QMB Innovation Centre

QUEEN MARY BIOENTERPRISES

Discovery

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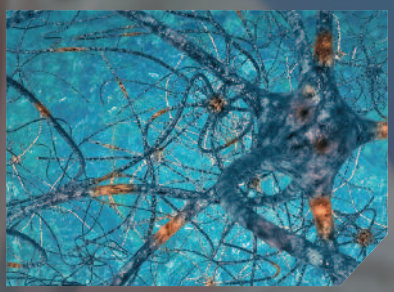
NEWS, VIEWS AND EVENTS AT QMB

IN THIS ISSUE

- QMB HITS KEY JOB AND BUSINESS TARGETS AHEAD OF SCHEDULE – **PAGE 3**

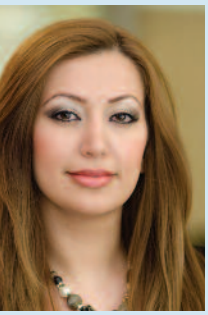
- INTERVIEW WITH PROFESSOR SIMON GASKELL, PRESIDENT AND PRINCIPAL OF QMUL – **PAGE 4**



- DEMENTIA INVESTMENT FORUM – **PAGE 10**

EDITOR'S WELCOME

Welcome to the latest issue of the QMB Newsletter.



In this issue, we speak to Professor Simon Gaskell, the President and Principal of Queen Mary University of London (QMUL), about what his plans are for the university and what we can expect from the forthcoming Life Science cluster in Whitechapel.

The prospect of having a major life science hub in East London is really exciting. In partnership with Barts Health NHS Trust, QMUL is looking to create a life sciences campus in Whitechapel with ample redevelopment space, providing opportunities for research, education and residential space and the potential creation of thousands of jobs in and around Whitechapel.

It's still early days but the economic, social and scientific benefits this will bring to the local area are considerable, further cementing East London's reputation for scientific and academic excellence.

In other news, it's all change at ADC Therapeutics (ADCT) and Spirogen, the oncology research and development companies focused on Antibody Drug Conjugates (ADCs), with the announcement that Dr. Chris Martin, the co-founder and Chief Executive of Spirogen, has been appointed CEO of ADCT. We wish Chris every success in his new role.

We also catch up with Kym Denny, the Chief Executive of hVIVO, formerly known as Retroscreen Virology, while ADC Therapeutics has said it has filed an Investigational New Drug (IND) for ground-breaking clinical trials in the treatment of Hodgkin's and Non-Hodgkin's lymphoma.

We also have a round-up of news from our sister organisation, Queen Mary Innovation Ltd (QMI), which has successfully launched another spinout company, Biomin Technologies Ltd, and helped to secure £2 million worth of funding for another spinout, Stealthyx Therapeutics.

For more updates and the latest news from QMB, including Dr Ramsay Richmond's life sciences sector blog, please visit our website. And we're eager to hear your perspective too, so please share your feedback in the comments section on our website, or join the conversation on our Twitter page.

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SPIROGEN'S DR. CHRIS MARTIN JOINS **ADC THERAPEUTICS** AS CHIEF EXECUTIVE OFFICER

ADC Therapeutics (ADCT) has appointed Spirogen's Dr. Chris Martin as its Chief Executive Officer.

Dr. Martin was co-founder and Chief Executive Officer of Spirogen Ltd leading up to its sale to MedImmune, the global biologics research and development arm of Astra Zeneca, in October 2013 for US$440 million in upfront and deferred consideration.

Following the deal, Dr. Martin joined on Medimmune's Management Leadership Team and AstraZeneca's Senior Leaders Group. He will continue to advise Medimmune as a consultant.

Dr. Martin played an important role in the formation of ADC Therapeutics in 2012 and served on its board of directors since its founding. He replaces Michael Forer who has been the CEO of ADCT since its formation. Forer is a Partner in the private equity firm Auven Therapeutics and was the lead investor on behalf of Auven for its majority investments in both Spirogen Ltd and ADC Therapeutics.

Commenting on his appointment in a press release, Dr. Martin said: "*ADCT is entering an exciting phase of clinical development, having recently filed its first IND for a clinical trial in lymphoma and its second IND to be filed later this year. Michael has been an important supporter to the success of both Spirogen and ADC Therapeutics, and I thank him for his leadership to date. I look forward to working even more closely with the ADCT team as well as with our investors and collaborators, to realise the potential of our ADC drugs.*"

Michael Forer has been appointed Vice Chairman of ADCT and will continue to work with the Company as Executive Vice President focused on its public markets capital strategy, business and finance activities.

Dr. Peter Corr, Chairman of the Board of ADCT and co-founder of Auven Therapeutics, added: "*Chris played an important role, together with Michael Forer, in the founding of ADC Therapeutics, and its business plan to develop proprietary PBD-based ADCs under license from Spirogen. He has contributed significantly to the business both as a board member and shareholder, and we are delighted that he has now joined the Company as CEO as we move forward with seven PBD-based ADCs into clinical development over the next two years. We believe that PBD-based ADCs are the next-generation of cancer drugs with the potential to make a large impact on cancer patients worldwide.*"

QMB hits key job and business targets ahead of schedule

QMB's jobs targets focused on jobs created/safeguarded, businesses entering and businesses supported.

