

Online Conference Day 1 – Wednesday, August 18 (all times GMT +2)

Biointerfaces International Seminar Session A

Session Chairs: **Núria Montserrat Pulido**, Institute for Bioengineering of Catalonia, Barcelona, ES (Seminar 1)

Eliav Haskal, NCCR Bio-Inspired Materials, University of Fribourg, Fribourg, CH (Seminar 2)

10.00 – 10.10	Welcome & Introduction Seminar	Tina Bürki , Empa, St. Gallen, CH
10.10 – 10.40	Seminar 1	Matthias Lutolf , Swiss Federal Institute of Technology, Lausanne, CH Next generation organs-on-a-chip <i>Organoids, stem cells, self-organisation, tissue engineering, organs-on-a-chip</i>
10.40 – 10.50	Discussion	
10.50 – 11.20	Seminar 2	Thorsten Ochsenreiter , University of Berne, Berne, CH Scientific integrity – Why do we care Melanie Röthlisberger , University of Zurich, Zurich, CH The how and why to open science <i>Plagiarism, honesty in communication, reproducibility, objectivity, misconduct / open science in research, open data, caveats for young scientists</i>
11.20 – 11.30	Discussion	
From 11.30	Ask Anything (Chat rooms)	Sally McArthur , Swinburne University of Technology, Melbourne, AU <i>(Young) participants to ask any question (e.g., related to career planning, publication, collaborations, funding, work/life balance and more)</i>
	Advisors:	Room 01: Martina Stenzel & David W. Grainger Room 02: Shulamit Levenberg & Delly Kazadi Room 03: Torsten Ochsenreiter & Berna Özkale Edelmann Room 04: Marcy Zenobi-Wong & Aylvin Dias Room 05: Núria Montserrat Pulido & Eliav Haskal Room 06: Romana Schirhagl & André Körnig Room 07: Sally McArthur & Tina Bürki Room 08: Melanie Röthlisberger & Canet Acikgoz Room 09: Silvia Campioni & Pascal Jonkheijm Room 10: Barbara Rothen-Rutishauser & Saber Amin Yavari

Biointerfaces International Conference Session 1

Session Chairs: **Martin Ehrbar**, University Hospital Zurich, Zurich, CH / **Dilara Perver**, ETH Zurich, Zurich, CH

13.00 – 13.10	Welcome words	Katharina Maniura , Empa, St. Gallen, CH
13.10 – 13.40	Lecture I	Marcy Zenobi-Wong , ETH Zurich, Zurich, CH <i>Microgels as building blocks for tissue engineering</i>
13.40 – 13.50	Discussion	
13.50 – 14.20	Lecture II	Jason A. Burdick , University of Pennsylvania, Philadelphia, US <i>Embedded 3D bioprinting within hydrogel suspension media</i>
14.20 – 14.30	Discussion	
14.30 – 14.40	Break	

Biointerfaces International Conference Session 2

Session Chairs: **Peter Wick**, Empa, St. Gallen, CH / **Sally McArthur**, Swinburne University of Technology, Melbourne, AU

14.40 – 15.00	Impulse Lecture	Adrian Roth , F. Hoffmann-La Roche AG, Basel, CH <i>Advanced human cell models for drug discovery, development and personalized medicine</i>
15.00 – 16.00	Panel Discussion: <i>Progress in cell-based in-vitro assays for drug development, substance toxicity testing, regenerative medicine – supporting 3R initiatives</i>	Swiss institutional representatives: <ul style="list-style-type: none">• Kathy Riklin, Swiss Competence Centre 3R (3RCC), CH• Silvia Frey, Animalfree Research, CH Industry representatives: <ul style="list-style-type: none">• Fred Züllli, Mibelle AG, CH• Heinz Ruffner, Novartis AG, CH• Adrian Roth, F. Hoffmann-La Roche AG, CH
16.00 – 17.00	Poster Session	Poster Session Rooms A / B / C / D / E1 / E2

Biointerfaces International Conference Session 3

Session Chairs: **Barbara Rothen-Rutishauser**, Adolphe Merkle Institute, Fribourg, CH / **Amro Hussien**, ETH Zurich, Zurich, CH

17.00 – 17.30

[David W. Grainger](#), University of Utah, Salt Lake City, US

Challenging mesenchymal stem/stromal cell heterogeneity and immunomodulatory profiles to improve cell-based therapies

17.30 – 17.40 Discussion

17.40 – 17.50 Break

Biointerfaces International Conference Session 4

Session Chairs: **Barbara Rothen-Rutishauser**, Adolphe Merkle Institute, Fribourg, CH / **Amro Hussien**, ETH Zurich, Zurich, CH

