



## RESEARCH CONFERENCES

ESF-EMBO Symposium

# Bacterial Networks (BACNET/08)

Hotel Eden Roc, Sant Feliu de Guixols (Costa Brava) • Spain  
13-18 September 2008

Chair: **Mark Buttner** • John Innes Centre, Norwich, UK  
Vice-Chair: **Urs Jenal** • University of Basel, CH

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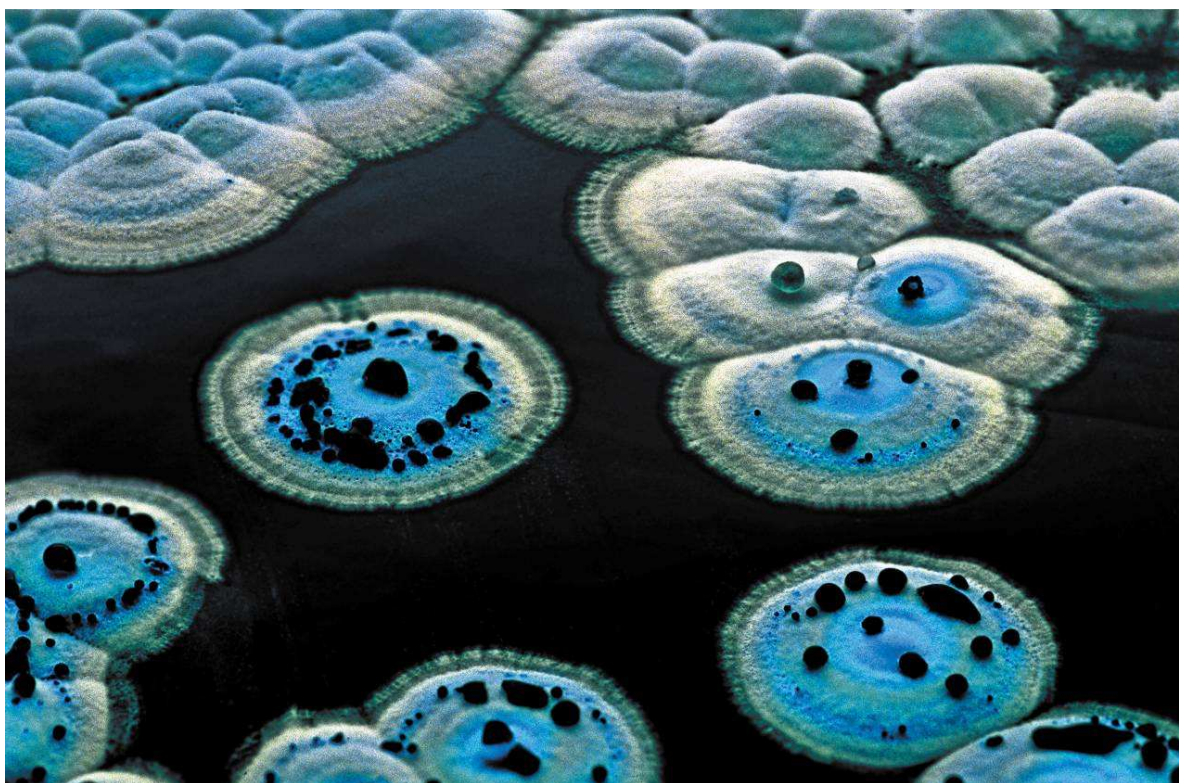
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REVIEWS **MICROBIOLOGY**

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# Final Programme

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## Saturday 13 September

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

## Sunday 14 September

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08.45-09.00	Conference Opening - on behalf of the European Science Foundation <b>Maria Pilar Perez</b> Universidad de Salamanca, ES
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## Session 1: Development

Chair: **Mark Buttner**, John Innes Centre, Norwich, UK

09.00-09.30	<b>Kit Pogliano</b> University of California, San Diego, La Jolla, US <i>Remodeling cellular membranes during Bacillus subtilis sporulation</i>
09.30-10.00	<b>Patrick Viollier</b> Case Western Reserve University, Cleveland, US <i>Polarity and the regulation of cell fate determination in Caulobacter</i>
10.00-10.30	<b>Lotte Søgaard-Andersen</b> MPI für Terrestrische Mikrobiologie, Marburg, DE <i>Moving parts - regulation of motility and intercellular signalling by compartmentalization in Myxococcus xanthus</i>
10.30-11.00	Coffee Break
11.00-11.30	<b>Klas Flärdh</b> Lund University, SE <i>Establishment and control of apical growth in Streptomyces</i>
11.30-12.00	<b>Martin Thanbichler</b> (talk selected from abstracts) Max Planck Institute for Terrestrial Microbiology, Marburg, DE <i>Spatial regulation of cell division in Caulobacter</i>
12.30	Lunch

## Session 2: Global Regulators and Second Messengers

Chair: **Urs Jenal**, University of Basel, CH

16.00-16.30	<b>Urs Jenal</b> University of Basel, CH <i>The role of cyclic di-GMP in Caulobacter cell cycle and development</i>
16.30-17.00	<b>Regine Hengge</b> Freie Universität Berlin, DE <i>Cyclic-di-GMP signaling in Escherichia coli</i>
17.00-17.30	Coffee Break

