

# SYNTHETIC BIOLOGY FROM STANDARD BIOLOGICAL PARTS TO ARTIFICIAL LIFE

Thursday, September, 17<sup>th</sup>, 2015

CAIXAFORUM. AVGDA FRANCESC FERRER I GUÀRDIA, 6-8. BARCELONA

9:00 **Opening**

9:15 **SESSION 1: EXPANDING THE TOOLBOX**

Chair: **John McCarthy**, University of Warwick, Coventry, UK

9:15 **Naturally-Inspired Engineering of Biological Systems**

**Ahmad Khalil**, Boston University, USA

9:45 **Synthetic RNA Wires in E. coli**

**Alfonso Jaramillo**, University of Warwick, Coventry, UK

10:15 **Multisite Phosphorylation Networks as Tunable Circuit Elements for Synthetic Biology Applications**

**Mart Loog**, University of Tartu, Estonia

10:45 **Coffee Break**

11:15 **Synthetic Genomics: from Genetic Parts to Genomes**

**Yizhi Cai**, University of Edinburgh, UK

11:45 **How to Assemble Minimal Life Bottom Up?**

**Steen Rasmussen**, University of Southern Denmark, Denmark

12:15 **Engineering Synthetic Development: How Many Ways Can You Make a Stripe?**

**Mark Isalan**, Imperial College London, UK

12:45 **Open Debate**

13:15 **Lunch**

B-DEBATE IS AN INITIATIVE OF:



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**14:30 SESSION 2: EXPANDING THE HORIZON**

Chair: **Jaume Bertranpetit**, Universitat Pompeu Fabra, Barcelona, Spain

**14:30 Programming and Perturbing Cell Signaling Networks**

**Wendell Lim**, University of California San Francisco, USA

**15:00 Transposable Elements: Moving Genomic Islands Around**

**Marie-Anne Van Sluys**, University of Sao Paulo, Brazil

**15:30 A Solution to Conflicts in a Growing Biofilm**

**Munehiro Asally**, University of Warwick, Coventry, UK

**16:00 Coffee Break**

**16:30 Synthetic Transitions**

**Ricard Solé**, Universitat Pompeu Fabra, Barcelona, Spain

**17:00 Cyborg-ization of Soil Bacteria for Smart Degradation of Environmental Pollutants**

**Victor de Lorenzo**, Centro Nacional de Biotecnología, Madrid, Spain

**17:30 Open Debate**

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**9:15 SESSION 3: QUANTITATIVE APPROACHES**

Chair: **Marta Ibañes**, University of Barcelona, Barcelona, Spain

**9:15 Towards a Multiscale Modeling Toolbox for Synthetic Virology**

**Kashif Sadiq**, Universitat Pompeu Fabra, Barcelona, Spain

**9:45 Using Synthetic Biology to Analyse Gene Expression Noise**

**John McCarthy**, University of Warwick, Coventry, UK

**10:15 The Wrong Use of Hill Functions for Synthetic Biology Designs: Lessons from Enzymology**

**Carlos Rodriguez-Caso**, Universitat Pompeu Fabra, Barcelona, Spain

**10:45 Coffee Break**

**11:15 Cybergenetics: Synthetic Circuits and Systems for the Precise Control of Living Cells**

**Mustafa Khammash**, ETH Zürich, Switzerland

**11:45 Design of Bimolecular Feedback Control Systems**

**Declan Bates**, University of Warwick, Coventry, UK

**12:15 Design, Construction & Function of Genomically Recoded Organisms**

**Farren Isaacs**, Yale University, New Haven, USA

**12:45 Open Debate**

**13:15 Lunch**

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**14:30 SESSION 4: FROM THE BENCH TO SOCIETY**

Chairs: **Christopher Coenen**, Karlsruhe Institute of Technology, Karlsruhe, Germany  
and **Lauren Swiney**, University of Warwick, Coventry, UK

**14:30 From Standard Biological Parts To Artificial Life? A Sociological Perspective**

**Jane Calvert**, University of Edinburgh, UK

**15:00 The Glycomic Code: How the Complex Metabolic Network of Polysaccharides in Plant Cells Generates a Code that Supports Life on Earth**

**Marcos Silveira Buckeridge**, University of Sao Paulo, Brazil

**15:30 Do You Believe in Standards?**

**Manuel Porcar**, University of Valencia, Spain

**16:00 Coffee Break**

**16:30 Lessons from History: Promises and Realities of the Artificial Synthesis of Life**

**Juli Peretó**, University of Valencia, Spain

**17:00 Synthetic Biology – of Fundamental Concepts and First Applications**

**Sven Panke**, ETH Zürich, Switzerland

**17:30 Open Debate**

**18:00 Closing Remarks**

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