

**Biointerfaces International 2018 Zurich / August 14 – 16, 2018: Science Session Program 14, 15A, 16**  
**Separate Session Program 15B = Translational Sessions**

**Tuesday, August 14**

**Conference Day 1 / KOH-B-10, floor B**

08:00 – **Registration** (University of Zurich, Entrance Hall)  
 09:00

09:00 – Welcome Address **Michael Hengartner**, President University of Zurich  
 09:30 **Nicholas D. Spencer**, ETH Zurich  
**Katharina Maniura / Jörg Güttinger**, Empa Biointerfaces / Ass. NTN Innovative Surfaces

**Session 1: Regenerative Medicine & Stem Cell Technology (A) / KOH-B-10, floor B**

Chairs: **David J. Mooney**, Harvard University, Boston, US and **Sheila MacNeil**, University of Sheffield, Sheffield, UK

09:30 – Keynote 1 **Molly Shoichet**, University of Toronto, Toronto, CA  
 10:10 *Affinity release strategies for the delivery of therapeutic proteins to the central nervous system*  
 Intro: **Sheila MacNeil**, University of Sheffield, Sheffield, UK

10:10 – **Coffee/Tea Break / Lichthof, floor D**  
 10:40

10:40 – Invited Talk 1 **Georg Duda**, Charité, Berlin, DE  
 11:10 *Enable regeneration – employing the immune-structure interface*

11:10 – Contributed Talk 1 **Manfred F. Maitz**, Leibniz Institute of Polymer Research, Dresden, DE  
 11:30 *Feedback controlled system for anticoagulant release with response to different coagulation factors*

11:30 – Contributed Talk 2 **Marcy Zenobi-Wong**, ETH Zurich, Zurich, CH  
 11:50 *The many faces of enzymatically-crosslinked hyaluronan*

11:50 – **Lunch & Poster Session & Exhibition / Lichthof & Foyer West, floor D**  
 13:20

Tuesday, August 14

**Session 2: Regenerative Medicine & Stem Cell Technology (B) / KOH-B-10, floor B**

Chairs: **Molly Shoichet**, University of Toronto, Toronto, CA and **Viola Vogel**, ETH Zurich, Zurich, CH

13:20 – 14:00	Keynote 2	<b>Sheila MacNeil</b> , University of Sheffield, Sheffield, UK <i>Biomaterials and regenerative medicine – from the laboratory to the clinic</i> Intro: <b>Viola Vogel</b> , ETH Zurich, Zurich, CH
14:00 – 14:20	Contributed Talk 3	<b>Maartje C. Bastings</b> , EPFL, Lausanne, CH <i>Programming materials with cell-adhesion sites that are functionally indistinguishable from nature</i>
14:20 – 14:40	Contributed Talk 4	<b>Michelle Grandin</b> , Alfred E. Mann Institute for Biomedical Engineering, University of Southern California, US <i>Optical coherence tomographic angiography as a diagnostic tool for diabetic retinopathy: A case study of translation</i>
14:40 – 15:05	Technology Pitches by Exhibitors (A)	<b>Alvéole</b> (booth no. 19) <b>SuSoS AG</b> (booth no. 20) <b>Insplorion AB</b> (booth no. 11) <b>abc biopply ag</b> (booth no. 1) <b>BioNavis Ltd.</b> (booth no. 22)
15:05 – 15:30	<b>Coffee/Tea Break / Lichthof, floor D</b>	

**Session 3: Drug-delivery systems (A) / KOH-B-10, floor B**

Chairs: **Wendy Naimark**, Interface Biologics, Toronto, CA and **Sierin Lim**, Nanyang Technological University, Singapore, SG