17.30-18.00	<b>Thomas Nyström</b> University of Gothenburg, SE <i>Global control of gene expression by alterations in RNA polymerase availability</i>
18.00-18.30	<b>Emmanuelle Bouveret</b> (talk selected from abstracts) CNRS, LISM, Marseille, FR <i>Genetic and physical interactions between lipid metabolism and the stringent response</i>
18.30-18.45	<b>Errett Hobbs</b> (short talk selected from abstracts) National Institutes of Health, Bethesda, US <i>Small proteins and small RNAs involved in resistance to outer membrane stress in Escherichia coli: analysis of a sequence signature-tagged mutant collection</i>
18.45-19.00	<b>Alex Böhm</b> (short talk selected from abstracts) University of Basel, CH <i>Bacterial second messengers signal ribosomal performance to induce biofilms</i>
19.30	Dinner
21.00-22.30	Poster Session

## Monday 15 September

### Session 3: Modelling and Engineering Networks - 1

Chair: **Martin Howard**, John Innes Centre, Norwich, UK

09.00-09.30	<b>Michael Laub</b> Massachusetts Institute of Technology, Cambridge, US <i>Rewiring two-component signaling pathways</i>
09.30-10.00	<b>Martin Howard</b> John Innes Centre, Norwich, UK <i>Models of spatiotemporal protein dynamics in E. coli: comparing Min and Par</i>
10.00-10.30	<b>Uwe Sauer</b> ETH Zurich, CH <i>Metabolic Networks</i>
10.30-11.00	Coffee Break
11.00-11.30	EMBO Young Investigator Lecture <b>Victor Sourjik</b> University of Heidelberg, DE <i>Amplification and robustness in bacterial chemotaxis</i>
11.30-12.00	<b>Dennis Bray</b> University of Cambridge, UK <i>The chemotaxis receptor cluster revisited</i>
12.00-12.15	<b>Nicholas Luscombe</b> (short talk selected from abstracts) EMBL-European Bioinformatics Institute, Cambridge, UK <i>Genomic principles for feedback regulation of metabolism</i>
12.15-12.30	<b>Markus Kollmann</b> (short talk selected from abstracts) Humboldt University, Berlin, DE <i>Robustness against non-genetic individuality is a highly adaptive trait in bacterial signaling</i>
12.30	Lunch

## Session 4: Modelling and Engineering Networks - 2

Chair: Michael Elowitz, California Institute of Technology, Pasadena, US

- 16.00-16.30 **Michael Elowitz**  
California Institute of Technology, Pasadena, US  
*Differentiation dynamics at the single-cell level*
- 16.30-17.00 **Alexander van Oudenaarden**  
Massachusetts Institute of Technology, Cambridge, US  
*A signals-and-systems approach to osmo-adaptation*
- 17.00-17.30 Coffee Break
- 17.30-18.00 **Michael Elowitz** (talk selected from abstracts)  
California Institute of Technology, Pasadena, US  
*Cryptic developmental noise reveals alternative sporulation pathways in *Bacillus subtilis**
- 18.00-18.15 **Ilka Maria Axmann** (short talk selected from abstracts)  
Humboldt University of Berlin, DE  
*Evolution and function of circadian clock proteins: lessons from bacteria*
- 18.15-18.30 **Daniel Madar** (short talk selected from abstracts)  
Weizmann Institute of Science, Rehovot, IL  
*Negative auto-regulation of a transcription factor can increase the dynamic range of its downstream genes*
- 18.30-18.45 **Joe Levine** (short talk selected from abstracts)  
California Institute of Technology, Pasadena, US  
*Cellular indecision: noisy gene expression in the sporulation initiation of *Bacillus subtilis**
- 18.45-19.00 **James Locke** (short talk selected from abstracts)  
California Institute of Technology, Pasadena, US  
*The variability and dynamics of *B. subtilis* stress response*
- 19.30 Dinner
- 21.00-22.30 Poster Session

### Tuesday 16 September

## Session 5: Microbial Cell Biology and Imaging

Chair: Jeff Errington, University of Newcastle, UK

- 09.00-09.30 **Jeff Errington**  
University of Newcastle, UK  
*A reproducible system for generating wall-less (L-form) bacteria: implications for the evolution of cell proliferation*
- 09.30-10.00 **Judith Armitage**  
University of Oxford, UK  
*Making decision: targeting of chemosensory proteins*
- 10.00-10.30 **Kenn Gerdes**  
University of Newcastle, UK  
*Mechanism of DNA Segregation by an Oscillating ParA ATPase*
- 10.30-11.00 Coffee Break
- 11.00-11.30 **Peter Graumann**  
Albert-Ludwigs-Universität, Freiburg, DE  
*A novel mechanism for regulation of replication in bacteria*

