TEDD Annual Meeting 2021

Cross-industrial applications of organotypic models

14th October 2021 – Zurich University of Applied Sciences, Wädenswil, Switzerland

Last update: 23.06.2021 12:05

Zurich University of Applied Sciences
zh aw
Life Sciences and Facility Management
Institute of Chemistry and Biotechnology

INVITATION

Recent advances in microphysiological systems (MPS) promise a global paradigm shift in drug development, diagnostics, disease prevention, and therapy. The expectation is that these systems will model healthy and various diseased stages and disease progression to predict toxicity, immunogenicity, ADME profiles, and treatment efficacies. MPS will provide unprecedented human-like physiological properties of in vitro models, enabling their routine application in the pharma industry and thus supporting reducing drug development costs by lowering the attrition rate of compounds.

Furthermore, we believe that promoting the cross-sectoral collaboration of academia and industry will further pave the way for widespread exploitation in precision diagnostics and therapy, disease prevention, and personalized nutrition. This will set a future-oriented alternative to animal testing, which is essential in the socio-political context.

During this TEDD Annual Meeting, we would like to showcase MPS application diversity across different industries. The aim is to foster the development of next-generation microphysiological systems (MPS) based on 3D cell culture, organoid, and organ-on-chip technology. To enable visionary projects and radical innovations, we will cover multidisciplinary fields and connect different industry sectors, like pharma, medtech, biotech, cosmetics, diagnostics, fragrances, and food, with each other.

Dr Markus Rimann
Director

Dr Katarzyna Kopanska
Project manager

PROGRAM

9:00	9:30	**Opening of the Meeting** ***Dr Markus Rimann*** *TEDD Competence Centre, Zurich University of Applied Sciences (ZHAW), Switzerland*
09:30	10:15	**What it took to engineer scalable multi-tissue disease models** *Dr Olivier Frey* *InSphero AG, Switzerland*
10:15	10:45	**Study of liver disease using spheroid models: From histology to single-cell sequencing** *Prof Laura Suter-Dick* *University of Applied Sciences Northwestern Switzerland (FHNW), Switzerland*
10:45	11:15	**From organoids to tissues – automation in physiological microenvironments as a key enabler for industrial and clinical applications** *Dr Vincent Revol* *CSEM SA, Switzerland*

11:15	11:45	**Volumetric 3D printing** *Dr Damien Loterie* *Readily3D SA, Switzerland*
12:00	14:00	**Lunch Break and Exhibition**
14:00	14:45	**Harnessing muscle stem cells for regenerative medicine and cellular agriculture** *Prof Ori Bar-Nur* *ETHZ Department of Health Sciences and Technology, Switzerland*
14:45	15:15	**Cultivated Meat: Tissue Engineering Concepts Enabling the Development of Food for Future** *Dr Suman Das* *Mirai Foods, Switzerland*
15:15	15:45	**Nanomechanical measurements of tissues in situ for diagnosis and treatment optimization of solid tumors** *Dr Marija Plodinec* *ARTIDIS*
15:45	16:15	**tbd**
16:15	16:30	**Final remarks and TEDD next steps** ***Dr Markus Rimann*** *TEDD Competence Centre, Zurich University of Applied Sciences (ZHAW), Switzerland*
16:30	17:30	**Apéro**

EXHIBITION

EXHIBITION FEE

TEDD Partner **First-time exhibitor**	**Free**
TEDD Partner **Past years exhibitors**	**Free**

REGISTRATION

https://www.zhaw.ch/de/lsfm/forschung/chemie-und-biotechnologie/competence-centre-tedd/tedd-events/online-tedd-event-registration-annual-meeting/

Opens: 24 June 2021
Deadline: 1 October 2021

PARTICIPATION FEE

TEDD Partner	**No entrance fee**
Standard Fee	**CHF 160**
Students	**CHF 80**

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CONTACT

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Einsiedlerstrasse 31, CH-8820 Wädenswil, Switzerland

VENUE

Zurich University of Applied Science (ZHAW)

Campus Grüental

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Switzerland

BIOGRAPHIES OF SPEAKERS

Dr Olivier Frey

InSphero, Switzerland

Olivier Frey is Vice President and Head of Technology & Platforms at InSphero and leads the Microphysiological Systems and Organ-on-Chip programs. Before joining InSphero, he was the group leader and SNF Ambizione fellow at the Department of Biosystems Science and Engineering of ETH Zurich, Switzerland. In the Bio Engineering Laboratory of Prof. Andreas Hierlemann, he was responsible for developing integrated microfluidic systems for single-cell handling and 3D tissue cultures. Included are in particular multi-tissue systems, or so-called "Body-on-a-Chip" configurations based on 3D microtissue spheroids for perfusion culturing, on-chip and off-chip analysis, and interaction. Olivier Frey received his Doctoral degree in Micro Engineering from EPF Lausanne, Switzerland, at the Laboratory of Prof. Nico de Rooij, and a Diploma in Microtechnology, Mechanics, and Economics from ETH Zürich.

