

# LBICnews

From the London BioScience Innovation Centre



## King's Cross: the heart of science in London

The Royal Veterinary College (LBIC's parent institution) is leading an audit of scientific activity in the King's Cross area that could have major benefits for the UK economy. This is the latest in a series of regional Science and Innovation Audits (SIAs), sponsored by the Department for Business, Energy & Industrial Strategy (BEIS).

Jo Johnson, Minister for London, said: "The Science and Innovation Audits are providing valuable insight into the ground-breaking work taking place across the UK and the contributions we are making to solve challenges across the world.

"The work...will support the development and delivery of our Industrial Strategy and allow local places to build on their

strengths. This will ensure that the UK remains competitive in the global market and is best placed to continue leading scientific discoveries and taking them to market."

The area of central London in which LBIC is based is home to a world-leading array of organisations at the cutting edge of their fields. These organisations are united

**Continued on page 3.**

### WELCOME

In this issue we are looking to the future. The life science landscape is fast evolving and becoming more diverse, both in the immediate vicinity of LBIC (see lead article, left), and further afield where European grants are still a good option for UK biotechs (page 7). Beyond Europe, working with the USA is becoming more accessible (banner below & page 6), while our Client News features deltaDOT's new link to China.

The future would be nothing without new talent, and One Nucleus' new student membership is a great opportunity for early career researchers, as is the chance of an industry placement (page 4).

My own future is changing as well: I am shortly going on maternity leave until summer 2019. I look forward to seeing how the sector grows in that time.

*L. Gatty*

Lucy Garnsworthy, Editor

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## Client News Round-up

### Fabrican Spray-on patch for topical medical treatments

Fabrican has created a topical medical skin patch from an aerosol can. The liquid formulations carry analgesic or moisturising compounds that form a coherent patch of material when sprayed. The sprayed patches adhere to the skin, are flexible and water resistant, yet can be removed easily with soap and water.

The aerosol application ensures patches are sterile when applied, and they can be additionally fortified with anti-microbial agents. For pain relief, patches can be impregnated with substances like menthol, capsaicin, or lidocaine. The technology can be used to facilitate highly effective 'wet wrap' therapies for skin conditions such as eczema. Patches can be discreetly applied, in colours to match the wearer's skin tone. The aerosol cans are safe, using a non-flammable greener propellant, and are ideal for applications where portability is an advantage, such as in search and rescue operations.

[www.fabricanltd.com](http://www.fabricanltd.com)



Fabrican's new topical medical skin patch

LBIC welcomes these new clients to the Centre:

- Clinical Accelerator
- GeneAlfa
- Prokarium



### deltaDOT signs licensing deal with Chinese manufacturer

In late 2017, a rigorous evaluation of deltaDOT's Capillary Electrophoresis (CE) instrument (HPCE-512) and competing CE instruments took place in Beijing. deltaDOT's HPCE-512 was judged to produce the best results and to be easiest to use of all instruments tested. Based on these findings the Chinese sponsor of the trial decided to license deltaDOT's technology, and in early 2018 the two companies signed an agreement. Under this agreement, deltaDOT has licensed its label free technology to the Chinese company and will help it to make deltaDOT's HPCE-512 for sale in Asia.

Nigel Stokes, deltaDOT's Managing Director, commented: "This agreement is a strong validation of deltaDOT's label free technology. In our highly competitive sector it is very encouraging to see the adoption of our technology in the rapidly developing Chinese market. We were very fortunate to appoint a UK-based consultancy who find investors, distributors and commercial partners in China on a success basis. I am happy to recommend them to any other LBIC tenants who are looking to do business in China."



New Unibio board member, Neil Goldsmith

### Innovate UK funds Oppilotech's bacteria model to tackle antibiotic resistance

Innovate UK has awarded Oppilotech a grant to further develop its exploration of Gram-negative bacteria. Gram-negative bacteria, which include *E. coli* and the pathogen *Neisseria gonorrhoeae*, are generally more resistant to antibiotics, due to their distinctive outer membrane.

