

MidTECH Matters

News from NHS Innovations West Midlands

A message from our Chairman Alan Wenban-Smith

2009/10 has been another good year for MidTECH. We have continued to develop in terms of the scale, content and significance of the innovations we help to bring to fruition, improving healthcare,

generating revenue to Trusts and attracting investment to the region. Highlights include:

- Dealing with over 100 new ideas revealed to us by client Trusts, maintaining last year's excellent level of local innovation;
- Identification of over £600k in investment attracted into development and exploitation of innovations during the year;
- Completion of 15 commercial exploitation agreements. This includes for the first time three licence agreements with international companies. Based on the companies' sales projections, these have potential to generate royalty income in excess of £5M to the NHS;

- In this issue, you will read about an innovation from the region, prototyped and commercialised by MidTECH - and winner of the "Innovative Product of the Year" at the UK's leading disability & rehabilitation exhibition.

Looking ahead, the continuing fall-out from the credit crunch is likely to be a major influence on our activities for the next several years. On the plus side, as resources become tighter, innovation will become even more important. The NHS's Quality, Innovation, Productivity and Prevention (QIPP) agenda emphasises innovation as a means of delivering improved patient care with less resources. In addition to the direct value of the innovations themselves, picking up and developing the good ideas of frontline staff is an intensely direct, practical and effective way of fostering an innovative culture.

More broadly, the new Business Secretary, Vince Cable, has stressed the role of innovation in the recovery and restructuring of the whole economy. The contribution that innovation in the healthcare sector can make is particularly relevant to the West Midlands, because of the regional concentration of manufacturing and the difficulties it faces in some of its existing export markets.

While there are undoubtedly challenging times ahead, MidTECH, in partnership with our member and client NHS Trusts in the West Midlands, has a great deal to offer to meet these challenges and to build further on previous years' achievements.

This issue of MidTECH Matters brings you news of the many positive developments taking place involving MidTECH and the West Midlands region. You will read about the launch of this year's Innovations Competition, our 'new look' website, member and partners news, including a few dates for your diaries and much more!

This year promises to be another exciting year with more licence agreements coming through the pipeline and with even more NHS events to attend, will certainly make for interesting times for NHS innovations and MidTECH. We look forward to keeping you abreast of developments and MidTECH's role in all these initiatives.

Launch of 2010 West Midlands Innovations Awards

Ingenious and inventive NHS staff throughout the West Midlands are being invited to enter their trailblazing projects for a prestigious competition with a £10,000 prize fund.

MidTECH, the West Midlands regional NHS innovation 'hub', is always on the lookout for pioneering techniques and inventions by staff working in NHS organisations in Birmingham, the Black Country, Solihull, Coventry, Warwickshire, Staffordshire, Herefordshire, Worcestershire and Shropshire.

And, once a year, the best ideas are selected as finalists in the 'Making ideas reality' competition, culminating in an 'Oscars' style awards ceremony.

Staff working at local NHS Trusts can find out more about the awards and how to enter by calling 0121 455 0346 or visiting www.midtech.org.uk, where they can apply online.

The closing date for entries is 14 September and the awards presentation - the sixth organised by MidTECH - will be held at the Botanical Gardens, Edgbaston, Birmingham, on Thursday 25 November 2010.

Competitors will be trying to match the success of last year's main award winners, Sandy Clayton-Kent, senior school nurse from NHS Warwickshire Community Health, and a team of nurses at Royal Wolverhampton Hospitals NHS Trust.

Sandy was presented with the MidTECH Award for Innovation in Prevention and Community Care - and a £4,000 cheque - for her invention of a board game about the risks of body piercing.

And the nursing team from Wolverhampton won the Award for Innovation in Acute Care, along with a £4,000 cheque, for their development of a special paediatric triage system to assess young patients attending emergency departments quickly. 'Ones to Watch' awards, each of £1,000, went to Richard King, locum consultant orthopaedic surgeon at University Hospitals Coventry and Warwickshire NHS Trust, for an innovative wrist splint, and Rachel Brazier, project manager, of University Hospitals Birmingham NHS Foundation Trust, for use of an encrypted Blackberry device to match up potential liver donors and transplant recipients.

Dr David Gleave, chief executive of MidTECH, said: "Our competition attracted more than 60 entries last year and we hope even more will enter our 2010 awards.

