



QUEEN MARY BIOENTERPRISES

Q4 2013

Discovery

NEWS, VIEWS AND EVENTS AT QMB

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THE CRITICAL ROLE OF QMB IN PROVIDING A PLATFORM FOR LONDON'S LIFE SCIENCES START-UP COMMUNITY

QMB is currently the largest purpose built commercial laboratory space in London, generating around £250,000 a year in business rates and enabling 320 plus science jobs in what was once considered an economically deprived area.

Delivered in late 2010 after two years construction with a £7 million grant from the (now abolished) London Development Authority and £18 million from Queen Mary University, we are already at full capacity a good three years ahead of schedule.



EDITOR'S WELCOME

Welcome to the first issue of QMB's newsletter where you will find all of the latest news from QMB and our tenants along with a roundup of the biggest industry news and some thoughts on science incubation from Ramsay Richmond, QMB's Executive Manager.



This has been a fantastic year for QMB. Not only have we managed to fill the centre with lots of new and exciting clients, but those clients have also had some great news of their own. One great news worth mentioning is the recent announcement of Spirogen's sale to MedImmune, proving that there are still exceptional events occurring in the biotech sector.

Retroscreen have also continued their expansion over the last year and have gone from strength to strength, acquiring various contracts. The beginning of the year saw the entrance of The London Specialist Pharmacy to the centre. Moreover QMB's virtual tenants BioMoti became a physical tenant at the centre.

In this issue Ramsay talks about QMB and the role incubators can play in promoting innovation and their vast benefits. We also take an in-depth look at Spirogen and their success; finding out just why they were so attractive to MedImmune.

I hope you enjoy the newsletter, and if you have any comments, please do not hesitate to get in touch.

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That's a real achievement when you consider that scientific research and technological innovation requires serious commitment and investment, and even more so when you consider that research and development budgets are often the first to be squeezed in times of economic uncertainty.

I put our performance down to two major QMB assets; firstly, our ability to provide both early stage incubation space for new start-up companies as well as late-stage (follow-on) space for companies as they grow, which means companies can stay at QMB for longer, giving them a future within London.

Secondly, the QMB Innovation Centre is a new build construction whereas many urban incubator facilities are often converted from pre-existing buildings. QMB has been designed to incorporate specialist features that are critical for chemistry, and internal walls free of internal services, which allows for easy expansion.

Both of these assets mean that QMB can accommodate a broad range of tenants in areas as diverse as drug discovery, instrumentation, biotechnology and clinical trials.

However, at the end of the day our success is down to the success and innovation of our tenants, who mine the deep veins of intellectual property inside London and the in-depth scientific talent at first and higher degree stages.

Our tenant list comprises early stage start-ups to more established, listed companies like Retroscreen Virology, one of the few Life Science IPOs to come to market since the start of the economic downturn, as well as Biomoti, Mediwise, Duvas Technologies, Spirogen and The London Specialist Pharmacy.

Our tenants are companies who see the benefits of working in London, with close proximity to world leading academic and clinical facilities. We are next door to Queen Mary's School of Medicine and Dentistry, Barts and The London, which is in the country's top five for quality of research. We are also five minutes' walk from the new Whitechapel Cross Rail station which will radically reduce east west transit times across the city.

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Our facilities also allow us to hold industry events which play a vital role in facilitating dialogue and collaboration across the Life Sciences community. These events galvanise what we're doing here which is to foster and promote innovation. We try and host events that will be of interest to our tenant companies and help them to foster interactions with other companies, business angels and venture capitalists, NHS and academic researchers.

The last few years have been challenging for everyone. Since the onset of the global economic crisis in 2008, budgets and margins have been squeezed, but it also showed what we can achieve even in the face of great adversity.

Presently, QMB seems to be at the receiving end of five years of pent-up demand for commercial laboratory space inside London. Due to this background effect and the foreground gradual increment for science-based business incubation space in London, demand is now outstripping supply, exacerbated by the long lead time in building such space. Spirogen's acquisition by MedImmune is proof that you can succeed within the M25.

Many challenges will no doubt remain in 2014, especially early stage investment. Budgets will still be tight and every spending choice scrutinised. But if we can continue to provide an enabling component and telling proof of urban late stage incubation, then we hope to make a significant contribution to the UK PLC's move to risk diversify its economy.

INDUSTRY NEWS ROUNDUP

Despite the after effects of the recession still lingering with us, the life sciences sector is as ever awash with news as new companies are formed, products launched and the sector continues to grow.

