based system to create a virtual care home where technology will monitor and assist in the care of the inhabitants



Back row (from left): Mark Glover, Director of Business Planning, Technology Strategy Board; Dr Debbie Buckley-Golder, Head of Knowledge Exchange; Clare Lindsay, KTP Programme Manager; Ian Shott, Governing Board member, Technology Strategy Board. Front row: Alex Strang, managing director, Logical Glue; Professor Hani Hadras, Essex Business School; Dr Faiyaz Doctor, KTP Associate.

The partners embarked on this KTP project with the aim of developing innovative rostering software through use of artificial intelligence systems.

As work progressed on computational intelligence techniques, it became obvious to the partners that this had a much wider application. This led to the KTP project developing artificial and computational intelligence-based systems that enabled the creation of a novel intelligent data analysis and decision support product.

Collaboration with the School of Computer Science & Electronic Engineering at the University of Essex allowed access to world-leading expertise in computational intelligence and enabled the Company to build an underpinning technology which is the first of its kind.

Logical Glue's user-led system reduces large variables to more manageable transparent data, allowing both technical and non-technical staff to make use of the knowledge held within the data.

Current sales are in credit reference and lending, where the system is able to detect a higher percentage of defaulting customers.

The Ipswich-based company is exploring other sectors, such as recruitment, oil and gas, pharmaceutical and biomedical, and also sees potential in emerging global markets where artificial intelligence analysis can be more easily integrated into business infrastructure.

As a result of the KTP, the University has established a new, multi-disciplinary centre for research in applied computational intelligence which will provide a forum for collaboration between several University departments.

- The company had begun to generate revenues from the financial sector at the end of the KTP with net profits expected to reach £3m three years after project completion
- The product has been awarded a worldwide PCT patent and has been shown to outperform other commercial offerings by 20-40%.
- The partners formed Logical Glue as a joint spin-out company to market and further develop the systems produced in the project
- Two more KTPs have been awarded to the company and the University of Essex to continue knowledge transfer projects
- The KTP has yielded top quality international research and three publications at major conferences; two journal papers were published post project, plus six conference papers and two book chapters
- The Associate has a role within the company, leading the marketing and development of the systems produced in the KTP.

**“This partnership is exceptional for delivering clear and measurable outputs and outcomes for all partners, which go far beyond those anticipated”**

KTP Adviser

## Joseph Rhodes Ltd

Sheffield Hallam University and  
Associate Karthik Ramakrishnan

Funded by the Technology Strategy Board

Partnership aim: to introduce and embed computer-aided engineering (CAE) techniques and innovative design methods to facilitate new product development with minimum lead time and cost



The Joseph Rhodes KTP project team: Peter Anderton, Group Rhodes Technical Director (left), with Karthik Ramakrishnan, Associate and Design Engineer, and Graham Cockerham, Professor of Engineering Design, Sheffield Hallam University.

Joseph Rhodes is an original equipment manufacturer (OEM), designing and developing hydraulic presses and other machinery for customers in 30 countries across sectors such as metal forming and composites.

This partnership exceeded all expectations in a business that is already one of Europe's leading companies in its field. In particular, it accelerated new opportunities in the fledgling Chinese aerospace market, with the resulting increase in export sales on course to exceed £8m.

The collaboration with Sheffield Hallam University showed how the latest technology could be embedded within a long-established industry as advanced CAE became an integral part of the design function of the company.

One particular product, a 10,600 tonne rubber die press, benefited hugely from 3D visualisation of the unique single-

cylinder configuration. This allowed modifications to improve reliability and reduce weight and earned Joseph Rhodes an industry award.

These same animation techniques were used not only to demonstrate operational and maintenance procedures to customers but also as sales tools by the marketing team.

Simulation/animation files have been made available to support teaching of metal forming at the University's Department of Engineering Design and Technology, furthering understanding of the benefits to be gained from the application of CAE technology.

The Associate, Karthik Ramakrishnan, continues to be employed by Joseph Rhodes as finite element design engineer and two more KTPs have been started at the company.

- On completion, the KTP was judged to be responsible for a £105k increase in profits across the company
- 3D concept sketches and 3D animation were fundamental in securing £13m worth of orders for two superplastic forming machines from BAE Systems
- In 2010 Joseph Rhodes was awarded the Queen's Award for Enterprise in the innovation category, specifically for their range of aerospace machinery
- The Company has formed a day-to-day working relationship with the University, drawing on advice and expertise in a number of areas – from stress analysis to use of consultancy facilities
- Three postgraduate projects have been established at the University; the programme has also seen extended analysis of products using simulation tools, which will be very helpful to teaching; some simulations will be used to explain manufacturing processes to students
- The Associate has achieved an MPhil in cost benefit analysis of computer-aided engineering (CAE) implementation.

