

# FutureNorth

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**“We are focusing on the long-term regeneration of our cities, helping companies to form, scale and grow, ultimately enabling UK plc to be competitive in a post-Brexit world”**

Phil Kemp, chief executive, Bruntwood SciTech, page 4



2018 Bionow  
Award winners

# Medtech companies triumph at Bionow Awards

## Reflecting “superb efforts” by life sciences companies in the North

The outstanding companies and leaders of the North's life sciences sector were honoured at the 17th annual Bionow Awards. The awards, which recognise excellence, outstanding achievement and enterprise in a sector that is worth more than £13bn to the North's economy, were sponsored by Manchester Science Partnerships, Alderley Park, Appleyard Lees, DLA Piper and World Courier.

Entertained by writer, comedian and actor Robin Ince, more than 300 people attended the awards dinner in Cheshire, which saw medical technology companies, Blueberry Therapeutics, C4X Discovery, Zilico and LightOx all win prizes for the application of their cutting edge technologies to the life sciences sector.

Following a remarkable year, Blueberry Therapeutics received the sought-after Company of the Year award. Blueberry is applying nanotechnology to the delivery of medicines for difficult-to-treat skin and nail infections.

C4X Discovery celebrated the only double win on the night, achieving the Bionow Project of the Year award for the development of Orexin-1 Receptor Antagonists for the Treatment of Addiction, while its Lead Software

Developer Phil Muwanga won in the prestigious Promising Technologist of the Year category.

Med-tech company Zilico won the Investment Deal of the Year after raising £13.5m to roll-out the sales of its device ZedScan which detects life-threatening cervical cancer much earlier than current products on the market.

Having developed a unique range of molecular tools for use as biological fluorescent probes for cell imaging and targeted light-based therapeutics aimed at treating conditions such as skin and colorectal cancers, LightOx won in the Start-Up category.

“Despite the current uncertainty our innovative and adaptable community will continue to find ways to grow”

Geoff Davison, chief executive, Bionow

Entrepreneur Alby Pattison took the Outstanding Contribution Award on the night. Alby founded Hart Biologics in 2002 and during the last 15 years the business has grown into an award-winning medical diagnostics company which exports to 39 countries and is now a team of 43.

The judges said he had “demonstrated a level of dedication to the sector that goes above and beyond the call of duty, in addition to being a leader in their field, Alby has also given a significant amount back to business and the community.”

Geoff Davison, chief executive of Bionow said: “Congratulations to all our winners and to those shortlisted - the 2018 Awards reflect the superb efforts by companies in the Life Sciences sector in the North to innovate and commercialise great ideas and IP into new medicines and treatments.”

He added: “Despite the current uncertainty in the market place regarding the nature and form of Brexit, and scarcity of funding in the North, I believe our innovative and adaptable community will continue to find ways to grow. Analysing recent Government figures, we found that the North's life sciences economy grew from £9.2 billion in 2016 to £13.6 billion in 2017, representing an increase of 48% over the previous year which is 4.8% higher than the national average. I look forward to reporting on continued growth next year.”

## The winners in full:

● Bionow Start Up of the Year - Sponsored by RSM

### LightOx Ltd

LightOx Ltd is a light-based therapeutics company that is developing new drugs that can be activated using light sources to kill targeted cell types. These new chemical entities will be formulated into new drugs to treat conditions such as skin and colorectal cancers.

● Bionow Healthcare Project of the Year - Sponsored by TRUSTECH

### The Northern Health Science Alliance - Project: Connected Health Cities

Connected Health Cities is a global programme harnessing the power of data to implement Learning Health Systems; to deliver improvements in systems, for patients. Using the innovative ‘CHC Method’ across multiple therapeutic areas to diagnose, treat and deliver care, the impact of CHC can now be measured in lives saved.

● Bionow Project of the Year - Sponsored by Waters Corporation

### C4X Discovery Ltd - Project: Development of Orexin-1

### Receptor Antagonists for the Treatment of Addiction

C4XD has identified C4X3256, a novel, potent and selective oral Orexin-1 antagonist for the treatment of addiction. C4X3256 has demonstrated excellent efficacy and tolerability in preclinical models of nicotine addiction, which has resulted in this project being licensed to Indivior who will continue the development of C4X3256 in the clinic.

● Bionow Product of the Year - Sponsored by Innovation Agency

### Femeda Ltd - Product: Pelviva - Pelvic Floor muscle re-trainer

Pelviva is an innovative, clinically proven solution to the common problem of incontinence, delivering 84% improvement in bladder control in 90 days. It uniquely brings together two new innovative technologies, a patented waveform which is incorporated into a home treatment device that is highly acceptable to the female user.

● Bionow Technical Service - Sponsored by Gateley Plc

### Seda Pharmaceutical

### Development Services – Technical Service: Integrated Pharmaceutical Development and Clinical Pharmacology Services

Seda is an integrated Pharmaceutical Development and Clinical Pharmacology Services company that maximises value build. Seda has successfully provided small biotechs, investors and large Pharma companies with integrated development expertise ensuring that drug products have been developed to support clinical programs ranging from early to late stage development.

● Bionow Promising Technologist of the Year – Sponsored by Seqirus  
**Phil Muwanga, Lead Software Developer, C4X Discovery Ltd**  
Phil has brought his computer games industry experience to C4XD where he has been instrumental in developing a collaborative, highly intuitive, Virtual Reality molecular design software suite, 4Sight. This has revolutionised the way chemists visualise and design new molecules, by providing novel insights to enhance the drug discovery process.

● Bionow Investment Deal of the Year – Sponsored by QIAGEN  
**Zilico Ltd - Deal: Investment and Strategic Partnership**  
The investment and strategic partnership deal was a tripartite deal between Deepbridge Capital, MaxHealth Medicine Group (China) and Zilico. The investment element was from both Deepbridge (understand patient capital) & Maxhealth (strategic partner for the fastest growing market). Maxhealth has the rights to deploy ZedScan, Zilico's flagship product across China. The investment and partnership aligns the interests of the two businesses.

● Bionow Outstanding Contribution – Sponsored by Sci-Tech Daresbury  
**Alby Pattison, Managing Director, Hart Biologicals Ltd**  
Entrepreneur Alby Pattison founded Hart Biologicals in 2002 with just three staff and began manufacturing reagents used to investigate the blood clotting function in patients taking blood thinning drugs. During the last 15 years the business has grown into an award-winning medical diagnostics company which exports to 39 countries and is now a team of 43.

● Bionow Company of the Year – Sponsored by AstraZeneca  
**Blueberry Therapeutics Ltd**  
Blueberry Therapeutics is a drug discovery and development company focused on developing innovative nanomedicines for difficult to treat skin and nail infections. Blueberry has had a remarkable year, including its BB2603 Phase I/II trial of 46 patients trial successfully meeting its primary endpoint in patients with both onychomycosis (fungal nail infection) and concomitant tinea pedis (athletes foot), as well as completing its £10m series B Fundraising.

*A not-for-profit membership organisation, Bionow supports the North of England's burgeoning life sciences sector, which currently includes some 1,100 science and healthcare companies with a combined turnover of around £13.6bn. Its member base includes start-ups and spin-outs as well as well-established businesses. The services it offers to firms include dedicated business support programmes, shared procurement schemes, insurance, recruitment and a comprehensive events programme.*

# Bionow: the place for business support

## Core mission to be part of a growing Northern Life Sciences and Healthcare community

Bionow is an award-winning specialist business development and services company serving the life sciences sector in the North of England. We provide our members with the tools and support to become the most competitive in the industry through our range of specialist products and services.

Our core mission is to support and be part of a growing Northern Life Sciences and Healthcare community, a mission closely aligned with the goals and values of our Sponsor Companies and Universities.

By working closely with our University Sponsors, our dedicated team facilitates the relationships, creates the links, and initiates opportunities for knowledge exchange and collaboration between Academia and Industry interested in new and developing technologies. Strong engagement between our University Sponsors and Multinational Enterprises, with our growing and vibrant SME community sparks innovation and creates sustained and increased employment within the sector across the North, and the UK as a whole.

Northern Universities embody world class strengths in research and teaching in the biomedical sciences, chemistry, physics, engineering, IT, mathematics and statistics.