"The ingenuity, enthusiasm, creativity and commitment demonstrated by NHS employees in developing new initiatives to improve care for patients never fail to impress us.

"Our judges always have a hard time deciding the winners of our awards - because each one is a winner in its own way.

"Past prize-winners have ranged from ideas for medical devices and rehabilitation or disability aids to software or other information technology and publications and training.

"And, even if they are not actually chosen to receive an award, there may be potential to progress their projects towards commercial success."



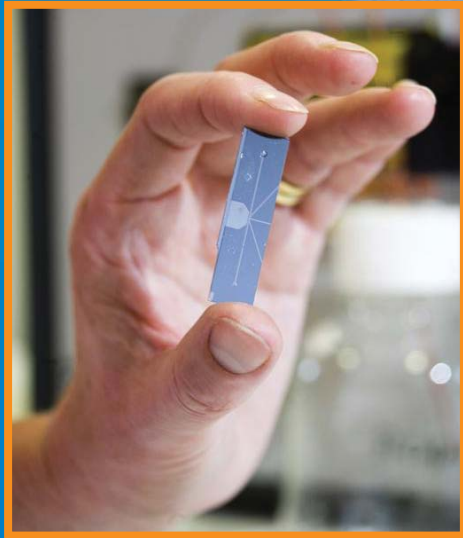
MidTECH is part of a national network of NHS Innovation Hubs, established by the Department of Health to identify, protect and commercialise innovative ideas from the NHS.

This includes helping to patent or otherwise protect the ideas, linking up with industries that may help to commercialise them - and aiming to ensure that a share of the profits go to the inventor and the NHS Trust where the projects were born.

Entries can be from individuals or from teams of staff working for NHS organisations in Birmingham, the Black Country, Solihull, Coventry, Warwickshire, Staffordshire, Herefordshire, Worcestershire and Shropshire.

Member News

Hospital and Defence firm team up with invention to help patients with chronic lung disease



An invention that could transform the lives of millions of people with chronic lung diseases is being tested in Stoke-on-Trent after a unique partnership with a leading hi-tech company that usually specialises in aerospace, defence and security.

Professor Monica Spiteri, of the Directorate of Respiratory Medicine at the University Hospital of North Staffordshire NHS Trust (UHNS), came up with the idea of testing saliva as a means of monitoring the everyday condition of patients with serious lung conditions, especially during flare-ups of disease.

Flare-ups – or exacerbations – of diseases like emphysema, chronic bronchitis and asthma, a leading cause of death and disability worldwide, not only cause regular disruption to patients' daily lives but are also the second biggest cause of emergency hospital admissions.

Early recognition of an impending flare-up could alert patients and the GPs, consultants and nurses



caring for them to begin or change treatment, which could avoid them being rushed into hospital.

QinetiQ, which provides technical advice to customers around the world in the aerospace, defence and security markets, has produced the prototype 'respiratory biosensor' at its technology centre in Malvern, Worcestershire. The biosensor is now being fine-tuned ready to begin clinical trials at the UHNS in Stoke-on-Trent in July.

The innovation follows a significant investment by Advanced Sensors Innovation Programme (ASIP), a joint venture between QinetiQ and Advantage West Midlands, the regional development agency.

MidTECH, the West Midlands NHS innovations hub, brought the hospital trust and QinetiQ together in a collaborative arrangement that has enabled QinetiQ scientists and NHS clinicians to develop the project. MidTECH has also arranged patent protection for Professor Spiteri's ideas.

Monica Spiteri, Professor of Respiratory Medicine at UHNS, said: "The arrival of our prototype respiratory biosensor is a landmark step in the development of future near-patient technology that could make a big difference for monitoring patients with lung disease – for example, in managing patients with flare-ups of Chronic Obstructive Pulmonary Disease (COPD).

"There are an estimated 29 million sufferers of COPD around the world. At the moment the only ways of monitoring the progress of COPD are spirometry machines, which measure how fast and how much a patient breathes out, and monitors which analyse exhaled breath. However, these tests are not sensitive enough to predict flare-ups or guide treatment.

"Saliva analysis is currently used in other fields, such as testing for alcohol and drug levels – but we are among the first teams in the world to develop it to monitor the progression of COPD and other lung conditions. Using saliva is far more convenient and less invasive for the patient than having to give a blood sample."