Oppilotech is creating a detailed computational network model of the outer wall of Gram-negative bacteria and will utilise the new grant to improve accuracy and allow for simulation of interactions with antibacterial agents. The model will expand knowledge of how the outer wall behaves and allow researchers to identify first-in-class viable drug targets that will form the basis for the development of the next generation of antibiotics.

### New member of Unibio's board of directors

Unibio Group has appointed Neil Goldsmith as a new member of its board of directors. Mr. Goldsmith has over 30 years of entrepreneurial experience in the life science sector and a proven track record of commercialising groundbreaking products and successfully transforming ideas into global business with stock market listings. From 2004 to 2017 Mr. Goldsmith was co-founder, CEO and board member of Evolva SA, taking it from a start-up biotech venture to a leading synthetic biology company listed on the Swiss stock exchange.

Mr. Goldsmith will be a key part of Unibio achieving its strategic goal of becoming one of the leading methane-to-protein companies in the world. He joins Unibio at an interesting time as the company is about to commission the first full-scale plant to produce its UniProtein animal feed.

## Continued from front page

by the Knowledge Quarter, a partnership of almost 90 institutions that promotes knowledge sharing between partners in order to advance innovation. Aside from the RVC and several other universities, partners in the Knowledge Quarter include Google, Wellcome and the British Library.

The local Science and Innovation Audit, spearheaded by the RVC on behalf of the Knowledge Quarter, focuses on three areas of strength: life sciences (particularly emerging infectious diseases, musculoskeletal pathology and dementia); cultural, scientific and heritage collections; and data sciences. The SIA has involved activities to examine relationships between different organisations, along with their role within the wider 'Innovation District' of the Knowledge Quarter across Camden and Islington. This will provide the basis for future plans

in the area in order to build on existing and potential strengths and thereby increase productivity, employment and economic growth.

Professor Stuart Reid, Principal of the RVC, said: "The future success of science depends on organisations working together, exploiting the synergy between our different skills sets and ensuring the outcomes have social, economic and political impact."

The work is now drawing to a close,

with submission of the final report due by the end of June. Amongst the recommendations the report is likely to make is a proposal for a 'spatial plan' that will provide a long-term (30-40 year) framework for development processes within the Knowledge Quarter, and govern its relationships with strategic partners outside the area.



# AlphaBiomics

## Exploring the microbiome for more effective immunotherapy

**Marcus Rauch and Anthony Williamson, both previously with the Janssen Prevention Center here at LBIC, together with their colleague Angélique van 't Wout, have recently founded a new biotech venture, AlphaBiomics.**

AlphaBiomics' mission is to use its microbiome platform ABFlow to develop precision medicine solutions that will enable safer and more efficacious drug therapies, with early focus on immunotherapy. "As individual patients, we can each respond very differently to the same drug. In fact, some of the most commercially successful drugs help only a minority of those treated,"

Marcus explains. "Our gut microbiome is fast emerging as a key determinant of how we react to drugs, including important immunotherapies, such as immune checkpoint inhibitors for advanced cancer. Thus, for some patients, having the right microbiome at treatment onset may literally mean the difference between life and death."

AlphaBiomics' solution is to measure gut microbial composition before therapy begins and determine which microbial signatures assign with different clinical outcomes. This information can then be leveraged to create microbiome-based predictive diagnostic and companion therapeutic products that will personalise care to benefit patients. AlphaBiomics is actively seeking partners with access to clinical samples from immunotherapy or vaccine patients.

Contact: [marcus@alphabiomics.com](mailto:marcus@alphabiomics.com)

# Student Placements

Student placements can greatly benefit the host company and provide an invaluable career opportunity for a student. LBIC is ideally placed to source students with a scientific background from the Royal Veterinary College.

We spoke with two companies that have hosted students in placements, along with an RVC student currently on a placement.

