London BioScience Innovation Centre
WHERE ENTERPRISE COMES TO SUCCEED

Summer 2021

LBICnews

From the London BioScience Innovation Centre

"When before have we heard our industry mentioned five times a day on the news?... We have a big opportunity here"

– Ian McCubbin, Leader of Manufacturing, Vaccines Task Force

Bio Integrates 2021 brings a cautiously hopeful message

LUCY GARNSWORTHY, LBIC

In May 2021, over 450 delegates attended the digital Bio Integrates conference held by Life Science Integrates. The conference focused on 'Connection, Reflection, Projection' and featured several LBIC clients amongst the speakers.

As might be expected, Bio Integrates 2021 examined the COVID-19 crisis and its potential legacies. The virus brought unprecedented attention to the life science industry and also showed what is possible when different groups collaborate and funding is channeled quickly towards a common goal. The general feeling was that it would be a shame to waste this momentum, but there needs to be focus on specific areas in order to maximise the opportunities.

The other pressing matter was the future of the industry post-Brexit. Speakers outlined the immediate impact of Brexit in

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WELCOME

The world is over 18 months into the COVID-19 pandemic and things will never be quite the same again. The pandemic has brought numerous challenges and heartbreaks, but for the life science industry it has also brought unprecedented levels of focus and collaboration to tackle the common foe. The accelerated vaccine development has set a new bar for all areas of healthcare, but what will come next?

Britain has also had to deal with the impact of Brexit, forever changing the way we interact with international partners and causing a lot of uncertainty. It has also brought opportunities, in particular with regard to the regulatory environment – see page 6 for details of how PharmaMedic are supporting companies looking to be a part of this.

We at LBIC have seen additional changes this year with the departure of two colleagues – see page 3 for our farewell to Ken Larkin and Bevan McWilliam. It will not be the same without them, but we look to the future with interest.

L. Gtly

Lucy Garnsworthy, Editor

Prokarium preclinical paper success

Prokarium is proud to have had their Entervax preclinical paper selected by the editors as the cover of the March issue of the International Journal of Molecular Sciences. Entervax is an oral, bivalent vaccine based on the combination of Prokarium's proprietary strain ZH9 (*Salmonella enterica serovar* Typhi ZH9) plus a novel strain modified to express antigens specific to *S. Paratyphi A*. Entervax is being tested in a Phase I trial with the support of the Wellcome Trust; results are currently under investigation.

Huge congratulations to Prokarium authors Claudia Prevosto, Mary Chol, Livija Deban and the rest of the team for all of their hard work!

DOI: 10.3390/ijms22063287

New Bio-Analysis Centre test improves equine diagnostics

The Bio-Analysis Centre (B-AC) based at LBIC is developing a new test for chronic weight loss in horses in conjunction with the RVC's Dr Mike Hewetson. This test uses a combination of non-metabolisable markers to help confirm malabsorption and is an improvement on the current equine test using glucose (which is metabolised after ingestion, and so is not an ideal choice of marker). This new test is more specific and has the potential of identifying the location of the problem in the horse's GI tract.

B-AC offers analytical services and contract research using HPLC and LC-MS. If any LBIC clients or RVC researchers need access to these techniques then please contact Dr Carolyn Hyde on 020 7691 2064 or by email to cali@b-ac.co.uk

Virokine's excellent preclinical results

Virokine reports on Virothera, subsidiary for novel immunotherapy activities for infectious disease. COVID-19 has highlighted the continuing importance of infectious disease and the new COVID vaccines show the nucleic acid approach is highly effective. Virokine gene therapy technology re-codes immunity for the next generation of immune therapies.

Virothera focuses on difficult-to-treat recurrent infections and persistent diseases of medical need worldwide, such as STD and COVID complications. Despite the company – like so many others – facing furloughs, lockdowns and Zooms galore during the pandemic, they are pleased to report excellent preclinical *in vivo* results in their NIH sponsored studies, with their first candidate giving complete protection against acute HSV. They have filed company patents for their supporting platform technologies, which use novel gene immune therapies to direct superior antigen presentation and immune protection.