While certainly not all good news, the IPO market seems to have come to life again, with Cellular Dynamics International Inc., Conatus Pharmaceuticals Inc. and Onconova Therapeutics Inc., Agios Pharmaceuticals Inc., bluebird bio Inc., Esperion Therapeutics Inc., OncoMed Pharmaceuticals Inc. and Prosensa Holding BV, to name but a few having all made their debuts on the market. However, despite this, the market is still very tough for fundraising.

It's not all good news in the orthopaedic implants market with Johnson and Johnson rumoured to have agreed a settlement of \$4bn over its faulty ASR hip implants. However, the invitro diagnostics sector seems to be alive and healthy with Qiagen buying up more companies, such as CLC Bio.

As ever, the sector is constantly in flux, and there seems to have been a spike in interest around bioinformatics. Qiagen recently paid \$120 million for CLC Bio, and there have been a number of new companies launched in this space and even some acquisitions in the US. The UK is also busy in this field, with Cambridge based Eagle Genomics, having secured their first fundraising this year.



This year also saw the US Supreme Court rule that companies could not hold patents on genes. While this has undoubtedly been bad news for many companies, such as Myriad, patient groups and scientists have been delighted.

While biotech seems to still be struggling, the CRO/CMO sector seems to be going from strength to strength. Retroscreen has had a very successful year, but the big news was Quintiles and its IPO, which triggered something of a buying spree of many of its smaller competitors.

The pharma sector seems to be having a mixed year. While approvals are down from a record 43 last year to just 34, projected revenues for those drugs are up, and the five year broadcast is predicted to be \$18.7 billion, compared to \$16.4 billion last year.

FIND OUT

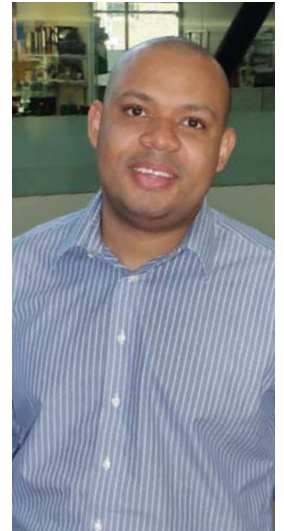
WHICH OTHER COMPANIES HAVE RECENTLY JOINED US, AND OTHER QMB NEWS ON PAGES 4&5

NO LONGER VIRTUAL – BIOMOTI BECOMES A FULL TENANT AT QMB

QMB welcomed BioMoti, a company developing cancer therapeutics, to the centre in April of this year. Biomoti's 'trojan horse' approach to treating cancer uses targeted delivery of therapeutics to the intracellular space of cancer cells, dramatically increasing efficacy whilst reducing side effects.

Having been spun out of Queen Mary Innovations, BioMoti was originally a virtual tenant. However, following an initial private finance round of £150,000 under the Seed Enterprise Investment Scheme (SEIS), BioMoti was able to take laboratory and office space.

Oncojans are a new class of therapeutic microparticles that target and gain entry to the interior of cancer cells where they slowly release drugs at the point of need whilst sparing healthy tissue. The oncojan platform is compatible with a range of drug classes from small molecule therapeutics to larger biologicals. MOTI1001 is BioMoti's lead oncojan based ovarian cancer candidate that has shown very promising potential in early preclinical studies.



Davidson Ateh (right), CEO of BioMoti, said: "I was very impressed by the QMB facilities. The ability to have lab and office space alongside each other will make developing the company much easier. In addition, we were also able to construct the offices and lab in a format which best suits our business."