**“The technology developed has helped the company open up world aerospace markets, offering us a secure future in the current difficult trading climate”**

*Peter Anderton, Technical Director, Joseph Rhodes Ltd*

## Risktec Solutions Ltd

Liverpool John Moores University and Associate Roisin Gray

Funded by the Technology Strategy Board

Partnership aim: to develop a new technical training business in the area of safety and business risk management, targeted at professional engineers operating in high risk industries



Back row (from left): Mark Glover, Director of Business Planning, Technology Strategy Board; Dr Debbie Buckley-Golder, Head of Knowledge Exchange; Clare Lindsay, KTP Programme Manager; Ian Shott, Governing Board member, Technology Strategy Board. Front row: Steve Lewis, Director, Risktec; Sheryl Hurst, training technical lead, Risktec; Dr Alan Wall, Reader, School of Engineering, Technology and Maritime Operations, Liverpool John Moores University.

Risktec Solutions has seen its competitive position dramatically enhanced by partnering with Liverpool John Moores University to create a professional training and education business in the specialist area of risk and safety management.

The Warrington-based company already had an excellent reputation for risk and safety consulting services. The fruits of the KTP with LJMU have further boosted credibility among clients in major hazard industries as well as those in commercial and public sectors, in helping to manage health, safety, security, environmental and business risk.

Risktec partnered with the University's School of Engineering because of its knowledge and experience of delivering technical material in an industrial environment – a key component of the KTP.

The initial proposal was to develop five training courses for a single market sector, accredited by industry training bodies and endorsed by LJMU. It soon became clear that there was an opportunity to go further and to develop an educational programme with recognised qualifications.

This was quickly expanded into a structured, modular educational programme to MSc level and Risktec now offers formal postgraduate qualifications in risk and safety management, validated by LJMU. Students enrolled with the University have a choice of up to 30 modules.

The Associate achieved an MPhil degree in addition to acquiring knowledge of business processes and management systems, implementing change and managing internal and external stakeholders.

- Risktec has achieved complete business diversification, with training and education now running as a separate business stream
- Training sales were £110k in 2007 (before KTP) and were on course to reach £800k at the end of 2011, with profitability in excess of 20%
- The University gained a new MSc programme serving new customers in new technical and geographical areas, bringing in new income as well as raising the profile of LJMU worldwide
- The MSc programme was selected by the United Arab Emirates nuclear regulator to train their national personnel – a major achievement for the UK, LJMU and Risktec
- More than 60 of Risktec's consultants across the world have been trained to deliver modules, thereby extending their knowledge and skills beyond consulting
- Risktec and LJMU are pursuing further joint opportunities in the Middle East and USA and, through a five-year partnership starting November 2011, have a validated distance learning version of the MSc programme.

**“ The KTP transformed Risktec from a consulting firm to an integrated consulting, training and education provider – a step change in our competitive position ”**

*Steve Lewis, Director, Risktec Solutions Ltd*



## NHS Highland

The University of the Highlands and Islands Millennium Institute and Associate Amy Nimegeer

Funded by the Economic and Social Research Council and the Scottish Funding Council

Partnership aim: to develop innovative public engagement for rural healthcare.



KTP Associate Amy Nimegeer conducting a workshop in the Highlands.

This partnership adopted a very novel approach to one of the biggest challenges facing healthcare services within rural areas: how to involve citizens in having a say in their own future health care services.

In recent years, rapid shifts in demographics, as well as changing job descriptions for health care providers, have been keenly felt in NHS Highland, particularly with fewer resources generally available to meet such growing and fast-changing needs. It therefore recognised the need to develop more effective ways of serving its communities, especially where a local GP or other healthcare professional might be retiring.

Identifying innovative models for healthcare service design was an ideal project for a Knowledge Transfer Partnership since it could draw on academic study of demographics and remote communities through the university's Centre for Rural Health in Inverness.

The KTP began with a review of international methods of rural public involvement, resulting in a tool-kit for public engagement.

**“Everyone involved recognised the great importance of the programme and went out of their way to ensure its success”**

KTP Adviser

Delivered in four stages, including design plans for future healthcare services, it looked to create stronger relationships and an 'informed' public. This took the form of road shows, community workshops and the development of an innovative new budgetary planning game. In addition, UHI staged a successful public lecture series and held a conference based on the project.

Until the KTP, the University's Centre for Rural Health had not included any teaching facility but the expertise gained from the project led to the development of two online MSc modules. The Associate is also now employed on joint working projects between UHI and the NHS.

Apart from being an outstanding example of communication and co-operation between partners at KTP level, this project has continued to have a significant impact on the way NHS Highland engages with remote communities.

- The project was presented to government delegates and senior academics from numerous countries seeking information on how to reform health services in their countries
- New research positions and projects have been funded based on findings from the KTP project, including a health economist position at UHI and a new funded PhD post
- Findings have been used to generate numerous academic papers, nine for submission to refereed journals and conferences and a further 33 for other conferences
- Training events met with overwhelming demand, not only from NHS Highland employees, but also from the Scottish Ambulance Service, local authorities, third sector and private organisations, as well as from employees of other health boards
- Around 60 staff have been directly trained in community engagement techniques, others through UHI MA in Health and Wellbeing, a course for health care professionals in the Highlands
- The Associate completed a Diploma in Management and presented at several high profile conferences both in the UK and abroad, being an invited speaker on several occasions.

## Pfizer UK

The University of Aberdeen and Associate Soumya Palliyil

Funded by the Technology Strategy Board and the Biotechnology and Biological Sciences Research Council

Partnership aim: to generate a panel of novel, human anti-infective drugs, each with differing anti-bacterial efficacies and specialities.



