



Synthetic Biology Congress

London, UK

20-21 October 2014

www.globalengage.co.uk/synthetic-biology.html

CUTTING EDGE RESEARCH, STRATEGIES, AND SOLUTIONS TO KEEP YOU UP TO DATE WITH LATEST ADVANCEMENTS, INVESTMENT OPPORTUNITIES, NOVEL METHODS & APPLICATIONS OF SYNTHETIC BIOLOGY IN THE HEALTHCARE & AGRICULTURE SECTORS

Global Engage is pleased to announce as part of their successful Genomic series of events the Synthetic Biology Congress, which will be held on October 20-21 in London, UK and will be co-located with our 2nd Annual qPCR and Digital PCR Congress.

Attracting over 150 industry & academic experts working in areas such as synthetic biology, bioengineering, biochemical / metabolic / chemical / genetic engineering, systems biology, microbiology, computational / molecular biology, chemistry, mathematics, computing, biochemistry, drug discovery and plant science this will examine the latest strategies, developments and case studies using synthetic biology to further research in healthcare and the agriculture sectors. The congress will also have a dedicated section focusing on finance, aimed at those looking for investment opportunities and those seeking funding to exploit their research.

Predicted to be worth \$10.8bn globally in 2016, synthetic biology is a fast-growing research area making tremendous scientific, technological and economical impacts worldwide. The conference will therefore provide a timely interactive networking forum offering the opportunity to take home cutting edge research, strategies, methods and solutions to allow you to keep up to date with the latest advancements, investment opportunities, novel methods, and applications of Synthetic Biology within your field.

This will be achieved through a vibrant exhibition room full of technology providers showcasing their technologies and other solutions, poster presentation sessions, expert led case study presentations and interactive Q&A panel discussions from a 40 strong speaker faculty examining topics on four separate tracks covering:-

Conference Agenda

Healthcare / Drug Discovery

- Overview, introduction and Impact of Synthetic Biology
- Academic & Pharmaceutical SynBio case studies
- Genome engineering
 - Technology and tool development
 - Gene and genome synthesis
 - Genome and pathway design
 - Genome editing - CRISPR/ TALENs / ZFNs etc
 - Engineering cells – novel / optimising pathways
 - Programming behaviour
 - Systematic engineering for better function prediction and modeling
- Applications of SynBio in health research
 - Development of drugs, vaccines, antibiotics etc
 - Disease identification
 - Reprogramming stem cells
 - Synthetic DNA based therapeutics
 - Antibody / Protein engineering
 - Biosensor development
 - Gene therapy
 - Bacteria engineering
 - Drug delivery
- SynBio for exploiting and designing proteins
 - Protein alteration & post-translational modification (PTM)
 - Novel screening strategies
 - Protein production
- Bottom up approaches – cell building / genome assembly / building synthetic life
- Bio-manufacturing
 - Biocatalysis and biotransformation innovation
 - Function and use of enzymes as biocatalysts
 - Enzyme engineering
- Panel – Opportunities, challenge, & future applications of SynBio in healthcare

Plant Synthetic Biology

- Potential of Synthetic Biology in plant research
- Genome and pathway design / engineering
- Natural product biosynthesis
- Genome Engineering / editing – CRISPR / TALENs etc
 - Enriching plants through synthetic biology
 - Programmable behaviour
 - Metabolic engineering
- Improving DNA assembly methods
- Applications at molecular, cell and plant levels
- Plant research case studies
 - Trait design / improvement
 - Nitrogen efficiency
 - Efficient water use
 - Conservation
 - Biosensors
 - Biofuel
- Plant research for biofuels / bioproducts and pharmaceuticals
- Panel - Potential of Synthetic Biology in plant research

Investment, Funding and Bioethics

- Funding opportunities for Synthetic Biology
- VC investment
- Social and BioEthics
- Small company showcase
- Panel Discussion – Venture Capitalism, Biotechnology Start-ups and Partnering Opportunities