Most of our sponsoring Universities offer the opportunity to engage a student to work on a defined project, with opportunities across various departments and faculties, including Business Schools. The project may involve remote working at the company's premises or be carried out within the University and might be paid project or be part of the course. A core strand of our support is the facilitation of student placements within sector companies and organisations. This brings tremendous benefit to the students themselves through gaining valuable work experience and for business it is an opportunity to engage an undergraduate or postgraduate student.

Universities who offer degrees with a compulsory year in industry usually have relationships in place to deliver these 12-month placements. However, there is always the need to source additional capacity and Bionow is keen to bring this opportunity to the attention of Members and other companies in the sector who may be able to support and benefit in this way. Through our relationships with our University Sponsors – Liverpool, Manchester, Lancaster, Newcastle and Durham – we can fast-track the recruitment of students with the appropriate skills and ambitions to suit your business. Industrial placements are on a salaried basis and the student maintains contact with their academic department throughout the placement.

Most sponsoring universities offer the opportunity to engage a student on a defined project



### UNIVERSITY OF LIVERPOOL

The University of Liverpool has, since 1881, worked for the advancement of learning and ennoblement of life. This remains our mission today and will give focus to all our efforts in the coming years as we strive to achieve our ambitions and aspirations, tackle the grand challenges of the age and make our vision a reality. We have laid down this explicit challenge of where we want to be in 10 years' time, and now we must be just as clear on how we will get there.

We start from a position of strength. As a connected, global University with multiple physical and virtual campuses – Liverpool, London, Suzhou, Singapore and online – our worldwide influence and impact is unrivalled in higher education. Over the next decade we will build on our internationally recognised strengths in research and scholarship and increase collaborative and inter-disciplinary working.

### UNIVERSITY OF MANCHESTER

The University of Manchester is a truly global institution, with a reputation for education and innovation that resonates across the world.

International businesses, charities, governments and universities turn to Manchester for our expertise. Whether it's leading the European renaissance in industrial biotechnology or helping to train midwives in developing countries, we provide the spark for positive change.

Our research engages with the world's biggest questions – that's why we bring together the best people in these fields to help us to find the answers. We've a history of attracting world-leading minds to work with us, from Niels Bohr and Arthur Lewis

to our latest Nobel laureates Andre Geim and Kostya Novoselov, whose pioneering work with the one-atom thick wonder material graphene has established Manchester not just as the centre of research into its application.

### LANCASTER UNIVERSITY

Lancaster University has risen to become one of Britain's top universities, with over 12,000 students and 2,500 employees within the Bailrigg campus that is now almost a small town in its own right.

Lancaster University has been named University of the Year by The Times and The Sunday Times Good University Guide 2018. It has also taken the top spot for Best Campus University and Best University in the North West.

Lancaster's success depends on the talented, creative and committed people who work hard to make this University so special and distinctive. Our vision for the future is to be a sustainable and academically excellent institution recognised as one of the leading universities in the world.

### NEWCASTLE UNIVERSITY

Newcastle University is a world-leading university, advancing knowledge, providing creative solutions, and addressing global problems.

We aspire to be a people focused university that harnesses academic excellence, innovation and creativity to provide benefits to individuals, to organisations and to society as a whole. Newcastle University exists for the public benefit to advance education, learning and research. Our objective is to build on this core purpose and, in doing so, provide new knowledge and creative solutions

that make a positive impact. We aim to work collaboratively with our many external partners to shape brighter futures, grow the economy and champion social justice.

### DURHAM UNIVERSITY

Durham University has a long-established commitment to research and research-led teaching. Research shapes and inspires the disciplinary structure of our departments, as well as our college communities. It directly informs our teaching of both undergraduates and postgraduates, and creates multidisciplinary programmes through our research centres and institutes. In partnership with policy-makers, industry, the public sector, and communities around the world, Durham's cross-disciplinary and cross-cultural research shapes local, national and international agendas.

**bionow**  
www.bionow.co.uk

Can create an exclusive sponsorship package and opportunity that perfectly aligns with your organisation's objectives. Opportunities include, but are not limited to:

- The facilitation of student placements within our sector companies and organisations.
- Access to a large SME community
- Access to academic research groups across the North of England
- Expertise in designing and developing bespoke conference programmes and networking events
- Promotion of events through targeted marketing
- Raising organisations profile through sponsorship of Bionow events

Alderley Park - the internationally renowned life science campus

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“We have a passion for helping companies to form, scale and grow”

Phil Kemp



# A unique approach

Stimulating and growing start-ups and SMEs is already paying dividends

BY ANDREW EDWARDS

It was the biggest science and technology deal of its kind in Europe last year.

A £360 million 50:50 partnership between Bruntwood and Legal and General, designed to drive business growth in our northern cities and create over 20,000 new high value jobs in the growing life sciences and technology sector.

The announcement and the formation of a new specialist company to drive it, Bruntwood SciTech, came in October 2018. So now for the proof of the pudding... delivery.

In addition to creating jobs Bruntwood SciTech is looking to treble its current customer base of businesses in life sciences and tech from 500 to 1,500 over the next five years.

The new company is also committed to delivering on the Life Sciences Deal within the Government's Industrial Strategy, published at the end of 2017.

The ambitious business plan would see Bruntwood SciTech's assets grow from 1.6million sq ft on day one to over 6.2million sq ft over the next ten years, increasing the value of the portfolio from £340million to over £2bn.

It is doing this by working in partnership, bringing together public, private and academic institutions to

unlock urban renewal opportunities and accelerate growth of some of the UK's key sectors through investment in long-term capital.

Bruntwood SciTech's portfolio ranges from medtech and digital start-ups to global life sciences companies.

Today it is centred around projects in Manchester's Innovation District - the Oxford Road Corridor, Cheshire, Birmingham and Leeds. Liverpool also features strongly in its forward plans.

Bruntwood SciTech offers an 'all inclusive' stimulus for start-ups, providing a fully comprehensive business support structure for growth; giving fledgling enterprises at the cutting edge of innovation the on-site professional assistance they need to flourish.

## Case study: Blueberry Therapeutics, Alderley Park

As a fledgling small business, Blueberry Therapeutics needed a base where it could turn a great idea into a genuine success story - without breaking the bank.

The skin treatments research specialists say they haven't looked back since locating on Alderley Park.

The business is developing a series of new treatments for dermatological disorders to take into the American market once it successfully make its New Drug Application in under two years' time.

Chief Executive Dr John Ridden said: "Alderley Park as a science

The business is driven by its overarching purposes - to create thriving cities across the UK city regions.

With questions being asked about the reality of Britain delivering on the Northern Powerhouse agenda, Bruntwood SciTech is already coming up with some hugely impressive answers.

- Over £160m is already being invested at the internationally renowned Alderley Park, which will see the development of new sports and leisure facilities, farm shop, gastropub and up to 275 new homes alongside a further £10m of investment which was recently unveiled for the development of additional laboratories to meet the growing demand at the site. The 150,000 sq ft Glasshouse, opening in Autumn, will become a new hub for tech and forward-thinking innovative businesses.

- The Citylabs campus, which is a joint venture between Manchester Science Partnerships and Manchester University NHS Foundation Trust, is undergoing a £60m expansion to create Citylabs 2.0 and 3.0. German-based global diagnostics company QIAGEN has announced that Citylabs 2.0 will be its home, focussed on precision medicines and molecular diagnostics.

- Manchester Science Park, also part

of Manchester Science Partnerships, was chosen as the HQ for the UK's only Internet of Things smart city demonstrator project, CityVerve. It is also home to a co-innovation hub, 'Mi-IDEA' delivered in partnership with Cisco a 'living lab' test bed and Tesla Power Pack Battery.

- Circle Square, Manchester's newest city centre neighbourhood, will see the £750m development of 1.2m square feet of commercial workspace, two hotels, 100,000 sq ft of retail and leisure space, multi-storey car park and public realm alongside 1,700 new homes, as part of a joint venture between Bruntwood SciTech and Select Property Group
- Platform, the recently re-furnished Bruntwood SciTech hub in Leeds, featuring a specialist incubator for digital tech and businesses from the creative industries, offers a range of co-working, serviced offices and commercial workspace alongside comprehensive business support packages and will create more than 1,000 jobs for the city over the next decade.