KTP Associate Soumya Palliyil with Professor Andy Porter, Chair in Molecular and Cell Biology at the University of Aberdeen (left), and Dr Keith Charlton, Director of Innovations, Haptogen Ltd.

This KTP focused on one of the biggest challenges facing the global pharmaceutical industry – development of a new class of antibiotic drugs capable of treating bacteria that are already resistant to other antibiotics.

Bacterial drug resistance poses a problem in 80% of all infections requiring antibiotic treatment; work undertaken through the KTP was a key contributor to one of the most advanced drug discovery programmes in anti-infectives.

The highlight of the project was the remarkable performance of the young KTP Associate who mastered the latest genetic engineering techniques to build a drug library of around a billion compounds.

She went on to select hundreds of possible ‘first in class’ drug candidates from this library and to show that their potency was at least 100 times better than

existing drugs developed by the company to similar targets. A 10-fold improvement would have been impressive in itself!

This was achieved in part because the Associate realised that the chances of a successful outcome would be greatly increased if tests to screen the library could be improved.

It represents the early steps of a 10 year journey to take new drugs to the clinic and into revenues – drug discovery success in this area would guarantee annual sales of more than US\$1bn.

The KTP programme was a valuable asset which helped drive the acquisition of a small but successful biotech company, Haptogen Ltd, by Wyeth and in turn by Pfizer.

- The University of Aberdeen developed a 60-strong protein therapeutics facility in a new building on its hospital site, funded in part by Scottish Enterprise.
- Academic publications were delivered from the project and presentations made at international meetings all over the world.
- The Associate was awarded her PhD and has a number of publications to her name. She is now employed within the Scottish Biologics Facility, preparing a Royal Society of Edinburgh Commercialisation Fellowship application with regard to new drug candidates
- The Associate attended and presented her work at conferences all over the world, including the biggest anti-infectives meetings both in Europe and the US
- The presence of Pfizer in Aberdeen was a huge catalyst to encourage the establishment of new University spin-out companies in protein therapeutics and the relocation of foreign companies to the city
- Aberdeen University has become a leading academic light in the training of new staff for the biotech industry, including the establishment of new courses in bio-business.

**“Soumya gained commercial and business insights...that many people never experience in a career in the industry”**

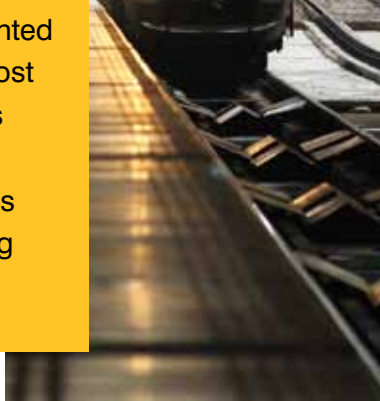
*KTP Adviser*

## Bombardier Transportation UK Ltd

The University of Plymouth  
and Associate Dr Jing Cai

Funded by the Technology Strategy Board

The Business Impact Award is presented to the business that has benefited most from its KTP project in the 12 months after completion. Bombardier Transportation designs, manufactures and delivers rail control and signalling solutions at its Plymouth site.



Bombardier Senior Scientist John Woodcroft with Dr Jing Cai, KTP Associate.

This KTP project has made a substantial impact on Bombardier Transportation's Rail Control Solutions' business in Plymouth and contributed to Bombardier's global rail control product range, by helping to develop a new world-leading and patented coded train detection system, *EBI Track 400*.

The partnership has ensured, after a steady sales volume for the last 25 years, that the company now anticipates an increase in its order book for this product by the end of 2013. This has already led to an increase in the size of the Plymouth-based Product Design Team.

Through innovative coding algorithms and enhanced system performance, Bombardier's technology significantly improves railway reliability, eliminating 'false positive' danger alerts and so

achieving savings for train operators while improving the travelling experience.

Bombardier is also the only UK company to be involved with trials with Network Rail for this technology.

Strong links have been developed between Bombardier and the University, to the benefit of both partners. The knowledge acquired and embedded through this Partnership has also been vital to the Plymouth site's strategic direction, with Bombardier investing further in its Plymouth site and strengthening its global product portfolio.

**“The KTP project developed innovative coding algorithms and increased system performance that has enabled Bombardier to become the world leader in track circuit and coded train detection systems. This level of success would have been impossible without KTP”**

Andy Millar, Engineering Design Manager, Bombardier Transportation UK Ltd

- The development work led to increased worldwide sales of the systems in international markets: including European and Asian markets, Australia and the USA.
- Live trials have been completed in Spain and are under way in India, and the technology is also being introduced into Russia, where approval is anticipated by the end of 2012
- Development of *EBI Track 400* has led Bombardier to invest further in its Devon site and its 100 employees, from where the product is exported globally
- This KTP project has been instrumental in establishing firm links between the University of Plymouth and Bombardier Transportation in Plymouth for specialist research assistance
- As a direct result of the collaboration with the University, the latest generation technology was patented
- Following the KTP project, Dr Cai was employed by Bombardier Plymouth for her specialist knowledge of mathematics and coding techniques, adding value and improving techniques and systems in areas beyond the KTP.