The new technology works by measuring bio-markers – proteins whose concentration reflects the severity or presence of disease – in saliva. Professor Spiteri and her team of research nurses, hospital specialists and GPs with a special interest in lung disease are now preparing for the clinical trials.

Tests are currently being carried out to refine the portable machine before patient sample testing begins.

Dr Mary Haigh, QinetiQ's exploitation manager for the project, said: "We are keen to get involved in projects that can find alternative uses and markets for the technology that we develop. This project brought together QinetiQ's world-class expertise in high sensitivity micro-systems for the detection of biological and chemical materials with UHNS's track record in the analysis of saliva.

"The result is a biosensor that incorporates leading edge chip-based technology and optical sensors and anything else for the diagnosis and detection of bio-markers associated with respiratory disease."

In due course the technology will be further miniaturised to produce a 'smart', handheld device with its own in-built 'lab on a chip' to enable patients to monitor their own condition in the comfort of their home.

David Gleaves, chief executive of MidTECH, said: "This is a unique project, linking together the expertise of QinetiQ's laboratories with the NHS to produce a device with so much potential to help COPD patients throughout the world.

"The production of the biosensor is a milestone towards helping these patients to manage their own condition and, at the same time, reduce the pressure upon Accident & Emergency departments."

Julia Bridgewater, chief executive of University Hospital of North Staffordshire, said: "I'm delighted with the work that Professor Monica Spiteri is doing in the Trust. This is incredibly important to our local population. This work demonstrates our commitment in taking a lead in providing the best possible care for people with these disabling conditions."



Rebecca Garrod-Waters, director of innovation at Advantage West Midlands, said:

"This project again highlights the technology strengths and innovation of West Midlands businesses – capabilities which will help them to grow in difficult economic conditions.

"The Advanced Sensors Innovation Programme has applied QinetiQ's renowned sensors expertise to create new products. The respiratory biosensor is a great example of where these capabilities are being used to address a major health issue affecting the lives of many sufferers and in doing so creating a new market for high-tech manufacturing."

LAUNCH OF OUR 'NEW LOOK' WEBSITE!

We are extremely pleased to announce the launch of the 'new look' MidTECH website.

Check it out at www.midtech.org.uk, where you will find all the latest information on our:

- IP Services
- News stories
- Case studies
- Resources
- Links
- FAQs and much more!



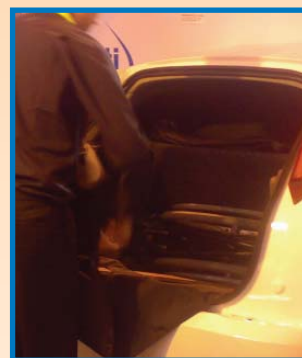
MidTECH innovation scoops 'New Product' award at Naidex

Facing stiff competition from over 100 new products, The BackSaver from Mangar International has been selected as the winner of the New Product of the Year Award at the Naidex exhibition as voted for by visitors to the show.

The New Product of the Year Award is an annual feature at Naidex, and attracts entries from all the major UK and International companies in the industry. Over 50 companies submitted their new products this year, which were displayed in the New Product Showcase at the exhibition.

Speaking from Naidex, Mr Andrew Barker, Managing Director at Mangar International, said: **"Innovation and new product development is central to our business at Mangar International so it's great to receive this level of recognition for our hard work. Winning any award is great news, but the Naidex New Product of the Year Award is particularly special because it's voted for by visitors to the show, the very people who use the technology day in, day out."**

The BackSaver is a simple but much needed device to help with loading and unloading a wheelchair from the boot of a car. As any wheelchair user or carer will know, wheelchairs can be heavy, and lifting them into and out of the car puts considerable strain on an individual's back. By using the BackSaver to perform this task



the weight that the individual has to support is reduced by up to 30%, significantly minimising the strain and injury risk involved.

The BackSaver is very straightforward to use, simply secure it in place in the boot of the car using the extendable pole, and unfold the material, laying it out on the ground behind the car. Position the wheelchair on the material and walk it into the boot using the hand holds. When the wheelchair is in place in the car the BackSaver can be folded over the top, ready to help with lowering the wheelchair back out again.