Virokine have also welcomed eminent new members to their team. Joining the Scientific Advisory Board are Professor ES Mocarski from the Emory Vaccine Centre, an expert in virus molecular pathogenesis, together with Dr A Kwong, an antiviral development expert, previously VP at Vertex and Executive VP at Dewpoint. Also appointed is new BD Director, Dr P Hotten, former BD Director at Oxford Gene Technology, and specialist in IP licencing and start-up development.

Virokine are affiliates of the Milner Therapeutics Institute at the University of Cambridge.

For more information contact info@virokine.com

New Remediiate partnership to create carbon negative power plant

Remediiate has signed a contract with SIMEC Atlantis Energy (SAE) to deploy its first UK algae installation in a soon-to-be-commissioned power plant in Uskmouth, South Wales. SAE, the global sustainable energy generation company and technology developer, will utilise Remediiate's patented technologies to convert waste gases into high-value algae products.

SAE hopes to abate over 750,000 tonnes of CO_2 and produce over 400,000 tonnes of algae intended for the animal feed industry. The Uskmouth pilot plant will be scaled up over time with the intention of making the power station carbon neutral by 2025 and carbon negative by 2030.

Remediiate has kicked off the feasibility study phase with the intention of deploying a 'Plant Alpha' by the end of 2021. This will run for six months before the company begins Phase 1 of the scale-up deployment with 50,000 tonne CO_2 capacity in mid-2022.

LBIC welcomes these new clients to the Centre:

- **Axovia Therapeutics**
- **Morula Health**
- **Purespring Therapeutics**

Continued from front page

the form of customs delays and extra costs such as thousands of pounds of additional VAT that cannot be passed on to customers. “The degree of uncertainty is detrimental to getting finance into the UK,” recounted Patrick Driscoll of CN Bio Innovations. For those whose selling point had been a rapid delivery of product or service, the impact has been massive. Quay Pharma CEO Maireadh Pedersen outlined how Quay’s model of manufacturing then shipping directly to clinic now has an interim step because the EU no longer recognises the UK’s Qualified Persons. Further challenges are the cold chain shipping and the loss of access to French tax credits.

Some companies related the need to open a European subsidiary just to facilitate processes that had previously been straightforward. As such, money and jobs that would have remained in the UK economy have now been directed elsewhere.

On the more positive side, some described Brexit as an opportunity to shape a new model of regulatory approval and operations for the UK, which could prove attractive to international investors and collaborators.

Funding for UK biotech was another recurring theme, touching on the gaps in support for companies at mid-stage as well as the need for more innovative and diverse sources of funding aside from government grants. This sits alongside the concerns raised around companies leaving the UK, or floating on the NASDAQ stock exchange in the USA rather than the UK’s AIM. “Make the economics compelling to keep the headquarters here,” urged Jason Foster of Ori Biotech, adding that the right infrastructure and financial incentives would be key, looking to other successful clusters for inspiration.

The strong talent pool in the UK was widely discussed. Company culture and clear career progression have emerged as essential factors in attracting and retaining the best staff. The value of diversity was also recognised, to bring new ideas and working approaches to a company. These components could be the key to building successful companies that attract collaboration and investment.

The messages to come out of Bio Integrates were of a positive future for UK life sciences, provided the right structures can be put in place to facilitate the essential aspects of running the business. As Discovery Park’s Martino Picardo said in his closing remarks: “There’s never been a better time to be in life sciences.”

Bio Integrates

Farewell to LBIC colleagues

March saw the departure of Ken Larkin, CEO of LBIC since 2011, and Bevan McWIlliam, Business Relationship Manager at the RVC and LBIC since 2012.

Ken first joined LBIC as the Business Development Manager and Deputy Director under LBIC’s founder, Professor Colin Howard. Following Prof Howard’s departure, Ken stepped up to the role of CEO and oversaw the expansion of LBIC into additional space and the strengthening of the Virtual client service, allowing more clients than ever to establish a successful base at LBIC.

