Programme

Der Simulierte Mensch

9:00	Arrival
9:20	Technical Introduction
9:30	Welcome by Geraldine Rauch and Axel R. Pries
9:45	Si-M Introduction by Andreas Thiel, Roland Lauster, Jennifer Rosowski and Shirin Kadler
10:15	Coffee break (5 min)

Session 1

10:20	"Quality assuring measures for human model systems" by Maren Hülsemann, BIH QUEST Center for Responsible Research
10:30	"Bioorthogonal transition metal catalysis for anticancer therapies" by Ana Perez, Bioanalytics, TU Berlin
10:40	"Neo|Pancreas^{Print} – 3D printed perfusable islet-containing tissue based on human decellularized pancreatic tissue derived bioink" by Eriselda Keshi, Experimental Surgery, Charité
10:50	"A 3D model for the survival niche of human long-lived bone marrow plasma cells" Zehra Uyar-Aydin, Medical Biotechnology, TU Berlin
11:00	"Immune-competent Human (multi)organ-on-a-chip models" by Anna-Catharina Krebs, BCRT and Institute of Med. Immunology, Charité
11:10	"Cardiovascular Modelling: Image-based Modelling of Heart Hemodynamics" by Leonid Goubergrits, Cardiovascular Modelling and Simulation, Charité
11:20	"Towards Design Automation for Organ-on-Chip Devices" by Robert Wille, TU München
11:30	Networking
12:00	Lunch break (30 min)

Session 2

12:30	"Organoid Modeling of the Human Blood-Liver Niche as a Platform for High- Resolution Ge nomic Screens and Organoid-on-a-Chip technology" by Milad Rezvani, BCRT, Gastroenterology, Nephrology and Metabolic Medicine, Charité
12:40	"Data Management in Automated transdisciplinary laboratories" by Simon Seidel, Bioprocess Engineering, TU Berlin
12:50	"Understanding the dynamics and drivers of human NK cell clonal expansion" by Timo Rückert, Charité/DRFZ
13:00	"SMB activities in biomechanics" by Melika Mohammadkhan, Structural Mechanics and Analysis, TU Berlin
13:10	"Using urinary cells to monitor and simulate human kidney diseases" by Philipp Enghard, Nephrology and Medical Intensive Care, Charité
13:20	Networking
13:55	Closing words and Farewell

CHARITÉ UNIVERSITÄTSMEDIZIN BERLIN

Technische Universität Berlin

Abstracts

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Speaker Table	
Quality assuring measures for human model systems	Maren Hülsemann
Bioorthogonal transition metal catalysis for anticancer therapies	Ana Pérez-Lopez
Neo|PancreasPrint – 3D printed perfusable islet-containing tissue based on human de-cellularized pancreatic tissue derived bioink	Eriselda Keshi
A 3D model for the survival niche of human long-lived bone marrow plasma cells	Zehra Uyar-Aydin
Immune-competent Human (multi)organ-on-a-chip models	Anna Krebs
Cardiovascular Modelling: Image-based Modelling of Heart Hemodynamics	Leonid Goubergrits
Towards Design Automation for Organ-on-Chip Devices	Robert Wille
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Understanding the dynamics and drivers of human NK cell clonal expansion	Timo Rückert
SMB activities in biomechanics	Melika Mohammad-khan
Using urinary cells to monitor and simulate human kidney diseases	Philip Enghard
Room 1 — Table 1	
Simulating glucose metabolism using continuous glucose monitoring in different fas-ting forms	Nico Steckhan
Cardiovascular Modelling: Efficient Simulation Methods for Virtual Surgery	Lars Walczak
Developing microelectronics at the interface between medicine and technology	Mario Birkholz
Development and Utilization of an “Organ-in-a-shell" concept to study age-related effects on allograft quality prior to liver transplantation	Simon Moosburner
GlobalResist - Forecasting antibiotic resistance evolution: a new approach to address a major issue in global health	Sophie Becke
Room 1 — Table 2	
Cardiovascular Modelling: In-Silico testing and validation of Cardiovascular Implantable devices (SIMCor)	Jan Brüning
hiPSC derived 3D-model systems @ BIH Core Unit pluripotent Stem Cell and Organoids	Harald Stachelscheid
Bioprinting of Organ Models	Jens Kurreck
Biofabrication of synthetic human liver tissue with advanced programmable functions	Nils Haep
Room 2 — Table 3	
Cardiovascular Modelling: Synthetic Vessel Geometries to augment clinical Data for Machine Learning Applications	Pavlo Yevtuschenko
Personalised, Pain-free Training with Biofeedback	Roxanne Jackson
Mechano-biological optimization of trauma and orthopaedic medical devices through computer modelling approaches	Sara Checa
Role of innate cells in the pathogenesis of Juvenile Idiopathic Arthritis (JIA)	Oliver Knight

Abstracts

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Room 2 — Table 4	
Toxicological potential of fungal volatile metabolites in in vitro respiratory test systems	Kustrim Cerimi
Immunocompetent skin-on-a-chip platform for in-vitro efficacy testing of immune-checkpoint immunotherapy in melanoma	Irit Vahav
Patient-derived airway models to advance diagnostics and precision medicine for cystic fibrosis and other rare genetic lung diseases	Anita Balász
Quantitative Systems Metabolism: Applications in basic research and personalized medicine	Nikolaus Berndt
Room 3 — Table 5	
Unravelling the developmental pathways of human innate lymphoid cell from tissue -derived CD34+ hematopoietic progenitors through ex vivo multi-omics and in vitro approaches	Daniela Carolina Hernández Torres
hiPSC-derived adrenocortical cell model	Nhi Tran & Ute Scholl
Systematic analyses of transcriptional programs in three-dimensional tissue culture models of pancreatic neoplasia with defined genomic alterations in driver genes.	Matthäus Felsenstein
Cardiovascular modelling: experimental methods to simulate human organ and blood physiology	Michael Lommel
Room 3 — Table 6	
Modelling of novel protein-protein interactions identified by crosslinking mass spectrometry	Alexander Rau
Epitope mapping of clinically relevant antibodies by advanced proteomics	Kendra Njo
Functional investigation of ex vivo human brain tissue pathophysiology *in vitro*	Laura Monni
Proteomic characterization of the human liver matrisome in health and disease	Assal Daneshgar
Room 4 — Table 7	
Interrogation and modelling of human intestinal innate lymphoid cell niches and their alteration in inflammatory bowel disease and cancer progression	Nils Müller
The role of zinc for the human glycome	Maria Maares
Decellularized human liver scaffolds as a novel 3D platform to mimic colorectal liver metastases in vitro	Karl Herbert Hillebrandt
Patient specific cancer treatment with Circulating Tumor Cells	Paul Geus
Reconstructing the triadic relationship of primary patient-derived lymphoma, the immune system and drug-related liver metabolism on multi-organ chips to emulate senescence-evoked T-cell immune responses	Anna Walter