- Innovation Birmingham, the region's leading digital and tech campus, has raised more than £18m in funding for over 280 start ups through its incubation programmes and is looking to expand.

Bruntwood SciTech is proving to be the real deal.

The company's Chief Executive Phil Kemp says the unique approach to stimulating, developing and growing start-ups and SMEs is already paying dividends.

Its incubator programmes across Manchester, Birmingham, Leeds and at Alderley Park are assisting fledgling entrepreneurs on their journey from a great idea to a great business.

Phil Kemp said: "We are focusing on the long-term regeneration of our cities and have a passion for helping companies to form, scale and grow, ultimately enabling UK plc to be competitive in a post Brexit world.

"We have an aggressive and imaginative plan to grow our asset base in the cities where we are currently established. Exciting things are happening.

"In Manchester the expansion of QIAGEN sticks out for me. In contrast to all the negativity around Brexit, here is a German company looking to invest in the UK, specifically into Manchester and in a ground-breaking area - genomics will have profound effects on people not only in Greater Manchester but also the UK, Europe and the world.

"The potential in Birmingham, where we've invested in Innovation Birmingham, is vast. The site is located where HS2 will run into the city. The knowledge district runs right up to where the platform will be. Get off the train and you'll walk straight into the innovation district.

"One of the great success stories at Innovation Birmingham is Gymshark, an online fitness clothing business, set up by a graduate from Aston University in his garage, which has gone from zero revenue to £500 million since 2012. They are part of our Serendip open innovation programme for enterprises, which helps global corporates and the public sector to innovate via collaboration with SMEs. We're looking forward to helping them grow as we continue to expand in the city."

park has been extremely helpful. We were the first to sign a lease to take laboratory and office space and with that a virtual company with great ideas, I.P, and a plan suddenly is real.

"We were able to lease equipment here as well.

"We didn't want to be spending a lot on equipment, so we had an equipped lab, internet, telephones. It was all here.

"Alderley Park is a great place for a company like ours, which is a drugs discovery and development company.

"We work with about five

companies at Alderley Park right now, so in terms of drug discovery and development we have all the companies and assets on-site to help move programmes forward.

"The positioning is absolutely fabulous from a getting around the globe point of view. We have an airport 30 minutes away and it's two hours to London by train. The connectivity is excellent.

"We often try to encourage partners of ours to come and visit and I think they are in awe when they come to the reception because it's such a beautiful, beautiful place."

**Bright Building, a 'living lab' for state-of-the-art technology**



**Platform, Leeds - home to the city's digital Tech Incubator'**



# With so many spades in the ground already, here is a geographical overview of Bruntwood SciTech

## Manchester

### MANCHESTER SCIENCE PARK

Close to the University of Manchester, Manchester Metropolitan University and Manchester University NHS Foundation Trust (MFT), the campus is home to a rich cluster of over 150 knowledge-based businesses and over 2,000 people attracted by the specialist science and tech facilities and equipment.

The heart of the Park is the Bright Building. Opened in 2017, it was purposefully designed to maximise customer interaction in order for innovative ideas to develop, and valuable partnerships to form. The building includes open communal workspace, a gym, cafe, flexible 200-person event space, sports kit drying rooms, and secure cycle storage.

Science and tech businesses located at Manchester Science Park have access to a specialist programme of business support including dedicated access to finance and funding, talent acquisition and retention services, new markets, and professional services assistance, coupled with a vibrant social events and networking calendar.

The campus is currently undergoing further transformation to grow to 1m sq ft within the next ten years to support the growth of science and tech businesses in the region.

### CITYLABS CAMPUS

Citylabs brings together and accelerates collaboration between the NHS, scientific and academic communities and industry on the largest clinical academic campus in Europe.

Citylabs provides opportunities for health and medical technology businesses to grow and co-create new health products in collaboration with the NHS and academia and is a Joint Venture project between Manchester Science Partnerships and Manchester University NHS Foundation Trust, the country's largest Provider Trust.

The campus is already home to a cluster of digital health, medical devices, diagnostics, precision medicine and bio-material businesses in Citylabs I.O, who have unique direct access to the hospital Trust's clinical resources, researchers, clinicians and procurement teams, as well as a specialist growth support and events programme.

Under the £60m expansion Citylabs

2.0 and 3.0 will become home to a globally-leading genomics campus for innovation, translational science, genomics, precision medicine and molecular diagnostics, serving both the Greater Manchester region and the wider UK. QIAGEN has been confirmed as the lead industrial partner in the creation of this world-leading hub and the company will also significantly expand its UK operations to have Citylabs 2.0 as its home, which was announced in the Life Sciences Industrial Strategy.

Real health benefits will be delivered for Manchester and the country in the creation of the clustered community by enabling big strides to be taken in the prediction and prevention of disease through new diagnostic tests which enable earlier detection of disease and development of personalised treatments.

### CIRCLE SQUARE

Circle Square is Manchester's newest city centre neighbourhood. A joint venture between Bruntwood SciTech and Select Property Group, the 2.4m sq ft, £750m development is also located in the heart of the Oxford Road Corridor.

It will be home to 1.2million sq ft of commercial workspace offering a mix of designated co-working, small studios, larger floorplates for managed and leased spaces and social community spaces. A place to live, work and enjoy, it will also include; 1,700 new homes, 1000 sq ft of public realm, and 100,000 sq ft of leading-edge retail, leisure space and two hotels.

Hewlett Packard Enterprise will move into office space at Circle Square next year. The company, which currently operates across six locations in the UK, will have capacity to locate almost 300 of its employees.

Circle Square, already home to Manchester Technology Centre with its tech incubator, is a magnet to large corporations attracted by access to digital tech entrepreneurs and start-ups. It will also boast the largest amount of new green space in central Manchester in a generation as part of its development.

### ALDERLEY PARK

Alderley Park, in Cheshire, is where world leading, science, innovation and stylish living come together to create a place like no other.

Currently undergoing over £247m

of investment, Alderley Park is home to the internationally-recognised Mereside life science campus and vibrant, fast growing community of over 200 companies.

Alderley Park also offers 150,000 sq ft of commercial workspace ideal for digital tech and forward-thinking innovative business along with a wide range of amenities including a conference centre complete with a 232-seat auditorium, meeting rooms, a restaurant, gym and outdoor sports pitches.

The Mereside campus offers over 1m sq ft of ready-to-go chemistry and biology labs ranging from a single bench up to 50,000 sq ft alongside a comprehensive range of centralised

scientific services all available on a pay as you go basis.

The Alderley Park Accelerator is focussed on the growth and scaling up of new and early stage life science companies, offering a variety of programmes and support services, such as the 12-week DEVELOP programme, a range of boot camps and access to an expert mentor network.

The campus is also home to national institutions including Innovate UK's Medicines Discovery Catapult and the national Antimicrobial Resistance Centre, a joint private-public initiative to support/accelerate the development of new antibiotics and diagnostics.

The Cancer Research UK Manches-

ter Institute also made the Mereside campus its interim home following a fire in 2017 at its former location in Manchester, taking 81,000 sq ft of laboratory and office space for over 300 scientists to conduct research and development activity.

## Leeds

Bruntwood SciTech's hub in Leeds is Platform, standing directly above the city's mainline railway station. The recently fully-refurbished Platform provides a major new strategic creative and technology centre in the heart of Leeds city centre and will create more than 1,000 jobs for the city through its Tech Incubator for start-ups in the digital and creative industries.

Facilities include co-working and serviced space as well as a customer lounge for networking, roof terrace, strong community events programme, and specialist business support programme which includes access to finance, intellectual property advice, business mentoring and resource planning.

Bruntwood SciTech is keen to continue its growth in Leeds as it continues to work closely with the city's public, private and academic authorities to help grow the city's strengths in science and technology.

## Birmingham

Innovation Birmingham is the region's leading digital and tech campus, with co-working, office, meeting and event space as well as highly specified business support programmes for innovators, entrepreneurs and investors looking to develop or fund innovative digital start-ups with high growth potential.