15:30 – 16:00	Invited Talk 2	<b>Tanja Weil</b> , Max Planck Institute for Polymer Research, Mainz, DE <i>Advanced biohybrid materials for drug delivery and tissue regeneration</i>
16:00 – 16:30	Invited Talk 3	<b>Stefan Salentinig</b> , Empa, St. Gallen, CH <i>Food- and digestion-inspired drug delivery systems</i>
16:30 – 17:00	Invited Talk 4	<b>Kazunari Akiyoshi</b> , Kyoto University, Kyoto, JP <i>Self-assembly of glyco-based polymers for protein delivery systems</i>
17:00 – 17:20	Contributed Pitches	<b>Rapid fire poster presentations</b> (3 min per Poster) Moderation: <b>Sally McArthur</b> , Swinburne University, Melbourne, AU
17:20 – 18:35	<b>Poster Session &amp; Exhibition &amp; Apéro / Lichthof, floor D, Foyer West, floor D</b>	

**Special Session 4: Evening Talks / KOH-B-10, floor B**

Chair: **Katharina Maniura**, Empa, St. Gallen, CH and **Jörg Güttinger**, NTN Innovative Surfaces, St. Gallen, CH

18:35 – 19:00	Technology Pitches by Exhibitors (B)	<b>CSEM SA</b> (booth no. 15) <b>Physical Electronics GmbH</b> (booth no. 16) <b>MagnebotiX AG</b> (booth no. 7) <b>KKS Ultraschall AG</b> (booth no. 8) <b>Accurion GmbH</b> (booth no. 13)
19:00 – 19:20	Contributed Talk 6	<b>Orane Guillaume-Gentil</b> , ETH Zurich, Zurich, CH <i>Single-cell analysis by fluidic force microscopy</i>
19:20 – 20:00	Keynote 3	<b>Wendy Naimark</b> , Interface Biologics, Toronto, CA <i>Sustained local drug delivery: key design criteria</i> Intro: <b>Katharina Maniura</b> , Empa, St. Gallen, CH
20:00	<b>End of Session</b>	

## Wednesday, August 15 (Session 15A)

**Conference Day 2 / KOH-B-10, floor B & video transmission to KOL-G-201 (Aula), floor G (for keynotes 5 and 7)**

08:00 – **Registration** (University of Zurich, Entrance Hall)  
08:30

08:30 – Keynote 5 **Matthias Lutolf**, EPFL, Lausanne, CH  
09:10 *Organoid development by design*  
Intro: **Georg Duda**, Charité, Berlin, DE

**Session 5: Functional Material-Tissue Interfaces / KOH-B-10, floor B**

Chairs: **Janos Vörös**, ETH, Zurich, CH and **Matthias Lutolf**, EPFL, Lausanne, CH

09:10 – Invited Talk 5 **Catherine Picart**, Grenoble Institute of Technology, Grenoble, FR  
09:40 *Bioactive surfaces for tissue regeneration*

09:40 – Invited Talk 6 **Laura De Laporte**, Leibniz Institute for Interactive Materials, Aachen, DE  
10:10 *Low invasive anisotropic materials for tissue regeneration*

10:10 – **Coffee/Tea Break / Lichthof, floor D**  
10:40

10:40 – Invited Talk 7 **Joachim Rädler**, Ludwig Maximilians University Munich, Munich, DE  
11:10 *Single cell time-lapse imaging on micro-arrays - gene expression kinetics and signaling pathways*

11:10 – Contributed Talk 7 **Karine Anselme**, Université de Haute-Alsace, CNRS, Mulhouse, FR  
11:30 *Curvotaxis directs cell migration through cell-scale natural landscapes*

11:30 – Contributed Talk 8 **Roberto C. Andresen Eguiluz**, University of California, Santa Barbara, US  
11:50 *Collagen thin film adhesion mediated by siderophore inspired molecules*

11:50 – Contributed Talk 9 **Nicholas Reynolds**, Swinburne University of Technology, Melbourne, AU  
12:10 *Controlling the self-assembly of peptide based amyloid nanofibrils*

12:10 – **Lunch & Poster Session & Exhibition / Lichthof, floor D, Foyer West, floor D**  
13:30

Wednesday, August 15 (Session 15A)

**Session 6: Bioanalytics & Diagnostics / KOH-B-10, floor B**

Chairs: **Michael Mayer**, Adolphe Merkle Institute, Fribourg, CH and **Markus Ehrat**, EK Biosciences GmbH, Magden, CH