## Aurora Medical

University of Southampton  
and Associate Alex Dickinson

Funded by the Technology Strategy  
Board.

Partnership aim: to develop a new  
hip implant system with improved  
bio-compatibility and longevity



**“ Without KTP, I don’t think I could have had a greater range of experience and level of responsibility so soon after graduating. It was a very exciting and rewarding three years ”**

*Alex Dickinson,  
formerly Associate at Aurora Medical*

A revolutionary hip replacement product inspired by space technology is transforming life for young patients with osteoarthritis and other degenerative joint conditions.

The new ceramic implant system was developed by Finsbury development ltd. and driven by a Knowledge Transfer Partnership with the School of Engineering Sciences at the University of Southampton and Associate Alex Dickinson. It represented a step change in implant design.

It was while company director Dr Andrew Taylor was working on a European Space Agency initiative that he was first introduced to orthopaedics as one of the new ways of employing space technologies. Andrew is now Managing Director and owner of Aurora Medical, a new company spun out of the Research Group at Finsbury to continue the research of the innovation.

Dr Taylor explains: ‘Taking advantage of recent improvements in material structural performance, we were able to develop low-profile, large bearing ceramic implants. These are more dislocation resistant, without over-engineering, and permit more of the patient’s bone to be conserved.’

The first ceramic product, DeltaMotion, was designed and developed with considerable input from the KTP and played a major role in Finsbury’s buoyant survival of the economic downturn and eventual sale to DePuy.

It was approved during the KTP project and before its completion had benefited more than 3,500 patients world-wide. It is particularly effective in restoring natural movement in younger, especially female, patients with degenerative joint conditions such as osteoarthritis.



KTP Associate Alex Dickinson (left) examines a hip implant product with Martin Browne, Reader in Biomaterials Science at Southampton University.

The all-ceramic resurfacing bearing, DeltaSurf, led on from the DeltaMotion product, extending the main goal of the KTP in developing two novel hip replacement implants to treat a problem patient group.

Input and expertise from the academics at Southampton focused on understanding loads exerted upon the implant by both everyday activities and traumatic events and predicting how the body might perform in response to implantation. The collaboration also developed dedicated tests to verify the new designs, setting the standards that other companies will need to follow.

Among the benefits to the University was that the KTP expanded their pre-clinical analysis knowledge base, including computational modelling and mechanical testing techniques.

The commercial performance of the DeltaMotion product, boosted by the work of the Associate indicated the potential of the company's newer implant. DeltaSurf prototypes are being developed into an industrial product on the basis of the KTP's commercialisation plan.

- Parallel products developed with input from the KTP team contributed to a £5.2m increase in sales over 18 months
- Aurora Medical was launched as a prosthesis design and development company after Finsbury Orthopaedics was acquired by DePuy Orthopaedics in December 2009
- The University produced five journal papers and five conference presentations, including an invited lecture at the European Orthopaedic Research Society congress 2010
- The knowledge base has won support for three more PhD studentships and has been integral to a UKIERI programme between Southampton and the Indian Institute of Technology, Kharagpur, India, researching a low-cost knee replacement
- The Associate, Alex Dickinson, was awarded a PhD and completed more scientific publications while working as lead researcher on a new European Community Framework 7 project; he was the group's youngest post-doctoral research fellow
- The KTP's academic credentials strengthened the company's pitch to a major stakeholder, a panel of nine internationally renowned orthopaedic surgeons who described it as the 'most exciting implant development project that (they) have been involved in'.

## Professor Graham Cockerham

Sheffield Hallam University

The Academic Excellence Award recognises 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.



Dr Vince Cable, Secretary of State for Business, Innovation and Skills, presents the award for Outstanding Academic Achievement to Professor Graham Cockerham, of Sheffield Hallam University.

Graham Cockerham's involvement with Knowledge Transfer Partnerships dates back more than three decades.

He attributes his recognition as a university professor some 15 years ago predominantly to his work on KTP activities and their impact on the University and its School of Engineering.

His first project was in 1979 at Davy McKee and was aimed at enhancing the quality of their steel mills, at one point involving six KTP Associates. He went on to be appointed Deputy Director of the School of Engineering, becoming lead academic as KTP (then called the Teaching Company Scheme) co-ordinator from 1980 to 2004.

After this, Professor Cockerham broadened his role as KTP co-ordinator for the Faculty of ACES, involving

computing and design programmes as well as engineering. In all he developed and delivered more than 100 programmes, of which over 90% were in his own specialism of engineering.

He says: 'While I look back at my first project as being the one that gave me a significant boost of confidence, I take a lot of pride in two recent ones, which have gained recognition for their achievements – the Associate at Penny Hydraulics being named a Business Leader of Tomorrow and Joseph Rhodes Ltd collecting a KTP regional award.'

Professor Cockerham believes that the key to a successful Knowledge Transfer Partnership lies in all three parties being firmly committed to making it work, recognising the mutual benefits.

'In practice, it means that there must be a proper vision for innovation by the company,' he says. 'Then you must have a committed and enthusiastic academic partner; and the Associate must have technical competence but, above all, show commitment, enthusiasm and an independent work ethic.'

