

**WEDNESDAY MAY 27, 2026**

**3:30–5:00 PM**

Poster Board Number	Abstract Number	Presenter	Title
<b>Track 1: Engineering the Next Generation of MPS</b>			
<b>Theme 1.7 Engineering Complex Multi-Cellular Systems</b>			
101	223	Matthias Gossmann	Modeling human cardiac complexity: 3D multicellular tissues and disease models for drug development
103	224	Bettina Lickiss	Ready-to-use human cardiac organoids for chronic contractility-based toxicity profiling of small molecules and biologics
105	232	Maitrayee Chatterjee	TIM-Cell: The most physiological intestinal permeability model
107	250	Connor Robinson	Biaxial Engineered Aortic Tissue on a Chip for the study of calcific aortic valve disease
109	254	Jae-Sung Ryu	Generation of cardiac organoids from human induced pluripotent stem cell (iPSCs) using a microphysiological systems (MPS) approach
111	263	Nozomu Koiwa	Development of cell culture microfluidic device to create locally distinct oxygen concentration
113	291	Dongwoo Oh	A kidney-on-a-chip model of distal epithelial-endothelial barrier for <i>in vitro</i> study of etoposide-induced cellular senescence
115	315	Gabriela Silva	Reusable microfluidic platform with cylindrical geometry for BBB-on-a-chip modelling
117	318	Chiara Diacci	Pharmacological validation of a novel BBB-on-chip platform for reliable and predictive <i>in vitro</i> drug screening
119	330	Anshul Bhide	An organ-on chip device for investigating the barrier function of human placenta
121	355	Lauren Perez	A highly reproducible and precise measurement platform for 3D engineered cardiac muscle tissue contractility
123	362	Nina Hobi	Advancing preclinical findings toward application with an inflamed infant colon-on-chip
125	374	Stephanie Pearson	Development and characterization of a human alveolus-on-a-chip for assessing viral infection and therapeutic efficacy
127	379	Scott Wood	Microfluidic osteoarthritis-on-a-chip: Modeling human joint inflammation
129	382	Vesna Chappell	Building complex <i>in vitro</i> human placenta systems at NIEHS
131	386	Sarah Lloyd	Development of complex <i>in vitro</i> models for evaluation of ADC-induced lung toxicity
133	391	Ravi Vaidyanathan	High-throughput assessment of barrier function using human iPSC-derived brain microvascular endothelial cells
135	408	Cassidie Reller	Microphysiological blood–brain barrier chip for screening surface ligands on liposomes for CNS delivery
137	428	Noriko Matsumoto	3D and super-resolution imaging of intestine-liver model on HUMIMIC chip <sup>3</sup>
139	438	Adrienne Vaughan	Physiologically-relevant human nasal airway-on-chip model for IL-13 asthmatic phenotype induction
141	447	Shayne Frebert	Bioprinting spatially guided functional 3D neural circuits with agarose-xanthan gum copolymer hydrogels
143	449	Adelina Rogowska-Wrzesinska	Long-term hepatic microphysiology in low-shear 3D cultures
145	458	Pai-Wen Wang	A co-culture microfluidic platform for studying LPS-induced early vascular-immune responses with neutrophil migration and chemotaxis