In 2015, Ken became Head of the newly created RVC Business department, which has proved to be a valuable resource for companies looking to access additional services, such as contract research.

Bevan worked to promote such services and facilitate connections between academics and industry partners, as well as identifying potential clients for LBIC.

We wish our former colleagues all the best in their new ventures and hope to see them at an event before too long.

Janette Richardson is acting as Interim CEO until the arrival of the new post-holder later in the summer.

Ken Larkin and family

Bevan McWilliam

RVC student placements – training the new generation of scientists

In the realm of graduate recruitment, students with a variety of experience can be highly valued. The RVC facilitates work placements for its students, to enable hosts to fulfil staffing needs and RVC students to gain valuable skills that could give them the edge in later job applications.

"We have had some very complimentary feedback about our students and some students have been hired by the same company subsequently," reports Claire Russell, Senior Lecturer at the RVC and Year Leader for year-long placements.

We spoke to Megan Ritson about her current Year 4 placement at Novartis:

"During my undergraduate studies I developed a passion for pharmaceutical science and believe that gaining experience working within this field would enable me to gain insight into the industry and progress as a young researcher.

"I am currently an intern scientific researcher with Novartis, a global pharmaceutical company. My role is within the Novartis Institute of Tropical Diseases department, specifically within the malaria liver stage biology team. I am developing innovative Cas9 technologies for the study of potential drug targets. Ultimately, this work will facilitate structure-based drug design and allow for the development of new vaccines and treatments.

"Due to COVID-19 my placement altered from a lab-based project to a project heavily enriched with bioinformatics, structural biology and programming – a very unexpected change of direction! Having the opportunity to learn such complex skills early in my science career has been a large learning curve and a huge challenge. I have been extremely surprised by how much I have enjoyed these aspects of biology and my ability to learn new skills."

Nigel Stokes, Director of the Bio-Analysis Centre, outlines their experiences with students:

"The Bio-Analysis Centre (B-AC) has greatly benefited from employing several RVC undergraduates on a part-time basis over the past five years, and these students have gained valuable laboratory expertise. During the 2020 lockdown we were especially fortunate as our second-year student was able to use the LC-MS

Placement student Megan Ritson

to continue our R&D into new assays – and this with only telephone and email support from senior managers who were unable to attend site. I recommend that other LBIC companies employ RVC students as they can provide additional support when needed – for example to help address peaks in workloads and provide holiday/sickness cover."

The RVC is always interested to hear from potential placement hosts. To learn more about hosting placement students or providing other opportunities for students, please contact Claire Russell crussell@rvc.ac.uk

Introducing Morula Health

We are pleased to announce that Morula Health has selected LBIC as its UK head office. Following an evaluation of various locations throughout the UK, Morula Health has decided that LBIC best suits its virtual business model.

Morula Health is a tech-driven, patient-centric medical writing company. They assist biotechnology and pharmaceutical companies globally with pre- and post-clinical trial regulatory medical writing, creating patient-centric trial designs by engaging with patient and advocacy groups, and producing patient-facing clinical trial materials to improve recruitment, retention, and compliance.

In a recent interview with Morula Health, they elaborated on their decision: "Even before COVID-19, we had intended to be a fully virtual organisation. Our customers are located all over the world, so we have always needed an effective method to communicate and collaborate with them virtually. To deliver to a high standard, we need to access the best talent, so we do not want our talent pool to be restricted based on a commutable distance to an office.

"It was, therefore, logical to have a virtual workforce and we have removed a significant fixed cost which benefits our clients. LBIC enables us to be part of the ever-growing London life science hub, with great transport links to Cambridge and Oxford, access to partners and expert consultants, and an ideal location to meet with customers from the UK and globally. We were particularly impressed with LBIC's customer services offerings for both us and the customers who seek to engage with Morula Health."

www.morulahealth.com

Organic search – why is it so important for your website?