READ ABOUT

FELLOW QMB OCCUPIER, SPIROGEN, WHO DEVELOP CANCER-TARGETING ANTIBODIES ON PAGES 5&6

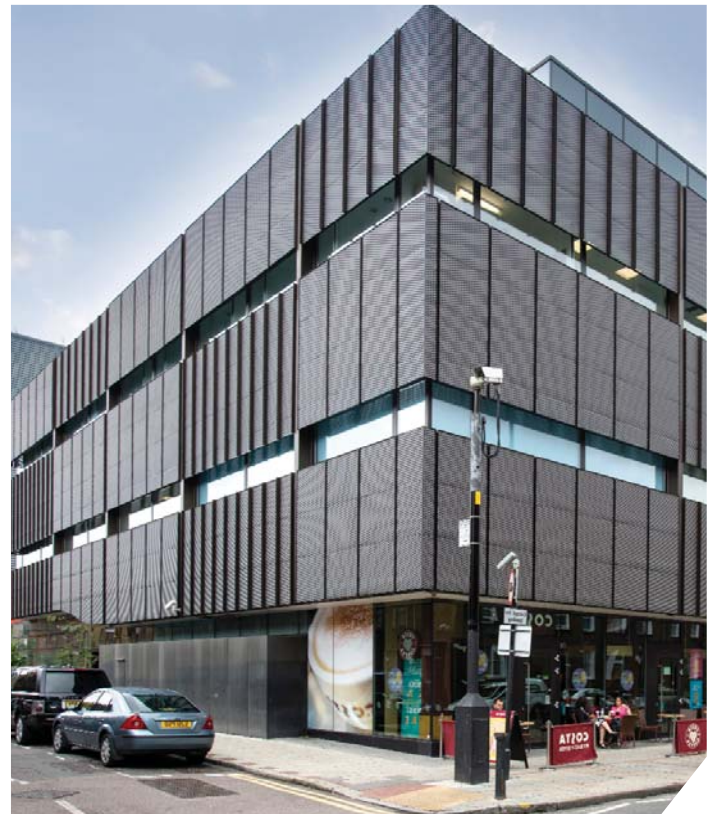
QMB IN THE NEWS

Not only has QMB had a busy year with lots of new clients moving in, the media have also been taking an active interest in the Centre and its impact on London's life sciences community.

Early in the year, Ramsay spoke to sp2, where he described the role of life science incubators such as QMB in helping foster innovation across the sector. In the article, Ramsay discussed the challenges facing the life sciences sector as a whole, and the role of QMB in helping meet these challenges.

In July, the Financial Times came to visit, interviewing Ramsay regarding the promotion of innovation in the life sciences sector. The newspaper also interviewed Chris Martin of Spirogen and Davidson Ateh of BioMoti to seek their views as tenants.

We have also had a host of other top media visits, including Clinica, EP Vantage and PM Live.



WATCH THIS SPACE

FOR MORE NEWS ABOUT QMB

Under the Microscope – Spirogen



Spirogen is a clinical stage biotechnology company specialising in novel, sequence-selective, DNA minor groove-binding molecules with potent therapeutic properties. Having been formed in 2000, Spirogen has now grown to 25 employees, and was recently sold to MedImmune for \$200 million in cash and deferred consideration of up to \$240 million.

The company's technology is based two different approaches, one involving pyrrolobenzodiazepines (PBDs) and the other involving Antibody-Drug Conjugate (ADC).

The natural PBDs bind covalently and sequence selectively to purine-guanine-purine motifs in the minor groove of DNA. The DNA binding activity of the molecules interferes with DNA processes including transcription and replication allowing them to act as anti-tumour and antibiotic agents. Spirogen's lead product, SG2000, SG2000 is currently undergoing Phase II clinical trials for the treatment of cisplatin resistant ovarian cancer.

ADC technology delivers extremely potent anticancer agents to cancer cells by attaching them to antibodies. Spirogen has developed highly potent warheads using its PBDs. These PBD warheads are joined to antibodies by linkers which are stable in the blood stream but release the PBD warhead once it is safely inside the targeted cancer cells.

Professors David Thurston and John Hartley and their colleague Dr Philip Howard had been working on DNA-interacting agents for over 10 years when they met Spirogen's commercial founder, Dr Chris Martin, and formed the company. This was followed by funding in 2001 and a licensing deal with Ipsen in 2003.

Spirogen continued its growth and secured further funding in the upcoming years. In July 2012 having initially been attracted to QMB's purpose built chemistry facilities and its London location, Spirogen moved its chemistry division to QMB. This was then followed by the transition of Spirogen's biology divisions from Uncivility College London to QMB in 2013.

The years of R&D and the specialised technology were very much appealing to AstraZeneca's MedImmune who acquired Spirogen in October 2013 for \$ 200 million in cash and deferred consideration of up to \$240 million.

For further information about Spirogen please visit their website, www.spirogen.com.

RUSSIANS VISIT QMB TO PICK UP SOME TOP TIPS

QMB had a visit from the Deputy Prime Minister of Russia, Mr Vladislav Surkov, in May 2013. This visit was planned as part of a wider tour of East London's expanding technology innovation hubs.



Mr Surkov's visit was a fact-finding mission to help the Russian government develop its own science city called Skolkovo on the outskirts of Moscow. QMB provided the Russian Federation with a tour of the facilities and discussed with them the strategy behind building a successful life sciences incubator as well as how to market the facilities to potential tenants.

QMB's Executive Manager Ramsay Richmond, Spirogen CEO's Chris Martin, Queen Mary's Principal, Simon Gaskell, and Chief Strategic Officer Dean Curtis, joined Mr Surkov to explain how the relationship between Queen Mary University and QMB, coupled with the proximity to the Royal London Hospital was able to help in attracting a mix of start-up and established businesses to the centre.

