![UK BioIndustry Association logo]

17ᵗʰ Annual bioProcessUK Conference 2020

bioProcessUK 4.0

Time	Tuesday 1 December
09.30 – 09.40	**Tribute to Simon Ellison** *Chair: Steve Bates & Kit Erlebach* **Welcome** **Peter Levison,** Pall
09:40 – 09.50	**UK Strategy Update** **Steve Bates OBE,** Chief Executive Officer, BioIndustry Association
09.50 – 10.00	**UK Manufacturing Perspective** A snapshot of the UK's biomanufacturing landscape **Dr Stephen Ward,** Chief Manufacturing Officer, Cell & Gene Therapy Catapult
10.00 – 10.45	**Collaboration is key – trinity of academia, industry and government working together to deliver COVID19 vaccines** *Chair: Ian McCubbin OBE* This session will celebrate how the trinity of industry, academia and Government have come together to develop vaccines in the fight against COVID-19. PANEL MEMBERS: **Dr Sandy Douglas,** Academic Clinician, The Jenner Institute, Oxford University **Kevin Thompson,** Technical Director, Pall Biotech **Dr James Miskin,** Chief Technical Officer, Oxford Biomedica **Ravi Limaye,** Managing Director, Wockhardt **Mark Proctor,** Senior Director, Global Supply Strategy, AstraZeneca
10.45 – 11.15	**Break and networking**
11.15 – 12.00	*What next for COVID19 Vaccines and Antibodies - portfolio and future strategy* *Chairs: Steve Bates OBE & Kate Bingham* **Vaccines Taskforce update – portfolio and future strategy** **Kate Bingham,** Chair of the Vaccine Taskforce PANEL MEMBERS **David Lawrence,** Chief Financial Officer, Valneva **Dr Paul Varley,** VP Biopharmaceutical Development, Kymab **Professor Robin Shattock,** Chair in Mucosal Infection and Immunity, Faculty of Medicine, Department of Infectious Disease, Imperial College London **Dr Matthew Duchars,** Chief Executive Officer, VMIC **Closing reflections on how far we've come** Kate Bingham and Steve Bates
12.00 – 12.15	**Richard Wilson Impact Award** **Presented by Dr Kit Erlebach,** Fujifilm Diosynth Biotechnologies & Chair of BIA MAC

12.15 – 13.15	**Early Career Researcher Poster flashes** *Chair: Dr Jonathan Haigh, Fujifilm* Young researchers will present their projects and outcomes ahead of the Poster Prize voting
13.15 – 14.20	**Break and networking**
14.20 – 14.45	**LeaP presentation** *Chair: Chair: Steve Bates & Kit Erlebach* **Louise Taylor,** Centre for Process Innovation & Zach Sexton, Cytiva
14.45 – 15.15	**MMIP overview - strategy and progress update** An overview will be given of the ongoing Medicines Manufacturing Industry Partnership (MMIP) initiatives, including high level updates from each of the MMIP work streams. **Andy Evans,** VP Clinical Manufacturing and Supply, AstraZeneca and Chair of MMIP
15.15 – 16.00	**Peter Dunnill Award Presentation and lecture**
16.00 – 16.10	**Summary and Close of Day one**
18.00 – 20.30	**Evening Networking**

	Wednesday 2 December
09.30 – 10.45	**Workshop 1 – Arthritis - From rehabilitation to remission** *Chair: Sharon Grimster, BIA MAC vice-Chair* **A history of biopharmaceutical development for Arthritis: early challenges and successes** A view of the development of biopharmaceuticals for the treatment of arthritis from the 1990's to present day including some personal recollections of the early development of antibody therapies. **Dr Ursula Ney,** Non-executive director in Life Science industry **Autologous Tolerogenic Dendritic Cells for Rheumatoid Arthritis (AuToDeCRA)** Our team is developing AuToDeCRA as a means to 'switch off' rheumatoid arthritis, and potentially applicable to other areas of autoimmunity. We have completed phase 1 and are gearing up for phase 2, where we will compare administration routes. This presentation will also cover, briefly, the Newcastle 'offer' in terms of Advanced Therapies development and delivery. **Professor John Isaacs** Newcastle University Translational and Clinical Research Institute, Newcastle-upon-Tyne, UK & Associate Medical Director (Research), Newcastle upon Tyne Hospitals NHS Foundation Trust **I'm a Believer!** I'm a believer - one woman's journey from rehab to remission with Rheumatoid Arthritis, and the difference your work makes to the lives of people with arthritis. The importance of partnerships to Versus Arthritis and how the charity can support your work. **Frances Borrer,** Versus Arthritis **Workshop 2 – #Empoweringdigitalskills** Access to digital skills and data analysis is becoming increasingly important in finding solutions to today's bioprocessing challenges. We need to ensure people within our industry have the digital skill sets they need. Demand already outstrips supply in many sectors and this is set to skyrocket as technology transforms business models. Pre-COVID the CBI reported that businesses were cautiously optimistic they would be able to access the digital skills they need in the future and we have all seen the effect the pandemic has had on digital infrastructure and ways of working. This session will present a number of different approaches currently being used successfully to upskill and attract new digital talent to our

sector including innovative apprenticeships in data science and AI, application of digital solutions to bioprocessing challenges, exploiting data science to attract talent across sectors and launch of a new virtual learning platform for advanced therapies and vaccine manufacturing skills.
Chair: Dr Kate Barclay