QMB has reached the end of its five year reporting period and is pleased to announce that it has successfully met all of the targets set by the Greater London Authority ahead of schedule.

The targets focused on jobs created/safeguarded, businesses entering and businesses supported. QMB met these targets in just four years rather than the agreed five. During that time, QMB has created and safeguarded 437 jobs, supported more than 200 businesses through the hosting of various industry based events, and housed over eight biotechnology companies, as well as several other virtual companies.

Noteworthy accomplishments include the listing of hVIVO, formally Retroscreen Virology, on the AIM stock market in 2012, and AstraZeneca's MedImmune acquiring Spirogen in 2013.

Dr Ramsay Richmond, the Executive Manager of QMB, said: "*We are delighted to have hit our targets ahead of schedule, highlighting the level of demand, depth of talent and appetite for scientific innovation in London and the greater south east.*"

Dr Ramsay Richmond, Executive Manager

The news comes as the Mayor's office announced that a record number of leading international companies are investing in London's life sciences sector.

Fourteen life science companies, including Pfizer, Takeda and India's Cipla, generated a total of £24.35m for London's economy in the 2014-15 financial year, creating a total of over 325 new jobs - more than three times as many as in 2013-14, which saw eight foreign companies create 101 new jobs in the sector.

The bulk of the growth is thanks to major expansion by Takeda, Asia's largest pharma company, which doubled its presence in the capital last year.

The company has created 200 new jobs in Takeda Development Centre Europe, which was established in London in 2004 and now employs 400 people to lead and manage its Europe-wide drug development and clinical trials activities.

Other significant investment in London comes from Pfizer, which established a new Gene Therapy Unit focused on rare diseases in the capital at the end of 2014 and has ongoing research and development partnerships with leading universities including Imperial College London, University College London, King's College London, Oxford and Cambridge.

India is also a growing presence on the London life sciences scene with new jobs created by Cipla, which in 2014 announced plans to invest up to £100m in the UK to fund the development of respiratory, cancer and antiretroviral medicines.

"*Over the last decade, foreign investment in London has gone through the roof. Companies from all over the globe want to establish a base here because we have the best access to finance and markets, an incredibly talented workforce and overall first-class conditions in which to do business. On top of this, London is one of the most desirable cities in the world to live, with a vibrant cultural scene, exciting history and more green space than any other city in the world,*" said Gordon Innes, Chief Executive of London and Partners, the Mayor's promotion agency.

Interview with **Simon Gaskell**, President and Principal, QMUL

Queen Mary University of London (QMUL) is planning major developments which, over the next few years, will see it increase its size and scope, while retaining a key focus on providing world class education and research.

In partnership with Barts Health NHS Trust, QMUL is looking to create a Life Sciences campus in Whitechapel with ample redevelopment space, providing opportunities for research, education and residential space and the potential creation of thousands of jobs in and around Whitechapel.

QMB caught up with Professor Simon Gaskell, the President and Principal of QMUL, to ask him about the proposed Life Sciences campus, what his vision is for the university, why collaboration between universities is so important and why the Queen Mary BioEnterprises (QMB) Innovation Centre is so vital to innovation at QMUL.

Q. How are things progressing with the Life Sciences cluster and why is it important to east London?

We have a vision to develop a world-class genomic research hub at Whitechapel. With the full participation of the life sciences industry, government and the local population, we plan to take individual discoveries and develop them through improved healthcare and through start-up companies or licensing. We therefore envisage an expansion of the spin-out activity that we've seen at QMB.

We have incredible expertise within the medical school, but we also have important expertise among our health economists and health geographers, our lawyers, ethicists, our bioengineers and our scientists. So it's a great coming together of our intellectual talent. The hospital provides us with access to a population with extensive medical records and potentially a very important test bed for certain aspects of life science research, including medical genomics and personalised medicine.

We've got an opportunity here to do something really exciting, with Queen Mary right at the heart of it.

Professor Simon Gaskell, President and Principal of QMUL.

We're drawing in academic partners, commercial partners and the NHS, including the most forward-looking components of the NHS like Genomics England, which represents the NHS's vision for population-scale genomic medicine.

Q. What are we talking about in terms of the timeline?

We're not at the point where we can definitely say which building is going where, but I think we're close to reaching agreement on the land. Then we can start planning buildings and talking in more detail to prospective partners. Those conversations will be taking place over the coming months, but these are all major projects and I doubt we'll be moving into a new building within two years. Realistically, the final development of everything we plan to do will be spread over the next decade, the project is that ambitious.

Q. How important is it for Queen Mary to operate on the international stage?

We have a fundamental obligation to test ourselves on the international stage. One of the greatest privileges of working in Higher Education is you get to interact with equivalent institutions around the world, partly to test how well you're doing but also to benefit from that interaction and to set up collaborations which are fundamentally enriching. If we don't operate on the global stage then we are failing as a research-led institution.