Russia's new focus on science and innovation comes as the country diversifies its economy away from fossil fuels. Skolkovo, which is currently in development, will be used to incubate scientific ideas before taking them to the market place as Russia attempts to develop more intellectual property.

Prospective tenants at Skolkovo will need to prove their innovative idea and establish alliances with both a Russian university and overseas partners. Government grants will help support new businesses as they develop, and the state is investing heavily in the project with special tax status, building a new university, business school, dedicated innovation centre, transport links, while private companies invest in cultural centres and housing.

QMB WELCOMES PERSONALISED HORMONE REPLACEMENT THERAPY EXPERTS

This year saw QMB diversify its client base from traditional life sciences companies to a company that provides a direct benefit to patients; QMB welcomed the London Specialist Pharmacy to the ranks of its tenants.

The Specialist Pharmacy provides patients with bespoke bio-identical hormone prescriptions in individualised dosages with a variety of delivery methods. In addition the company also works with patients to individualise their treatment programme for optimum therapeutic effect.

"The Specialist Pharmacy is an excellent addition to our growing roster of tenants. While supporting the development of new technologies and approaches in healthcare is a key aim of the Centre, it is also important that these ideas make it from the lab and provide real benefits to patients," said Ramsay Richmond, Executive Manager of QMB.

Dr Marion Gluck, CEO of The Specialist Pharmacy, added: *"We are very delighted to be moving into QMB. The facilities are ideal for what we need, and the combination of laboratory and office conveniently located in an easily accessible location, in a modern purpose built facility made the decision to come to QMB very easy."*

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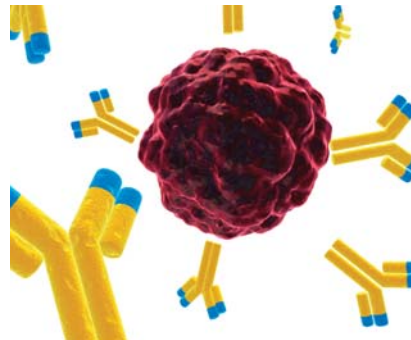


CLIENT NEWS

Spirogen bought by MedImmune

Spirogen has been bought by MedImmune, the global biologics research and development arm of AstraZeneca for an initial consideration of \$200 million and deferred consideration of up to \$240 million, based on reaching predetermined development milestones.

Spirogen's proprietary pyrrolobenzodiazepine (PBD) technology attaches highly potent cytotoxic agents, or 'warheads' to specific cancer-targeting antibodies using biodegradable 'linkers'. This targeting optimises the delivery of the cancer drug to the tumour cells only and provides the greatest degree of tumour killing while minimising the toxicity to the patient.



Dr. Chris Martin, CEO of Spirogen, commented: *"This deal reflects the very significant progress made by our scientists, most notably over the last two years, as we have applied our warhead and linker technologies to the development of highly potent and specific*

ADCs. We believe that PBD-armed antibody-drug conjugates will emerge as a critical component in the next generation of cancer biologics with the potential to make a difference for oncologists and their patients. We look forward to combining our world class capabilities in this area with MedImmune's ability to develop this exciting class of oncology drugs."

Dr. Bahija Jallal, Executive Vice President of MedImmune, added: *"Antibody-drug conjugates are ground-breaking technologies with the potential for directly targeting many types of cancer tumours while safeguarding healthy cells. The cutting-edge technologies developed by Spirogen and ADC Therapeutics complement MedImmune's innovative antibody engineering capabilities, enabling us to accelerate antibody-drug conjugates into the clinic."*

Spirogen was formed in 2000 as a spin-out from several institutions including University College, London and partly funded by Cancer Research UK. Its business model has been to partner its technology with pharma and biotech for use in the development of novel drugs.

It has a number of industry collaborations, including Genentech which was announced in 2011 and with ADC Therapeutics in 2012.

Spirogen initially moved its chemistry team to QMB in July 2012, taking advantage of the commercial fume hoods, before moving its biology team in September 2013.



MediWise wins top international Building Global Innovators MIT award

MediWise Ltd., was announced Health-tech winner of the 2013 Building Global Innovators competition for its GlucoWise™ device, which can be used to manage diabetes non-invasively and monitor glucose levels.

The team was handed a prize of €100,000 and shortlisted to win another €400,000 alongside an accelerator programme at MIT (Massachusetts Institute of Technology) in Cambridge, MA based on meeting new development milestones in the next four months.

