***Preliminary Program***

***March 3 , 2020***

**Microbial Engineering II**

**September 13-18, 2020**

**Grand Hotel Santa Eulalia**

**Albufeira-Portugal**

**Conference Chairs**

**Eli Keshavarz-Moore**

 University College London, United Kingdom

**Barry Buckland**

BiologicB, USA

**Sunday, September 13, 2020**

16:00 – 18:00 Conference Check-in

17:45 – 18:00 ***Welcoming Remarks***

 Barry Buckland and Eli Keshavarz-Moore, Conference Chairs

18:00 – 18:50 Introduction to Plenary Lectures

**Plenary Lectures**

**Refactoring yeast central metabolism to reverse growth phenotypes and product formation**

Diethard Mattanovich, BOKU, Austria

18:50 – 19:40 **Synthetic biology for synthetic chemistry**

 Jay Keasling, University of California, Berkeley, USA

19:40 – 19:45 Concluding Remarks

19:45 – 20:30 Reception

20:30 – 22:30 Dinner

**Monday, September 14, 2020**

07:30 – 08:30 Breakfast Buffet

08:30 – **Session I: Natural Products and Secondary Metabolites**

 Session Chairs: Tiffany Rau (USA)

 Joel Cherry (Digestiva, USA)

 Session Introduction

 **Clean manufacturing: Powered by biology**

Sunil Chandran (Amyris, USA)

**Production of novel carotenoids using *Deinococcus* as the production organism**

Emmanuel Petiot (Deinove, France)

 **Digestiva: Solving Protein Digestion**

Joel Cherry (Digestiva, USA)

**Microbial Engineering of new Streptomyces sp. From Extreme Environments for Novel Antibiotics, Anticancer and Antifungal Drugs**

Juan Asenjo (University of Chile)

 **Using microbial metabolic engineering to make Human Milk**

 **Oligosaccharides (HMO) available to the world**

 Niels Banke Glycom, USA

 Introduction to Plenary Lecture

**Plenary Lecture**

 **Microbial biosynthesis of complex plant-derived alkaloids**

Christina Smolke, (Antheia, USA)

 Lunch Buffet

14:00– **Session II: Primary Metabolites**

 Session Chairs: Arindam Bose (AbiologicsB, LLC, USA)

 Brigitte Gasser (BOKU, Austria)

 Session Introduction

**Valorization of renewables into bio-based chemicals using metabolically engineered microbes**

 Christoph Wittmann (Saarland University, Germany)

**How the central metabolism of Clostridium acetobutylicum can be engineered by manipulating electron fluxes**

Philippe Soucaille, (INSA (France) & University of Nottingham, (United Kingdom); Metabolic Explorer (France))

**Pollution to products: Recycling of “above ground” carbon by gas fermentation**

 Michael Koepke Lanzatech Engineering

 **Corynebacterium glutamicum for conversion of simple sugar into**

 **adipic acid by condensation of TCA cycle intermediates**

 Jaeho Swin, Chalmers University, Sweden

 Introduction to Plenary Lecture

**Plenary Lecture**

**Continuous culture reborn or revived?**

Charles Cooney, MIT, USA

 Dinner

20:30 – 23:00 **Poster Session I** (with social hour and dessert)

 Session Chairs: Brenda Parker (University College London, United Kingdom)

 Laura Stoffels (Syngenta, United Kingdom)

**Tuesday, September 15, 2020**

07:30 – 08:30 Breakfast Buffet

08:30 – **Session III: Therapeutic Proteins and Peptides**

 Session Chairs: Karen Polizzi (Imperial College London, United Kingdom))

Neil Dixon (University of Manchester, United Kingdom)

 Session Introduction

**Figuring out what yeast can secrete, and have your fill of it**

 Nico Callewaert (University of Gent, Belgium)

**Robust protein production and secretion in bacteria using type III secretion system**

Danielle Tullman-Ereck (Northwestern University, USA)

**Characterization of homologous industrial strains using continuous cultivation techniques to understand process performance variation in a platform fed-batch production process**

 Anthony Grippe (Merck, USA)

**Development of the filamentous fungus Myceliophthora thermophila C1 into a next-generation therapeutic protein production system**

 Ronen Tchelet (Dyadic International, Hungary)

 **Host engineering for product quality without sacrificing volumetric**

 **Productivity**

 Neil Dalvie, MIT

 **Optimization of E. coli SoluPro using synthetic biology to generate**

 **high-performance microbes for scalable production of protein**

 **therapeutics**

 Johan Kers AbSci

 **Development of new tools for enhanced IgG secretion in**

 **glycoengineered Pichia pastoris strains**

 Chiara Lonigro, Gent University

 **Beyond CHO: the microorganisms awaken**

 Jeremy Peyrol, Merck

G**rowth-decoupled recombinant protein production in Escherichia coli**

 Patrick Stargardt, Biotech NGmbH Vienna

 Lunch Buffet

14:00 – **Session IV: Biopolymers and Biofuels**

 Session Chairs: Behnam Taidi (CentraleSupélec, France)

 David Stuckey (Imperial College, United Kingdom)

 Session Introduction

**In-situ capture of CO2 from heterotrophic processes using mixed cultures**

Behnam Taidi (CentraleSupélec, France)

**Design-build-test and Learn for *in-vivo* and cell-free production of biomaterials**

 Jean-Loup Faulon (University of Paris Saclay, France; University of

Manchester, United Kingdom)

**Controlling the size and linkage type of biopolymers derived from sucrose**

Magali Remaud-Siméon (Université de Toulouse, CNRS, INRA, INSA, Toulouse, France)