Prof. Laura Suter-Dick

University of Applied Sciences Northwestern Switzerland (FHNW), Switzerland

Prof. Dr. Laura Suter-Dick is currently Professor for Molecular Toxicology in the School of Life Sciences at the University of Applied Sciences Northwestern Switzerland (FHNW). She is a European Registered Toxicologist (ERT), holds a PhD in biology, and acquired more than 15 years of research experience in the industry before moving to academia in 2012. During her career in the industry, she specialized in mechanistic toxicology, with a strong focus on advanced in

vitro systems for toxicity assessment, the alternative to animal methods, and toxicogenomics. She is actively involved in teaching and supervises bachelor, Master, and PhD students. She is president of biotechnet Switzerland and a member of the Swiss Centre for Applied Human Toxicology (SCAHT) and the Swiss 3R Competence Center (3RCC). She is a board member of the Swiss Toxicology Society.

Dr Vincent Revol

CSEM SA, Switzerland

Dr. Vincent Revol is Head Research and Business Development, Life Science Technologies for CSEM Regional Centers. Responsible for the research roadmap and contacts with key partners and customers, he ensures the strategic alignment of CSEM activities with the Life Science market. Engineer and physicist by education, Vincent is passionate about innovation where technology meets life. Born in France and educated at the Ecole Polytechnique in Paris, he received his Master's degree at Stanford University before completing his PhD at the University of Zürich. Dr. Vincent Revol is also an InnoSuisse expert and member of different start-up coaching programs.

Dr Damien Loterie

Readily3D, Switzerland

Damien Loterie graduated from EPFL in 2017 with a PhD in microengineering. His expertise in light shaping through complex media put him on track to develop an algorithm for volumetric 3D printing. He co-founded the spin-off Readily3D in 2020 and now serves as CEO of the company.

Prof. Ori Bar-Nur

ETHZ Department of Health Sciences and Technology, Switzerland

Dr. Ori Bar-Nur serves as a tenure-track assistant professor in the Department of Health Sciences and Technology at ETH Zurich, heads the Regenerative and Movement Biology (RMB) lab. He received his PhD degree with distinction in 2012 from the Hebrew University and completed postdoctoral training at Harvard University in 2018, both in Stem Cell Biology. The primary long-term goal of his laboratory is directed towards developing stem cell-based therapeutic approaches to treat degenerative loss of muscle mass. To this end, his lab utilizes direct lineage reprogramming approaches to convert somatic cells into the regenerative-competent myogenic stem and progenitor cells suitable for potential therapies. Given the lab's expertise in muscle cell line production, further research initiatives include exploring means to reduce costs of cultivated meat production via the generation of unique muscle stem cell lines that can be used as a source for sustainable proteins. Dr. Bar-Nur's work has been published in prestigious journals, including Nature Biotechnology, Nature Methods, and Cell Stem Cell. In 2019 he was a recipient of an Eccellenza Grant from the Swiss National Science Foundation.

Dr Suman Das

Mirai Foods, Switzerland

He holds PhD in Molecular Medicine with a particular focus on metabolic interactions in cancer patients from the Medical University of Graz, Austria. After a Postdoc at Novartis, he continued to develop various therapeutic interventions towards Muscle metabolism. He is the author of more than 20 high-impact publications with more than 1100 citations (h-index 15) and holds two granted

patents.

He co-Founded Mirai Foods with Christoph Mayr (CEO) in 2019. Now he is serving as Chief Scientific Officer. Mirai Foods aims to produce Cultivated Meat from bovine stem cells. MIRAI's mission is to provide delicious, high-quality cultivated meat at a fair price. Better for people, animals, and the planet.

Dr Marija Plodinec

Dr. Marija Plodinec (Chief Executive Officer, Board Member, Co-Founder) Marija Plodinec studied physics in Zagreb and received her doctorate in 2010 from the Maurice Müller Institute at the Biozentrum of the University of Basel. For twelve years, she has driven the development of ARTIDIS, a medical device for fast and early diagnosis of breast cancer based on a unique nanomechanical biomarker. During many years as a research associate at the Biozentrum of the University of Basel and as a project leader at the University Hospital Basel, Switzerland, she has brought this technology from basic research to the first clinical studies. Dr. Plodinec is a recognized expert in the EU and the US in the field of physical sciences in oncology and has co-authored important scientific papers and patents in this field. She is also a member of several international organizations focusing on cancer research and its clinical applications. Dr. Plodinec has co-founded ARTIDIS AG and, in November 2017, became the CEO of ARTIDIS AG and a Member of the Board of Directors. Under her leadership, ARTIDIS fundraised more than 12M USD, successfully completed the large clinical study on 545 patients in Switzerland, grown to 25 FTE, and partnered up with leading pharmaceutical and clinical institutions such as the Texas Medical Center in Houston, US, with the goal to establish its presence and fast market entry in the US.