The campus is home to over 170 companies, employing over 1000 people. Over 330 start-ups have benefited from the campus' Serendip open innovation programme to date, working with national partners including National Express, Barclays, Tata Motors and Gymshark and collectively raising over £18 million in start-up funding.

Innovation Birmingham is also at the heart of the West Midlands' plans for a 5G test bed and is located next to the planned terminal for HS2.



## Case study: Stoller Biomarker Discovery Centre, Citylabs

Cancer drug treatments will be better targeted for patients thanks to pioneering work by the Stoller Biomarker Discovery Centre at Citylabs in Manchester.

Bruntwood SciTech's Citylabs campus is the perfect location for the job, according to the centre's director Professor Tony Whetton.

The Discovery Centre specialises in finding protein markers in blood which can stop patients being given treatments that fail to improve their conditions.

It ends the 'hit-or-miss' process where doctors prescribe drugs that may, or may not, be effective along the treatment journey.

The centre succeeded in getting a grant to establish the best and largest proteomic centre in the region and

worked with Manchester Science Partnerships to develop high-end laboratory space at Citylabs.

Prof Whetton said: "The key thing for me about Citylabs is location, location, location."

"Manchester is one of the best centres to undertake clinical and pre-clinical research."

"We're on the site of the largest NHS Trust in the country and there is a really large clinical base, and two or three hundred yards away we have two of the UK's major universities."

"We also have local industry, local healthcare industry colleagues and local clinical research colleagues around us as well. And we can find those in Citylabs as well as elsewhere in Manchester – at Manchester Science Park for example."



CHC was awarded the 2018 Healthcare Project of the Year Award in recognition of the innovative use of technology and NHS data

# A catalyst for change

## Project has galvanised relationships and reduced the timeframe for innovations

The award-winning Connected Health Cities (CHC) project is transforming lives across the North of England.

Using its unique method, CHC is now helping doctors to treat children with asthma at home rather than in hospital; coordinating better care for those with fragility or for vulnerable families; helping to plan services for people with COPD, liver disorders and epilepsy; saving lives and reducing disability after a stroke; and producing tools that can help tackle antibiotic usage.

Professor John Ainsworth, Director of CHC commented "CHC was conceived as a pilot programme to explore the feasibility of the NHS adopting a learning health system approach. It has exceeded all of our expectations. The impact can now be measured in lives saved, reduced costs and improved patient experience."

Connected Health Cities is harnessing the power of data to implement cycles of continuous improvement in health and care service, called Learning Health Systems (LHS), for the benefit of patients. Backed by the Department of Health and Social Care, and led by the Northern Health

Science Alliance, CHC put in place clinically and socially driven care pathways programmes across the health sector in the North of England. CHC is embedded inside of both the NHS, through Trusts and AHSN clinical partners, and in academia; but with strong representation from both local citizens and local government.

CHC achieved transformational results by using a replicable approach which is attracting significant global

interest. The approach is centred on the CHC method which uses a combination of people, data and methods to provide an agile framework that enables front-line innovators to improve care, reduce waste and unlock learning.

The CHC method brings together the right people to work on the right data with the right methods; to deliver the best care for the right patients at the right time. The approach has

successfully broken down organisational barriers to transform beliefs and capabilities. It has created high performance teams who understand what works, where it works and the know-how to scale their solutions.

Critical to the success of the CHC method has been the significant involvement of both patients and local citizens in steering the direction and value proposition of CHC outputs.

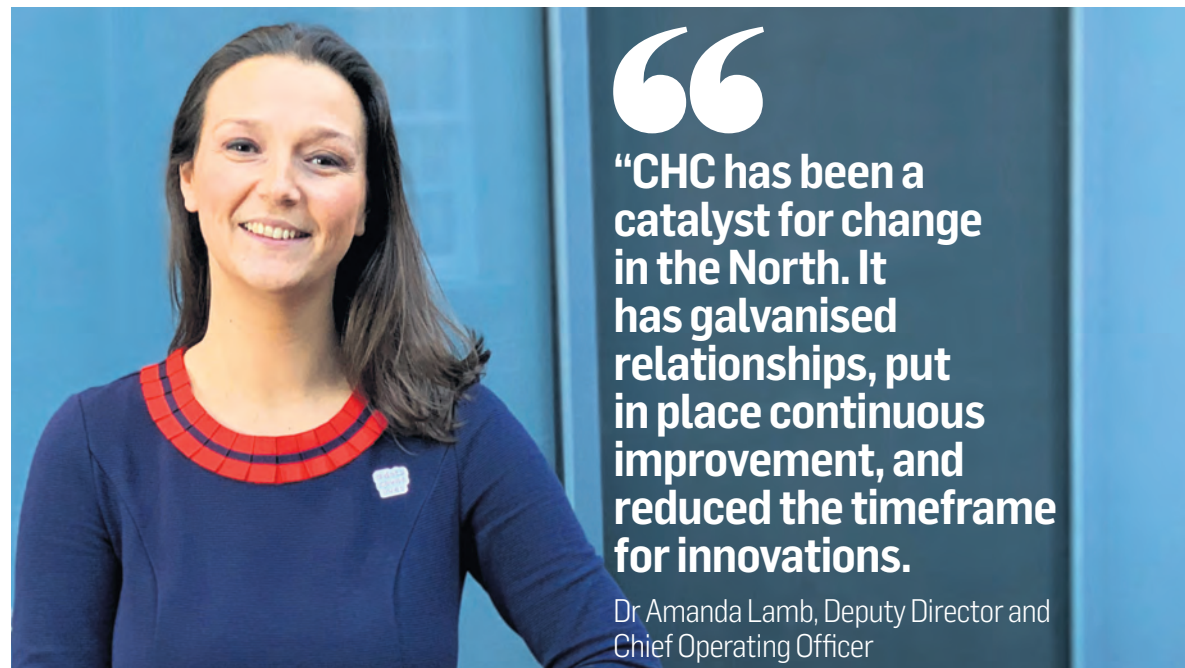
As a large data-intensive initiative,

CHC has been unique in that one of its main aims was to work with the public and gain its trust. This was achieved through the use of many citizen-centric methods centred on our social media campaign #DataSavesLives. The use of Citizen Juries, which allows the public to gain a deep understanding of the risks and opportunities of a specific topic and give their informed opinion on complex or nuanced topics, has provided great insight.

The key message was that if their data was to be used for improvements, the public wanted to be able to see and feel the benefit. CHC ensured the delivery of local solutions in key areas important to its regions.

Dr Amanda Lamb, Deputy Director and Chief Operating Officer, said: "CHC has been a catalyst for change in the North. It has galvanised relationships, put in place continuous improvement, and reduced the timeframe for innovations. We are excited to explore international opportunities in the near future."

2018 was a significant year for CHC with many staff and projects being recognised by prestigious organisations such as Northern Power Women, Health Services Journal, Biomedical Journal and Bionow, where CHC was awarded the 2018 Healthcare Project of the Year award in recognition of the innovative use of technology and NHS data to create and embed LHS with the NHS and social care.



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CHC has been a catalyst for change in the North. It has galvanised relationships, put in place continuous improvement, and reduced the timeframe for innovations.