CONTINUED on Pages 5 & 6

INTERVIEW

Interview with **Simon Gaskell**

CONTINUED from Page 4

Q. Can you explain your vision for research at Queen Mary?

Our ambition is to be widely regarded across the world in a number of targeted areas, but covering a broad inter-disciplinary range. What I mean is, we want to bring talent together from a broad range of areas, for example bringing together philosophers, historians, geographers and economists to contribute their unique intellectual perspective with the chemists and clinicians, mathematicians and engineers.

I call this approach post-disciplinary. In other words, you care less about where a research problem lies in disciplinary terms, and more about how you draw together disciplinary expertise in finding a solution to that problem.

Q. How does QMB fit into that vision?

At Queen Mary we like to define our mission in simple terms, the creation of knowledge and the dissemination of knowledge. I used to think of these two aspects as two ends of a linear scale, with the dividing line between the two slightly blurred. But at QMUL, we are increasingly thinking of our mission as a continuum with multiple interconnections across the range.

Knowledge Creation refers to research while Knowledge Dissemination is linked to traditional teaching, both undergraduate and postgraduate. But it also relates to public engagement and exploiting the outputs of research, whether that be commercial or social.

I don't see QMB, and the activity it represents, as being at the end of a pipeline so much as part of the continuum, with the opportunity to interact with other parts of the process. QMB is part of a wider vision for what universities are all about.

Q. How does QMB raise the university's profile?

QMB is an extremely important part of our activities. You can talk about knowledge creation and knowledge dissemination but at the end of the day a politician might say "*so what, how many jobs has it created?*" or "*what's the capital value of the companies that have been produced and sold?*" So QMB is an obvious physical representation of what knowledge dissemination is: it houses activity that was spawned in part from university research, and we're immensely proud of that.

"QMB is an extremely important part of our activities."

Q. How does the QMB incubator project contribute to London's competitiveness and entrepreneurial profile?

If you want to establish a large scale laboratory facility that's related to the pharmaceutical industry, then you wouldn't put that in central London. On the other hand, if you want to maintain very close contact between those first stages of commercialisation and the originators of that research, then you absolutely want to be close to where those original research laboratories are situated. You need something central, like QMB and other facilities like it, because we provide a stage and when companies are nurtured and supported through the QMB mechanism, they can grow and develop, and when they get to a certain size and expand, they can then move on, as they should.

Q. How critical is QMB in the promotion of early entrepreneurial activity inside the university's R&D departments?

QMB is a very important symbol of those researchers and academics that have the aspiration - and we very much encourage that aspiration - to take their discoveries through to commercial exploitation. QMB is a very potent symbol about how we support that, and we see that as a very worthwhile activity. We are saying to our colleagues, if you have the aptitude, ability and the flair to take your discoveries through to commercial exploitation, then we will support you on that journey.

Q. How critical is QMB to QMUL's commercialisation of know-how?

QMB is a tangible representation of our exploitation of Intellectual Property (IP); it's an important physical demonstration of what we do. One of the most important reasons for having an effective series of mechanisms for commercialising our research outcomes is that it encourages our researchers to be more ambitious in their research and to be more alert to applications and the exploitation of commercial possibilities. Otherwise research runs the risk of being too introspective.

QMB is an important mechanism but it's certainly not the only one at Queen Mary. QMI plays a significant role in the licencing of discoveries and IP. The proportion of disclosable IP which is exploited through spinout companies is a minority, but you would expect that to be the case. When you get a single company like Apatech [the award-winning spin-out company which was acquired by Baxter International for US$330 million], it distorts the picture enormously for a while.

You hope for maybe one Apatech every three years but it just doesn't work like that, whereas the licensing income represents a steady flow of revenue and activity. But if I said to the Business Secretary, this is how many licences we negotiated last year, it just doesn't have the same impact as pointing to QMB and saying hVIVO [the AIM-listed QMUL start-up formerly known as Retroscreen] is housed there.

Queen Mary can hold its head up high when comparisons are being made between it and other institutions in London.

Q. How important is it to have strategic links with other universities in London like UCL?

It's important for two reasons: firstly, Queen Mary can hold its head up high when comparisons are being made between it and other institutions in London. But we are, in many respects, still considerably smaller. Collaboration is key because we all benefit. For example, we're taking forward plans with UCL to create a new cardio research institute based at Barts Hospital in West Smithfield. Combining the strengths of the two universities, together with advanced clinical practice in Barts, creates a more substantial entity than having two universities competing against one another. Productive interaction is vital to the future success of Queen Mary.

AND **FINALLY:**

Professor Gaskell joined QMUL in October 2009.

Prior to his appointment, Professor Gaskell held the post of Professor of Mass Spectrometry at UMIST before becoming Head of Chemistry in 1999 and, following the merger of the two institutions, Associate Vice President for Research in the University of Manchester in 2004, and Vice President for Research in 2006. He is also Chair of the Board of the Higher Education Statistics Agency (HESA) and, since 2012, the elected Treasurer for Universities UK, the representative organisation for UK universities.

RETROSCREEN CHANGES ITS NAME TO **hVIVO**

hVIVO
better treatments, faster

It's been a busy six months for Retroscreen Virology, which recently changed its corporate name to hVIVO plc.