13:30 – 14:10	Keynote 6	<b>Sindy KY Tang</b> , Stanford University, Stanford, US <i>A microfluidic guillotine for single-cell wound repair studies</i> Intro: <b>Michael Mayer</b> , Adolphe Merkle Institute, Fribourg, CH
14:10 – 14:40	Invited Talk 8	<b>Daniel Müller</b> , ETH Biosystems and Engineering, Basel, CH <i>Measuring the mass regulation of single mammalian cells at millisecond time resolution</i>
14:40 – 15:20	Invited Talk 9	<b>Govind Kaigala</b> , IBM Research, Rüschlikon, CH <i>Hydrodynamic shaping of sub-nanoliter volumes of liquids on surfaces for biopatterning and molecular analysis</i>
15:20 – 15:50	<b>Coffee/TeaBreak / Lichthof, floor D</b>	

**Session 7: 3D Cell Culture Models/ Engineered Tissues / KOH-B-10, floor B**

Chairs: **Tanja Weil**, Max Planck Institute for Polymer Research, Mainz, DE and **Sindy KY Tang**, Stanford University, Stanford, US

15:50 – 16:20	Invited Talk 10	<b>Hansjörg Keller</b> , Novartis, Basel, CH <i>3D Bioprinting and bioengineering of musculoskeletal tissue models for physiological drug testing in vitro</i>
16:20 – 16:40	Contributed Talk 10	<b>Yuji Teramura</b> , Department of Bioengineering, The University of Tokyo, Tokyo, JP <i>Protective role of PEG-phospholipid conjugate in reducing ischemic reperfusion injury in kidney transplantation</i>
16:40 – 17:00	Contributed Talk 11	<b>Tina Buerki</b> , Empa, St. Gallen, CH <i>Nanoparticle uptake and toxicity assessment in a novel standardized human placental organoid model</i>
17:00 – 17:40	Keynote 7	<b>David J. Mooney</b> , Harvard University, Boston, US <i>Manufacturing T cells in vitro and in vivo</i> Intro: <b>Sindy KY Tang</b> , Stanford University, Stanford, US
18:30 – 23:00	<b>Conference Dinner</b> (Restaurant “Die Waid”, Zurich)	

Wednesday, August 15 (Session 15B)

08:00 – **Registration** (University of Zurich, Entrance Hall)  
08:30

**Conference Day 2 Plenary Talk** [KOH-B-10, floor B, video transmission to KOL-G-201 \(Aula\), floor G](#)

08:30 – Keynote 5 **Matthias Lutolf**, EPFL, Lausanne, CH  
09:10 *Organoid development by design*  
Intro: **Georg Duda**, Charité, Berlin, DE

**Session 5B: Translational Session 1: Interfaces in the education and translation from science & technology to clinics & market:** [KOL-G-201 \(Aula\), floor G](#)  
Chair: **Alex Dommann**, Empa, CH

09:10 – Invited Translation- **Corina Schütt**, Hochschulmedizin Zurich, CH  
09:25 Contribution 1 HMZ + Zurich Heart

09:25 – Invited Translation- **Uwe Freudenberg**, Max Bergmann Center of Biomaterials, Dresden, DE  
09:40 Contribution 2 *ResCure: Hydrogels for healing chronic wounds*

09:40 – Invited Translation- **Volker Gatterdam**, Roche Pharma Research and Early Development, Roche Innovation Center Basel, CH  
09:55 Contribution 3 *Focal Molography – The ongoing journey from an idea towards a product*

09:55 – Invited Translation- **Stefan Fischer**, Euresearch, CH  
10:10 Contribution 4 *European Funding Opportunities for Research and Innovation Projects*

10:10 – **Coffee/Tea Break** / [Lichthof, floor D](#)  
10:40

**Session 5B (continued): Translational Session 1: Interfaces in the education and translation from science & technology to clinics & market:** [KOL-G-201 \(Aula\), floor G](#) Chairs: **Daniel Ricklin**, University Basel, CH / **Aylvin Dias**, DSM Materials Science Center BV, NL

