



## RESEARCH CONFERENCES

ESF-EMBO Symposium

# Biological Surfaces and Interfaces

Hotel Eden Roc, Sant Feliu de Guixols (Costa Brava) • Spain  
27 June – 2 July 2009

Chair: **Julie Gold**, Chalmers University of Technology, SE

Co-Chair: **Joachim P. Spatz**, Max-Planck-Institute for Metals Research, DE

Vice-Chairs:

**Fredrik Höök**, Chalmers University of Technology, SE

**Janos Vörös**, ETH Zürich, CH

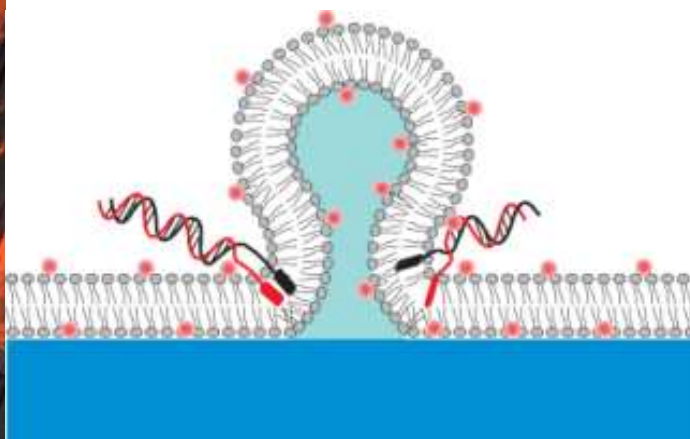
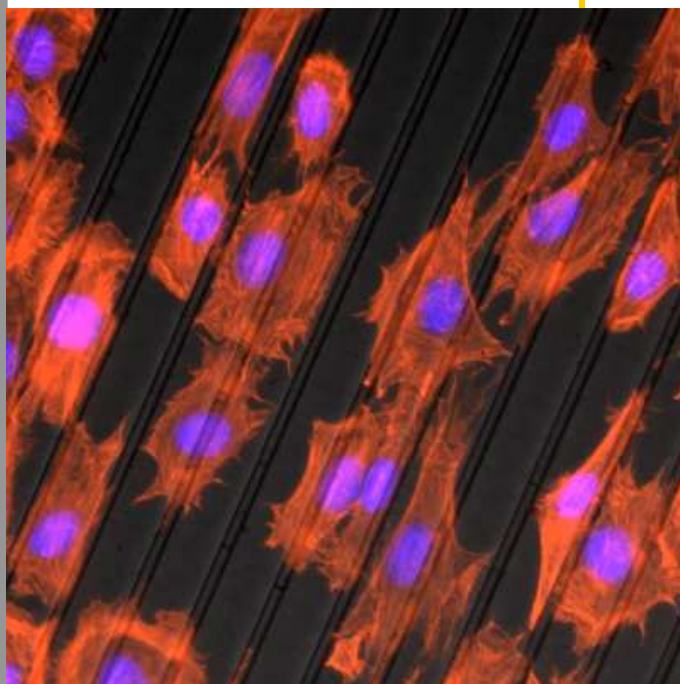
ESF Rapporteur:

**Kenneth Dawson**, University College Dublin, IE

[www.esf.org/conferences/09290](http://www.esf.org/conferences/09290)

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# Final Programme

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## Saturday, 27 June

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Late afternoon / early evening	Registration at the ESF desk
19.30	Welcome Drink
20.30	Dinner

## Sunday, 28 June

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08.30-09.00	<b>Julie Gold</b> Chalmers University of Technology, SE
	<b>Joachim P. Spatz</b> Max-Planck-Institute for Metals Research, DE
	<b>Kenneth Dawson</b> University College Dublin, IE <i>ESF Presentation</i>

## Session 1: Nanoscale characterization of surfaces and bioentities

Chair: **Janos Vörös**, ETH Zürich, CH

09.00-09.45	<b>David Klenerman</b> University of Cambridge, UK <i>Nanoscale functional imaging of biological surfaces using a nanopipette</i>
09.45-10.30	<b>Josep Samitier</b> IBEC Institute for Bioengineering of Catalonia, ES <i>Characterization of cell behavior on polymer micro-nanopatterned substrates: a study of cell-substrate interactions</i>
10.30-11.00	Coffee break
11.00-11.45	<b>Jennifer Curtis</b> Georgia Institute of Technology, US <i>Mapping the mechanics and macromolecular organization of hyaluronan-rich cell coats</i>
11.45-12.30	<b>Ralf Richter</b> CIC BiomaGUNE, ES <i>Peripheral cell coats – What can we learn from well-defined model systems?</i>
12.30	Lunch
15.45-16.15	Coffee break

## Session 2: Engineering surfaces and bioactive interfaces

Chair: **Joachim Spatz**, Max-Planck-Institute for Metals Research, DE

16.15-17.00	<b>Aldo Ferrari</b> Scuola Normale Superiore di Pisa, IT <i>Polarity selection by nanotopography induced focal adhesion control</i>
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- 17.00-17.45 **Milan Mrksich**  
University of Chicago, US  
*Engineering active interfaces between cells and materials*
- 18.00-18.45 **Erik Reimhult**  
ETH Zürich, CH  
*Self-assembled biomimetic membranes and probing of their properties*
- 19.00 Dinner
- 20.30 **Evening Plenary Session**  
**Viola Vogel**  
ETH Zürich, CH  
*Mechanisms by which mechanical forces can switch protein function*
- 21.30 Poster session I