Kym Denny, hVIVO's CEO

It's a move which, it believes, better reflects the Company's broader vision for revolutionising drug development using human studies, by pioneering a new way in which therapeutic and diagnostics are discovered and developed.

According to the Company, the 'h' stands for the human aspect of hVIVO's process to accelerate drug development, while 'VIVO' represents the science of clinical testing on living organisms which, in this case, is the human sample.

hVIVO uses healthy volunteers to study new drugs and investigate disease in a safe, controlled environment. The Company has conducted over 40 clinical studies, involving more than 85 separate quarantines and more than 1,950 volunteers for a range of industry, governmental and academic clients.

"Human volunteers are at the heart of all we do. Changing the Company name to hVIVO plc reflects the revolutionary step of using human models of disease to develop treatments for humans. A pioneering concept in drug testing deserves a pioneering name to best describe it and we chose hVIVO," said Kym Denny, the CEO.

Denny concedes that 2014 was a volatile year for infectious disease. The Company was affected by the outbreak of Ebola on London's healthcare companies, while public health officials grappled with a surprisingly severe flu season.

As the company runs controlled clinical trials for third parties that are developing new drugs, as well as using human volunteers to produce 'live' samples used in research, the crisis forced several pharmaceutical customers to shift their focus to viral diseases outside of hVIVO's area of expertise in respiratory diseases.

In early 2015, the Company achieved its first 'pathomics map' which describes the human response to flu infection.

This was ahead of expectations as the Company was able to deploy more resource into internal research following a slowdown in customer demand for flu studies due to a reprioritisation towards Ebola.

"The shifting market dynamics meant we had the opportunity to accelerate our own R&D programmes, but that allowed us to begin to unravel the key cellular and molecular causes of these diseases via our newly named process, 'pathomics'," said Kym.

Due to this market shift, hVIVO raised its R&D spend to £10.7m, compared with £1.2m in 2013. But to do so, it had to put its capacity expansion plans for a new research hub in Chesterford Research Park near Saffron Walden on hold, and raised another £33.6m by issuing new shares last August.

hVIVO is now embarking on the next stage of its development by broadening the human challenge model (HCM) platform to discover novel biomarkers and drug targets that will shepherd the next generation of therapeutic and diagnostic products.

The Company conducted two landmark Respiratory Syncytial Virus (RSV) trials, one which led to a leading journal publication and another that was tied to a substantial acquisition of Alios BioPharma by Johnson & Johnson for $1.7 billion, including the RSV antiviral therapeutic, highlighting the value these types of studies can play in identifying safe, effective therapies.

hVIVO is now embarking on the next stage of its development.

hVIVO's pioneering hVIVO platform of human models of disease, provided early proof of concept and dose selection for a new antiviral drug in RSV infection for Gilead Sciences Inc. Gilead, an American research–based biopharmaceutical company, sought hVIVO's expertise and its unique human viral challenge model to test its GS–5806, a small molecule antiviral in RSV infection, a common cause of infant hospitalisations with no existing antiviral treatment.

The study was included in the New England Journal of Medicine which concluded that: "Treatment with GS–5806 reduced the viral load and the severity of clinical disease in a challenge study of healthy adults".

"The Alios and Gilead product validation studies clearly showed how we help organisations deliver better treatments, faster. We are very excited to be expanding our platform into new disease areas, developing the industry's first commercial asthma model this year," said Kym.

hVIVO appoints Reid Tripp as Director of Business Development and Marketing

In April, hVIVO appointed Reid Tripp as Executive Vice President for Business Development and Marketing.

Tripp joins from TKL Research where he was Vice President, Global Business Development and Marketing, and will assume responsibility for hVIVO's overall sales and marketing agenda as well as driving biomarker discovery collaborations. He will report to Kym Denny, CEO, and will be a member of the executive team.

"Reid's involvement will be crucial in continuing to make hVIVO the world's premier conductor of human challenge studies and forge new relationships as we develop respiratory biomarkers that will change the way drugs are developed," said Kym.

FOR MORE INFORMATION: WWW.HVIVO.COM

QMI Update

Since the last newsletter in December, QMI, the research commercialisation company of Queen Mary University of London, has been developing a new spinout company, Biomin Technologies Ltd, and secured £2 million in funding for another spinout company, Stealthyx Therapeutics.

Graeme Brown, Director of Technology Transfer at QMUL and Executive Director at QMI, talks about some of the highlights.

We are pleased to announce our new spinout company, Biomin Technologies Ltd, which will produce and supply a bioactive silicate material that can address the global problem of tooth decay and dentine sensitivity.

The technology, which was developed by Professor Robert Hill at the School of Dentistry, works by incorporating fluoride in the bioactive glass to aid remineralisation of the tooth surface. The compositions are protected by a family of patents.

Dental caries, or tooth decay, is one of the most prevalent diseases and costs the NHS over £1 billion per annum, whilst dentine hypersensitivity, a consequence of caries, affects about 40% of the population.