Synthetic Biology (Healthcare) - Confirmed Speakers 2014

- Paul Freemont, co-founder and co-director of the EPSRC Centre for Synthetic Biology and Innovation, Imperial College, UK
- Jean Peccoud, Associate Professor, Synthetic Biology Group, Virginia Bioinformatics Institute, USA
- Jutta Heim, Senior Scientific Advisor, Evolva, Switzerland
- Jonathan Lewis, CEO & Director, ZioPharm, USA
- Yaakov (Kobi) Benenson, Professor, Synthetic Biology Workgroup, ETH Zurich, Switzerland
- Dek Woolfson, Professor of Chemistry & Biochemistry, Director, BrisSynBio, a BBSRC/EPSRC-funded Synthetic Biology Research Centre, School of Chemistry, University of Bristol, UK
- Alfonso Jaramillo, Professor of Synthetic Biology, School of Life Sciences, University of Warwick, UK
- Pier Luigi Luisi, Director Synthetic Biology Lab, Department of Biology, Roma Tre University, Italy
- Barbara Di Ventura, Group Leader Synthetic Biology, Heidelberg University, Germany
- François Kepes, Research Director, Institute of Systems and Synthetic Biology, Genopole, CNRS, France
- Richard Kitney, co-founder and co-director of the EPSRC Centre for Synthetic Biology and Innovation, Imperial College and Professor of Biomedical Systems Engineering in the Department of Bioengineering, Senior Dean and Director of the Graduate School of Engineering and Physical Science, Imperial College London, UK
- Claire Marris, Senior Research Fellow, Centre for Synthetic Biology and Innovation, Kings College London, UK
- Didier Mazel, Director Genetics and Genomics, Institute Pasteur, France
- Patrick Yizhi Cai, Chancellor's Fellow and Group Leader, School of Biological Sciences, University of Edinburgh, UK

Synthetic Biology (Healthcare) - Reserved Speakers 2014

- Timothy Lu, Associate Professor, Synthetic Biology Group, Research Laboratory of Electronics, Dept. of Electrical Engineering and Computer Science, Dept. of Biological Engineering, MIT Synthetic Biology Center, USA
- Oscar Kuipers, Professor of Molecular Genetics of Prokaryotes, University of Groningen, The Netherlands

Synthetic Biology (Plant) - Confirmed Speakers 2014

- Birger Lindberg Møller, Director, Centre for Synthetic Biology, Department of Plant and Environmental Sciences, University of Copenhagen, Denmark
- Anne Osbourn, Director, Norwich Research Park Industrial Biotechnology and Bioenergy Alliance, John Innes Centre, UK
- Nicola Patron, Head Synthetic Biology, The Sainsbury Laboratory, UK
- Johnathan Napier, Professor, Rothamsted Research, UK
- Neal Stewart, Professor of Plant Sciences, Ivan Racheff Chair of Excellence in Plant Molecular Genetics, & Co-Director of the Tennessee Plant Research Center, USA
- Joshua Yuan, Associate Professor and Director, Texas A&M Agrilife Synthetic and Systems Biology Innovation Hub, Texas A&M University, USA
- Christian Rogers, Scientific Programme Manager, Engineering Nitrogen Symbiosis for Africa (ENSA), John Innes Centre, UK
- Matias Zurbruggen, Group Leader/ Assistant Professor, University of Freiburg, Germany
- Vincent Martin, Canada Research Chair in Microbial Genomics and Engineering, Professor, Department of Biology, Co-Director, Centre for Applied Synthetic Biology, Concordia University, Canada
- Stuart John Dunbar, Head Mode of Biological Action Group, Syngenta, UK
- Dominique Loque, Director of Cell Wall Engineering, and Staff Scientist, Lawrence Berkeley National Laboratory, USA
- Siobhan Brady, Assistant Professor, Department of Plant Biology and Genome Center, UC Davis, USA
- Jules Beekwilder, Wageningen University, The Netherlands
- James Locke, Research Group Leader, Sainsbury Laboratory, University of Cambridge, UK
- Rupert Fray, Associate Professor, Plant Molecular Biology, University of Nottingham, UK
- Brian King, Post Doc, Department of Plant and Environmental Sciences, University of Copenhagen, Denmark
- Greta Nölke, Group Head, Metabolic Engineering, Department Plant Biotechnology, Fraunhofer Institute for Molecular Biology and Applied Ecology, Germany
- Morten Nørholm, Senior Scientist and Academic-Entrepreneurial Research Group Leader, Novo Nordisk Foundation Center for Biosustainability, Denmark
- Robert Edwards, Professor and Head of the School of Agriculture, Food and Rural Development (AFRD), Newcastle University, UK