It helps, he says, that KTP is more refined and focused these days.

'One of our great successes is that we have had a lot of repeat KTPs. Although I have overseen 120 projects they have been with around 40 companies. For instance, Joseph Rhodes, have been partners in four discrete projects.'

Professor Cockerham is now on a phased retirement, which allows him to see through three remaining KTPs and also to arrange a smooth handover with his successor.

**“Graham Cockerham has been an excellent ambassador for KTP over the years, helping a large number of companies to deliver successful projects through his unwavering commitment to the programme”**

*Debbie Buckley-Golder, Head of Knowledge Exchange, Technology Strategy Board*

## Matthew Druce

University of Southampton and  
Geotek Ltd

Funded by the National Environment  
Research Council and the Engineering  
& Physical Sciences Research Council



Matthew Druce at work 'in the field' with Geotek.

Whether testing equipment in the seas off Korea or negotiating with suppliers at home, Matthew Druce has exceeded all expectations as a KTP Associate driving one of the most technically demanding KTP projects.

The aim of the partnership between Geotek Ltd and the University of Southampton was to design, build and commission an advanced geotechnical testing system to analyse the mechanical properties of gas hydrate bearing sediments under *in situ* conditions.

Matthew was expected to deliver all design, build and testing phases of this project, to a predetermined schedule and budget and within an existing team of engineers.

He led the successful commissioning of the project's first deliverable in Korea, achieving unprecedented steps in gas hydrate research – the sub-sampling and transfer of pristine hydrate-bearing sediment samples on site.

Testing the new equipment for two months offshore in Korea was a challenging role, demanding maturity and leadership, first-class communications skills and a willingness to take responsibility for health and safety in a potentially dangerous environment.

This achievement has encouraged further investment from other customers for the development of the second project deliverable, the Pressure Core Analysis and Transfer System – Triaxial (PCATS-T) apparatus. This equipment will perform advanced geomechanical tests on gas hydrate bearing samples, allowing clients to assess the behaviour of the seabed samples across a broad range of stress/strain conditions.

The complete core analysis system has been commissioned, together with the company's technical expertise, for two offshore research expeditions in 2012.

As a result of the project, Matthew has developed his technical and managerial skills beyond the expectations of the company and the University.

He also liaised with prospective customers and suppliers to guide the project towards a successful conclusion. In doing so he showed himself to be a personable and talented presenter, communicator, self-starter and leader, in addition to being extremely competent as a technical designer.

- Matthew developed a pressure core sub-sampling system to provide new opportunities for advanced testing of natural gas hydrate bearing sediment samples
- He designed equipment capable of transferring and performing advanced geomechanical tests on pristine hydrate bearing sediments under *in situ* conditions
- Matthew developed the product design to facilitate small and large strain testing on single samples, optimizing the range of data available to clients.
- He has sourced new suppliers and negotiated more competitive rates of business, helping to reduce production costs for the company
- Matthew's design-led and project management skills have led directly to more efficient use of company resources, improving organisation, productivity and cost control within the business, helping new contracts to be won
- Matthew has been offered and has accepted the position of Production Manager at end of the three-year KTP period.

## Catia Guimaraes

Oxford Brookes University and  
InterContinental Hotels Group plc

Funded by the Technology Strategy  
Board and the Economic and Social  
Research Council



Catia Guimaraes ... won the trust and confidence of the senior management team at InterContinental Hotels Group.

As KTP associate Catia Guimaraes was tasked with developing business continuity and disaster recovery (BC/DR) plans across the global operating system of InterContinental Hotels Group.

When suddenly faced with a very real crisis – the Japanese earthquake and tsunami – she rose to the challenge with a mature performance that earned great credibility within the group's risk management team.

By providing timely and precise information, she facilitated accurate decision making regarding the safe and sustainable operation of IHG's corporate sites in Japan. As a result of the team's effective response to a very complex disaster, thankfully Japan reported no casualties.

Catia provided the team with all the information she had acquired about the group's sites in Japan through her own mapping and business impact analysis of headquarters and divisional offices, central reservations offices, data

centres and business service centres around the world.

This included their function, location in relation to the earthquake epicentre, critical processes carried out and back-up systems. She also identified alternative sites (Singapore and Shanghai) that could take over their processes should these need to be evacuated, the number of people working and the contact details of the BC/DR plan owners.

The KTP had required Catia to be trained as a business continuity professional and, under academic and company supervision, to develop a methodology for annual updating and testing of the plans.

Catia proved herself a very talented manager with outstanding leadership skills. Her enthusiasm and energy for the project gained the support and cooperation of a diverse group of colleagues around the world, while her impressive communication skills won the trust and confidence of the senior management team.