Graeme Brown, Director of Technology Transfer at QMUL

innovation
Queen Mary Innovation Ltd

The company will produce and supply a bioactive silicate material that can address these global health problems. The toothpaste material works by re-mineralising the tooth surface with the bioactive glass to prevent caries and reduce sensitivity. There are similar products on the market, however the QMUL bioactive glass composition is unique as it also contains fluoride. In addition, the composition is longer lasting, faster acting and more durable than existing products.

The company recently recruited Richard Whatley as CEO.

Stealthyx Therapeutics secures £2 million in funding

Since our last Discovery newsletter, Stealthyx Therapeutics Ltd, a QMUL spinout company, secured £2 million in funding from Index Ventures, the Europe and San Francisco-based global venture capital firm, which will see the company begin development of five new drugs for autoimmune diseases, inflammation, cancer and osteoarthritis.

Stealthyx has developed a new drug delivery system that enables the efficient and safe targeting of drugs to specific sites of disease. By delivering the drugs directly to the location of the disease, there are less side effects and improved effectiveness.

Stealthyx was created by QMUL in 2002 based on the research of Professor Yuti Chernajovsky in the William Harvey Research Institute. Using its novel drug delivery system, drugs are inactive until reaching the site of disease where they are released and become active, thereby improving efficiency and effectiveness. The delivery system consists of a 'shell' to protect the drug as it travels through the blood stream to the site of the disease and therefore provides longer life. An enzyme then releases the drug when it arrives at the disease site.

The platform can be used for biologic drugs such as proteins and peptides, and Stealthyx has demonstrated in laboratory studies that the delivery system improves both safety and effectiveness.

William Harvey Research Institute

Development of five new drugs for autoimmune diseases, inflammation, cancer and osteoarthritis will begin.

Professor Yuti Chernajovsky, founder of Stealthyx, said: "*This funding will be crucial to the development of new treatments for people who have poorly treated conditions such as cancer or osteoarthritis. We have developed a powerful drug delivery system that could be used to treat many common and costly conditions. With this funding from Index Ventures, we can now begin to apply the technology to develop new drugs, finally addressing real patient needs and improving existing treatments with reduced side effects.*"

"*The Stealthyx technology has the potential to deliver drugs with radically different profiles to those on the market today, and Index Ventures is delighted to support the next stage in its development*" said Dr David Grainger, partner at Index Ventures who will chair the board at Stealthyx Therapeutics.

Dr Michele Hill-Perkins from Queen Mary Innovation (QMI) said: "The funding for Stealthyx highlights the strength of research at Queen Mary University of London. The technology has significant potential to radically change how we treat complex diseases, providing real medical and societal benefits, and we are delighted to see the company secure its first funding."

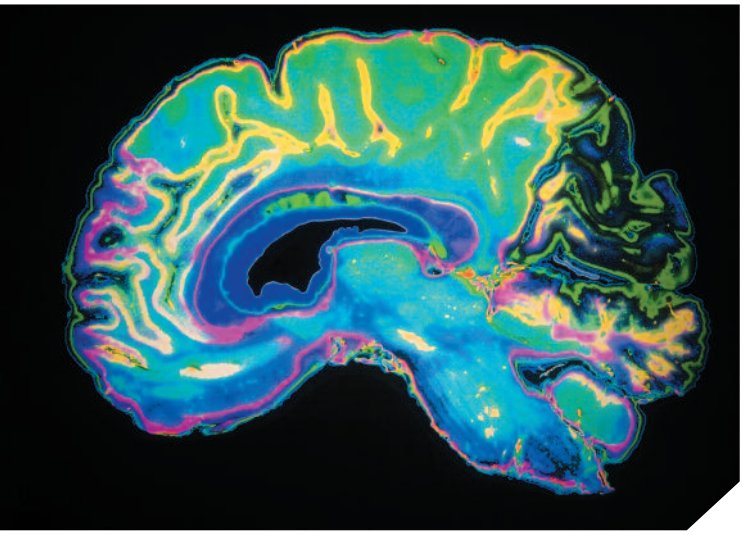
DEMENTIA INVESTMENT FORUM

QMB recently hosted a Dementia Investment Forum with One Nucleus, bringing together experienced medical practitioners, investors and academics to hear how private companies and individuals are helping to tackle Alzheimer's, one of the most common types of dementia.

The disease, named after Alois Alzheimer, the doctor who first described it, is a physical disease that affects the brain. There are more than 520,000 people in the UK with the disease, although an estimated 36 million people worldwide suffer from dementia. Due to increased life expectancy, particularly in developing countries, the number of cases of dementia is predicted to triple by 2050.

The brains of people with Alzheimer's disease show two hallmarks - plaques and tangles. Plaques are the build-up of sticky proteins called beta amyloid, while tangles are twisted strands of a protein called tau. During the course of the disease, proteins build up in the brain to form plaques and tangles which leads to the loss of connections between nerve cells, the death of nerve cells and the loss of brain tissue.

While neuroscientists, geneticists and biochemists have mapped out the disease's multi-causal nature and its immensely complex genetic-environmental interaction, there are no viable therapies. Consequently, only 45 percent of patients are even told they have it. Scientists say they don't know very much about when it onsets and don't have a designed mechanism for what the process of the disease is. It's therefore proven to be one of the most complex diseases around.



one nucleus™
The Business Catalyst for Life Sciences

The economic cost of Alzheimer's disease and other causes of dementia is higher than that of cancer, in the UK it is thought to cost the economy about £26 billion a year, around £10 billion more than cancer. However, ten times less money is spent researching dementia than cancer.