Meeting Sponsors 2014



Synthetic Biology Congress

Day 1 – Monday October 20, 2014, London, UK

08.00-08.50	Registration & Coffee	
08.50-09.00	Global Engage Welcome Address Stream Chair's Opening Remarks	
09.00-09.35	Keynote Address: Title to be Confirmed CONFIRMED: Paul Freemont, co-founder and co-director of the EPSRC Centre for Synthetic Biology and Innovation, Imperial College, UK	
09.35-10.05	Solution Provider Presentation For sponsorship opportunities please contact Steve Hambrook at steve@globalengage.co.uk	
	Track 1 - Synthetic Biology in Healthcare	Track 2 - Plant Synthetic Biology
10.05-10.10	Stream Chair	Stream Chair
10.10-10.35	Synthetic Biology for Cancer Research CONFIRMED: Yaakov (Kobi) Benenson, Professor, Synthetic Biology Workgroup, ETH Zurich, Switzerland	Making New Molecules CONFIRMED: Anne Osbourn, Director, Norwich Research Park Industrial Biotechnology and Bioenergy Alliance, John Innes Centre, UK
10.35-11.35	Morning Refreshments Poster Presentation Sessions One to One Meetings	
11.35-12.00	Synthetic DNA Based Therapeutics in Human Cancer CONFIRMED: Jonathan Lewis, CEO & Director, ZioPharm, USA	Development of Novel Approaches for Cell Wall Bioengineering <ul style="list-style-type: none"> Development of synthetic biology tools to fine-tune gene expression in plants Rewiring secondary cell wall regulatory network. Lesson and learn in lignin engineering CONFIRMED: Dominique Loque, Director of Cell Wall Engineering, and Staff Scientist, Lawrence Berkeley National Laboratory, USA
12.00-12.25	Utility of Synthetic Biology in Discovering Novel Chemical Structures CONFIRMED: Jutta Heim, Senior Scientific Advisor, Evolva, Switzerland	Precision Engineering of Plant Genomes Using CRISPR/Cas The modification of existing biological systems is essential for synthetic biology in organisms in which bottom-up engineering is not yet possible. The CRISPR (clustered regularly interspaced short palindromic repeats)/Cas (CRISPR-associated) type II prokaryotic adaptive immune system is used by various bacteria and archaea to mediate defense against viruses and other foreign nucleic acid. We are using a re-engineered CRISPR/Cas system as a tool for targeted genome engineering in order to control transcription, to deliver proteins to specific genome locations and to make single and double-stranded DNA breaks in predetermined sequences to activate the non-homologous end joining (NHEJ) and homology-directed repair (HDR) mechanisms. CONFIRMED: Nicola Patron, Head of Synthetic Biology, The Sainsbury Laboratory, UK
12.25-12.50	Panel Discussion: Opportunities, Challenge, & Future Applications of Synbio in Healthcare <ul style="list-style-type: none"> Drug, Vaccine and Antibiotic Development Invitation to: Senior Representatives x4	Benchmarking and standardising DNA editing technologies CONFIRMED: Morten Nørholm, Senior Scientist and Academic-Entrepreneurial Research Group Leader, Novo Nordisk Foundation Center for Biosustainability, Denmark
12.50-13.20	Solution Provider Presentation For sponsorship opportunities please contact Steve Hambrook at steve@globalengage.co.uk	Solution Provider Presentation For sponsorship opportunities please contact Steve Hambrook at steve@globalengage.co.uk
13.20-14.20	Lunch	

