



Department of Experimental and Health Sciences

SYNTHETIC BIOLOGY FROM STANDARD BIOLOGICAL PARTS TO ARTIFICIAL LIFE

Thursday, September, 17th, 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:

biocat "la Caixa" Foundation











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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

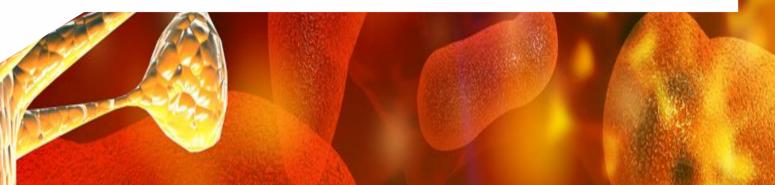
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- 14:30 SESSION 4: FROM THE BENCH TO SOCIETY Chairs: Christopher Coenen, Karlsruhe Institute of Technology, Karlsruhe, Germany and Lauren Swiney, University of Warwick, Coventry, UK
- 14:30 From Standard Biological Parts To Artificial Life? A Sociological 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