**“Being a KTP Associate gave me a jump start I could only have dreamed of. As a result of the KTP project, the company has now hired me to be part of their Global Risk Management team.”**

Catia Guimaraes

- Given two years to complete her BC/DR training, Catia completed the course in the first three months of the project and became a fully certified business continuity professional inside six months.
- She developed a clear governance structure involving more than 200 people around the world at all levels of the company, from corporate executives to those in operational roles.
- Catia prepared a business impact analysis questionnaire for 103 personnel around the world, achieving a 94% completion rate within three months; the remainder were sites in Japan and Australia, still recovering from natural disasters.
- She developed the principles of operation for the group's Global Business Continuity Council, comprising vice-presidents and senior executives involved with business continuity and global corporate risk management, and also coordinated proceedings as chair.
- Catia was able also to coordinate and run at least one major stress test per critical site.
- Another deliverable beyond the planned project is that she will set a foundation for the business continuity management of the Group's 4,500 hotels.



## Lisa Finney

Staffordshire University  
and GDM (Heat Transfer) Ltd

Funded by the Technology Strategy  
Board and the Economic and Social  
Research Council



Outstanding people skills and a huge commitment to promoting new ways of working are among the qualities that distinguished Lisa Finney's two years as KTP Associate with cooling systems manufacturer GDM.

The partnership objectives required Lisa to develop and implement a strategic marketing plan that would complement and achieve overall business objectives for growth and international expansion.

The company had been through a period of change as the Managing Director retired and a new General Manager took over.

Lisa supported him as he made the strategic decisions necessary to take the company forward and provided reassurance through her knowledge and business awareness.

Starting with a clear project plan, Lisa first carried out an audit, ranging from basic marketing and customer research to rebranding and a new catalogue. This led to a more strategic approach to marketing, with a stronger profile in international and future markets, such as the rail industry.

She championed new initiatives and developed excellent working relationships with the team.

In promoting the benefits of new ways of working, Lisa defined the risks involved in not carrying forward the changes. She implemented a customer relations management system and new website. The outcomes have included an increase in turnover and profitability, an effective customer database and the introduction of modern marketing tools such as digital and direct marketing.

Her development of sponsorship allowed for a day out for employees and their families at truck racing championships, showing that she recognised the importance of motivation in a small business.

Lisa's greatest strengths are her people-to-people and management skills. She demonstrates outstanding characteristics in teamwork, presentation and creative problem solving.

- Turnover and profit increased by 30% in the first year and a further 16% in 2010-11.
- Lisa designed and managed a new website, which propelled GDM to the top of search engine listings, generating £90k of orders and £500k of new business inquiries.
- Her awareness of the power of social media led to the creation of blogs, forums, newsletters and she joined key industry social network groups
- Implementing a new CRM system on her own initiative, she introduced digital and direct marketing technology, including direct mail and proactive selling, to target new enquiries and lapsed customers
- Lisa oversaw creation of a new brand identity and image, including all signage, literature and promotion
- She managed GDM's presence at several exhibitions, generating significant new enquiries.

## Kenny Macfarlane

Staffordshire University and  
Clive Durose Woodturners Ltd

Funded by the Technology Strategy Board



Kenny Macfarlane ... won the 'rising star' category in the 2011 Construction News Awards.

Kenny Macfarlane achieved the seemingly impossible in setting up a business unit addressing the high-quality, curved stair-rail market.

His brief as KTP Associate was as wide-ranging as it was demanding – to incorporate all business functions, including sales, design, estimating, manufacture and installation.

Kenny stepped up to the challenge, building a small, but highly skilled team able to survey, design, manufacture and install timber handrails for bespoke projects. These one-off contracts required the very latest software and CNC (computer numerically controlled) machinery.

As well as implementing new procedures and systems within the company, his contract management role saw him managing 10 to 15 contracts simultaneously, each worth between £1k and £350k, and lasting from two weeks to six months.

The response from the market to such a specialist service was overwhelming; over the two years of the KTP, 'Precision Timber Handrails' (PTH) received

inquiries from the education, leisure, healthcare, retail and residential sectors.

A purely technical job became a mini-business, yielding a new revenue stream that will contribute 30% of overall company sales in 2012. The project has already been recognised with industry awards.

In October 2010, Kenny won the Timber Trade Journal's (TTJ) national award for career development, a major accolade in the timber industry. He also won the 'rising star' category in the 2011 Construction News Awards.

Kenny is a naturally confident individual, with obvious leadership and managerial skills. What began as a predominantly technical role developed into a business management position. He made the transition naturally and successfully, taking an active role in training his team in technical areas and boosting morale by sharing project testimonials and organising regular staff appraisals.

Kenny encouraged strong communication through regular meetings and presentations to shop floor staff and senior management alike.

- Kenny implemented the latest measuring, modelling and programming software throughout the company to help the project stay at the forefront of the market. His technical background meant that he was able to set up in-house digital libraries, drawing templates, rendering services and manufacture simulation techniques
- The project allowed the company to diversify, not only with the product range, but also into different target markets
- Kenny has been studying part-time towards an MSc in advanced technology, specialising in business management, having already achieved the CMI Diploma in Management during his KTP programme
- He created an effective survey/design/manufacturing organisation, helping to meet quality and efficiency performance indicators while implementing a nationwide installation and finishing service
- After creating a brand image for PTH, Kenny marketed the brand through its own website [www.pthandrails.co.uk](http://www.pthandrails.co.uk), promotional e-campaigns, presentations, consultations and direct sales
- PTH has projected a sales turnover rising to £1m by 2014.