The BackSaver is made from strong and durable material that can be machine-washed. It will support wheelchairs weighing up to 25kg (77lbs) and comes complete with a one year guarantee.

The BackSaver is the latest in an impressive list of award-winning products from Mangar International. Since winning the HTV Opportunity

Wales Product of the Year Award in 1981 for the Mangar Bathlift, the world's first powered portable bath lift, Mangar International has scooped a wide range of awards for product design. Amongst the selection are three Independent Living Design Awards, two Smart Awards for Research and Development, the Medtrade Providers' Choice Award for the Camel and, most recently, the BHTA Lifetime Service Award, won by founder and chairman David Garman for his contribution to the industry.

"Our large selection of awards received over the years acts as testament to the company's dedication to the rehabilitation and independent living industry." Commented Andrew Barker, "All being well we might have to invest in a new award cabinet soon!"

Events & dates for your diary

NHS Innovations go to 'Confed'

At the NHS Confederation conference and exhibition - in Liverpool in June, the nine English NHS Innovations Centres (or 'hubs'), prompted themselves under the NHS Innovations brand again this year.

As well as showcasing a wide range of technological and healthcare innovations, senior staff from the nine hubs met with CEOs and directors of the numerous NHS Trusts attending the conference to explain how they plan to retain their individual identities and regional responsibilities whilst increasingly pooling information, sharing expertise and working together. The intention, said John Stedman Chief Executive of NHS Innovations South East, one of the hubs - is to ensure that we are even better-placed than before to promote better patient care and improved outcomes by bringing innovation from within the NHS through to commercialization.

EXPO 2011, 9 & 10 March, ExCel Centre, London Docklands



Following the great success of the first Healthcare Innovation Expo held in June last year, the NHS has announced that a second much larger Expo will take place in March 2011.

The Expo, which is the largest public sector health and social care event in Europe, provides an unparalleled opportunity for businesses to interact directly with key buyers and decision makers from the NHS. Last year businesses

secured tens of millions of pounds of orders and the 2011 Expo will provide even greater opportunities with the show expected to attract twice as many delegates. The event provides the opportunity to showcase new innovations as well as demonstrating how successful joint working initiatives already underway between private and public sector organisations can be replicated across the NHS and social care.

The Expo will bring together the best in healthcare innovation from the private, public, voluntary, local government, scientific and academic communities from across the globe, and forms an important part of delivering the High Quality

Care for All agenda that puts quality at the heart of the NHS and creates an environment where innovation can flourish. Last year's event attracted more than 5000 visitors including frontline NHS staff and managers and social care experts as well as senior executives from global organisations leading the way with new healthcare technology. It is expected that the two day Expo in March 2011 will welcome more than 10,000 delegates.

There will be a comprehensive seminar programme delivered by senior medical, academic and private sector representatives, as well as an innovative trade fair with exhibitors including Microsoft, Omron, Cap Gemini and Diabetes UK. The Navigation Zone that proved popular with exhibitors and delegates alike also makes a comeback. The Navigation Zone connects people, organisations and resources helping them to navigate the NHS and to understand how to successfully partner with them. Experts will offer guidance to innovators about developing their products and successfully introducing them to the NHS.

For more information about the Healthcare Innovation Expo and to register, please visit: www.healthcareinnovationexpo.com

Nursing in Practice 2010, 16 November, NEC, Birmingham

NHS Innovations West Midlands will be attending and exhibiting at the NIP event again this year.

NIP is designed specifically to meet the educational needs of all primary care nurses and public health professionals; the programme features an impressive collection of speakers delivering highly topical and relevant presentations.

For more information and to register your attendance, please visit: www.nursinginpractice.com

Medica 2010, 17-20 November, Düsseldorf, Germany

Medica 2010, the world's largest medical equipment showcase will be held in Düsseldorf, Germany.

MidTECH will be attending the exhibition again this year, looking for partners to help commercialise and supply a range of innovative ideas that have originated from NHS staff from the West Midlands region.

For more information please visit: www.medica-tradefair.com

Staffordshire Council pioneers Telehealth application

Staffordshire County Council is a trailblazer in the UK, piloting the comprehensive product comparison website from Alvolution. The site is already being used by a cross section of public sector workers involved with the health or social care of up to 800,000 Staffordshire residents. The comparison website helps these professionals choose the best product package for individuals, using their personalised budgets.