14.20-14.45	Applications in Drug Development (Infectious Diseases) RESERVED: Timothy Lu, Associate Professor, Synthetic Biology Group, Research Laboratory of Electronics, Dept. of Electrical Engineering and Computer Science, Dept. of Biological Engineering, MIT Synthetic Biology Center, USA	Developing Tools for Synthetic Biology in Plant Roots <i>Agrobacterium rhizogenes</i> is able to transform plant genomes and induce the production of “hairy roots”. We describe the use of <i>A. rhizogenes</i> in tomato to rapidly assess gene expression and function and for plant synthetic biology. A root cell-type and tissue-specific promoter resource has been generated for domesticated and wild tomato (<i>Solanum lycopersicum</i> and <i>S. pennellii</i>) using these approaches. Imaging of tomato roots using <i>A. rhizogenes</i> coupled with laser scanning confocal microscopy is facilitated by the use of a TagRFP marker present in binary vectors. Finally, transcriptional reporters, translational reporters and CRISPR/Cas9 genome editing demonstrate that SHORT-ROOT and SCARECROW gene function is conserved between Arabidopsis and tomato. CONFIRMED: Siobhan Brady, Assistant Professor, Department of Plant Biology and Genome Center, UC Davis, USA
	Track 1 - Investment, Funding and Bioethics	Track 2 - Plant Synthetic Biology
14.45-15.10	Title to be Confirmed CONFIRMED: Claire Marris, Senior Research Fellow, Centre for Synthetic Biology and Innovation, Kings College London, UK	Synthetic Biology: From Understanding Signalling Processes to Tool Development CONFIRMED: Matias Zurbriggen, Group Leader/ Assistant Professor, University of Freiburg, Germany
15.10-15.35	Developing a Culture of Security in Synthetic Biology CONFIRMED: Jean Peccoud, Associate Professor, Synthetic Biology Group, Virginia Bioinformatics Institute, USA	Plant Transcriptomes as a Source of Parts for the Reconstitution of Synthetic Alkaloid Pathways in Yeast CONFIRMED: Vincent Martin, Canada Research Chair in Microbial Genomics and Engineering, Professor, Department of Biology, Co-Director, Centre for Applied Synthetic Biology, Concordia University, Canada
15.35-16.05	Panel Discussion – Venture Capitalism, Biotechnology Start-ups and Partnering Opportunities <ul style="list-style-type: none"> VCs vs. High net worth individuals vs. crowd funding vs. other creative funding options Where are the business opportunities in Synthetic Biology research? Appetite for partnering and contractual expectations Sources of IP and technology Invitation to: Senior Representatives x4	Synthetic Biology Approaches to Engineering the Nitrogen Symbiosis on Cereals Engineering Nitrogen Symbiosis for Africa (ENSA) is a Bill & Melinda Gates Foundation sponsored project to test the feasibility of developing cereal crops capable of fixing nitrogen, as an environmentally-sustainable approach for farmers in sub-Saharan Africa to increase maize yields. It will initiate the first steps towards the transfer of biological nitrogen fixation to cereals, through engineering nodulation signalling in maize and <i>Setaria viridis</i> , an emerging model system for the engineering of Panicoid grasses. The work builds on the knowledge that cereals already possess the symbiosis signalling pathway and readily establish the mycorrhizal symbiosis. The ENSA project uses the tools of synthetic biology combined with the gain-of-function mutations in symbiosis signalling genes to allow the isolated study of component parts of the nodulation signalling pathway. CONFIRMED: Christian Rogers, Scientific Programme Manager, Engineering Nitrogen Symbiosis for Africa (ENSA), John Innes Centre, UK
16.05-16.50	Afternoon Refreshments & Poster Presentation Sessions One to One Meetings	
16.50-17.15	Title to be Confirmed Invitation to:	Case Study: Metabolic Engineering of the Omega-3 LC-PUFA Trait Into Plants CONFIRMED: Johnathan Napier, Professor, Rothamsted Research, UK
17.15-17.45	Investment & Funding Presentation Open to VC Companies and Investors For sponsorship opportunities please contact Steve Hambrook at steve@globalengage.co.uk	Synthetic Design to Enhance Photosynthetic Terpene Production CONFIRMED: Joshua Yuan, Associate Professor and Director, Texas A&M Agrilife Synthetic and Systems Biology Innovation Hub, Texas A&M University, USA
17.45-18.00	Small Company Showcase For sponsorship opportunities please contact Steve Hambrook at steve@globalengage.co.uk	Small Company Showcase For sponsorship opportunities please contact Steve Hambrook at steve@globalengage.co.uk