## Carolyn Hyde

Manager of Bio-Analysis Centre



*A student learning lab techniques*

“We have had two placement students – one for a year and the other for three months.

“Both worked hard and were keen to learn, quickly picking up the routine tasks

and able to anticipate needs thus freeing me up to concentrate on solving the method development issues.

“I found the experience of having them very beneficial, so much so that we have just taken on two students as part-time employees.”

The Bio-Analysis Centre offers analytical services including HPLC and mass spectrometry, as well as training on the relevant equipment.

If you have any analytical requirements that you want to discuss with Dr Hyde, please contact her on [cali@b-ac.co.uk](mailto:cali@b-ac.co.uk).

## Deborah Cockerill

Managing Partner and co-founder of Sciad



*Manning the Sciad exhibition stand*

“At Sciad we regularly recruit science students for internships, part-time posts or permanent roles. We really enjoy working with students as they bring a tremendous

amount of energy and creativity to their work. We find that a scientific degree offers a very strong foundation for taking on a trainee role in science communications and digital marketing and many of our employees start working with us straight from university.

“Students interested in working with us at Sciad can find information about how to apply on our website [www.sciad.com](http://www.sciad.com) and we're always keen to hear from graduates interested in a career in communications and marketing in science, tech and health.”

Sciad is a digital marketing agency that works with businesses in healthcare, life science, the environment and other science and technology-based sectors.

## Josef Huntingdon

Biological Sciences student at the RVC, currently on a one-year placement with Cancer Research UK

“Where to begin when discussing what I have learnt during my time at CRUK Therapeutic Discovery Laboratories (TDL)?! Aside from the obvious lab skills of western blotting, cell culture and flow cytometry, I have learnt, and begun to hone, a wealth of soft skills such as time management and problem solving, all of which will help me further my future career.

“During my time with the cell biologists at TDL, as part of the Target Validation and Disease Positioning group, I have been working on optimising the group's 3D cell culture capabilities and their application in a high-throughput setting - this being in small molecule screens and, more recently, in the immuno-oncology space. This has been a fantastic opportunity to help build the group's capabilities and provide another mode of screening that can hopefully improve the selection of future therapies.

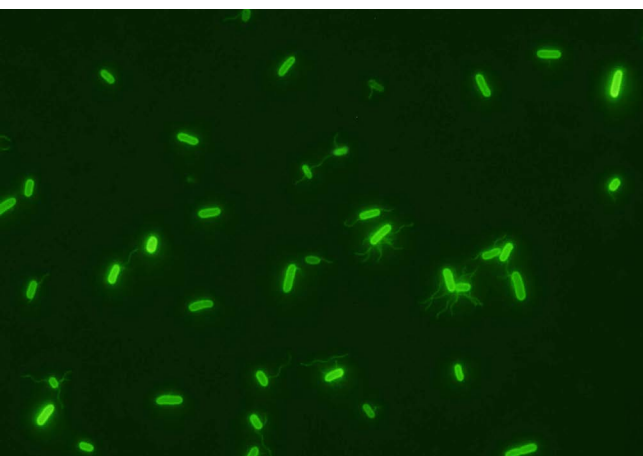
“Looking to the future, this opportunity has strengthened my craving to be in the lab and to pursue a career in science, providing me with a solid grounding on which to apply for PhD positions for when I graduate in 2019. I would like to thank TDL for giving me this opportunity and for providing unrivalled training and support. I will look forward to hearing about their successes in the future.”

