



**RESEARCH CONFERENCES**

ESF-UB Conference in Biomedicine

# Systems Biology

Hotel Eden Roc, Sant Feliu de Guixols (Costa Brava) • Spain

12-17 April 2008

Chair: **Luis Serrano**, Centre for Genomic Regulation, Barcelona, ES

Co-Chair: **Roel van Driel**, University of Amsterdam, NL

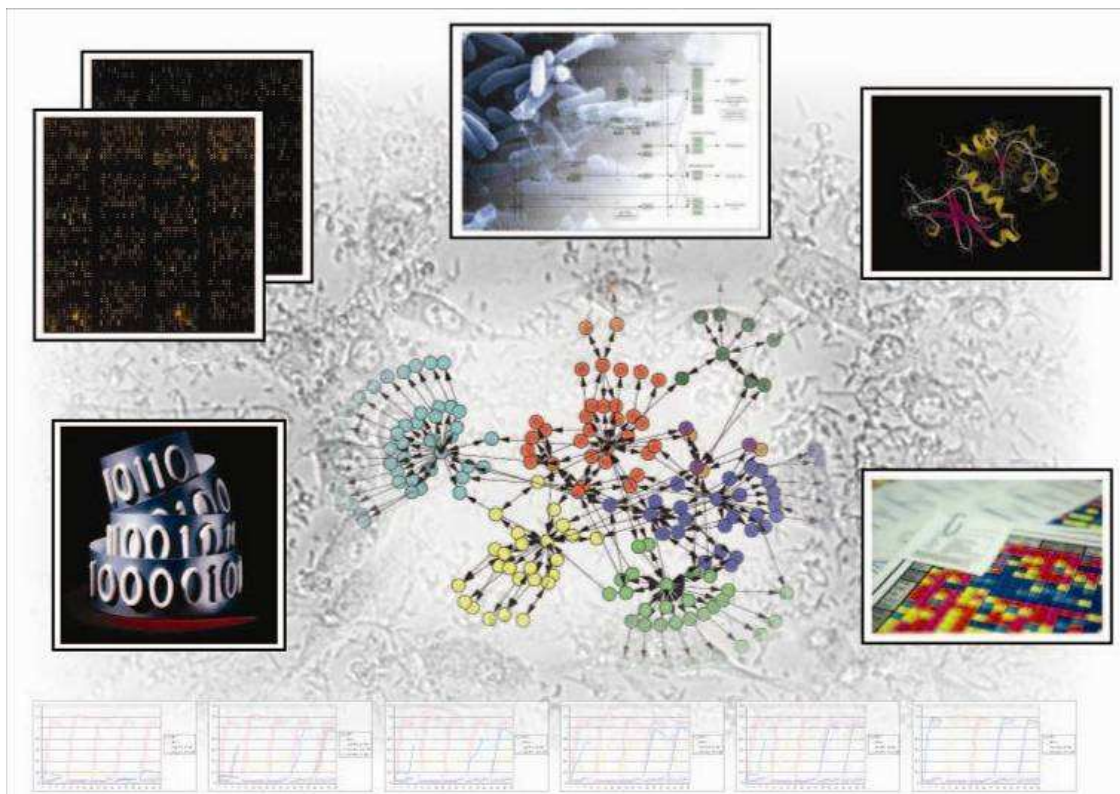
Vice-Chair: **Rudolf Aebersold**, Swiss Federal Institute of Technology, CH

[www.esf.org/conferences/08234](http://www.esf.org/conferences/08234)

With support from



Generalitat de Catalunya  
Departament d'Innovació,  
Universitats i Empresa  
**Comissionat per a Universitats  
i Recerca**



# Final Programme

---

## Saturday 12 April

---

Late afternoon / early evening	Registration at the ESF-RC desk
19.00	Welcome Drink
20.00	Dinner

## Sunday 13 April

---

08.45-09.15	Conference Opening - on behalf of the European Science Foundation <b>Agnès Gruart</b> Universidad Pablo de Olavide, Sevilla, ES
-------------	---