17.50 – 18.20 Lecture III

[Sarah Köster](#), University Göttingen, Göttingen, DE

Nonlinear mechanics of cytoskeletal biopolymers

18.20 – 18.30 Discussion

18.30 – 19.00 Lecture IV

[Andrés J. Garcia](#), Georgia Institute of Technology, Atlanta, US

Biosynthetic hydrogels for regenerative medicine

19.00 – 19.10 Discussion

Online Conference Day 2 – Thursday, August 19 (all times GMT +2)

Biointerfaces International Seminar Session B

Session Chairs: **Romana Schirhagl**, Dept BioMedical Engineering, University of Groningen, NL (Seminar 1)

Tina Buerki-Thurnherr, Dept Materials Meet Life, Empa, St. Gallen, CH (Seminar 2)

10.00 – 10.30	Seminar 1	Viola Vogel , ETH Zurich, Zurich, CH Extracellular cues in health and disease <i>Mechanobiology of cells and extracellular matrix, how forces switch protein functions with powerful physiological consequences</i>
10.30 – 10.40	Discussion	
10.40 – 11.10	Seminar 2	Martina Stenzel , University of New South Wales, Sydney, AU Nanoparticle drug delivery systems for cancer therapy <i>Nanoparticles, mechanism of drug loading, behaviour of nanoparticles in a biological system (in vitro and in vivo)</i>
11.10 – 11.20	Discussion	

Biointerfaces International Conference Exhibitor Session

Session Chair: **Jörg Güttinger**, Association NTN Innovative Surfaces, Dübendorf, CH

11.20 – 13.00	Exhibitor Session Exhibitor Pitches	<ul style="list-style-type: none">• 11.20 Zurich Instruments AG, Tim Ashworth• 11.25 CELLnTEC Advanced Cell Systems AG, Anand David• 11.30 MaxWell Biosystems, Marie E. Obien• 11.35 TEDD Competence Centre, Katarzyna Kopanska
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Biointerfaces International Conference Session 5

Session Chairs: **Marcy Zenobi-Wong**, ETH Zurich, Zurich, CH / **Yashoda Chandorkar**, Empa, St. Gallen, CH

13.00 – 13.30	Lecture V	Shulamit Levenberg , Technion - Israel Institute of Technology, Haifa, IL Bioprinting vascularized 3D Tissue constructs
13.30 – 13.40	Discussion	
13.40 – 14.10	Lecture VI	Núria Montserrat Pulido , Institute of Bioengineering of Catalonia, Barcelona, ES Engineering kidney organoids to understand kidney development and disease
14.10 – 14.20	Discussion	
14.20 – 14.30	Break	

Biointerfaces International Conference Session 6

Session Chairs: **Qun Ren**, Empa, St. Gallen, CH / **Anna Puiggali-Jou**, ETH Zurich, Zurich, CH

14.30 – 14.50	Lecture VII	Stéphanie Boder-Pasche , CSEM SA, CH <i>Automated and Standardized Solutions for Organoid Technology</i>
14.50 – 15.00	Discussion	
15.00 – 15.30	Lecture VIII	Peter Loskill , University of Tübingen, Tübingen, DE <i>Recapitulating complex human biology in vitro: Microphysiological systems and organ-on-chip technology</i>
15.30 – 15.40	Discussion	
15.40 – 16.10	Lecture IX	Morgan Alexander , The University of Nottingham, Nottingham, UK <i>Cell instructive materials for next generation medical devices: Microtopography opportunities</i>
16.10 – 16.20	Discussion	
16.20 – 16.30	Break	

Biointerfaces International Conference Session 7

Session Chairs: **Katharina Maniura**, Empa, St. Gallen, CH / **Mark Tibbitt**, ETH Zurich, Zurich, CH

16.30 – 17.00	Lecture X	Jianping Fu , University of Michigan, Ann Harbor, US <i>Bottom-up synthetic embryology for understanding early human development</i>
17.00 – 17.10	Discussion	
17.10 – 17.40	Lecture XI	Romana Schirhagl , University of Groningen, Groningen, NL <i>Nanoscale MRI for measuring free radical generation in living cells</i>
17.40 – 17.50	Discussion	
17.50 – 18.20	Lecture XII	Tatiana Segura , Duke University, Durham, US <i>Particle hydrogels principles, properties, and applications</i>
18.20 – 18.30	Discussion	
18.30 – 19.00	Lecture XIII	Sarah Heilshorn , Stanford University, Stanford, USA <i>Engineered Protein Matrices for Precision Medicine</i>
19.00 – 19.10	Discussion	
19.10 – 19.20	Closing Remarks	Katharina Maniura , Empa, St. Gallen, CH