"In such a fast-moving market, it is essential that those of us in the public sector set new standards of best practice and promote these technologies internally and externally. From sustainability to mobility, memory aid to medicines compliance, the many functions a single device can fulfil has the potential to help the NHS and the councils improve care while saving costs.

"We need to recognise that just as there are a range of issues, there can be a range of solutions. But here, knowledge is the most important factor. We have to be able to inform the public, share our product expertise with our colleagues and fellow professionals and recommend solutions.

"This professional tool can be used to signpost users to all the technologies that are available to meet their needs. It's user friendly, helps with both specific need-generated enquiries and more general welfare searches. Searchable by condition, by scenario, or by technology, it presents you with a range of options, clearly highlighting product uses and benefits."

Jim Ellam, Assistive Technology Project Lead

Prevention and Independence Team - Joint Commissioning Unit, Staffordshire County Council



MedilinkWM helps medical packaging developer to innovate

Innovative packaging technology developed and manufactured by a Hereford company, with help from MedilinkWM and the Advantage Proof of Concept fund, could soon be helping to save lives.

A new product from Dyecor Limited, based at Whitestone Business Park, will enable temperature-controlled drugs, stem cell materials and even organs for transplant to be transported more efficiently and cost-effectively than ever before.

The company specialises in absorbency, specialist paper conversion and sachet manufacture. Its latest development is based on an existing product, Thermacor – a patented, thermoformed

carry diagnostic samples – urine, blood and so on. That really took off, primarily because there was a huge public health campaign for Chlamydia and we offered a very logical way of transporting urine samples for Chlamydia testing.

"Almost every lab and customer we visited also had a requirement for taking things in a chilled and temperature-controlled condition, so it seemed a logical extension for our product – to not only be able to package samples in this absorbent plastic, but also to be able to transport them in a chilled condition."

Having identified the new product – called Thermacool – as appropriate for transporting drugs, diagnostic samples and possibly blood products, Dyecor applied to the Advantage Proof of Concept fund in July 2009.

MedilinkWM's Connectivity Director Chris Dyke and its Connectivity Manager Chris Ramsden were both on the judging panel and realised the exciting potential of the product for transporting organs for transplant.

Chris Ramsden explored the idea with the company further and helped the Dyecor team to establish links with Queen Elizabeth Hospital, Birmingham – Europe's largest liver transplant centre – and with its transplant surgeons and other NHS transplant specialists.

Dyecor's thermoforming capability meant it was able to mould a thermal reservoir – a close-fitting box around a sample – which was able to contain a refrigerant. "What's typically used for insulation is expanded polystyrene, but we have specialist expertise relating to expanded polyurethane, which is ten times more effective as

an insulator and much more robust," said Rod.

"But the real Holy Grail is that conventionally, when you send material in a chilled container, you use dry ice," he added. "Nobody likes it because it is very environmentally unfriendly. You have to vent it and it's explosive and very expensive – in fact, because it's hazardous, airlines charge a premium for carrying it.

"We thought if we could produce a container that was robust, lower cost and also do away with the need for dry ice, but still allowed the magical 72 hours of transport time, then we would have an unanswerable argument for using Thermacool."

With funding agreed from Advantage West Midlands within days and confirmed within just a few weeks, as well as "wonderful" support from Chris Ramsden, Dyecor decided to concentrate development on the three principal areas that provided substantial marketing possibilities, including the transport of high value medicines, and stem cell transportation.

Rod adds: "MWM has been fantastic and Chris I would single out – he's been an incredible help. He made valuable introductions for us and has been hugely enthusiastic. He has kept up a really good ongoing mentoring role with the company while we have been working on the product."

Dyecor has already been recognised for its work, winning the Queen's Award for Innovation during the course of the Thermacool development.

MedilinkWM influences and guides public sector initiatives at regional and national level for the benefit of companies, and drives research and development by identifying potential markets for growth and new product commercialisation in the Life Science market.

Visit www.MedilinkWM.co.uk



package suitable for transporting liquid specimens – which has already proved highly successful for medical applications.

Dyecor owner and managing director Rod Davidson explains: "We started off with this idea of creating an absorbent moulding process to