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147	463	Elizabeth Blaber	Understanding the impact of spaceflight on the brain-liver-gut-axis: Using novel tools to adapt multi-organ microphysiological systems to spaceflight conditions
149	490	Hao-Chien Kao	Development of a vascularized liver-on-a-chip platform for liver tissue engineering
151	493	Yifan Gao	An integrated benchmark of multi-lineage human brain organoid protocols
153	498	Sebastien Teissier	A novel injection-compatible microfluidic skin-on-chip platform supporting full-thickness human skin biopsies with hypodermis for dynamic compound tracking and multi-modal analysis
155	513	Evan Cirves	Functional coupling of bone marrow and skin microphysiological systems to model human extramedullary granulopoiesis
157	520	Jason Spence	Development-guided assembly of innervated, vascularized iPSC-derived human intestinal organoids with <i>in vitro</i> peristaltic function
159	521	Mila Rep	Responsible innovation and shaping research: A qualitative study of scientists' attitudes on the development of multi-organ-on-a-chip models for obesity
161	526	Sana Surrency	A 3D Peri-implant Epi-mucosa-on-a-chip as a functional platform to study host–bacteria–material interactions
163	529	Byengkyu Kang	Spatiotemporal control of multi-axis gastruloids patterning using microfluidic signaling gradient
165	540	Maria Fernanda Grisales	Development of a human iPSC-based neural microphysiological system to model Down syndrome
167	553	Pim De Haan	Physiological control of circulating steroid hormones in MPS using thermodynamic properties of plasma protein binding
169	563	Alican Ozkan	Human IBD complex <i>in vitro</i> model to evaluate monoclonal antibodies targeting immune cell trafficking
171	587	Brycelyn Whitman	Generation of human organoid liver microphysiological system (MPS)
173	597	Wei Chen	Integrated liver-thyroid <i>in vitro</i> system for predicting human-relevant thyroid disruptors
175	615	Andrew Antolic	Merging central and peripheral nervous system models into a unified functional hipsc-derived human-on-a-chip model
177	618	Meysam Chorsi	Multi-organoid MPS for iPSC-based radiation response modeling and inter-organ crosstalk
179	620	Meixuan Yang	Dengue virus infection in human iPSC-derived BBB-MPS induces antiviral responses while preserving barrier integrity
181	634	Donia Ahmed	Epithelial cell nascent matrix deposition contributes to early lung fibrosis
183	645	Kanchana K Pandian	Next generation microphysiological systems for human gut–liver axis modeling in preclinical drug testing
185	661	Samira Aghlara-Fotovvat	A microvascularized endometriosis microphysiological system to probe <i>Borrelia burgdorferi</i> -driven gynecopathology
187	673	Srikanya Kundu	3D bioprinted human neural circuitry models with physiologically relevant functional assays for disease modeling and drug screening
191	699	Elizabeth Lipke	Developing engineered cardiac tissues exhibit composition and functional differences when exposed to thalidomide during hydrogel-supported hiPSC differentiation
193	708	Shilan Ma	The effect of probiotics on inflammatory bowel disease using a microfluidic device in an anaerobic environment

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195	733	Yuwen Zhao	Functional neural microenvironment to study neuronal connection dynamics
197	755	Juhee Kim	Development of an advanced microfluidic platform for engineering functional 3d skeletal muscle.
199	759	Yunji Lee	Physiologically relevant breathing lung models enabled by soap films-inspired ultrathin hydrogel membranes
201	762	V Amanda Fastiggi	Bioprinted vascular inflammation model
203	763	Angelica Phelan	Macrophage impact on cytokine response within a bioprinted arterial model
205	764	Mukunth Parthasarathy	Evaluating the impact of dimensionality on neuronal network activity and compound-response <i>in vitro</i>
207	781	Tom Harris-Brown	Opti-ox™ deterministic cell programming to enable the industrialisation of New Approach Methodologies
209	786	Júlia Vallverdú	Standardizing and automating high-throughput organoid culture and downstream applications with the mo:bot
211	787	Zhouquan Fu	Biofabrication of 3D printed artery-on-chip
213	811	Tets Nagamoto	PacinO plates: morphologically-relevant lung acinus organoids attaining high-throughput reproducibility and automated scalability, with straightforward observability and months-long durability
<b>Track 2: Modeling Human Biology with MPS</b>			
<b>Theme 2.1 Modeling Developmental and Reproductive Biology</b>			
215	28	Nipun Jain	Engineering 3D bio-printed lung-on-a-dish platform to investigate pulmonary fibrosis
217	31	Amanda Lima	Development and validation of a thermoplastic intestine-on-a-chip enabling dynamic epithelial–endothelial co-culture and drug transport analysis
219	48	Soumyadip Kundu	Predicting gastrointestinal toxicity using the assay-ready, primary-derived OrganoReady® Colon Organoid model
221	53	Nikita Karra-Bhardwaj	Complex respiratory disease modelling and toxicity testing
223	84	Cristina Antich	A high-throughput three-dimensional bioprinted human placenta model recapitulating different stages of gestation as a novel predictive platform to study drug safety and pathological conditions during pregnancy
225	719	Breanne Kincaid	Pynapse-enabled synapse geometry analysis and functional electrophysiology identify developmental neurotoxicity of low-dose metals in human brain organoids
227	740	Yen Diep	A placenta-brain microphysiological analysis platform (PB-MAP) for evaluation of neuropathogenesis in pre-eclampsia
229	771	Tiffany Edwards	Novel 3D method to culture primary human placental cytotrophoblasts
231	793	Abigail Edwards	A microfluidic placenta-on-a-chip model for evaluating transplacental drug transport
<b>Track 2: Modeling Human Biology with MPS</b>			
<b>Theme 2.2 Modeling Human Disease: Neurological and Neurodegenerative Disorders</b>			
233	51	Mubeen Goolam	Developing African origin neural rosette organoids as a genetically diverse preclinical model of neurological disease
235	79	Xueqi Tang	Modeling chemotherapy-induced peripheral neuropathy with hiPSC-derived sensory neuron and Schwann cell co-culture
237	189	Kévin Gillois	Development of a human iPSC-derived retinal microphysiological co-culture system for dry age-related macular degeneration