- 11.30-11.45 **Dagmara Jakimowicz** (short talk selected from abstracts)  
 Institute of Immunology, Wroclaw, PL  
*Chromosome segregation during Streptomyces coelicolor development involves formation of helical ParA scaffolding for ParB complexes*
- 11.45-12.00 **Orna Amster-Choder** (short talk selected from abstracts)  
 The Hebrew University, Jerusalem, IL  
*Regulation of transcription by sub-cellular localization of proteins: The bgl sensory system as a case in point*
- 12.00-12.15 **Enrique Flores** (short talk selected from abstracts)  
 Consejo Superior de Investigaciones Científicas, Sevilla, ES  
*Filament structure in the heterocyst-forming cyanobacterium Anabaena: cell-to-cell connecting complexes and a continuous periplasm*
- 12.15-12.30 **Jeroen van Zon** (short talk selected from abstracts)  
 Imperial College London, UK  
*A model of regulated protein localization can explain TipN dynamics in C. crescentus cell polarity*
- 12.30 Lunch

## Session 6: Regulatory Networks and Switches

Chair: **Tim Donohue**, University of Wisconsin-Madison, US

- 16.00-16.30 **Thorsten Mascher**  
 Georg-August-University, Göttingen, DE  
*Extracytoplasmic-function sigma factors: the third pillar of bacterial signal transduction*
- 16.30-17.00 **Tim Donohue**  
 University of Wisconsin-Madison, US  
*Mapping the microbial response to the reactive oxygen species singlet oxygen*
- 17.00-17.30 Coffee Break
- 17.30-18.00 **Colin Kleanthous**  
 University of York, UK  
*Conformational transitions of the bacterial redox sensor RsrA*
- 18.00-18.30 **Montserrat Elías-Arnanz** (talk selected from abstracts)  
 Universidad de Murcia, ES  
*A singular complex involved in global transcriptional regulation in Myxococcus xanthus*
- 18.30-19.15 **Forward Look Plenary Discussion** (chair: Urs Jenal)
- 19.30 Dinner
- 21.00-22.30 Poster Session

## Wednesday 17 September

## Session 7: Host-Microbe Interactions

Chair: **Edward Ruby**, University of Wisconsin-Madison, US

- 09.00-09.30 **Edward Ruby**  
 University of Wisconsin-Madison, US  
*Bacteria-host communication in a beneficial association*
- 09.30-10.00 **EMBO Young Investigator Lecture**  
**Dirk Bumann**  
 University of Basel, CH  
*Systems biology of Salmonella infection*

- 10.00-10.30 **Eva Kondorosi**  
ISV – CNRS, Gif-sur-Yvette, FR  
*The fate of bacteria in Rhizobium-legume symbiosis*
- 10.30-11.00 Coffee Break
- 11.00-11.30 **Martin Ackermann** (talk selected from abstracts)  
ETH Zurich, CH  
*Phenotypic bi-stability promotes the division of labor during Salmonella pathogenesis*
- 11.30-11.45 **Amy Ma** (short talk selected from abstracts)  
Harvard Medical School, Boston, US  
*Delivery of an actin crosslinking domain by Vibrio cholerae T6SS*
- 11.45-12.00 **Nick Tucker** (short talk selected from abstracts)  
John Innes Centre, Norwich, UK  
*Bacterial responses to nitrosative stress*
- 12.30 Lunch

## Session 8: Cell-Cell Communication

Chair: Paul Williams, University of Nottingham, UK

- 16.00-16.30 **Paul Williams**  
University of Nottingham, UK  
*Quorum sensing, quinolones and post-transcriptional regulation in Pseudomonas aeruginosa*
- 16.30-17.00 **Tim Tolker-Nielsen**  
Technical University of Denmark, Lyngby, DK  
*Interaction and division of labour in Pseudomonas aeruginosa biofilms*
- 17.00-17.30 Coffee Break
- 17.30-18.00 **Paul Straight** (talk selected from abstracts)  
Texas A&M University, College Station, US  
*The chemical vocabulary of a microbial conversation*
- 18.00-18.30 **Justin Nodwell** (talk selected from abstracts)  
McMaster University, Hamilton, CA  
*Ligands for TetR-like proteins*
- 18.30-18.45 **Christophe Corre** (short talk selected from abstracts)  
University of Warwick, Coventry, UK  
*A novel class of signaling molecules in the model organism Streptomyces coelicolor A3(2)*
- 18.45-19.00 **Eriko Takano** (short talk selected from abstracts)  
University of Groningen, Haren, DE  
*Novel non-coding RNAs and signalling molecules in Streptomyces coelicolor*
- 19.30 Get-together & Conference Dinner

## Thursday 18 September

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Breakfast & Departure

## Abstracts, Posters & Short Oral Presentations

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There will be no oral presentations other than those listed in the programme. All abstracts are accepted for poster presentation. Participants presenting a short talk may bring a poster if they wish.

**Nature Reviews Microbiology will sponsor a prize for best talk selected from abstracts. Two poster prizes, sponsored by EMBO and Nature Reviews Microbiology will be awarded to the best posters.**