To discuss hosting a placement, contact Charlotte Lawson at the RVC: [chlawson@rvc.ac.uk](mailto:chlawson@rvc.ac.uk)

## Developing effective, thermostable vaccines

**LBIC welcomes its newest client, Prokarium, a privately-owned UK synthetic biology company. Prokarium is working to perfect an oral vaccine delivery platform, a solid tumour-targeting platform and has several products in development.**

Vaxonella®, Prokarium's proprietary vaccine platform, enables oral administration of vaccines containing live bacteria. The bacteria are swallowed in a capsule or



*Fluorescent micrograph of ZH9 (from MTD01\_84), Prokarium's Salmonella Typhi bacterial strain called ZH9, a live typhoid vaccine.*

ingested in liquid form (for infants), pass through the stomach and then traverse the lining of the small intestine. There the bacteria are engulfed by the body's own immune cells, and start expressing the vaccine antigen genes. The antigens are processed and presented by the body's immune cells to stimulate all arms of the

immune system. Vaxonella is based on a modified *Salmonella enterica* that has been proven safe in ten clinical trials in the UK, USA and Vietnam. A new immuno-oncology initiative is now aiming to utilise *Salmonella's* tumour-targeting capabilities, in particular for solid tumours that do not respond well to other therapies.

Prokarium received £2 million in funding from the UK and Mexican governments to develop vaccines against enteric fever and plague, the latter being classed as a re-emerging disease by the World Health Organisation. In developing the enteric fever vaccine (dual typhoid-paratyphoid), Prokarium has established a government-backed collaboration with Mexican biopharmaceutical company Probiomed in order to scale-up vaccine testing and production.

Prokarium has made its vaccines thermostable and, when combined with the ability of patients to self-administer the oral dose, the new vaccine should provide

significant cost reduction and increase the potential reach of a vaccination programme. Currently, injectable vaccines rely on administration by a healthcare professional as well as a refrigerated supply chain, which can leave vulnerable populations unvaccinated or supplies wasted. In addition, Prokarium's manufacturing method makes production up to 70% cheaper than injectable biologicals.

In early 2018, Prokarium completed a \$10 million investment round, securing funds from Riyadh Valley Company of Saudi Arabia, Flerie Invest of Sweden and Korea Investment Partners of South Korea. This funding will support the clinical development of Prokarium's vaccines against Chlamydia, *Clostridium difficile* and enteric fever (typhoid and paratyphoid), as well as allowing expansion of the immuno-oncology team.

Dr Ted Fjällman, CEO of Prokarium, remarked: "We had a thorough look at many different places to relocate to and the Prokarium team is really excited to join the LBIC community as it was our top choice. In all, 15 office and laboratory staff will be moving into LBIC in stages over the next few months and we look forward to interacting with the companies already here!".

[prokarium.com](http://prokarium.com)

## One Nucleus supports early career scientists with new membership options



One Nucleus, the life science membership organisation, has expanded its services to include student or post-doctoral members. This provides a valuable opportunity for early career scientists to engage with the life science industry and become

successful players in the field, ensuring the sustainability of the sector.

Benefits for student and post-doc members include: free entry to monthly events and reduced rates on conference tickets; volunteering and participation

opportunities; and discounts on training courses.

For further information go to: [onenucleus.com/postdoc-membership](http://onenucleus.com/postdoc-membership) [onenucleus.com/student-membership](http://onenucleus.com/student-membership)

# BIO 2018 Convention

TONY JONES, CEO, ONE NUCLEUS



**Tony Jones reports on the BIO International Convention, hosted in June 2018 in Boston, USA, by the Biotechnology Innovation Organization (BIO), which represents more than 1100 biotechnology companies and related organisations across the United States and in over 30 other countries.**

Preparing for the US-themed BioWednesday at LBIC, the recent trip to BIO – hosted at the world’s leading life science cluster in Massachusetts – served as a great opportunity to engage with contacts from the global biotech sector. The convention provided a wealth of insights into the challenges faced by the sector, the opportunities arising, and the strategies for growth being adopted in different regions.

## International engagement

One Nucleus co-organised a number of satellite gatherings to enable targeted engagement with international collaborators, profiling of the region’s companies and exploration of strategies for supporting growth closer to home.

Among the distinguished guests were Harriet Cross, Consul-General in Boston, and Baroness Fairhead, Minister for Trade & Export Promotion, who spent a great deal of time engaging with and advising attendees.