Dr Amanda Lamb, Deputy Director and Chief Operating Officer

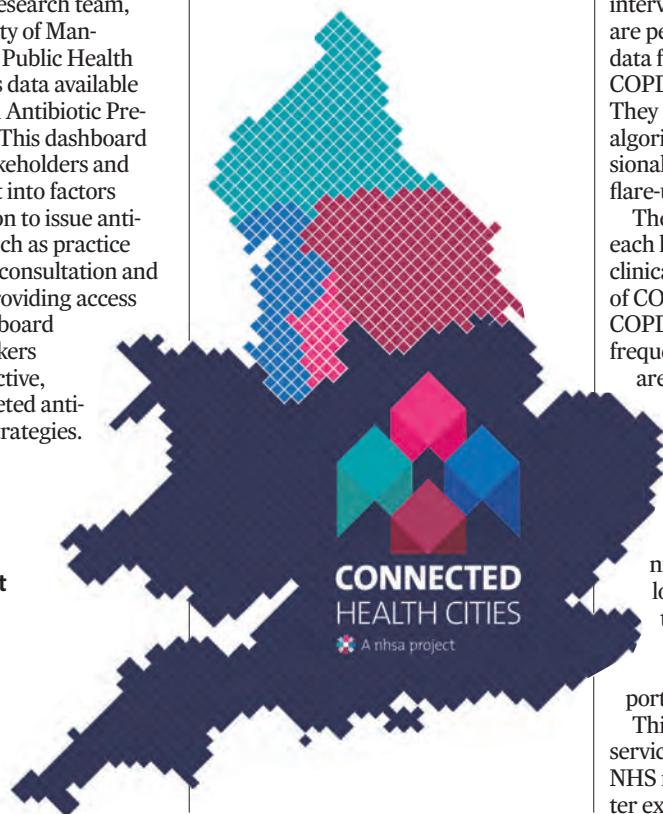
# Transforming lives across the North of England

## Greater Manchester: Building Rapid Interventions to reduce antimicrobial resistance and over-prescribing of antibiotics (BRIT)

Antibiotic resistance is one of today's most pressing healthcare concerns with England's chief medical officer warning of 'an antibiotic apocalypse'. Manchester CHC research has found that the current use of antibiotics is highly variable across the NHS, identifying northern, social-economically deprived regions as antibiotic prescribing 'hotspots'.

The BRIT team have analysed anonymised data from more than 20 million consultations across 400 GP practices, A&E departments and out-of-hours clinics to understand the drivers behind antibiotic prescribing across the UK. The research team, based at the University of Manchester, worked with Public Health England to make this data available through the National Antibiotic Prescribing Dashboard. This dashboard offers healthcare stakeholders and policy makers insight into factors impacting the decision to issue antibiotics to patients, such as practice location, duration of consultation and staff shortages. By providing access to this data, the dashboard empowers policy makers to develop more effective, evidence based, targeted antibiotic optimisation strategies.

- ◆ Greater Manchester (GM)
- ◆ North West Coast (NWC)
- ◆ North East and North Cumbria (NENC)
- ◆ Connected Yorkshire (CY)



The recent launch of a second dashboard co-designed with GPs (GP Antibiotic Prescribing dashboard) offers prescribers a data-driven understanding of their own practice's prescribing behaviours. This tool provides practices with the information that they need to compare their own antibiotic prescribing patterns to national and regional prescribing rates, whilst seeing whether their patients are considered 'high-risk' or 'low-risk' of developing infection-related complications, to support the optimisation of antibiotic prescribing.

*The National Antibiotic Prescribing Dashboard is now open to public sector professionals working in a healthcare, government or research institution. To register, go to <http://britanalytics.uk>.*

## North West Coast: Identifying admission patterns and targeting interventions in Chronic Obstructive Pulmonary Disease (COPD)

Chronic Obstructive Pulmonary Disease (COPD) is a long-term condition that affects around three million people and leads to progressive breathlessness. In fact, its recurring flare-ups are the second most common cause of emergency medical admission in the UK. However, symptoms and severity vary from patient to patient, and managing the condition requires support from both clinicians and social support services.

As part of the NWC CHC, a Data Laboratory has been established at the University of Liverpool to identify admission patterns and targeted interventions in COPD. Researchers are performing clinical analysis on data from emergency admissions for COPD across the North West Coast. They have developed new clinical algorithms to help healthcare professionals identify patients with COPD flare-ups.

The Data Lab produces reports for each hospital catchment area, allowing clinical teams to understand patterns of COPD admission. For example, COPD hospital admissions are more frequent in deprived areas where there are higher rates of smoking.

Researchers are also using geo-mapping techniques to illustrate COPD 'hotspots' where there are high hospital admission rates. Together, the reports and geo-mapping techniques provide valuable insights to local clinical teams, allowing them to see where resources such as primary care, emergency access, ambulances and community support networks should be allocated.

This leads to improved planning of services and targeting of social and NHS resources, as well as a much better experience for patients.

## Yorkshire and the Humber: Supporting community care and reducing demand on A&E services

The UK has seen increasing pressure and demand on emergency services resulting in stretched resources to deliver the care needed for patients. Currently large amounts of data are collected on patients which remains in silos and is not used to improve their care.

A programme to support community care and reducing demand on A&E services is linking routine data from the ambulance service, NHS 111, Emergency Departments and Hospital Trusts from across the Yorkshire and Humber region. The linkage produces a picture of the whole journey patients have from call to discharge from care. The data exists now for over 15 million patient contacts and the research team have tapped its potential.

Analysis of the linked dataset suggests that between 1 in 6 and 1 in 7 adults attend the Emergency Department with conditions that could easily be managed elsewhere. It has also found that a minimum of 1 in 6 ambulance journeys are avoidable and that around 20-30% of acute hospital admissions could be avoided leading to huge cost savings for the health service.

This dataset provides invaluable insights into how the NHS could be configured to save money whilst also delivering more appropriate care for patients. This will have direct benefit for local and national commissioning and policy direction by enabling the NHS to plan ahead and deliver services more effectively. The data used will, over time, tell a story that will help deliver better and more targeted care.

## North East and North Cumbria: Predictive Modelling for Unplanned Care in the North East and North Cumbria

The NHS is facing unprecedented policy and funding changes, ever-increasing workforce pressures, and an ageing population. NHS staff need to be able to plan ahead to best tackle these challenges and to this with a strong evidence base to inform their decision making.

In the North East and North Cumbria region, embedded within Durham University in collaboration with local GPs, councils and Trusts, predictive modelling for unplanned care has been providing the evidence for exactly this problem. The team are delivering statistical models that can be used by analytics teams in healthcare and local authorities to produce daily A&E forecasts up to six months in advance, highlighting uncertainties and variations in both urgent and emergency care, whilst facilitating planning and management in hospitals, walk-in centres and GP practices in a way that hasn't been done before. The impact is research informed planning to meet changing patient population needs.

Two apps developed provide practical modelling, scenario planning and decision-support tools for A&E and GP practices. These apps are being used by GPs in Darlington to better understand their patients' current and future needs; planning staff allocation and recruitment to accommodate a growing and ageing population. This represents a long-needed move from reactive and silo-based planning to proactive population health planning.

The A&E app provides local Trusts with a better understanding of the types of emergencies and patient flows in A&E throughout the month, potentially allowing them to be better prepared to cope with periods of high demand. The impacts include an improved capacity to predict demand which can serve to both improve patient care and inform effective staff deployment.

## NHSA: a vision for a healthier, wealthier North

In 2015 the Northern Health Science Alliance (NHSA) had a vision for a healthier, wealthier North created by using the assets of the region to create a better future for its people.

Health North: Connected Health Cities was born of that ambition. A project to use the North's deep expertise, in a number of areas including health data, to create innovative solutions to solve real-world problems.

The project caught the imagination of many of those involved in it and the NHSA was allocated "Health North: Connected Health Cities" funding by the Government.

The Northern Powerhouse is home to 21% of the total UK life science sector workforce and has grown by more than 9% to over 50,000 employees since 2012. Latest figures for 2017

show the value of this sector in the North to be over £13.6bn.

The NHSA is an alliance of the top research universities, NHS hospital trusts and the four Academic Health Science Networks across the North of England. Dr Hakim Yadi, its founding CEO, set about mapping the considerable assets that these organisations comprised of.

He said: "It soon became clear that there were a number of unique features to the health research landscape across the North of the UK that could be used for a great project to help improve the lives of the people living there – and then scaled up across the UK and further afield."

Working with leading academics such as Professor Iain Buchan, now at the University of Liverpool, Dr Yadi

discovered that there was a unique expertise in health data academia – with these academics ideally poised to work in an interdisciplinary manner with their local NHS Trusts, third sector providers and other institutions in the area.

The North's population is also stable, people who live in an area tend to stay there making it an ideal place to carry out research into improving patient health.

Dr Yadi continues: "We spoke to people across the alliance and soon discovered that not only was there unique expertise across the North's cities and regions but also that it had region-specific issues that needed tackling."

"Our thought was – why don't we harness the excellent minds and facilities we have here to tackle the problems

that the population needs addressing? This is where the idea of 'connected health cities' came up. A system which continually used the information it was getting to improve itself."

The award-winning Connected Health Cities is now a flagship project of NHSA which continues to deliver new projects under its Health North agenda.