Currently, the treatments available are inadequate and only improve some of the symptoms. In the decade between 2002 and 2012 there were 244 drugs trialled in patients yet just one of these trials resulted in a drug being approved for treatment – a failure rate of 99.6%.

This sustained failure means investing money in these expensive trials is financially risky, and has led to a number of pharmaceutical companies stopping or reducing research in these areas.

The event was split into three sessions. Each session had a panel discussion followed by a series of pitches from companies showcasing their innovations.

The first session looked at **'Investing in Technology in dementia'** which was chaired by Ben Newton from GE Healthcare, the panellists included Alan Edwards, Chairman and CEO of ASep Healthcare; Jill Rasmussen from psi-napse, a clinician with a special interest in psychoses, affective disorders and neurodegenerative diseases; and Nathan Nagel, Health E-Games, a dementia technology company which creates digital games for people with, or at risk of developing, dementia.

Jill Rasmussen from psi-napse said arriving at the correct diagnosis was critical and, because not everyone declines at the same rate, more needs to be done to tackle the signature pathology of the disease.

"If it's not caught early enough how do you know you've got the right diagnosis? We need to look at the factors that affect a person's decline and what factors put more people at greater risk, then hopefully we can make the correct interventions at the right time," she said.

The audience then heard pitches from Erik Christensen, Pre Diagnostics AS, which aims to be the leader in diagnosing early Alzheimer's disease with a focus on the development of IVD biomarker products that use established and effective technologies and procedures; Nathan Nagel, Health E-Games, and Andrew Blackwell, Chief Scientific Officer at Cambridge Cognition, and a board advisor to several neurotech companies.

Session two looked at 'Investing in Therapeutics in Dementia' which was chaired by Michael Perkinton from MedImmune and AstraZeneca.

The panellists included Rob Pinnock from MSD, the UK subsidiary of Merck & Co., Inc; Daniel Mahony from Polar Capital; Geraldine O'Keefe, Life Science Partners, which invests in listed securities and Alasdair Thong from Index Ventures.

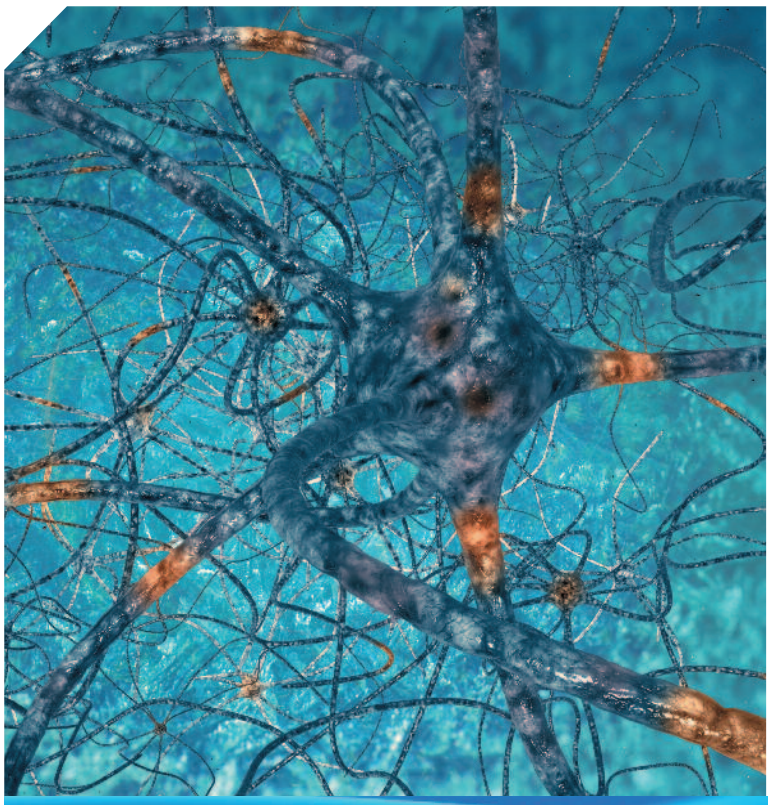
Following the discussion, the company heard pitches from Anders Fugeli from Pharmasum, a company that discovers and develops novel drugs for the treatment of diseases in brain neurology; Dirk Beher from Asceneuron, a science-driven biotechnology company as a spin-off from Merck Serono in October 2012; and Konrad Glund from Probiodrug.

The third and final session looked at 'How can Public-Private Partnerships Change the Dynamic?' which was Chaired by Siro Perez from Roundcape.

Alan Edwards, Chairman and CEO of ASep Healthcare, said Alzheimer's is currently in what he called the "Cinderella space" in that it has to compete with other diseases like cancer to get much needed funding.

Daniel Mahoney from Polar Capital said one of the biggest problem associated with investing in a cure for Alzheimer's is that the disease, currently, is quite poorly defined, which inhibits the involvement of long-term investors.