 **Biosensors &amp; Biocatalysis for Biorefinery &amp; Bioremediation**

 Neil Dixon (short), University of Manchester, UK

 **A biotechnological strategy for the valorization of cellulose through**

 **Levoglucosenone**

 Louis Mouterde Agro Paris Tech

 **Integrated synthesis of high-value aromatic alcohols from**

 **Lignocellulosic Biomass**

 Robson Tramontina (short) University of Campinas

 **Building a stable bacterial chassis for sustainable, economical**

 **chemicals production**

 James Allen (short) UCL

 **Feruloyl-coa synthetase and feruloyl-coa hydratase/lyase as**

 **biocatalysts for conversion of lignin into flavor and high-value**

 **molecules**

 Thiago Goncalves (short) UNISO, UNICAMP

Introduction of Plenary Lecture

 **Plenary Lecture**

**Integrated biomanufacturing with micro-modular systems for biopharmaceuticals and vaccines**

Chris Love, MIT, USA

Dinner

20:30 – 23:00 **Poster Session II**

Session Chairs: Brenda Parker (UCL, United Kingdom)

 Laura Stoffels (Syngenta, United Kingdom)

**Wednesday, September 16, 2020**

07:30 – 08:30 Breakfast Buffet

08:30 – **Session V: Microbiome**

Session Chairs: John Aunins (Seres Therapeutics, USA)

 Kristala Prather (MIT, USA)

Session Introduction

**Metabolic modeling for the microbiome**

Costas Maranas (Penn State University, USA)

**Synthetic biology and processing for engineering the microbiome**

Scott Plevy ([Synlogic Therapeutics](https://eur01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.synlogictx.com%2Four-people%2Fleadership%2F&data=02%7C01%7C%7C189efc8c1f9442a72c9008d7052ee8b0%7C1faf88fea9984c5b93c9210a11d9a5c2%7C0%7C0%7C636983571343086446&sdata=XuS7o%2FDHYzxDNZOjgF%2FclYTvQj6swatF9Agc65wwktA%3D&reserved=0), USA)

**Novel technologies are key for the development of live bacterial therapeutics**

 Christophe Lacroix (ETH Zurich, Switzerland)

**Engineering microbes and biology for communicating with electronics**

William Bentley (University of Maryland, USA)

 (Invited speaker from Indigo ; pending) Number 125

 **Treating microbial systems engineering as an inverse**

 **function problem to enhance production of biomolecules**

 Ranjan Srivastava University of Connecticut

 Lunch Buffet

Afternoon – free for networking, discussion, leisure

16:30 – **Session VI: Cell free protein synthesis**

 Session chairs: Daniel Bracewell (University College London, United Kingdom)

 Jim Swartz (Stanford University, USA)

Session Introduction

**Cell-free systems for portable, on-demand biomanufacturing, molecular sensing and education**

Mike Jewett (Northwestern University, USA)

**New kid on the block: Industrialization of cell-free synthesis for biotherapeutics development**

Bob Kiss (Sutro Biopharma, USA)

**Rapid Iterative Design of Tandem-Core Virus-like Particles Using**

**Escherichia coli- based Cell-Free Protein Synthesis**

 Nicole Colant, University College London, UK

 Introduction of Plenary Lecture

**Plenary Lecture**

**Dynamic metabolic engineering**

 Kristala Prather (MIT, USA)

Dinner

**Thursday, ASepember 17, 2020**

07:30 – 08:30 Breakfast Buffet

08:30 – Concurrent Workshops

**Workshop1**

Chair: Eli Keshavarz-Moore

Session Introduction

What is the vision of the future of biomanufacturing?

 Contributors:

 Jonathan Brown (Pall Europe)

 Martin Smyth (Sartorius Stedim)

 Parrish Galliher (GE)

 Aaron Pilling KBI Biopharm (USA)

08:30 – **Workshop 2**

Chair: Gary Lye (University College London, United Kingdom)

 Session Introduction

 **Biorefinery**

Introduction of Plenary Lecture – EKM or BB

 **Plenary Lecture**

**Vaccines:  Unprecedented opportunities for impact**

Rahul Singvi (Flagship Pioneering, USA)

12:30- 14:00 Lunch Buffet

14:00- **Session VI: Vaccines**

Session Chairs: Stefanie Frank (University College London, United Kingdom)

Barry Buckland (BiologicB, USA)

Session Introduction

**Developing modular, well-characterized VLP vaccines**

Jim Swartz (Stanford University, USA)

**Integrated product design and development for manufacturable protein subunit vaccines**

Kerry Love (MIT, USA)

**De-risking technology transfers for vaccine candidates in highly complex lab/pilot/manufacturing landscapes**

Tracie Spangler (Merck, USA)

**Development of affordable recombinant glycoconjugate vaccines in bacterial cells**

Brendan Wren (London School of Hygiene & Tropical Medicine, United

Kingdom)

 Effect of over expressing protective antigen on global gene transcription in

 Bacillus anthracis BH500

 Joseph Shiloah, National Institutes of Heatlh, USA

 **Microbial platform for dengue vaccine production for low and medium**

 **income countries (LMICs)**

Salome De Magalhaes UCL

 **Re-purposing protein compartments as vaccines, drug delivery**

 **systems and nanobioreactors**

 Stefanie Frank, University College London, UK

Introduction of Concluding Plenary Lecture

**Plenary Lecture**

**Engineering *Pichia pastoris* to make the impossible burger possible**

Smita Shankar (Impossible Foods, USA)

19:45 – 23:00 Reception, Conference Banquet and Poster Prizes

**Friday, September 18, 2020**

07:30 – 10:00 Breakfast Buffet followed by departures