**“ Compared to most graduate positions, I was given a lot of responsibility from day one. KTP has given me an exceptional platform to build my career on’ ”**

Kenny Macfarlane

## Simon Pykett

Sheffield Hallam University and  
Penny Hydraulics Ltd

Funded by the Technology Strategy Board

Penny Hydraulics  
NUCLEAR



Simon Pykett ... his meticulous research paid dividends on the very first tender.

Simon Pykett was far from daunted when invited to help Penny Hydraulics diversify from a declining market in mining equipment sales into the nuclear engineering supply chain.

In fact, Simon's achievements as Associate in the first year of his KTP project were astonishing. He transformed the business, winning a contract valued at £160k after six months.

The objective was to develop and embed a capability for lifting, handling and movement of spent nuclear fuels.

Moving into the nuclear industry had appeared too big a step for the company. Simon took total ownership of the project, opting to develop internal capability by first winning and delivering a contract rather than seeking contracts once capability had been developed.

His meticulous research paid dividends on the very first tender and the need to overhaul the company's production and business processes required tact, diplomacy and determination.

Now a Sellafield quality assured supplier, Penny Hydraulics enjoys preferential status when bidding for new tenders. All this happened 12 months ahead of expectation, with Simon's costs covered and profit generated. In addition to submitting further tenders, he found time to pursue a Level 5 diploma in leadership and management and is also undertaking an MSc with Sheffield Hallam University.

After completion of the Sellafield contract, Simon secured new business with other nuclear sites, including a contract with Magnox Ltd totalling more than £240,000, with additional work in the pipeline. Simon will be assuming the role of project manager for all of these activities. A new company division, Penny Hydraulics Nuclear, has been established in light of this success.

Simon combines technical expertise with commercial understanding and is sensitive to the impact his work has on people. He has achieved a phenomenal amount in a short time – and always with a smile.

- Simon established a presence in the nuclear community by being active in its 'Young Generation Network', attending the UK Decommissioning Conference 2010, meeting an established tier 2 supplier and attending Sellafield supplier events
- After contacting organisations operating in the nuclear supply chain, he registered the company with the National Nuclear Institute, the Utility Vendor Database and the Nuclear Skills Passport Scheme and successfully co-ordinated audit visits
- Simon assumed the role of project manager, dealing with a team of four designers, one quality control and three to five shop floor personnel while chairing all internal and external meetings
- He instilled a collaborative attitude between suppliers, craftsmen and design staff and also improved design, quality management, procurement and inventory control procedures
- He undertook welding qualifications himself alongside shop floor employees
- Simon has acted as the main point of contact between the company and the customer, liaising with Sellafield personnel at various levels of authority. He chaired all meetings involving Sellafield staff for design audits, functionality testing and load testing.

**“It provided a fantastic learning curve from day one, with a wide range of experiences including finance, production and project management.”**

Simon Pykett

## Historic Royal Palaces

Kingston University and Associate  
Suzannah Lipscomb

Funded by the Technology Strategy  
Board and the Arts & Humanities  
Research Council

The Arts & Humanities Research Council Award is presented to the project that demonstrates most effectively the contribution made by the humanities to KTP.



KTP Associate Suzannah Lipscombe (inset) and the West Front of Hampton Court Palace.

A Knowledge Transfer Partnership which vividly brought to life the reign of Henry VIII helped to attract more than 115,000 extra visitors to Hampton Court Palace in just six months, eclipsing even the most optimistic predictions.

The anticipated outcome was a quality visitor experience that would appeal particularly to domestic families and to drive a 10% increase in visitor numbers throughout 2009. In fact, that target was exceeded within the first six months, with a year-on-year increase of 43%.

The KTP transformed the capability of HRP to understand their palaces as products that needed to be sympathetically and commercially presented and marketed in order to engage a targeted audience.

It was part of a wider project by the Historic Royal Palaces (HRP) to represent the Tudor Palace at Hampton Court, coinciding with the 500th anniversary of Henry VIII's accession.

The KTP with Kingston University had twin aims: to inform an exciting new interpretation for visitors to the Tudor palace; and to strengthen links between 'public history' presented at the palace and the academic community.

Academic perception of Historic Royal Palaces was transformed by a highly successful conference on Henry VIII.

Suzannah Lipscomb's contribution as Associate was to introduce original academic research of the Tudor court, social and religious life to real and virtual visitors, as part of a strategic plan to reduce reliance on overseas visitors and to develop the home market, particularly families.

- The launch of 'Henry VIII: Heads and Hearts' increased the number of domestic family day visitors by 43% year-on-year, an additional 115,287 visitors
- An academic conference on Henry VIII was attended by more than 150 people, with distinguished scholars among the 59 speakers
- A well-attended public talks series featured leading specialists on Henry VIII, such as David Starkey, Hilary Mantel and Philippa Gregory
- Kingston University has enhanced its academic presence by forming networks in the UK and abroad, through involvement in the Research Advisory Panel and participation in conferences overseas and the Henry VIII conference
- The Associate initiated and led a Research Advisory Panel of interdisciplinary academics and enhanced the public profile of HRP through appearances on radio and TV; she also contributed to a new Henry VIII website, used by 42% of visitors
- The Associate, now a lecturer in early modern history at the University of East Anglia, remains an external consultant to HRP and a member of the HRP's research strategy board.