Day 1 – Monday October 20, 2014, London, UK

18.00-18.15	Small Company Showcase For sponsorship opportunities please contact Steve Hambrook at steve@globalengage.co.uk	Small Company Showcase For sponsorship opportunities please contact Steve Hambrook at steve@globalengage.co.uk
18.15-18.30	Small Company Showcase For sponsorship opportunities please contact Steve Hambrook at steve@globalengage.co.uk	Small Company Showcase For sponsorship opportunities please contact Steve Hambrook at steve@globalengage.co.uk
18.30	Chairman's Closing Remarks and End of Day 1	
18.30-19.30	Drinks Reception	

Synthetic Biology Congress

Day 2 – Tuesday October 21st 2014, London, UK

	Stream Chair Welcome Address -	
08.40-09.10	Keynote Address: Development of Genetic Languages for Specific Biotechnology Domains or Genetic Parts: Learning From 40 Years of Legacy Vectors CONFIRMED: Jean Peccoud, Associate Professor, Synthetic Biology Group, Virginia Bioinformatics Institute, USA	
09.10-09.40	Solution Provider Presentation For sponsorship opportunities please contact Steve Hambrook at steve@globalengage.co.uk	
	Track 1 - Synthetic Biology in Healthcare	Track 2 - Plant Synthetic Biology
09.40-09.45	Stream Chair	Stream Chair
09.45-10.10	Title to be Confirmed CONFIRMED: Richard Kitney, co-founder and co-director of the EPSRC Centre for Synthetic Biology and Innovation, Imperial College and Professor of Biomedical Systems Engineering in the Department of Bioengineering, Senior Dean and Director of the Graduate School of Engineering and Physical Science, Imperial College London, UK	Plant Power: The Ultimate Way to Go Green CONFIRMED: Birger Lindberg Møller, Director, Centre for Synthetic Biology, Department of Plant and Environmental Sciences, University of Copenhagen, Denmark
10.10-11.00	Morning Refreshments Poster Presentation Sessions	
11.00-11.30	Solution Provider Presentation For sponsorship opportunities please contact Steve Hambrook at steve@globalengage.co.uk	Solution Provider Presentation For sponsorship opportunities please contact Steve Hambrook at steve@globalengage.co.uk
11.30-11.55	Experimental work on minimal cell and/or never born proteins; / Epistemology of synthetic biology CONFIRMED: Pier Luigi Luisi, Director Synthetic Biology Lab, Department of Biology, Roma Tre University, Italy	Synthetic Promoters and Transcription Factors for Precise Gene Expression in Plants <ul style="list-style-type: none"> Synthetic promoters can be designed for precise gene expression Synthetic transcription factors based on TAL effectors can enhance gene expression These tools, along with other advanced tools in plant biotechnology can provide a level of precision heretofore not attained in transgene expression. CONFIRMED: Neal Stewart, Professor of Plant Sciences, Ivan Racheff Chair of Excellence in Plant Molecular Genetics, & Co-Director of the Tennessee Plant Research Center, USA