BY DEBORAH COCKERILL, SCIAD COMMUNICATIONS

If you are working for a life science company, however large or small, organic searches are often the main source of high-quality visitors to your website from potential customers or investors. Ranking higher in search results than your competition is therefore vital as it can have a real impact on your bottom line and your success as a company.

Google uses a complex system of core ranking algorithms to analyse information about web pages – such as relevance and usability – to determine the order they should appear in the search results for any given query. Taking steps to improve your website SEO (search engine optimisation) will help to increase your search rankings, drive traffic to your site, and build a community of stakeholders for your company, helping you to raise funds or generate new customers.

Research your keywords

It is vital to determine the scientific keywords that your target audiences are most likely to search in order to reach your website. As these terms may be relatively niche, it is really important they appear in your copy, your URLs, your meta titles, description tags, and your page headings, so that Google will understand what your pages are about.

If you are unsure, check through your Google Search Console to see which keywords and URLs are generating traffic. Just as importantly, ensure they are keywords and phrases that you often use within your specialty area of work and research. You understand your industry community the most and the information they are interested in as part of their everyday work.

Refresh your content

Regularly uploading new content – such as news, blogs, articles, white papers, posters, case studies, application notes, social posts, and information about events you are attending – will keep your website fresh and engaging for users.

Check your page speed

Fast websites tend to have better engagement and a low bounce rate as web users don't want to waste time waiting for your site to load. Site speed is also very important for SEO, so much so that Google's recently implemented "Core Web Vitals" focus on speed and user experience as key factors for determining search rankings.

Be mobile responsive

Given that over 60% of all searches now come through mobiles – even within working hours – if your website isn't mobile-friendly this will have a huge impact on your rankings as well as being off-putting to potential customers.

Cultivate backlinks

Links to your website from other sites with high authority and relevant content will help with increasing your referral traffic and your rankings. As with any scientific citations, quality is much more important than quantity when it comes to linking and so industry network and publication websites are great for increasing your Google PageRank.

Switch to HTTPS

In short, HTTPS is a more secure version of HTTP, so consider making the switch if you haven't already done so.

Gain leads with CTAs

CTAs (Call to Actions) are interactive elements such as 'Contact Us' buttons, sign-up forms, or brochure downloads, which encourage your visitors to take further action once they have engaged with your content.

CTAs should be used to convert visitors into your contacts, which is, after all, the whole purpose of attracting them to your website in the first place.

Implementing all of these changes can make a big difference, helping to maintain your SEO rankings so that you keep abreast of your competition and don't miss out on valuable potential business connections.

What next?

With strong branding and messaging as the foundation of all your communications, and the fundamentals in place on your website, there is so much more you can do to raise your digital profile. In addition to targeted PPC advertising via Google Ads, the life science industry has fully embraced social media platforms such as LinkedIn and Twitter giving you an inbuilt community to reach out to.

If you are looking to increase your company profile, then Sciad Communications is offering all LBIC clients a free 30-minute video consultation. Whether you need support to improve SEO, strategic advice on your communications challenges, or help with understanding your Google Analytics data, we will respond to your specific needs. **Please contact Deborah Cockerill, Managing Partner at Sciad Communications (deborah@sciad.com) for further details.**

‘Innovation Passports’ to secure UK as life science ‘superpower’, aided by PharmaMedic

PharmaMedic Consultancy (PMC) is currently supporting several clients with their applications to the MHRA’s new Innovative Licensing and Access Pathway scheme (ILAP). The pathway forms part of a bold vision for the UK to incentivise and support life sciences development as we emerge into a post-Brexit regulatory and clinical trials environment.