## Monday, 29 June

### Session 3: Cell receptors, signalling and environmental interactions

**Chair: Barbara Boyan**, Georgia Institute of Technology, US

- 09.00-09.45 **Benny Geiger**  
Weizmann Institute of Science, IL  
*Functional nano-architecture of focal adhesions*
- 09.45-10.30 **Jay Groves**  
University of California Berkeley, US  
*Spatial organization and the mechanics of signal transduction in cell membranes*
- 10.30-11.00 Coffee break
- 11.00-11.45 **Alicia El Haj**  
Keele University, UK  
*Cell surface interactions in a dynamic environment*
- 11.45-12.30 **Christine Selhuber-Unkel**  
Niels Bohr Institute, DK  
*Cell adhesion forces on nanopatterned surfaces*
- 12.30 Lunch
- 15.45-16.15 Coffee break

### Session 4: Contributed Presentations I

**Chair: Joachim Spatz**, Max-Planck-Institute for Metals Research, DE

- 16.15-16.30 **Paul Roach**  
The University of Nottingham, Nottingham, UK  
*Combinatorial approach to assess neuronal cell interactions on surfaces with gradient chemistry and topography*  
(short talk)
- 16.30-16.45 **Anne-Kathrin Born**  
Empa, Swiss Federal Laboratories for Materials Testing and Research, CH  
*Analysis of molecular interactions between focal adhesion proteins talin and vinculin using FRET*  
(short talk)
- 16.45-17.00 **Dmitry Volodkin**  
Max-Planck Institute of Colloids and Interfaces, DE

*Bio-interfaces functionalized with the multilayered polymer films able to remotely release active bio-molecules by external IR-light stimulation*

(short talk)

17.00-18.45 Poster Session I, continued

19.00 Dinner

20.30 **Evening Plenary Session**

**Peter Fromherz**

Max Planck Institute for Biochemistry, DE

*Interface and Interfacing: Semiconductor with Brain*

21.30 Poster Session I, continued

## Tuesday, 30 June

### Session 5: Cell differentiation and tissue engineering

**Chair: Julie Gold**, Chalmers University of Technology, SE

09.00-09.45 **Heike Mertsching**

Fraunhofer Institute for Interfacial Engineering and Biotechnology, DE

*From model tissues towards functional organs: Bioengineers beyond the cell*

09.45-10.30 **Dror Seliktar**

Technion Israel Institute of Technology, IL

*Cells in gels: Exploring cellular morphogenesis and differentiation in 3-D culture*

10.30-11.00 Coffee break

11.00-11.45 **Barbara Boyan**

Georgia Institute of Technology, US

*Mechanisms that mediate cell response to substrate microstructure*

11.45-12.30 **Sponsor presentations**

12.30 Lunch

Afternoon Half-day excursion to Girona

19.00 Dinner

20.30-21.30 Forward Look Plenary Discussion

21.30 Poster session II

## Wednesday, 1 July

### Session 6: Biosensing and characterization of biomolecules

**Chair: Fredrik Höök**, Chalmers University of Technology, SE

09.00-09.45 **Eva Sinner**

IMRE Institute of Materials Research and Engineering, SG

*Synthetic bioarchitectures for monitoring molecular assemblies and interactions on biofunctionalized surfaces*

09.45-10.30 **Giovanni Dietler**

EPFL Lausanne, CH

*What is the size and shape of DNA in 2 dimensions?*

10.30-11.00 Coffee break

11.00-11.45 **Jonas Tegenfeldt**

Lund University, SE  
*Nanostructured devices for DNA analysis*

- 11.45-12.30 **Peter Seeberger**  
Max Planck Institute of Colloids and Interfaces, DE  
*Carbohydrates on surfaces – Diagnostics and sensing*
- 13.00 Lunch
- 16.30-17.00 Coffee break

## Session 7: Contributed Presentations II

**Chair: Fredrik Höök**, Chalmers University of Technology, SE

- 17.00-17.15 **Angelika Kunze**  
Chalmers University of Technology, SE  
*Transfer of biomolecules between lipid membranes*  
(short talk)
- 17.15-17.30 **Marga Lensen**  
RWTH Aachen, DE  
*Cellular behavior on micro- and nanopatterned hydrogels*  
(short talk)
- 17.30-17.45 **Samir Mitagotri**  
University of California, US  
*Physical Attributes of Biomaterial Interfaces: Impact on Biological Function*  
(short talk)
- 17.45-19.00 Poster session II, continued
- 19.00-19.30 Closing remarks, Awards, Chairs 2011
- 20.00 Get-together & Conference Dinner

### Thursday, 2 July

- 08.00 Breakfast & Departure

### Abstracts, Posters & Short Oral Presentations

There will be no short talks other than those listed on the final programme. All other abstracts have been accepted as posters. The list of accepted posters can be found at [www.esf.org/conferences/09290](http://www.esf.org/conferences/09290)

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