10:40 – Invited Translation- **Martin Kayser**, Wyss Zurich, CH  
11:20 Contribution 4 *The Wyss Zurich model and challenges for translational medicine*  
**Maximilian Emmert**, Wyss Zurich Project «LifeMatrix»

11:20 – Invited Translation- **Christian Mathis**, SuSoS AG, Dübendorf, CH  
11:35 Contribution 5 *Molecular pocket-knife for next-generation diagnostics*

11:35 – Invited Translation- **Stephan Emmerth**, Baselaunch, **Jakob Busch-Petersen**, F. Hofmann-La Roche AG, Basel, CH  
12:10 Contribution 6 *BaseLaunch and the role of incubators*  
**Simon Ittig**, T3 Pharmaceutical AG, Basel, CH  
*A versatile bacterial cancer therapy: from idea to company*

Wednesday, August 15 (Session 15B)

12:10 – **Lunch & Poster Session & Exhibition / Lichthof, floor D, Foyer West, floor D**  
13:30

**Session 6B: Translational Session 2: Sources of Innovation KOL-G-201 (Aula), floor G**

Chairs: **David W. Grainger**, University of Utah, USA and **Michelle Grandin**, representing AMI-USC, LA, USA

13:30 – Invited Translation- **Daniela Marino**, Wyss Zurich Project «denovoSkin», Zurich, CH  
13:45 Contribution 7 *Personalized tissue therapy: challenges and opportunities*

13:45 – Invited Translation- **Daniel Delfosse**, Mathys AG Bettlach, CH  
14:00 Contribution 8 *Cooperation is the key for successful innovation*

14:00 – Invited Translation- **Curzio Rüegg**, Novigenix AG, University of Fribourg, CH  
14:15 Contribution 9 *Cancer diagnostics: translating an idea into a product*

14:15 – Invited Translation- **Patrick Kugelmeier**, Kugelmeiers AG, Zollikerberg, CH  
14:30 Contribution 10 *How laws of nature should guide the development of 3D cell culture for regenerative medicine*

14:30 – Panel Discussion Discussion Leader: **David W. Grainger**, University of Utah, USA  
15:10 *Panelists: Speakers of above*

15:20 – **Coffee/TeaBreak / Lichthof, floor D**  
15:50

Wednesday, August 15 (Session 15B)

**Session 7B: Translational Session 3: Crossing regulatory and institutional barriers** KOL-G-201 (Aula), floor G

Chairs: **Samuele Tosatti**, SuSoS AG, CH and **Martin Schuler**, AO Foundation, CH

15:50 – 16:05	Invited Translation- Contribution 11	<b>Peter Studer</b> , SwissMedtech, CH <i>The new EU-regulations and their impact on startup companies</i>
16:05 – 16:20	Invited Translation- Contribution 12	<b>Martin Schuler</b> , AO Foundation, Dübendorf, CH <i>Surviving the new MDR</i>
16:20 – 16:25	Invited Translation- Contribution 13	<b>Beat Lechmann</b> , Johnson & Johnson Medical Devices, Zuchwil, CH <i>MDR/IVDR implementation: what does it mean for my company?</i>
16:25 – 16:40	Invited Translation- Contribution 14	<b>Lukas Langenegger</b> , hemotune AG, Zurich, CH <i>The new MDR, what does it mean for Startups</i>

16:40 –  
16:50 Q&A

16:50 –  
17:00 *Short break (no servings)*

**Conference Day 2 Plenary Talk** KOH-B-10, floor B, video transmission to KOL-G-201 (Aula), floor G

17:00 – 17:40	Keynote 7	<b>David J. Mooney</b> , Harvard University, Cambridge, MA, USA <i>Manufacturing T cells in vitro and in vivo</i> Intro: <b>Sindy KY Tang</b> , Stanford University, Stanford, US
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18:30 – ca. 23:00 **Conference Dinner** (Restaurant “Die Waid”, Zurich)