The programme enables organisations of all sizes to work closely with the MHRA, National Health Service Executive, Scottish Medicines Consortium and other stakeholders on a new medicine development and reimbursement pathway. Already, the scheme has attracted significant interest from medicines developers. The first so-called ‘Innovation Passport’ was awarded to belzutifan, a medicine for adults with von Hippel Lindau disease developed by MSD (UK). This rare genetic disease is caused by mutations in the VHL tumour suppressor gene. More recently, in May 2021, HyBryte™, a treatment for early-stage cutaneous T-cell lymphoma (CTCL) in adults, was awarded the designation. No doubt, further announcements from other organisations will follow. A successful Innovation Passport designation triggers the MHRA and its partners to create a living “Target Development Profile” (TDP) document, which sets out a roadmap for the product towards patient access within UK healthcare. A successful ILAP application is a significant boon for drug developers and stands to accelerate the time to market for innovative treatments. Most importantly, the approach also benefits patients who will get faster access to vital new therapies.

The scheme has established flexible entry points so that sponsors with mid-stage development global dossiers and early entrants with only non-clinical data can apply depending on the available data. However, the MHRA does caution that the earliest possible engagement will allow companies to benefit most from the initiative. Notably, the scheme is not advised for organisations with products at later stages.

As an initiative to support innovation, the eligibility criteria focus on areas of high unmet patient or public health need, rare diseases, special populations and clinically significant contributions to efficacy and safety profile, patient care and quality of life.

The introduction of the passport is one of a suite of initiatives designed to cement the UK’s position in the global life sciences industry and create a prominent clinical trials ‘superpower’. It also reflects an ongoing focus on cross-stakeholder and industry/public collaboration that has been such a critical feature of the COVID-19 response and a mainstay of the successful innovations we have seen during this period.

To discuss how PMC can help guide you through the ILAP application process, get in touch at **hello@pharmamedic.co**.

BRAINCURES’ biology-driven approach to precision medicine

BRAINCURES has developed a biological intelligence (BI) approach that enables nearly-failure-free drug discovery and shortens the drug development cycle by at least four years. For example, the biology powered BRAINCURES Discovery Engine (BDE) platform algorithms eliminated 57 of 72 (79%) drug-target pairs that went on to fail in Phase III clinical trials, potentially saving up to US$11 billion of outlay.

In an interview with Danny Sullivan of Longevity Technology in June 2020, the founder and CEO, Dr Krzysztof Potempa explained that the company’s biological intelligence approach turns questions around data into actionable insights without deep learning steps associated with Artificial Intelligence (AI): “We performed systems biology driven efforts to decipher proprietary target rules that interlink and hierarchise genes implicated in brain function into a molecular corporation comprised of different targets. Compounds that modulate certain targets have biomarkers for drug/patient matching and patient selection, and open new avenues for advancing the development of precision treatments.”

The company has several successful collaborations with academic and biotech partners, and is keen to build new partnerships. For example, at ADDF’s 15th Annual Drug Discovery for Neurodegeneration Workshop in May 2021, the company presented how it has prioritised 20 of 55 investigational drugs as Alzheimer’s Disease treatments with high predicted clinical success, using a unique virtual phenotypic screen powered by molecular signatures common to the BDE and L1000 (see https://vimeo.com/542932799/5a1ec0eb3f).
www.braincures.com

Biosafety: A brief introduction to compliance

BY DR SHURENE BISHOP SIMON, DIRECTOR OF BISHOP SIMON (A HEALTH, SAFETY AND BIOSAFETY CONSULTANCY)

When scientific organisations decide to undertake work involving the use of bioagents, they need to characterise their projects according to risk levels and identify whether special considerations are required. This article provides a snapshot to help with the decision process.

First, identify the hazard group of the bioagents to be used. Hazard groups range from 1 to 4, and the level of risk increases accordingly. Hazard groups can be identified by checking The Approved List of biological agents. Once determined, ensure that the laboratory complies with requirements under the Control of Substances Hazardous to Health Regulations (COSHH). You will also need to notify the Health and Safety Executive (HSE) of your intention to use hazard group 2, 3 and 4 bioagents. (See Schedule 3 of the COSHH.)

