



FEBS 2019 Advanced Lecture Course

Biological Surfaces and Interfaces: The Mechanistic View.

June 30 – July 5, 2019
Hotel Eden Roc
Sant Feliu de Guixols, Spain

Program

Organizers:

Chair

Marta Bally
Umeå University
Sweden

Co-chair

Ilya Reviakine
University of Washington – Seattle
WA, USA

Vice-Chair

Delphine Gourdon
University of Ottawa
ON, Canada

Vice-Chair

Chris Lorenz
King's College
London, UK

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BBA Biomembranes



Sunday, June 30th, 2019

17 : 00 -	Registration
19 : 00	Welcome mixer
20 : 00	Dinner

Monday, July 1st, 2019

07 : 30 – 08 : 30

Breakfast

08 : 45 – 09 : 00

M.B./I.R., Welcome and announcements

Session I: Materials in biological milieu

09 : 00 – 09 : 45

Andrea Salis

Department of Chemical & Geological Sciences, University of Cagliari, Italy
Specific effects of electrolytes at biointerfaces

09 : 45 – 10 : 30

Tobias Weidner

Department of Chemistry, Aarhus University, Denmark
How proteins nucleate materials – a molecular view at the interface

10 : 30 – 11 : 00

Coffee break & poster set-up

11 : 00 – 11:45

Francesca Baldelli Bombelli

Department of Chemistry, Politecnico di Milano, Italy
Nanoparticle-protein conjugates: design, characterization, and biointeractions

11 : 45 – 12 : 05

David Cheung

National University of Ireland Galway, Ireland
Effect of surface structure and chemistry on protein adsorption

12 : 15 –

Lunch and free time

15 : 30 – 16 : 00

Coffee & meet the speakers of session I

16 : 00 – 16 : 45

Wilbur A. Lam

*Department of Biomedical Engineering, Georgia Institute of Technology & Emory University
School of Medicine, Atlanta, GA, USA*
Engineering microsystems to study cell-cell interactions in hematology and vascular biology

16 : 45 – 17:05

Birgit Fendl

Danube University Krems, Austria
Association of CRP With Extracellular Vesicles

Session II: Lipid Interfaces

17:05 – 17 : 50

Tommy Nylander

Department of Physical Chemistry and NanoLund, Lund University, Lund, Sweden
Biomolecular interactions at the lipid aqueous interface of non-lamellar liquid crystalline phases.

17 : 50 – 18 : 20

Coffee break

18 : 20 – 19 : 05

Peter Tieleman

Department of Biological Sciences, University of Calgary, AB, Canada
Increasing complexity and realism in computer simulations of biological membranes

19 : 05 – 19:25

Sarah Waldie

Institute Laue-Langevin, Grenoble, France.
Cholesterol Deuteration and Exploitation for the Study of HDL/LDL Exchange Phenomena in Atherosclerosis

19 : 30 –

Dinner

20 : 30 –

Poster Session I

Tuesday, July 2nd, 2019

07 : 30 – 08 : 30

Breakfast

Session II: Lipid Interfaces, cont'd.

09 : 00 – 9 : 45

Maikel C. Rheinstädter

*Department of Physics and Astronomy, McMaster University, Hamilton, ON, Canada
Neutrons and X-Rays for Health and Disease*

9 : 45 – 10 : 05

Saara Lautala

University of Helsinki, Finland

A potent partial agonist of PKC orients in membranes like the biological activator diacylglycerol

10 : 05 – 10 : 20

Carmen Pettersson

JPK BioAFM, Bruker Nano Surfaces, Berlin, Germany

Investigating Dynamic Biological Processes with High-Speed, High-Resolution Correlative AFM-Light Microscopy

10 : 20 – 10 : 30

Sponsor Pitch talks: Insplorion, Microvacuum

10 : 30 – 11 : 00

Coffee Break & poster viewing

11 : 00 – 11 : 20

Kaori Sugihara

University of Geneva, Switzerland

The mechanism of antimicrobial peptide synergy

11 : 20 – 11 : 40

Dayane Alvares

National University of Cordoba, Argentina; and São Paulo State University - UNESP-IBILCE, Brazil

Impact of an antimicrobial peptide on the membrane fluidity of host membranes: Influence of cholesterol and a hopanoid