### Session 1: Synthetic Systems Biology

Chair: **Patrick Aloy**, Institute for Research in Biomedicine, Barcelona, ES

09.15-10.00	<b>Ron Weiss</b> Princeton University, US <i>Synthetic biology: from programming bacteria to programming stem cells</i>
10.00-10.45	<b>Patrick Aloy</b> Institute for Research in Biomedicine, Barcelona, ES <i>Protein interaction specificity: Using 3D structures to unveil compensatory effects in protein interaction networks</i>
10.45-11.15	Coffee break
11.15-11.30	<b>Juan Manuel Pedraza</b> Harvard University, Boston, US <i>The coarse-graining of biochemical fluctuations</i>
11.30-11.45	<b>Vitor Martins dos Santos</b> Helmholtz Center for Infection Research, Braunschweig, DE <i>Genome-wide Metabolic Comparison of the in-silico Phenotype-Genotype relationship of Pseudomonas putida and the pathogen Pseudomonas aeruginosa</i>

### Session 2: Biomolecular Networks

Chair: **Alfonso Valencia**, Spanish National Cancer Research Centre, Madrid, ES

11.45-12.30	<b>Alfonso Valencia</b> Spanish National Cancer Research Centre, Madrid, ES <i>Protein network coevolution</i>
12.30	Lunch
15.00-15.45	<b>Luis Serrano</b> Centre for Genomic Regulation, Barcelona, ES <i>Evolvability of bacterial transcription networks</i>
15.45-16.00	<b>Gianni Cesareni</b> Università Tor Vergata, Roma, IT <i>Protein interaction networks mediated by peptide recognition modules</i>
16.00-16.15	<b>Juan Poyatos</b> Spanish National Biotechnology Centre, Madrid, ES <i>The determinants of transcriptional network motifs assembly in Escherichia coli</i>

16.15-16.45 Coffee break  
16.45-19.00 Poster Session  
19.30 Dinner

## Monday 14 April

---

### Session 3: Systems Biology of Development

Chair: Patrick Lemaire, Developmental Biology Institute of Marseille, FR

09.00-09.45 **Tony Hyman**  
MPI of Molecular Cell Biology and Genetics, Dresden, DE  
*Systems Approach to Cell Division*

09.45-10.30 **Eric Davidson**  
California Institute of Technology, Pasadena, US  
*A gene regulatory network for embryonic development*

10.30-11.00 Coffee break

11.00-11.15 **James Sharpe**  
Centre for Genomic Regulation, Barcelona, ES  
*Towards a realistic 4D computer simulation of vertebrate limb development*

11.15-11.30 **Susana Ubeda-Tomas**  
Center for Plant Integrative Biology, Loughborough, UK  
*Modelling Multicellular Developmental Processes in Plants*

11.30-12.15 **Patrick Lemaire**  
Developmental Biology Institute of Marseille, FR  
*Of gene regulatory networks and cell shapes in the ascidian early embryo*

12.30 Lunch

### Session 4: Systems Biology and Disease

Chair: Lilia Alberghina, University of Milano-Bicocca, IT

15.00-15.45 **Hiroaki Kitano**  
Kitano Symbiotic Systems Project, JP  
*Robustness-based approach to systems drug design: toward long-tail drugs*

15.45-16.30 **Pierre De Meyts**  
Hagedorn Research Institute, Gentofte, DK  
*Connecting the dots in diabetes pathogenesis: the need for systems biology*

16.30-17.00 Coffee break

17.00-17.45 **Alexander Hoffmann**  
University of California, San Diego, La Jolla, US  
*A temporal code generates specificity in inflammatory signaling*

17.45-18.30 **Lilia Alberghina**  
University of Milano-Bicocca, IT  
*Cell cycle control*