Thursday, August 16

**Conference Day 3 / KOH-B-10, floor B**

**Session 8: Bioinspired Materials / KOH-B-10, floor B**

Chairs: **Sally McArthur**, Swinburne University, Melbourne, AU and **André Studart**, ETH Zurich, Zurich, CH

08:30 – Keynote 8 **Sierin Lim**, Nanyang Technological University, Singapore, SG  
09:10 *Protein assemblies at interfaces: fundamentals and opportunities*  
Intro: **Sally McArthur**, Swinburne University, Melbourne, AU

09:10 – Invited Talk 11 **André Studart**, ETH Zurich, Zurich, CH  
09:40 *3D printing of biologically-inspired materials*

09:40 – Contributed Talk 12 **Marie Weinhart**, Freie Universität Berlin, Berlin, DE  
10:00 *Thermoresponsive monolayers on polystyrene substrates for tissue culture – from functional pancake to brush coatings*

10:00 – **Coffee/Tea Break / Lichthof, floor D**  
10:30

**Session 9: Bacteria at Interfaces / KOH-B-10, floor B**

Chairs: **Fredrik Höök**, Chalmers University of Technology, Göteborg, SE and **Joachim Rädler**, Ludwig Maximilians University Munich, Munich, DE

10:30 – Keynote 9 **Erik Reimhult**, University of Natural Resources and Life Sciences, Vienna, AT  
11:10 *Digital phase contrast holography applied to investigating bacteria and bacteria interactions with surfaces*  
Intro: **Fredrik Höök**, Chalmers University of Technology, Goteborg, SE

11:10 – Invited Talk 12 **Joanna Aizenberg**, Harvard University, Boston, US  
11:40 *Designing interfaces that prevent marine fouling*

11:40 – Contributed Talk 13 *to be selected from rapid poster presentations on Aug 14*  
12:00

12:00 – **Lunch & Poster Session & Exhibition / Lichthof, floor D, Foyer West, floor D**  
13:30

13:30 – **Poster Prizes Announcement / KOH-B-10, floor B**  
13:45

Thursday, August 16

**Session 10: Drug Delivery Systems (B) / KOH-B-10, floor B**

Chairs: **Catherine Picart**, Grenoble Institute of Technology, Grenoble, FR and **Ashutosh Chilkoti**, Duke University, Durham, US

13:45 – 14:15	Invited Talk 13	<b>Kwanwoo Shin</b> , Sogang University, Seoul, KR <i>Photosynthetic artificial organelles for regulations of ATP-dependent reactions inside liposomal minimal cell</i>
14:15 – 14:45	Invited Talk 14	<b>Ashutosh Chilkoti</b> , Duke University, Durham, US <i>Genetically encoded systems for drug delivery</i>
14:45 – 15:15	Invited Talk 15	<b>Brigitte Städler</b> , Aarhus University, DK <i>Cell mimicry based approaches in drug delivery</i>
15:15 – 15:45	<b>Coffee/Tea Break / Lichthof, floor D)</b>	

**Session 11: Mechanobiology / KOH-B-10, floor B**

Chairs: **Claudia Fischbach**, Cornell University, Ithaca, US and **Carsten Werner**, TU Dresden, DE

15:45 – 16:15	Invited Talk 16	<b>Viola Vogel</b> , ETH Zurich, Zurich, CH <i>Unraveling the crosstalk between tissue tension and tissue functions</i>
16:15 – 16:45	Invited Talk 17	<b>Manuel Salmeron-Sanchez</b> , University of Glasgow, Glasgow, UK <i>Engineering biointerfaces for integrin-growth factor crosstalk</i>
16:45 – 17:25	Keynote 10	<b>Claudia Fischbach</b> , Cornell University, Ithaca, US <i>Engineering approaches to study tumor-microenvironment interactions</i> Intro: <b>Carsten Werner</b> , TU Dresden, DE
17:25 – 17:35	Closing	

**End of Conference**