11 : 40 – 11 : 55

FEBS Presentation by Claudio Soares, Universidade Nova de Lisboa, Portugal

12 : 00 –

Lunch and free time

Tuesday, July 2nd, 2019

15 : 30 – 16 : 00	Coffee & meet the speakers of session II and III
Session III: Biological Membranes	
16 : 00 – 16 : 45	<p>Patricia Bassereau <i>Institut Curie, Paris, France</i> Linkers at the interface plasma membrane-cortical actin: only linkers?</p>
16 : 45 – 17 : 30	<p>Natalie Elia <i>Department of Life Sciences, Ben Gurion University of the Negev, Beer Sheva, Israel</i> Cytokinetic membrane abscission mediated by the ESCRT complex</p>
17 : 30 – 18 : 00	Coffee break
18 : 00 – 18 : 45	<p>Susan Daniel <i>School of Chemical and Biomolecular Engineering, Cornell University, Ithaca, NY, USA</i> Biologically complex supported cell membranes and their applications in host-pathogen interactions</p>
18 : 45 – 19 : 05	<p>Hudson Pace <i>Umeå University, Sweden</i> Next-Generation Model Membrane Architectures for Investigating Host-Pathogen Interactions</p>
19 : 05 – 19 : 25	<p>Natalia Baranova <i>Institute of Science and Technology (IST) – Vienna, Austria</i> In vitro reconstitution of bacterial cell division</p>
19 : 30 –	Dinner
20 : 30 –	Poster Session II

Wednesday, July 3rd, 2019

07 : 30 – 08 : 30

Breakfast

Session IV: Cells and Tissue Interfaces

09 : 00 – 9 : 45

Manuel Salmeron-Sanchez
Centre for the Cellular Microenvironment, School of Engineering, University of Glasgow, UK
Engineered 3D environments to control stem cell differentiation

9 : 45 – 10 : 30

Viktoria Weber
Department of Biomedical Research and Christian Doppler Laboratory for Innovative Therapy Approaches in Sepsis, Danube University Krems, Krems, Austria
The blood-biomaterial interface

10 : 30 – 11 : 00

Coffee break & poster viewing

11 : 00 – 11 : 45

Thomas Crouzier
Division of Glycoscience, Royal Institute of Technology (KTH), Stockholm, Sweden
Evading the foreign body reaction with immune-modulating mucin hydrogels

11 : 45 – 12 : 05

Rami Mhanna
American University of Beirut, Lebanon
The sulfation of biomimetic glycosaminoglycans controls growth factor binding and subsequent cell proliferation and differentiation

12 : 05 – 12 : 25

Ralf Richter
University of Leeds, UK
Multivalent Recognition at Fluid Surfaces: The Interplay of Receptor Clustering and Superselectivity

12 : 25 – 12 : 45

Delphine Gourdon
Biomedical Engineering Department, Cornell University, Ithaca, NY, USA and the Department of Physics, University of Ottawa, ON, Canada
Boundary mode lubrication of articular cartilage with a biomimetic diblock copolymer.

12 : 45 –

Lunch and excursion/free time

19 : 30 –
20 : 30 –

Dinner
Poster Session III

Thursday, July 4th, 2019

07 : 30 – 08 : 30	Breakfast
Session IV: Cells and Tissue Interfaces: cont'd.	
09 : 00 – 09 : 45	<p>Joachim Rädler <i>Faculty of Physics and Centre for Nanosciences, Ludwig Maximilians Universität München, Germany</i> Structured interfaces for the study of cell migration phenotypes</p>
Session III: Biological Membranes: cont'd.	
09 : 45 – 10 : 30	<p>Petra Schuille <i>Max Plank Institute of Biochemistry, Martinsried, Germany</i> How membranes catalyze protein self-organization</p>
10 : 30 – 11 : 00	Coffee and poster viewing
11 : 00 – 11 : 20	<p>Chris Lorenz <i>King's College London, UK</i> The effect of oxidised cholesterol on model red blood cell membranes</p>
11 : 20 – 11 : 40	<p>Adree Khondker <i>McMaster University, Hamilton, ON, Canada</i> A Molecular Mechanism for Polymyxin-induced Membrane Damage that predicts Bacterial Resistance</p>
11 : 40 – 12 : 00	<p>Jorge Royes Mir <i>ENS Chimie, Paris, France</i> Teaching nanomaterials to bacteria: bioproduction of chemically modifiable proteoliposomes.</p>
12 : 00 – 12 : 20	<p>Ferra Pinnock <i>Cornell University, Ithaca, NY, USA</i> On-chip synthesis of Ganglioside GM1 for the Treatment of Huntington's Disease</p>
12 : 30 –	Lunch and free time
15 : 30 – 16 : 00	Coffee & meet the speakers of sessions IV and V
Session V: Organs on a chip	
16 : 00 – 16 : 45	<p>Milica Radisic <i>Institute of Biomaterials & Biomedical Engineering, University of Toronto, ON, Canada</i> Advances in organ-on-a-chip engineering</p>
16 : 45 – 17 : 30	<p>Robert Passier <i>Department University of Twente, the Netherlands</i> Human heart-on-chip models for modelling cardiovascular disease</p>
17 : 30 – 18 : 45	Forward Look round-table session
19 : 30	Conference Dinner

Friday, July 5th, 2019

8 : 00	Breakfast
9 : 00	Departure