Meetings with groups from regions such as Quebec, British Columbia and New Jersey confirmed international interest in engaging with our region, and One Nucleus

will be executing some of the ideas discussed with our members – including LBIC – in the coming months. I am sure that MedCity will also soon be capitalising on these links following their well-received Genomics Roundtable Debate and their presence on the UK Pavilion at BIO.

## The scale-up agenda

Biomed Realty – an increasingly significant inward investor to the UK Life Science sector – organised an excellent bus tour of the Cambridge MA life science cluster, in collaboration with MassBio, BIOCOCOM and Stansted Airport. Participants gained insight into both the public policy drivers and support and the real estate approaches that have enabled the cluster to scale-up. The



*The Consul-General Reception – (left to right) Tony Jones (One Nucleus), Blaise Heid, Tracy Grazioli (Santander), Baroness Fairhead (UK Minister for Trade & Export Promotion), Adam Payne, Eduardo Casajuana (Santander)*

demand is now such that Kendall Square is the most expensive real estate on the East Coast US!

It was fascinating to hear how, along with the need to provide patient capital, a suitably skilled workforce and sufficient lab facilities, a challenge that should not be underestimated is the need to stimulate a scale-up appetite among companies.

The UK Life Sciences Industrial Strategy speaks to a scale-up agenda and need and my experience at BIO left me with a key question regarding our cluster: “In what area is there an appetite to scale up?” This could mean scaling up young life science companies to build their own manufacturing and development capacity, or it could mean scaling up the earlier stage research and development excellence they currently hold, creating an asset pipeline for partnering or selling.

Both can be equally valuable and emerging business models such as the F-star approach are exemplars of scaling up what you are good at while monetising the fruits of that labour. In addition, when one considers the huge presence of global

Pharma in the Cambridge MA cluster, one could see how developing an exciting, relatively early-stage asset pipeline could attract significant inward investment by Pharma seeking to capitalise on the intensely innovative research base locally.

## The global sector

The tour was rounded off by a top-line view of industry trends from seasoned industry commentator, John Carroll of Endpoints Research. A key message was how much impact

investment from China is having in the life science sector globally. While some remain fearful, engaging with the Chinese opportunity is starting to pay real dividends for others. It is hard to imagine a city better placed to build effective engagement with China than London, so I am optimistic this will be a key driver in the future of global biotech.

# Brexit and UK funding from Horizon 2020



We asked Vic Mistry, Head of Innovation Partnerships at Ixion, for his view on the future of the UK in applying for European Horizon 2020 funding.

There has been a lot said about UK participation under the Horizon 2020 framework. H2020 still represents a great opportunity for UK businesses and research organisations. Across the programme, the UK ranks second only to Germany in terms of the number of project participations, with UK researchers and innovators awarded 15% of all agreed funds to date, totalling around €4 billion.

Following the announcement last October that the UK Government guarantees to underwrite Horizon 2020 funding, the Prime Minister's speech on our future economic partnership with the European Union underpins the positive moves approaching Brexit. A recently published joint report states:

"Following withdrawal from the Union, the UK will continue to participate in the Union programmes financed by the MFF [Multinational Financial Framework] 2014-2020 until their closure... Entities

located in the UK will be entitled to participate in such programmes. Participation in Union programmes will require the UK and UK beneficiaries to respect all relevant Union legal provisions including co-financing. Accordingly, the eligibility to apply to participate in Union

programmes and Union funding for UK participants and projects will be unaffected by the UK's withdrawal from the Union for the entire lifetime of such projects." Horizon 2020 is one of the Union programmes covered by this report.