MediWise designs and develops innovative wireless devices in the fields of medical diagnostics and monitoring and GlucoWise™ is their first product. GlucoWise™ is an affordable, non-invasive, wireless, diabetes management platform. The revolutionary device enables people with diabetes to accurately monitor their blood sugar levels for better management of their condition. The glucose readings can be taken occasionally or continually throughout the day and results are instantly displayed on the device or can be transmitted via Bluetooth to a mobile app, where the user can receive alerts and has access to data analytics.

MediWise Ltd. CEO Dr George Palikaras commented: "We are extremely happy to have received such a prestigious award. The Building Global Innovators program has been very supportive of GlucoWise™ and we cannot thank them enough for their support during the last four months. The high quality of our competitors and enthusiasm of the highly knowledgeable mentors makes this win even more special. I would like to thank our team for all their hard work and we look forward to competing in the Grand Finale award next year."

BUILDING GLOBAL INNOVATORS

3 EDITIONS + 1 ONGOING

384 SUBMISSIONS

22 COUNTRIES
 PORTUGAL, SPAIN, FRANCE, UNITED KINGDOM, CANADA, USA, BELGIUM, ARGENTINE, GERMANY, BELARUS, CHILE, BRAZIL, COLOMBIA, ESTONIA, INDIA, ITALY, MEXICO, CZECH REPUBLIC, RUSSIA, SOUTH KOREA, GREECE, BANGLADESH.

1498 GLOBALPRENEURS

46,1% FROM ALREADY INCORPORATED STARTUPS

80 SEMI-FINALISTS

>3.000 HOURS OF COACHING AND MENTORING

9 BOOTCAMPS

ISCTE-IUL, LISBON - PORTUGAL AND MIT, MASSACHUSETTS - USA

>€17.000.000 SECURED FINANCING

>50% VENTURE CAPITAL AND BUSINESS ANGELS

>20h ECONOMIC LEVERAGE

€1.000.000 CAIXA CAPITAL AWARDS FINANCIAL SUPPORT / EDITION

>150 HIGHLY QUALIFIED JOBS CREATED

48 INCORPORATED STARTUPS

Another great year for Retroscreen

It was another big year for Retroscreen. The company has continued to acquire various contracts and expand rapidly, taking on more space both at QMB and across the country. Retroscreen has also delivered another great set of financial results and announced plans to develop a new drug discovery arm for the business.

Retroscreen acquired contracts which include a £3.9 million contract for evaluating modes of influenza transmission and better understanding of how the virus spreads. The study is the largest-ever investigation into influenza transmission and is a collaboration with the University of Nottingham and other international groups, funded by the United States Centres for Disease Control and Prevention. Another notable contract win includes the Viral Challenge Model contract with a major global pharmaceutical company for the provision of a respiratory syncytial virus (RSV) challenge study. The contract, valued at £5.9m, is the largest RSV challenge study conducted by Retroscreen to-date.

It was the winning of these contracts that propelled Retroscreen's announcement of its buoyant financial results, which saw revenues double and its share price rise to over £3.50 from a starting point of 80p in 2012. This is noteworthy at a national level as it supports the UK government's ongoing strategy for risk diversification of the economy.

The new drug discovery arm of Retroscreen will be funded by the £25.5m the company raised in July. This new strategy will see Retroscreen building the foundations to unlock the potential for drug discovery inherent within their proprietary virometric data and biological samples.



Commenting on Retroscreen's half year results, CEO Kim Denney, said: "In this period we have solidified our plans to add new Airways Disease challenge models (AD-VCM) and have defined the VCM as human models of disease, which together with the pioneering of our virometrics database will create powerful tools in mapping human response to infection. I am delighted that we are on track to meet the objectives we set out for 2013, including starting our first AD-VCM validation studies, implementing the IT infrastructure pivotal in building the virometrics database, and continuing to build solid foundations for expansion and revenue growth."

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Queen Mary continues to Innovate

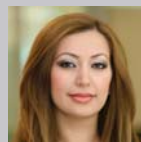
Queen Mary Innovations has continued to build its portfolio of innovative companies, with three of them securing new investment. Retroscreen listed on AIM last year, raising £15 million, and this year raised another £25 million to drive the development of the next phase of the business.



Actual Experience Ltd, which is developing technologies for quantifying and diagnosing global network and server infrastructure based on user perception, has secured another £500,000. This is in addition to the £1.5 million previously raised. At the same time, MixGenius, which was established in December 2012 with £250,000 from a Canadian investor to

generate new automatic music mixing technology, has raised almost £1 million in additional funds.

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



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