“One of the things I really liked about KTP is that it gave me a lot of autonomy and ownership”

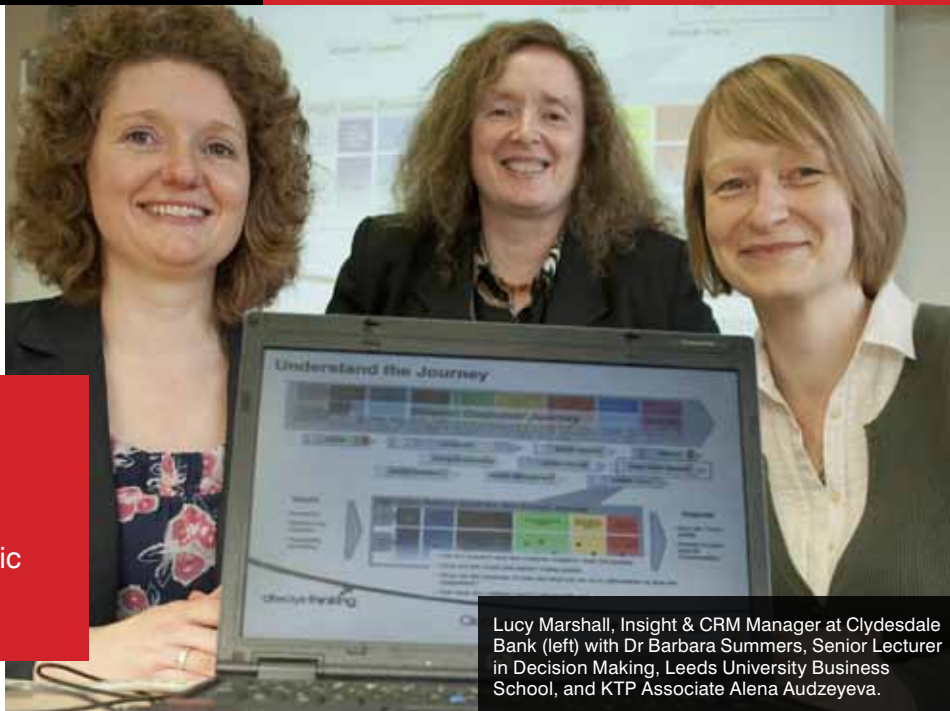
*Suzannah Lipscomb, formerly KTP Associate*

## Clydesdale Bank

University of Leeds and Associate  
Alena Audzeyeva

Funded by the Economic and Social  
Research Council (ESRC) and the  
Engineering and Physical Sciences  
Research Council (EPSRC)

The Economic and Social Research  
Council Award is presented to the  
project that demonstrates most  
effectively the application of economic  
and social research to KTP.



Lucy Marshall, Insight & CRM Manager at Clydesdale Bank (left) with Dr Barbara Summers, Senior Lecturer in Decision Making, Leeds University Business School, and KTP Associate Alena Audzeyeva.

This KTP was a shining example of the way in which fundamental academic disciplines such as mathematics can be applied to solve a complex business problem.

The outstanding results recorded are all the more praiseworthy for having been delivered against a background of turmoil in the UK and global financial system.

Clydesdale Bank's partnership with the University of Leeds Business School arose from a desire to improve their understanding of banking customers' current and future economic value.

The project developed and implemented Customer Lifetime Value (CLV) measures which could help the bank improve its relationship with customers by identifying which products were most appropriate to their needs and ensuring that they were aware of the product at the right time.

Clydesdale bank anticipates a multi-million pound increase in profits as a result of applying knowledge gained in the project and there was an unexpected bonus in identifying retention and acquisition of over-50s as crucial to the quality of the bank's business. Other improvements delivered by the KTP centred on price tests, better customer insight and developing statistical knowledge and capability.

Meanwhile the KTP also initiated university research into CLV models as well as related issues regarding customer acquisition and retention. Access to confidential bank data supported this research on CLV.

The project is an excellent example of how knowledge exchange between social scientists and business can be of mutual benefit.

- Clydesdale expects a £20m-plus increase in profits in the three years after completion of the KTP, by applying the customer lifetime value model developed in the project
- As a result of the Associate, Alena, identifying a profitable sub-segment of customers among the over-50s, the bank invested £40k in R&D, with the aim of improving their retention and acquisition
- Three MSc dissertations have been written in a partnership between Clydesdale Bank and Leeds University Business School (MSc financial mathematics), producing original research for the benefit of the KTP and, more generally, Clydesdale Bank
- Access to confidential bank data has supported research on CLV and led to the production of original scientific research within the University
- The project has fed into teaching of MSc students on the financial mathematics course, linking their studies to issues in the banking world and opening up new research areas for the university in the area of banking
- Alena's work has informed a 'needs based' rather than 'sales target-based' communications programme which saw an uplift in sales of 170%.

**“We were impressed with the way that this KTP helped to push academic thinking forward through tackling a complex business problem”**

*Eloise Stott, Senior Knowledge Exchange Manager, Economic and Social Research Council*

## For more information

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