Recently it launched its Health for Wealth report, commissioned by six of its top academics, which looks into the relationship between health and productivity and discovered poor health in the North means the UK misses out on £13.2bn a year in lost productivity.

The NHSA has been awarded a Northern Powerhouse in Health Research Science and Innovation Audit by Government, due to be

published shortly, which maps out the considerable assets across the region.

And the NHSA has also been named in the UK Industrial Strategy Life Sciences Sector Deal as a key driver for health innovation in the North of England - where it has uncovered £1.6bn of planned industry investment in the North's life sciences sector.

The success of Connected Health Cities demonstrates that when investment is placed into the North of England its clinicians, academics and support staff have the ability to deliver – and at scale – opportunities which build the health and wealth of region.

*For more information on the Northern Health Science Alliance visit [www.thenhsa.co.uk](http://www.thenhsa.co.uk) and follow us on Twitter @the\_nhsa*

Pelviva is an easy to use, clinically effective, treatment



# A breakthrough for women

## North East firm develops pioneering female health technology

Femtech - female technology - is one of the fastest growing sectors of healthcare, driven by an increased level of investment into the sector; forecast to reach \$50bn by 2025, according to a recent Frost and Sullivan report.

To date, female health has been an area of healthcare with limited research and investment but there are signs this is changing, and Cramlington-based Femeda Ltd is set for rapid expansion based on its innovative research development recently launched in the UK.

A third of all women experience bladder leakage, which has a huge impact on their quality of life. Acknowledging a need for an easy-to-use, discreet and clinically effective treatment, Femeda focused on developing a product that would be a life-changing breakthrough for women.

### THE RESULT WAS PELVIVA:

- a new treatment for women, patients and healthcare professionals with proven clinical efficacy
- a solution to the problems caused by a lack of adherence, or inability to perform pelvic floor muscle exercises correctly
- a disposable, discreet and easy-to-use pelvic floor muscle re-trainer with reactive pulse technology (RPT™).

Pelviva incorporates a revolutionary pattern of neuromuscular electrical

stimulation using a programme developed by Professor Jacqueline Oldham, of Manchester University. Each device contains a unique microprocessor that delivers the patented Pelviva waveform to the pelvic floor muscles.

It is a single-use, disposable intravaginal medical device made of a body responsive foam, which adapts to every woman's individual shape. The unique Pelviva RPT delivers a series of intensive reactive pulses every alternate ten seconds, to stimulate the pelvic floor muscles.

**THE DEVICE** mimics the way the body works naturally, causing the pelvic floor muscles to contract. This helps restore speed and strength to the power fibres, to prevent bladder leak-

**“This trail blazing development has the potential to transform the lives of women world-wide”**

Professor Jacqueline Oldham

age when women cough, laugh, sneeze, or exercise. It also re-trains the endurance fibres to hold on when a woman urgently needs the toilet, giving back control over urgency bladder leakage.

Professor Oldham, Director of Corridor Manchester Health Innovation, said: “Pelviva is the result of painstaking research through academic, clinical, and industry collaboration bringing innovation into healthcare. This trail blazing development has the potential to transform the lives of women world-wide.”

Bladder leakage is the term Femeda choose to use when talking about this condition as women find it difficult to relate to the correct medical term ‘urinary incontinence’, which is more commonly associated with the elderly and infirm. The condition affects a woman's psychological, emotional, social, and sexual function.

It is a global problem, affecting women as young as 18 and often exacerbated by childbirth and menopause. Only one in four are likely to consult with their healthcare professional due to the embarrassment which surrounds the condition; the rest will ‘suffer in silence’.

As part of an on-going development and focus on manufacturing excellence, in 2016 Femeda set up its own manufacturing plant in Cramlington. The plant runs alongside its R&D team to provide a springboard for future growth.

Last month, Femeda won the 2019 Medilink Partnership with Academia Award. The awards celebrate success

spanning the whole of the North of England. The ceremony saw industry, academia and the NHS come together to toast the achievements of the incredibly strong health sector regionally.

**THE COMPANY** also won the Product of the Year category at the prestigious 2018 Bionow Awards which acknowledge ingenuity, dedication and the accomplishments of those who drive innovation and deliver outstanding results within the biomedical and life science sectors across Northern England.

“It's a first for a consumer medical device to win the award and a great achievement against some exceptional competition and innovation across the regions,” said Andrew Tasker, chief executive of Femeda. “It is a credit to the close teamwork in the company that has become integral to how we work in the business, and which has driven our successful launch.

“Our R&D efforts focus on clinical leadership whilst continually incorporating consumer and patient insights,” he said, adding “whilst bladder leakage is not a life-threatening condition, it is a life changing condition for millions of women worldwide.”

In recognition of the major support the business has received from clinicians and academics in the Manchester area

to bring Pelviva to the market, Femeda is investing back into the Greater Manchester community. It has committed to provide up to £50,000-worth of Pelviva product to women with bladder leakage in the region, via the appropriate clinicians and hospital trusts.

The company is working with Health Innovation Manchester and the relevant health trusts, as well as primary and secondary care providers, to make the product available to women who as yet have had limited alternatives.

“Bladder leakage is an extremely common problem that seriously impacts on women's lives,” said Julia Herbert, Femeda's clinical director. “It has a close association with depression and often results in women withdrawing from social and physical activity. Bladder leakage can also negatively impact on a woman's personal life, relationships and sexual function.

“It's been great to be involved in the development of Pelviva to bring women a treatment that really does fit into their life, is easy to use and that is also clinically effective. Pelviva is a

pioneering medical device that will have a life-changing impact on women's quality of life.”

*Pelviva is available direct to consumers from [www.pelviva.com](http://www.pelviva.com) and will soon be available in selected pharmacies.*





# Bridging the gap

Law firm with the only dedicated life sciences team in Manchester

BY MIKE COWLEY

Whereas the life sciences sector appears increasingly buoyant in the north – with pundits suggesting it will underpin the region's future prosperity – the reality is that it is struggling to achieve its true potential because the north-south divide is still a major determining factor in success or failure.

The bottom line is that while access to seed capital is available to life science start-ups in the region, the later stage funds needed to take them to the next point in their development are not only based in the South or overseas but seem loath to commit their money north of Watford.

With spin out companies from universities the main driver of the sector, the significant focus of later stage funders is still on the traditional golden triangle – Oxford, Cambridge and London – with the North competing for a distant second place neck and neck with Scotland. In fact, none of the 40 major life science fund raisers in the UK can be found in the North. And that's why the 'Golden Triangle' scooped up more than 80% of all funds raised between 2012 and 2016.

According to the latest BioCity annual report, the body that monitors life science startups and business incubators, funds in the North are "no doubt making a positive contribution to the development of local life science industries but do not have the capacity to invest in tens of millions – the eternal challenge for regions outside the South East."

**ONE NORTHERN** firm well aware of the situation and making significant attempts to bridge the gap is Slater Heelis, the law firm with the only dedicated life science team to be found in Manchester, all its rivals opting to keep their specialists in London or Cambridge. The expertise of the practice's life sciences team – of which two thirds are also biomedical graduates – saw Slater Heelis complete 19 development capital transactions last year raising more than £50m of seed and early stage funding for clients.

Simon Wallwork, a Partner in Slater Heelis who is Head of Life Sciences, has an unrivalled track record in the sector which goes back two decades to the time "when little was happening and so most law firms weren't interested in the sector".

He has become a significant player in the North, acting for more than 35 life science companies in investment capital deals over the last two years and being embedded as a member of the Strategic Advisory Board of Bionow, the voice of life sciences in the North.

He has also worked with Manchester University, Liverpool University and Alder Hey Children's Hospital on their commercialisation strategies.

Wallwork has been instrumental in helping his clients buck the trend of the funding divide which has left the North as the poor relations, with one deal last year raising £10m for Blueberry Therapeutics, one of the North's rising stars.

The Slater Heelis team has assisted in enabling Blueberry to evolve from a start-up to a company poised to deliver a revolutionary non-harmful spray for a market leading treatment for fungal infection of skin and nails which in its original tablet form in extreme cases has potentially fatal results. The funding though did not come from the UK, but from China – with China Medical Systems providing the £10m as part of a commercialisation agreement.