Skills Overview
Dr Kate Barclay, Skills Consultant, BioIndustry Association

Learning pathways in Data Science & AI apprenticeships
Cambridge Spark are the UK's leading specialist Data Science & AI apprenticeship training provider. This talk will cover how you can develop Analytics, Data Science & AI skills and capability by using government-funded apprenticeships and degree apprenticeships, from entry-level all the way through to MSc. Cambridge Spark's cutting-edge training in Data Science and AI includes Data Analyst, Data Scientist, and Machine Learning Engineer apprenticeships as well as Data Science degree apprenticeships at BSc and MSc levels.
Tony Clark, Head of Training Solutions, Cambridge Spark (20 mins)

Digital apprenticeships
Having recently graduated from the BSc Digital and Technology Solutions Apprenticeship Program, Becca will share her experiences of being a Digital Apprentice at AstraZeneca. Throughout her scheme, she has been able to rotate around several different IT and business areas, gaining invaluable experience and applying her university learnings to real life working scenarios. When Becca started at AstraZeneca in 2016, she had little idea of where she wanted her career to progress to, but now four years on she has a permanent role in a team she loves, a full BSc and has just embarked on her newest challenge - the MSc Digital and Technology Solutions.
Becca Goodwin, Digital Apprentice, AstraZeneca

Talent engineering using machine learning algorithms
Enginuity combines our existing engineering expertise with ingenuity with data to shape the future of the engineering and manufacturing landscape. This talk will discuss how machine learning can develop understanding of how a common skills language can be evolved to understand those transferrable skills, to support reskilling, recruitment and repurposing of careers.
Dr Jacqueline Hall & Dr Ben Alexander-Dann
Head of Policy & Strategy & Data Science and Insight Analyst, Enginuity

Launch of Advanced Therapies Skills Training Network online platform
Dr Kate Barclay, Skills Consultant, BioIndustry Association

10.45 – 11.15	**Break and networking**
11.15 – 12:45	### bioProcessUK 4.0 technology showcase *Chair: Oliver Hardick* Pitches from new enabling technology companies - Dragon's Den style voting for best technology ### Mass photometry – a novel method to study biomolecules Mass photometry is a novel method recently developed by scientists at the University of Oxford to determine the mass and mass distributions of native single molecules in solution. In a label-free manner and using only a few microlitres of sample it is possible to study the mass, oligomeric state, binding behaviour and much more in a single assay that takes no more than a few minutes. **Dr James Wilkinson,** Sales Director, Refeyn ### FourPlus: Immersive Technologies for the Life Sciences Sector

FourPlus creates powerful, virtual and augmented reality tools for the life sciences sector. Harnessing these state-of-the-art immersive technologies, we provide innovative solutions for lab design, lab training, data visualisation and technology showcasing.
Dr Hayley Mulhall, Founder and CEO, FourPlus

Empowering the digitalisation and scale up of Cell & Gene therapies
Autolomous is building a software platform to enable CGT manufacturers to better capture, manage and leverage manufacturing insights. Within 18 months since our inception, Autolomous has deployed its first commercial product, AutoloMATE-eBMR, to clients in the UK, Europe and US. AutoloMATE-eBMRs flexibility has been demonstrated by the variety of manufacturing workflows we support, including TIL, CAR-T, Allo NK and IPSC.
Kwok Pang, Chief Operating Officer & Co-Founder, Autolomous

Microfluidics, a path towards safe, scalable, and affordable manufacturing of cell therapies
MicrofluidX is tackling the problems of process control, scalability, and cost associated with cell bioprocessing, in particular for autologous cell and gene therapy. Its automated, closed technology allows biologists to easily carry out process development by running dozens of cell culture conditions in parallel with extreme process control, and to scale up seamlessly up to several billion cells for manufacturing at a fraction of the current costs.
Dr Antoine Espinet, Founder and CEO, MicrofluidX

12.45 – 13.45	**Break and networking**

bioProcessUK 4.0
Chair: Damian Marshall

How technology innovation can potentially improve bioprocesses and achieve some of the objectives of Industry 4.0.
In order to address the challenges faced as we move forward with the adoption of Industry 4.0 we have developed several new technologies and product platforms that supplement the existing toolboxes and are potential enablers for process improvement and optimization in the design of end-to-end processes. These will be illustrated and demonstrate how it should be possible to develop process flows using the technology platforms best optimised for optimal productivity based on kg product produced per year per unit facility footprint.
Dr Peter Levison, Executive Director Business Development, Pall Biotech

13.45 – 15.00

Peptide-based biomaterials for 3D cell culture and bioprinting
Biogelx supply unique peptide-based biomaterials to researchers around the globe who are interested in 3D cell culture and bioprinting. The core technology of these functional materials was developed at the University of Strathclyde by Prof Rein Ulijn, and Biogelx continue to develop new products and applications around this knowledge base. The company remains in touch with its academic roots by supporting 6 ongoing PhD studentships and acting as a contributing partner in a multicenter H2020-funded project involving academic and industry groups.
Dr Chris Allanm, Development Scientist, Biogelx

Title TBC
Gerald Kierans
Pfizer Grange Castle

15.00 – 15.15

Closing summary and awards
Steve Bates, Chief Executive Officer, BioIndustry Association
Kit Erlebach, Fujifilm Diosynth Biotechnologies & Chair of BIA MAC