"The sequelae from a range of different results, be they genetic or environmental, means you might end up with dementia which is categorised as Alzheimer's today, but might, at some point in the future, actually be categorised as something completely different."



The disease, named after Alois Alzheimer, the doctor who first described it, is a physical disease that affects the brain.

Mahoney cited the example of breast cancer which has been redefined in recent years due to the advances in genomic analysis.

"On our side of the fence, we can get excited about it but we need more of a bone in terms of what is better or different from what has gone before," Mahoney said.

Hakan Goker from MS Ventures, the corporate venture capital fund of Merck Serono, said: *"Merck Serono stopped working on neurodegenerative disease a while back as they felt they did not have the resources to push forward with it."*

However, despite the scale of the challenge ahead, Goker was optimistic about the success of future treatments, saying medicine *"will get there"* because the choice of patients is getting better and the industry's understanding about the various mechanisms is also improving.

LIFE SCIENCE INDUSTRY ROUND UP

Investors in the U.S. have poured more than US$1 billion into European biotech companies since the start of this year.

The Wall Street Journal recently reported that Wall Street's insatiable appetite for biotechnology stocks has led to a surge in small companies from Europe listing in the U.S., where they fetch higher valuations than in their home markets.

Investors in the U.S. have poured more than US$1 billion into European biotech companies since the start of this year, easily surpassing the US$794 million raised in all of 2014. That compares with just two share issues—one initial public offering and one follow-on offering—for a total of US$153 million in 2013, and none in the three previous years, according to data from Bank of New York Mellon Corp.

It is another sign that the bull-run in biotech stocks is showing no sign of slowing, and builds on the stellar performance in the financing of the UK's life sciences industry during 2014, which amounted to US$2.86 billion, according to UK broker Peel Hunt.

Speaking at the BioTrinity annual conference in May, Clare Terlouw, Corporate Director at Peel Hunt, said the UK is in a great position to build on its world class science base, with strong levels of funding allowing companies to leverage the generous tax-climate, build world class companies, and employ many thousands of skilled scientists, engineers and graduates.

"It has been a breakthrough year for the UK Healthcare and Life Sciences industries with strong public markets that will help Britain's best companies keep their IP in the UK and build a thriving industry. We look forward to continuing to work with innovative and growing companies across the life sciences sector, helping them retain value for longer and become global leaders in their respective fields," said Terlouw.

A comprehensive data set analysis revealed 114 disclosed financing rounds by UK life sciences companies in 2014 across a range of specialisms including biotech, diagnostics, medtech and research tools.

The research from 2014 found that US$883m was raised in venture financing rounds and US$1,975m was raised on the London Stock Exchange, marking 2014 as a year of resurgence for the UK life sciences sector.

AstraZeneca

During the year, AstraZeneca fought off a hostile bid from Pfizer, and Shire completed two acquisitions following the withdrawn bid by AbbVie. In the mid cap market, BTG tapped into public markets to build a world beating interventional medicine franchise; Vectura Group, SkyePharma plc, Retroscreen Virology, EKF Diagnostics and Oxford BioMedica also showed that follow-on financing is buoyant.

Of the US$883m raised in venture financing in 71 financing rounds, nearly US$500m was raised by biotech companies. Medical devices companies raised US$107m in venture funds, while diagnostics companies raised US$192m, and research tools companies raised US$91m, led by Oxford Nanopore.

Oxford NANOPORE Technologies

However, only 12.2% was directed for "enterprise-size financing rounds" below US$5m. Companies in the Golden Triangle secured over 50% of venture financing, with the Oxford cluster in the lead (US$221m), London slightly behind (US$147m) and the Cambridge cluster (US$131m,) collectively the most active UK life sciences R&D clusters.

Forty three public markets fundraisings, including 13 IPOs, raised US$1,975m including US$1,580m in biotech, pharma and speciality pharma financings, US$203m by medical devices firms, US$53m by diagnostics companies, US$18m by contract research companies and US$121m by research tools companies. There were seven fundraisings on the public markets of US$100 million or more, indicating investor risk appetite amongst institutional investors is improving. Circassia Pharmaceuticals plc raised over £200m in March 2014, valuing the company at £581m, making it the largest ever London listed biotech IPO.

In addition, a further US$689m was raised by London-listed funds investing in IP commercialisation comprised of Imperial Innovations plc (US$247m), Allied Minds (US$181m), IP Group (US$154m) and Mercia Technologies (US$108m). This figure was excluded from the totals because these funds invest in a number of sectors including life sciences.

The Golden Triangle secured 60% of public market financings, with the London cluster in the lead (US$551m), followed by Oxford (US$485m) and Cambridge (US$141m).

summit plc

NASDAQ

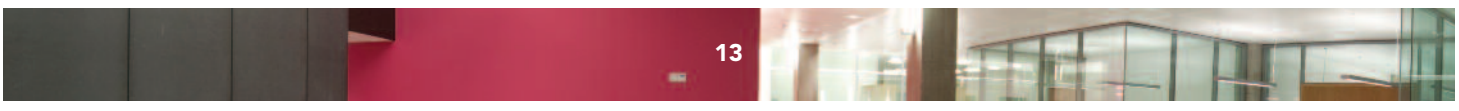
UK companies also tapped into the buoyant US markets, further validating the attractiveness of UK science. Summit Therapeutics' listing on the NASDAQ Global Market raising US$34.1m highlighted the quality and strength of the UK life sciences sector globally and points to a continuation of 2014's successful trend.