Slater Heelis has already this year been involved in fund raising for Redag Crop Protection. This has also seen Redag sell some of its lead products to Globachem, a Belgian based pharmaceutical company.

**AS A RESULT** of the difficulty in finding UK later stage funds, Slater Heelis has also been acting where crowd funding, increasingly important in the sector, is involved. Client Liverpool Chirochem, which produces small molecules for R&D, turned to crowd funding to raise money initially before completing a funding round with a syndicate including Deepbridge Capital, Praetura and Maven.

Wallwork sees many challenges for the North in terms of access to funding and believes change is necessary to achieve a level playing field with the South. He is calling for:

- The development of more Funds that are prepared to take a "patient capital" style of investment, similar to that in the US. (Such funds are prepared to take a longer-term view on the investment rather than the three to five year investment criteria that are used by most UK funds)
- Establishing later stage funds in the North of England so that companies that have raised early stage funding have the next tier of funders on their doorstep.

Brexit is also causing concern, in that Wallwork would like more clarity



“All we need now is for the later stage funders down south to wake up to what's going on up North”

Simon Wallwork

on how the EU funding that forms the basis of most life sciences early stage funding is replaced post Brexit. Similarly he believes the uncertainty surrounding the regulatory environment post-Brexit both in terms of drugs and medical devices is harmful.

Not that it is all doom and gloom. Wallwork believes that the continued investment in infrastructure at

many of the Northern universities, Manchester Science Park, City Labs, Daresbury Innovation Centre – along with the continued excellence in academic research in the universities – is all making a significant contribution.

He also is convinced that the increasing expertise in the support network and the success of BioNow in developing the ecosystem in the North

will play a major contributory factor in any success story. What also pleases Wallwork is the growth of early stage life science funds in the North such as Catapult Ventures, Alderley Park Ventures, Maven, Deepbridge and Praetura.

"All we need now is for the later stage funders down south to wake up to what's going on up North," he said.

## Building a relationship

Slater Heelis, though not one of the big players in the corporate league, is a law firm that punches far above its weight in terms of life sciences in the North. This is due to the approach taken by Simon Wallwork and his team – of not seeking out winners but looking after a number of start-ups "pyramid style" with the objective of as many as possible rising to the top.

Unlike rival larger firms, Slater Heelis does not operate on time, billing, and recovery targets but invests its time at an affordable price with rewards to come in the form of longterm relationships. And last year alone saw a high success rate in terms of acting for clients including:

- Manchester Imaging, a dental diagnostics spin out from the

University of Manchester, where Slater Heelis steered the firm through its third investment round with Catapult Ventures and Mercia.

- Reed Medical Holdings, a supplier of orthopaedic footwear to the NHS, which involved a management buy-out from the former owner who retired after 50 years.
- Apex Molecular saw Slater Heelis

advise on investment in the company by GM & Cheshire Life Sciences fund and angel investors.

- BiVictrix Therapeutics, a biotech focused on developing novel antibody drug conjugates to target unmet needs in blood cancer saw Slater Heelis advise on investment from shareholders including DBW Investment and Alderley Park Ventures.

# Creating a virtuous circle

If people are well they are more productive and the economy does better

Following Health Innovation Manchester celebrating its first year in October 2018, we took the opportunity to talk to Chief Executive Professor Ben Bridgewater who has been at the helm for the past 12 months.

Following an illustrious 20-year career as a cardiac surgeon in Greater Manchester with a proclivity for spearheading innovative digital technology programmes to drive and assure better quality in cardiac surgery, Bridgewater became increasingly interested in the role of using technology to improve patient outcomes.

This led to him spending a lengthy spell in a global technology company translating the digital transformation opportunities being realised so successfully in retail, banking and manufacturing into the health and life sciences sector to improve patient experience and outcomes. Arguably not a typical career path for a cardiac surgeon or the CEO of an NHS organisation.

**HOWEVER, AS** the CEO of a unique organisation tasked with driving collaboration between NHS, social care, academia, and industry to accelerate innovation and drive economic growth, it is safe to say that while unusual, Bridgewater's career path has provided the ideal platform from which to lead such a unique entity.

"I have had an unusual career compared to many in healthcare," he said. "I spent a long time in the NHS, a fair bit of time within the university environment, and the private sector with a commercial digital health focus. All the roles I have previously undertaken have been a really useful exposure to all the things you need to execute well in Health Innovation Manchester."

"Health Innovation Manchester is different from all other existing structures in health and social care; conceived to ensure that the opportunities from devolution with delegated control of its £6 billion health and social care budget lead to greater innovation and economic development. It was recognised that there are a number of issues that hinder innovation such as complicated structures, fragmented decision-making and multiple access points.

"Health Innovation Manchester was formed to simplify that to enable us to deliver innovation faster both for our citizens and for the economy of the city region. We have brought

together the Academic Health Science Network and the Academic Health Science Centre into a single entity and augmented it with the additional capabilities of our four universities, the wider NHS, industry, and other regional institutions to adopt a 'one Manchester' approach.

"Our role is in essence to drive better health and wellness outcomes for Greater Manchester citizens and to drive economic growth for the city region. These two things are related. If people are well, they are more productive and the economy does better, and if they are wealthier, they are less unwell in general. Alongside this, we are trying to make the academic world increasingly effective in driving impact by supporting innovation out of the universities and making sure that that it benefits citizens.

"This is a really important thing for citizens and academics alike because the more impact that can be realised from research, the more we can increase funding to do great research, and the more we can bring great academic talent into the city region to create a virtuous cycle."

Although now only 16 months old, Health Innovation Manchester is already embracing its complex remit and gaining traction at the heart of the city-region's health and social care devolution. Its perceived added value to a system already renowned for its collaborative approach is clearly resonating with commissioners, providers and the universities, who are providing additional resources and capacity.

**THIS IS** enabling the delivery of local programmes aligned to the Greater Manchester's shared priorities on top of AHSN funded national innovation programmes. Some of these are particularly ambitious in range and scope, including a ground-breaking project to become the first city to eliminate Hepatitis C and a multifaceted programme to improve the care of people with Chronic Obstructive Pulmonary Disease (COPD), the cause of 23,000 deaths in England every year and the fifth biggest killer in the UK.

In addition to the delivery of an inflight project portfolio spanning more than 80 programmes, Health Innovation Manchester is also successfully recalibrating the NHS relationship with industry. In two UK firsts it orchestrated Memorandums of Understanding (MoU) with the Association of British HealthTech Industries and the pharmaceutical industry. The latter of which has seen the organisation being shortlisted in



**"Our role is in essence to drive better health and wellness outcomes for Greater Manchester citizens and to drive economic growth for the city region"**

Professor Ben Bridgewater

the prestigious Health Service Journal (HSJ) Partnership Awards with the winners announced late March 2019.

This drive by Health Innovation Manchester to improve customer centricity and collaboration between industry and health and social care is reverberating across the sector and has not gone unnoticed. The life sciences industry is becoming ever keener to do business in Greater Manchester's devolved health and social care system, which has recently attracted major players such as Amazon and QIAGEN

who have invested in Manchester bases creating hundreds of new jobs in the process.

**THIS COMMITMENT** to redefining the public sector's relationship with its wider infrastructure and industry is a vein that runs particularly deep within Health Innovation Manchester and is championed by Ben himself who believes that industry have a pivotal role to play in enabling the creation of a sustainable health and social care system that delivers better patient outcomes.

"At the moment there are a series of key strategic drivers in Greater Manchester that cut across health and social care, industry and academia. There is the UK life sciences sector deal, the Greater Manchester industrial strategy, one of the country's first modern local industrial strategies, as one of three 'trailblazer' areas in the UK, and of course the NHS long-term plan. Health Innovation Manchester sits perfectly at the intersect of these three strategies to bridge the gap between them," said Bridgewater.

"A vibrant life sciences industry in the UK is incredibly important in terms of both ensuring that we get access to the best treatments for our citizens and as a key strand of the economy. We have worked hard on our culture as a public sector organi-

sation alongside industry to speak the same language and understand industries priorities, problems and challenges. At the same time, we have been quite clear and specific about the health challenges that we want to address.