Most often, work involving high hazard groups will need to be conducted at a sufficiently high level of containment. For example, work with a hazard group 2 organism is usually conducted at containment level 2. There are exceptions to this rule, and it is important to know what these are (see Schedule 3 of the COSHH).

Also consider whether genetic modification (GM) will be carried out and whether GM regulations apply. There are two sets of GM regulations: 'contained use' and 'deliberate release'. This article focuses on contained use.

The Genetically Modified Organisms (Contained Use) Regulations classifies activities into four groups: class 1 to class 4. The level of risk increases from 1 to 4 and is based on the extent of the genetically modified organism's risk to human health and the environment.

Some essential requirements when GM work is to be carried out are:

(**1**) Notify the HSE of intention to use the premises to conduct Contained Use work;

(**2**) Notify the HSE of intention to use the premises to conduct class 2, 3, and 4 work;

(**3**) Class 1 activity must be reviewed by a competent individual (e.g. a biosafety officer) whilst activities above class 2 must be reviewed by a GM Safety Committee.

These requirements are not an exhaustive list and you should refer to the GMO (Contained Use) Regulations for further information.

Finally, be mindful of biosecurity requirements. Biosecurity measures in a laboratory environment are there to prevent unauthorised access, loss, theft and misuse. In other contexts, biosecurity prevents spread of disease and introduction of exotic or alien organisms into the local environment. An effective way to ensure that biosecurity risk is identified is to devise a biological risk assessment template that will capture this information, and to provide staff with biosafety awareness training.

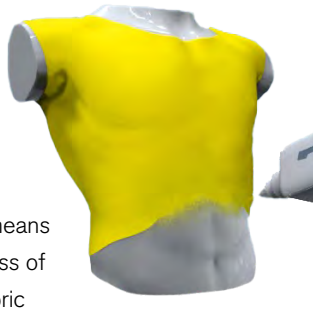
It is important that work does not commence until all authorisations are received. If in doubt, organisations must seek advice from a biosafety professional who can help them to fulfil these compliance requirements.

For more information contact
info@bishopsimon.co.uk
bishopsimon.co.uk

Find out more

The Approved List of biological agents: https://www.hse.gov.uk/pubns/misc208.pdf
Control of Substances Hazardous to Health Regulations (COSHH): https://www.hse.gov.uk/pubns/priced/l5.pdf
The Genetically Modified Organisms (Contained Use) Regulations 2014: https://www.hse.gov.uk/pubns/priced/l29.pdf

Fabrican's recyclable Spray-on T-shirt



Fabrican is pioneering a new method of manufacturing T-shirts. Using robotic sprayers, the manufacturing process is 100% automated and readily customisable to vary colour, design and size without the need for expensive tools. The technology realises the dream of mass customisation by enabling on-demand manufacturing of made-to-measure T-shirts in colours and styles selected by the wearer.

The sprayed T-shirt is also a new experience for wearers, being a totally new fabric with a customised, seamless fit.

Fabrican's patented Spray-on fabric technology can be integrated with wearable technology or diagnostic devices to monitor the health of the wearer.

Comparatively low capital requirements mean that the technology offers local, small-scale 'pop-up' manufacturing for entrepreneurs in less-developed countries. Local manufacturing in turn means opportunities for economic development and garments with a lower carbon footprint than imported materials.

The high bio-origin content of the fabric means that it is mostly biodegradable and compostable. It is 100% recyclable by means of a very simple process of dissolving sprayed-fabric items and re-spraying material for new clothing. Unlike conventional methods of dyeing fabrics, which consume high volumes of water, pigments for the sprayable T-shirts require no water, further enhancing the manufacturing technology's environmental profile.

www.fabricanltd.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 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 **Lucy Garnsworthy** on **+44 (0) 20 7691 0982** or email **lbic@rvc.ac.uk**

Contact us

LBIC has been supporting life sciences companies since 2001. Today we host more than 50 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 Francis Crick Institute.

Our management team comprises:

Janette Richardson
Interim CEO and Operations Manager

Lucy Garnsworthy
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