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239	207	Peter Hsi	Focused ultrasound-induced cavitation in a 3D <i>in vitro</i> human brain model recapitulates markers of blast traumatic brain injury
241	277	Shushant Jain	Evaluation of human induced pluripotent stem cell-derived tri-culture as <i>in vitro</i> model for Neurodegeneration and neuroinflammation
243	328	Daniel Bramham	Modelling neurodegeneration with 3D bio-printed ipsc-derived neural models
245	329	John Lamb	Advancing drug discovery and toxicology with human iPSC-derived 3D cardiac and brain microtissues
247	331	Cherry Gupta	Engineering a high-throughput human blood–nerve barrier-on-chip for NF1 therapeutic discovery
249	367	Heather Branscome	A human iPSC-derived neurosphere model for studying HIV-1 CNS infection and persistence
251	369	Kartik Balachandran	Design and validation of a novel blood-brain barrier-on-chip device for the study of low-magnitude traumatic brain injuries
253	370	Monika Rajput	A predictive <i>in vitro</i> 3D bioprinted vascularized tissue platform to study environmental toxicant-induced angiogenesis and vascular dysfunction
255	378	Christopher Fellin	A blood-brain-barrier model to study radiation exposure
257	385	Kaveena Autar	Utilizing a functional human-based central nervous system model for evaluating neurocognitive impairment and therapeutic efficacy
259	403	Shereen Chew	A human donor-matched iPSC-derived gut-liver-brain microphysiological system for studying interorgan crosstalk and modeling early Parkinson's disease
261	406	Noah Goshi	Cross-species comparison of viral infection responses in human and rodent complex neuronal cultures
263	412	Xiaobo Han	Developing of a MPS device for <i>in vitro</i> functional evaluation with compartmentalized cultured neural models on multiple MEA platforms
265	418	Kamilė Kasperavičiūtė	Chemical surface modification of porous polycarbonate membranes in two-channel microfluidic chips for enhanced cell adhesion
267	435	Maren Schenke	Sex and genetic background shape androgen responses in a human brain microphysiological system
269	441	Lauren Vetoulis	Development of a microfluidic model of the human brain-lymphatic-lymph node circuit for investigation of neurodegenerative pathogenesis
271	446	Margaret Magdesian	Patient-specific human neuromuscular junctions-on-a-chip for real-time, label-free profiling of NMJ responses to toxins and drug development
273	450	Jack Thornton	Establishment of an immunocompetent human neural organoid platform to investigate neurofibromatosis type 1-associated neuroimmune dysfunction
275	451	Akhmetzada Kargazhanov	Evaluating amyloid-induced neuromuscular pathology by utilizing a human iPSC-derived <i>in vitro</i> functional NMJ model
277	471	Zheyu Ruby Jin	<i>Ex vivo</i> modeling of preterm brain injury for high-throughput drug screening
279	488	Vasiliki Machairaki	Proteomic profiling of brain organoids and extracellular vesicles identifies early alzheimer's biomarkers and predictors of drug response
281	514	Kaustubh Joshi	Human olfactory neurogenic organoids derived from induced pluripotent stem cells recapitulate the complete olfactory niche for disease modeling
283	518	Olivier Uwishema	A human neurovascular microphysiological system to model blood-brain barrier dysfunction under inflammatory conditions