11.55-12.20	Peptide and Protein Design in Synthetic Biology Prof Woolfson will describe the process of rational peptide and protein designs, and it's potential and possible applications in synthetic biology. He will demonstrate how this has led to new insight into protein structure, and, of more relevance to synthetic biology, how completely de novo and useful structures can be constructed. He will illustrate this will a project aimed at making protein-based assemblies with applications in vaccine development and enzyme encapsulation. CONFIRMED: Dek Woolfson, Professor of Chemistry & Biochemistry, Director, BrisSynBio, a BBSRC/EPSRC-funded Synthetic Biology Research Centre, School of Chemistry, University of Bristol, UK	Panel Discussion: Panel Discussion: Opportunities, Challenge & Future Applications of SynBio in Plant Research Invitation to: Senior Representatives x4
12.20-12.50	Solution Provider Presentation For sponsorship opportunities please contact Steve Hambrook at steve@globalengage.co.uk	Solution Provider Presentation For sponsorship opportunities please contact Steve Hambrook at steve@globalengage.co.uk
12.50-13.50	Lunch	
13.50-14.15	Synthetic Biology to Produce Hypermodified Antimicrobial Peptides for Pharmaceutical Use RESERVED: Oscar Kuipers, Professor of Molecular Genetics of Prokaryotes, University of Groningen, The Netherlands	Syngenta's Strategy and Activities in Plant Synthetic Biology CONFIRMED: Stuart John Dunbar, Head Mode of Biological Action Group, Syngenta, UK
14.15-14.40	Bacterial Engineering CONFIRMED: Didier Mazel, Director Genetics and Genomics, Institute Pasteur, France	Engineering Plant Secondary Metabolism with Polyprotein Technology CONFIRMED: Robert Edwards, Professor and Head of the School of Agriculture, Food and Rural Development (AFRD), Newcastle University, UK
14.40-15.05	Regulating with RNA in Bacteria We propose a forward engineering approach to dissect the roles of different forms of RNA could play in genome function. Current computational tools for secondary prediction allows us the development of an algorithm to design novel RNA regulatory circuits based on the stability of RNA molecules, their interactions and strand displacement reactions. We take advantage of available RNA domains with known function and structure (such as ribosome-biding sites, transcription terminators, or ribozymes) to use them as interchangeable and switchable modules in our circuits. We exemplify the methodology by engineering novel behaviours for RNA molecules that only where believed to occur in proteins, such as cooperative regulation or a two-component signal transduction system. We also show the engineering of the first known RNA-RNA cascade in living cells by imposing a hierarchical activation of functional RNA modules. We characterize our circuits in E. coli by external forcing using custom microfluidics chips and measuring the responses at the single-cell level. CONFIRMED: Alfonso Jaramillo, Professor of Synthetic Biology, School of Life Sciences, University of Warwick , UK	Improvement of Resource-Use Efficiency and Productivity in Crop Plants Global population growth requires higher agricultural productivity to meet food demand. Although boosting productivity is a challenge in agricultural research, one straightforward approach is to enhance the efficiency of photosynthesis and thus the amount of fixed carbon. In C3 plants, photorespiration reduces the photosynthetic efficiency. Thus, reducing photorespiration should increase carbon-use efficiency, promote growth and increase the yield. We have developed a novel method to enhance photosynthetic carbon fixation in potato, based on expression of a polyprotein comprising all three subunits of bacterial glycolate dehydrogenase. The recombinant DEFp was active <i>in-planta</i> , leading to significant improvement of tuber yield in greenhouse as well as controlled field experiment. This approach has the potential to increase biomass and yield of diverse crops. CONFIRMED: Greta Nölke, Group Head, Metabolic Engineering, Department Plant Biotechnology, Fraunhofer Institute for Molecular Biology and Applied Ecology, Germany
15.05-15.35	Afternoon Refreshments Poster Presentation Sessions	
15.35-16.00	Advanced Concepts II Drug Bioproduction From Microorganisms Co-regulated genes tend to locate at periodical or proximal positions along the chromosome. This specific genome layout is interpreted as a means to cluster co-regulated genes in space through the appropriate folding and conformation of chromosomes. To improve our capacity in designing genomes for bioproduction, an important issue is whether gene position matters for its expression level in a rationalizable way. Such appears to be the case, based on genome profiling of responsiveness to a given transcription factor. This periodical genome layout is found, not only in eubacteria, but also in eukaryotic yeast, meaning that the workhorses of drug bioproduction share this feature. CONFIRMED: François Kepes, Research Director, institute of Systems and Synthetic Biology, Genopole, CNRS, France	Title to be Confirmed CONFIRMED: James Locke, Research Group Leader, Sainsbury Laboratory, University of Cambridge, UK