## The UK Government encourages the UK research and innovation (R&I) community to continue applying for Horizon 2020 funding and participating in Horizon 2020 projects because:

- Until our departure from the EU, we remain a Member State, with all the rights and obligations that entails. This means that UK entities are eligible to participate in all aspects of the Horizon 2020 programme while we remain a member of the EU
- The UK and the EU fully intend UK entities' eligibility in Horizon 2020 to remain unchanged for the duration of the programme, as set out in the Joint Report. This includes eligibility to participate in all Horizon 2020 projects and to receive Horizon 2020 funding for the lifetime of projects
- The Government's 'underwrite guarantee' remains in place in the event that commitments made in the Joint Report are not met



Ixion's view: Post-Brexit, we initially thought that UK projects with UK consortia would be marked down and be frowned upon by our European counterparts, but this has never been the case for Ixion. For our clients we have won numerous H2020/ Eureka Eurostar project bids that include UK universities and institutes. Therefore, we encourage continued UK participation.

**A member of the LBIC Business Support Network, Ixion is a social enterprise owned by a large charity, The Shaw Trust.** If you would like to know more about how Ixion can support companies in accessing innovation grants, please contact Vic Mistry, Head of Innovation Partnerships 07725 256376 [vic.mistry@ixionholdings.com](mailto:vic.mistry@ixionholdings.com)

# Virtual tenancy offers flexible London base

**£600**  
for the first six months

For companies looking to establish a London base, it is easy to think that a physical office is required. However, many companies find it simpler to take on a 'virtual' tenancy at LBIC, giving access to meeting room space when needed for important face-to-face meetings, but without the commitment and setup required with dedicated office space.

LBIC's experienced team has developed the virtual package to suit the varied needs of life science companies of all sizes.

## Benefits of an LBIC Virtual tenancy

- **A Central London address** less than 10 minutes' walk from the international transport links of St Pancras International station
- **One-year complimentary Gold membership** of One Nucleus, the international membership organisation for life science and healthcare companies
- **Discounted client rates** on meeting rooms, catering and video conferencing facilities
- **A dedicated telephone line** answered in the client's name and redirected as needed
- **Post collection** and redirection
- **Courier bookings** at client rates
- **Business Support Network** to assist with doing business in the UK
- **Access to RVC equipment** and facilities, including the stunning Lightwell café
- **Visible profile within LBIC** and through our marketing and communications
- **Option to cancel at any time**, with just one month's notice period

## The set-up process is quick and straightforward

Contact us at [lbic@rvc.ac.uk](mailto:lbic@rvc.ac.uk) or call +44 (0) 20 7691 1122 today to enquire about becoming a Virtual client.

Additional charges may apply for certain services. A full list of charges can be supplied on request. Prospective clients will be subject to due diligence checks by LBIC management. Introductory rate is excluding VAT.

## Would you like to feature in our newsletter?

If you would like to contribute to a future issue of LBIC News, contact the **Communications Manager** on +44 (0) 20 7691 0982 or email [lbic@rvc.ac.uk](mailto:lbic@rvc.ac.uk)

## Contact us

LBIC has been supporting life sciences companies since 2001. Today we host more than 60 companies, ranging from entrepreneurial start-ups to more established UK companies and overseas subsidiaries from Europe, North America and Asia Pacific. The Centre is owned



and operated by the prestigious Royal Veterinary College, one of the independent Colleges of the University of London.

The Centre is a 10-minute walk from St Pancras International for Eurostar services and the site of The Francis Crick Institute.

### Our management team comprises:

**Dr Ken Larkin**  
Chief Executive

**Janette Pickles**  
Operations Manager

**Lucy Garnsworthy**  
Communications Manager

### For further information, or to enquire about our services, contact:

The London BioScience  
Innovation Centre,  
2 Royal College Street,  
London, NW1 0NH

**Tel:** +44 (0) 20 7691 1122

**Email:** [lbic@rvc.ac.uk](mailto:lbic@rvc.ac.uk)

**www:** [www.lbic.com](http://www.lbic.com)

**Twitter:** @LBICLondon

**LinkedIn:** [linkedin.com/company/london-bioscience-innovation-centre](https://www.linkedin.com/company/london-bioscience-innovation-centre)



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