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285	531	Cosmo Mitchell	A high-throughput neurovascular-unit-on-a-chip for ischemic stroke modeling and therapeutic screening
287	541	Belen Zylberman	Investigation of sensorimotor pathology in Alzheimer's disease with a human iPSC-derived microphysiological system
289	559	Alan Kim	Gene expression variance as a disease signature in neurological organoid models
291	560	Lixuan Ding	Midbrain-Striatum microphysiological system to model dopaminergic reward circuitry <i>in vitro</i>
293	564	Aditya Raghunandan	CirculationSiM: A new blood-brain barrier (BBB)-on-a-chip system to study the role of cerebrospinal fluid circulation in health and in neurodegeneration
295	574	Xiufang (Nadine) Guo	Investigation of bioenergetic therapy for Amyotrophic lateral sclerosis and Alzheimer's disease in human functional microphysiological systems
297	591	Krysten Jones	An <i>in vitro</i> to <i>in vivo</i> extrapolation (IVIVE) for the detection of aberrant neuronal activity
299	610	Deepshikha Mitra	A functional human-on-a-chip model of autoimmune-mediated peripheral neuropathies
301	612	Shovan Naskar	Characterization of a functional brain-region-specific 3D neural spheroid model for high-throughput therapeutics screening
303	639	Vincent Truong	A functional human iPSC-derived DRG-dorsal horn neuron pain circuit model
305	678	Nicholas Coungeris	Integration of microglia into 3D CNS functional organoids for modeling Alzheimer's disease
307	685	Victoria Alstat	The advantages of CNS-3D organoids for functional neuromodulation studies
309	695	Anukriti Dey	Characterization of a human isogenic neurovascular unit on a chip for modeling blood-brain barrier transport and neuroinflammation
311	696	Randolph Ashton	RosetteArray® Platform: Off-the-shelf human developmental neurotoxicity screening and modeling of neurodevelopmental disorders
313	697	Andre Wimberly	A vascularized microfluidic gut-brain axis model demonstrates synergistic effects of alcohol and tbi-associated microbiome dysbiosis
315	753	Neal Lojek	Electrophysiological and neuroimmune phenotype characterization in an engineered 3D cortical tissue model to deep space-relevant doses of chronic gamma radiation
317	795	Antonella Di Bello	Functional characterization of L-Dopa responses in midbrain organoids using 3D HD-MEA technology
319	796	Jerry Skefos	Characterizing ACROBiosystems human iPSC-derived cerebral organoids using the BioCAM Duplex and CorePlate™ 38/60
321	801	Krithika Shankar Iyer	Development of a novel serum free directed differentiation protocol for functional hiPSC-derived endothelial cells
323	815	Aliyah Penn	Using iPSC-derived brain organoids as a tool for precision medicine in rare neurodevelopmental diseases
<b>Track 2: Modeling Human Biology with MPS</b> <b>Theme 2.3 Modeling Human Disease: Cancer</b>			
325	63	Shuai Shao	Quantifying the dual effect of anti-tumor and pro-tumor human neutrophils on natural killer cell behaviors in a microphysiological system