18.30-19.30 Poster Session

19.45 Dinner

## Tuesday 15 April

---

### Session 5: Systems Biology and Drug Discovery

Chair: Erik Wanker, Max Delbrück Center for Molecular Medicine (MDC), Berlin, DE

09.00-09.45	<b>Lucas Pelkmans</b> Swiss Federal Institute of Technology (ETH), Zürich, CH <i>Using quantitative heterogeneity signatures of human cell populations in image-based systems cell biology</i>
09.45-10.30	<b>Marc Vidal</b> Centre for Cancer Systems Biology (CCSG), Dana-Farber Cancer Institute, Boston, US <i>Interactome Networks and Human Disease</i>
10.30-11.00	Coffee break
11.00-11.15	<b>Stéphanie Heux</b> Institute of Molecular Systems Biology, Zurich, CH <i>Tracking Drug Interactions with Yeast Metabolism by Metabolomics and Fluxomics</i>
11.15-12.00	<b>Eric Wanker</b> Max Delbrück Center for Molecular Medicine (MDC), Berlin, DE <i>From protein interaction networks to disease modifiers and signalling pathways</i>
12.00-12.30	<b>Business Meeting – Part 1</b> <i>Identification of the focus and topics of the next conference. Presentation of the candidate chairs</i>
12.30-12.45	Ballot vote to elect next chair
12.45	Lunch
Afternoon	Half-day excursion
19.00	Dinner
21.00-21.30	<b>Business Meeting – Part 2</b> <i>Results of the elections, selection of the organising committee, suggestions for the next conference</i>

## Wednesday 16 April

---

### Session 6: Networks at Work

Chair: Boris Kholodenko, Thomas Jefferson University, Philadelphia, US

09.00-09.45	<b>Boris Kholodenko</b> Thomas Jefferson University, Philadelphia, US <i>Cell-signalling dynamics in time and space</i>
09.45-10.30	<b>Ursula Klingmüller</b> German Cancer Research Center, Heidelberg, DE <i>Linking signaling pathway activation and cellular decisions</i>
10.30-11.00	Coffee break
11.00-11.45	<b>Matthias Gstaiger</b> Swiss Federal Institute of Technology (ETH), Zürich, CH <i>Network analysis via quantitative proteomics</i>
11.45-12.30	<b>Trey Ideker</b> University of California, San Diego, US <i>Pathway mapping by integration of physical and genetic interactions</i>
12.30	Lunch

## Session 7: Modelling of Complex Networks

Chair: Edda Klipp, Humboldt University, Berlin, DE

16.00-16.45	<b>Adam Arkin</b> University of California Berkeley, US <i>(De)Constructing Cellular Networks</i>
16.45-17.15	Coffee break
17.15-18.00	<b>Edda Klipp</b> Humboldt University, Berlin, DE <i>Modelling of Cellular Stress Response</i>
18.00-18.15	<b>Nils Bluthgen</b> University of Manchester, UK <i>Design Principles of Transcriptional Feedbacks in Eukaryotic Signalling Networks</i>
18.15-18.30	<b>Edda Gudrun Schulz</b> Humboldt Universität, Berlin, DE <i>Two positive feedback loops control effector function and memory induction in type 1 T-helper lymphocytes</i>
19.30	Get-together & Conference Dinner

### Thursday 17 April

---

## Session 8: The Future of Systems Biology

Chair: Stuart Kim, Stanford University Medical Center, US

09.00-09.30	<b>Thomas Bruhn</b> European Science Foundation, Strasbourg, FR <i>The role of ESF in shaping future Systems Biology research in Europe</i>
09.30-10.00	<b>Veronika Simons and Maike Heidelberger</b> Research Centre Juelich, DE <i>ERASysBio - A funding initiative to advance the European Research Area in their networking in the field of Systems</i>
10.00-10.30	Coffee break
10.30-11.15	<b>Denis Noble</b> University of Oxford, UK <i>Integrating levels of complexity: how far can we go and when?</i>
11.15-12.00	<b>Stuart Kim</b> Stanford University Medical Center, US <i>Genome-wide views of aging gene networks</i>
12.00	Lunch and Departure

### Abstracts, Posters & Short Oral Presentations

---

All abstracts submitted are accepted for poster presentation.  
Selected short talks are 10 minutes + 5 minutes discussion.