"The MoU's have been a key enabler in this respect and have led to programmes in partnership with not just one company but groups with similar interests, working collaboratively to help redesign our pathways so their technologies and innovations will deliver the maximum benefit to patients.

"We also appreciate that SMEs are a source of some amazing innovations, but it can be quite hard for them to get to the right decision makers. You need the right opportunity to pitch your value proposition to the right people so that they understand what the opportunities are. Health Innovation Manchester is in a great position to work with them to enable them to do that."

Health Innovation Manchester is only at the beginning of a long-term plan rooted in bold ambitions. But having already delivered significant tangible outcomes in terms of improving health and wellbeing and generating economic growth in such a short space of time - there are no doubts that these ambitions are achievable.

# Elanco becomes independent

## Elanco Speke continues focus on biotechnology

One of the most historic manufacturing plants in Merseyside is to undergo a change in ownership. Elanco is a global health company which develops products to prevent and treat disease in food animals and pets in more than 90 countries.

Elanco became a standalone company in September 2018 having previously been a global subsidiary of Eli Lilly and Company. The company have grown to be number four in the animal health industry.

It is still very much 'business as usual' at one of the 12 manufacturing plants based in Speke, Liverpool.

Elanco Speke Operations will continue to produce its range of fermentation based animal health products for global markets. It will also continue to manufacture the therapeutic protein, Human Growth Hormone, for Eli Lilly under contract and maintain the increasingly important process development activities, particularly in the biotechnology area.

Speke Operations enjoys a remarkable history. It has played an important role in the economy of Liverpool since it started life as the world's biggest penicillin manufacturer during the Second World War, saving the lives of not only British troops fighting overseas, but UK residents back home.

Today, Elanco Speke Operations is very much embedded in the local community providing high value, long terms jobs. Investing circa £250m on site in the last decade, the company plays a major part in UK overseas trade by exporting 95% of what it makes. It also actively supports several local charities in the area of "hunger initiatives" and science based education programmes with local schools and universities.

**THE FACTORY** was originally built by the UK Government 'Ministry of Supply' which acquired 12 acres of land in Speke shortly after the D Day landings at a cost of a then staggering £1m. The bulk production of penicillin requires large scale fermentation processes, similar to those used in the brewing industry. Since none of the traditional pharmaceutical manufacturers possessed this expertise, the Distillers Company (Biochemicals), was brought in to run the site and eventually acquired it two years later.

Distillers ran the factory from the end of the war until the 60s when the site was sold to the US based Eli Lilly for whom the factory had previously manufactured antibiotics. Ever since, the plant on Fleming Road – named after Alexander Fleming, the discoverer of penicillin who visited the factory in Speke and was said to have been moved to tears by what he saw – has been at the forefront of drug manufacture first for humans and now in animal health.

Speke became even more important to Eli Lilly when it produced clinical trial material for biosynthetic insulin which ensured the US Company became a world leader in the supply of this critical, life-saving medicine.

Building on the expertise gained in pioneering the insulin manufacturing process, the Speke site started to



Elanco launches on the NY stock exchange

develop and manufacture Human Growth Hormone (Humatrope) in the mid-1980s. Humatrope is used by both children and adults to supplement the naturally occurring growth hormone, secreted by the pituitary gland, when the patient does not produce sufficient quantities to sustain healthy growth.

The current facility was built in 1995, and was soon able to double its capacity through a series of innovations identified by the Speke scientists. As a result, in 1999, Speke Operations became the global supplier for Humatrope, providing the drug product for all Eli Lilly worldwide markets.

Expansion continued, and in 2008, a new purification facility was opened at Speke. This multi million pound

facility was notable in that it was designed, built and tested in sections in Sweden, and the completed modules were brought to site to be assembled as the finished facility – essentially like a giant Lego model. The Speke site has now been manufacturing this important human health product for over 30 years.

**ELANCO SPEKE** is also breaking new ground by adopting the latest biotech techniques to meet today's ever-increasing demand in terms of health for both livestock and pets. On the biotech front, the company has focused initially on animals which provide a source of protein for humans, the first in its biotech product range being Imrestor, a drug to prevent mastitis in

“The growth opportunities in biotech are very exciting for the Elanco Speke site”

Lindsay McDonald

cows, a common complaint with serious consequences for the animals.

Since these biotech products are produced using microbial fermentation processes – and Elanco in Speke has a great track record in the technique – this means that its future success seems assured (see panel).

Team leader for Biotech manufacturing at Speke, Lindsay McDonald summarised her thoughts on the future of the site: “Our 35 years’ experience in biotech manufacturing, in combination with the strong connection between development and manufacturing ensures an ‘End in Mind’ mentality to new product introductions. The growth opportunities in biotech are very exciting for the Elanco Speke site.”

## The future

The future success of the Elanco Speke Operations facility will be heavily influenced by its historic expertise in the manufacture of innovative products based on biotechnology.

Already accounting for 25% of activity at site, the team at Speke is in the vanguard in terms of process development activities as the Biotech development hub for Elanco.

This in part at least is due to Speke's involvement with the scale-up and commercialisation of Imrestor, the first animal health biotech drug developed internally by Elanco.

This new product introduction was enabled by a multi-million pound investment to build a state

of the art downstream purification facility, where future animal health biotech products will be manufactured to meet the high quality standards demanded of all such drug products. The facility has extensive clean room suites, and employs modern “plug and play” skid mounted equipment and disposables technology to maximise flexibility and process economies.

The Speke site has also invested in laboratory and pilot plant facilities, enabling them to effectively conduct process scale-up trials and also to manufacture field study (the animal equivalent of clinical trial) materials. Effectively this means they could make early batches to go straight into animal

trials to establish viability. The end result is that the Speke team is working on several new animal drugs they hope to bring to market in the shortest possible time scale.

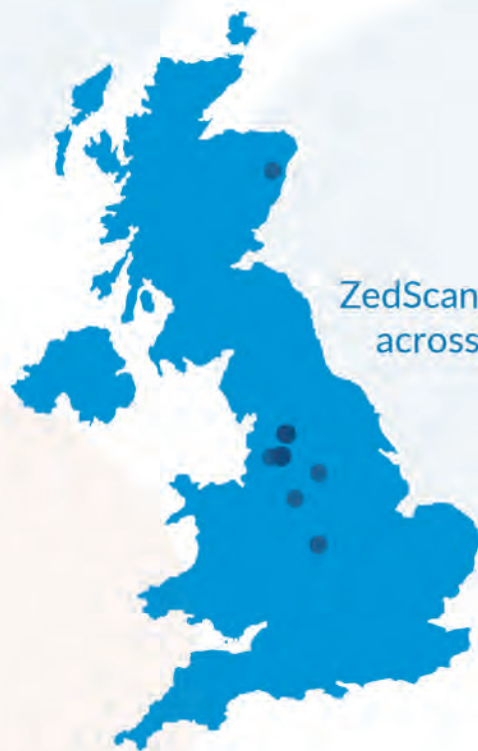
The investment in animal health biotech at Elanco Speke has enabled the Speke development team to grow to over 20 process development scientists which has turned them into a force to be reckoned in the animal drug R & D field.

The final piece of the jigsaw on which Elanco Speke is planning to build its future success is using its fermentation capability to produce enzymatic additives for feed mix to maximise the nutritional value in the animal feed.



real-time medical diagnostics

Zilico Ltd specialise in the design and manufacture of real-time medical diagnostics, centred on patented Electrical Impedance Spectroscopy (EIS) technology to identify and differentiate tissue types



ZedScan adoption across the UK

ZedScan™  
a new standard in colposcopy

ZedScan™, Zilico's first adjunct diagnostic, differentiates between normal, pre-cancerous and cancerous changes in cervical cells, that cannot always be seen with standard colposcopy or technology<sup>1</sup>

- Better patient management<sup>1</sup>
- Improved diagnostic accuracy<sup>1</sup>
- Minimised colposcopic subjectivity<sup>1</sup>
- Immediate results
- Easy to use
- Designed for seamless integration



As primary HPV testing for cervical screening is introduced nationally in 2019, more NHS hospitals are preparing for the associated increase in referrals to colposcopy by introducing ZedScan to their clinical services<sup>2,3</sup>

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3. ZedScan Adoption Data on File

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