Allergy Therapeutics Italia
Transforming Allergy Treatment

Encouragingly, 2015 got off to a good start in London, with specialty pharmaceutical company Allergy Therapeutics raising £20m. In addition, there is evidence of funds flowing from US-based investors into a number of London listed mid and small cap healthcare companies, signifying that London listed companies are able to attract capital on a global stage.

Jon Rees, CEO at OBN said: "Taken together, the public markets and venture financing data combined demonstrate the resurgence of financing in UK life sciences. However, the relatively small proportion raised for enterprise financing rounds strongly supports the case for continued financing mechanisms to support innovative R&D firms through the equity gap, such as the Biomedical Catalyst. Nevertheless, OBN welcomes this banner year for UK life sciences."

There is evidence of funds flowing from US-based investors into a number of London listed mid and small cap healthcare companies.



ADC Therapeutics submits first IND for a novel ADC against Lymphomas

ADC THERAPEUTICS

ADC Therapeutics (ADCT) has filed an Investigational New Drug application (IND) with the US Food and Drug Administration for its cytoxic warhead ADC-301 for the treatment of lymphomas.

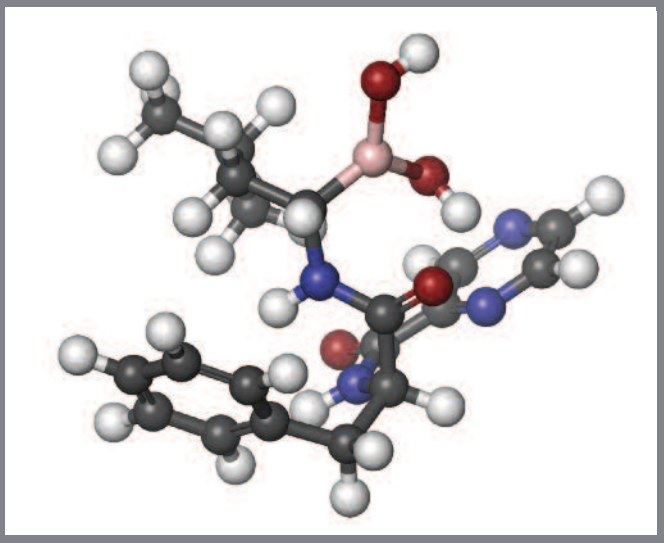
The IND is for a Phase I clinical trial for ADCT-301, a novel antibody drug conjugate targeting CD25, a cell-surface antigen which is found in many patients with lymphomas.

The Phase I clinical trial will commence at four leading oncology centres in the USA, with the possibility of expanding to two centres in the UK. The initial adaptive designed dose-escalation study will include up 58 patients and will evaluate the tolerability, safety, pharmacokinetics and anti-tumour activity of ADCT-301 in patients with relapsed or refractory Hodgkin's and Non-Hodgkin's lymphoma.

Through a complex process of chemical engineering, cytotoxic agents are connected to antibodies using synthetic "*linkers*" which remain stable in the bloodstream until they are absorbed into tumour cells, at which point the drug is released.

ADC's are a massive game changer in how cancer is treated, potentially reducing and in some cases eradicating the need for chemotherapy and its debilitating side effects. To date just two ADCs have been approved for patient use; ADCETRIS, for Hodgkin lymphoma and systemic anaplastic large cell lymphoma, received approval from the U.S. Food and Drug Administration (FDA) in 2011, and T-DM1 (Kadcyla) for breast cancer in 2013. However, there are currently 40 to 50 new compounds in clinical development, meaning many more ADCs could be on the market within five years.

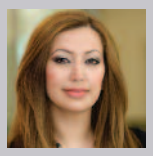
Subject to study results, ADCT intends to rapidly expand the numbers of patients in the trial and the participating clinical centres.



In a statement released by the company, Michael Forer, the then Chief Executive Officer of ADCT, said: *"The filing of our first IND is a significant milestone for ADC Therapeutics. We are delighted to be working with Memorial Sloan Kettering and other leading clinical centers. We believe this is a significant endorsement of the prospects for ADCT-301. In addition, we expect to file four more INDs with additional proprietary ADCs over the next two years as we continue to build our clinical pipeline."*

ADC Therapeutics has a license to the PBD warheads from Spirogen, while HuMax®-TAC™, a human antibody targeting CD25 was developed by Genmab under license from Medarex. In June 2013, Genmab and ADCT entered into a collaboration and License Agreement for the development of ADCT-301. Genmab holds a 25% stake in ADCT-301.

PLEASE CONTACT OUR MANAGEMENT TEAM WITH ANY FEEDBACK OR NEWS STORY IDEAS:



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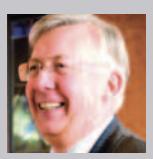

TED WEBSTER
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