16.00-16.25	<p>Synthetic genomics: from Parts to Genomes</p> <p>The Synthetic Yeast genome project, or Sc2.0 (www.syntheticyeast.org), aims to design, construct, and replace the native 12Mb genome of <i>Saccharomyces cerevisiae</i> with a fully synthetic version. Sc2.0 chromosomes encode a myriad of designer changes. First, to improve genomic stability, destabilizing elements such as transposons and tRNA genes are removed from the synthetic genome. Second, synonymously recoded sequences called PCRtags permit encryption and tracking of the synthetic DNA. Finally, to enable downstream genetic flexibility, Sc2.0 encodes an inducible evolution system called SCRaMbLE (Synthetic Chromosome Rearrangement and Modification by LoxP-mediated Evolution) that can generate combinatorial genetic diversity on command. To date, ~10% of the genome has been synthesized and we have powered a semi-synthetic yeast entirely dependent on multiple synthetic chromosome arms designed to our specifications. Software and experimental infrastructure developed to facilitate Sc2.0 genome design and construction are applicable to new projects ranging from single gene/pathway design to synthesizing artificial chromosomes. Sc2.0 international partners include Imperial College London, Edinburgh University (UK); Tsinghua University, Tianjin University, GenScript, BGI (China); Pondicherry University, IGIB (India). Sc2.0 has the potential to revolutionize the future of genome structure-function analysis.</p> <p>CONFIRMED: Patrick Yizhi Cai, Chancellor's Fellow and Group Leader, School of Biological Sciences, University of Edinburgh, UK</p>	<p>Redirection of the Carotenoid Pathway for the Production of Taxanes in Tomato Fruit</p> <p>CONFIRMED: Rupert Fray, Associate Professor, Plant Molecular Biology, University of Nottingham, UK</p>
16.25-16.50	<p>LINuS: A Light-Inducible Nuclear Localization Signal for Precise Spatiotemporal Control of Protein Dynamics in Living Cells</p> <p>an optogenetic tool (LINuS) for regulating protein nuclear import with blue light is presented -LINuS is a single, small protein tag, genetically encoded, that does not need externally supplied chromophores and can be tuned by mutations or by selecting different light regimes -LINuS can be fused to any protein of interest, provided the endogenous regulation of import/export can be knocked out (via mutations)</p> <p>We showcase the applicability of LINuS for cell biology by controlling gene expression and mitotic entry with light</p> <p>CONFIRMED: Barbara Di Ventura, Group Leader Synthetic Biology, Heidelberg University, Germany</p>	<p>Production of Citrus Compounds by Synthetic Biology</p> <ul style="list-style-type: none">Plants produce many high value compounds. For example, Citrus fruits such as lemon, orange and grapefruit produce a number of monoterpenes, sesquiterpenes and flavonoids that have an industrial application. Traditionally these are produced by distillation and extraction from Citrus fruit waste products.By introducing biosynthetic pathways from plants into microbes, we create alternative sources of plant high value compounds. The identification of the pathways will be highlighted in this presentation.By engineering the metabolic chassis of the microbe, we truly integrate the plant pathway into the microbial host, and tailor microbial production systems for production of plant compounds. Examples for microbial production of Citrus compounds will be presented. <p>CONFIRMED: Jules Beekwilder, Senior Scientist, Plant Research International, Wageningen University, The Netherlands</p>
16.50-17.15	<p>Precise Genome Editing in the Moss, <i>Physcomitrella Patens</i>, for Production of High-Value Plant Natural Products</p> <p>CONFIRMED: Brian King, Post Doc, Department of Plant and Environmental Sciences, University of Copenhagen, Denmark</p>	
	Chairman's Closing Remarks and Conference Close	