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327	77	Silvia Scaglione	Modeling the esophageal adenocarcinoma microenvironment under dynamic flow: A milli-fluidic multi-organ approach to study stromal crosstalk
329	92	Saumya Jaiswal	A brain tumor-on-chip model to mimic glioblastoma-induced blood-brain barrier dysfunction
331	99	Shota Koishi	Development of a pancreatic ductal adenocarcinoma model for evaluating the effects of dynamic ECM remodeling on drug efficacy
333	118	Seyoum Ayehunie	Use of patient-derived 3D tumoroids harboring diverse mutations to scaleup screening of therapeutic safety and efficacy of metastatic colorectal cancer
335	125	Moo-Yeal Lee	High-throughput 3D immune-tumor co-culture in a pillar/perfusion plate with dynamic immune perfusion for immunotherapy screening
337	128	Nathachit Limjunyawong	Establishment of a biobank of Thai patient-derived lung organoid as a model for studying lung cancer pathogenesis
339	144	Irene Mariam Jacob	Modeling the Blood Brain Barrier (BBB) using an organ-on-chip platform for therapeutic screening
341	146	Fahimeh Shahabipour	A bioprinted vascularized tumor tissue model of non-small cell lung cancer to screen for cancer drugs targeting the tumor microenvironment
343	171	Gatha Adhikari	Evaluation of ethyl cellulose–ethanol ablation in a human-scale microphysiological model of high-grade cervical dysplasia
345	202	Evren Oktem	Tissue-specific vascularized tumor microenvironment chips: Modeling angiogenesis in epithelial cancers
347	217	Paul Vulto	Development of organotypic patient-derived ovarian cancer model for therapy testing
349	242	Cristina Sanchez De Diego	Engineering human microphysiological systems to recapitulate bone, lymph node, and liver metastases in prostate cancer
351	255	Morgan Hamon	A workflow integrating multi-omics with patient-specific 3D cell models for interrogating precision medicine approaches in clinically-relevant timeframes
353	266	Tesi Liu	A novel pumpless microphysiological platform for long-term glioblastoma tissue slice culture towards personalized radiotherapy
355	267	Pavan Hallur	Extracellular matrix stiffness influences molecular profiles and chemoresponse in oral squamous cell carcinoma
357	284	Chung-Chung Hung	A vascularized microphysiological platform for angiogenesis assessment in colorectal cancer patient-derived tumor organoids and hepatic tumor spheroids
359	290	Volodymyr Kuzmenko	Development of <i>in vitro</i> 3D liver tissue model with bile duct network using LUMEN X DLP printer
361	305	Maurizio Aiello	A nutrient-responsive cancer-on-chip platform for translational testing of fasting-based therapies
363	308	Serge Roux	Neuron-as-a-Sensor (NaaS) methodology in compartmentalized MPS to model chemotherapy-induced peripheral neuropathy (CIPN)
365	309	Adriana Toma	Neuron-as-a-Sensor (NaaS) applications for <i>in vitro</i> monitoring of 3D tumor organoid treatment responses
367	341	Mandy Esch	A pumpless, recirculating microfluidic platform for investigating nanoparticle-modulated cancer transendothelial migration
369	345	Thomas Sommermann	A dynamic micro-vascularized organ-on-chip model of pancreatic cancer reveals T cell exclusion and modulation

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371	356	Orna Rabinovich Ernst	Hypoxia-focused 3D tumor models for target identification and translational drug development
373	360	Agnieszka Sadowska	Development of microphysiological systems for evaluating next-generation TCE and CAR-T therapies for solid tumors
375	373	Jane Miglo	It's not just a phase! Luteal influences on early events in ovarian cancer development
377	388	Chris Yankaskas	Standardizing tumor-on-chip Inputs with OncoPro™ Tumoroid Cell Lines
379	389	Tanysha Chi-Ying Chen	Modelling subtype-specific gastric cancer using patient-derived organoid (PDOs) in microphysiological systems
381	397	Twinkle Jina Minette Manoharan	A 3D glioblastoma tumor-on-a-chip for evaluating targeted biomimetic nanomedicine
383	398	Mehdi Nikkhah	A patient-derived brain-tumor-on-a-chip model to elucidate perivascular niche-driven glioblastoma heterogeneity
385	424	Ilva F. Souza	Evaluation of the behavior of MDA-MB-231 tumor spheroids mimicked in a microfluidic device with different collagen concentrations
387	434	Libardo A. Gonzalez-Torres	Mimicking the tumor microenvironment of triple-negative breast cancer using MDA-MB-231 spheroids in a microfluidic device
<b>Track 2: Modeling Human Biology with MPS</b>			
<b>Theme 2.6 Modeling Host Pathogen and Microbiome Interactions</b>			
389	151	Naokata Kutsuzawa	Evaluation of the effects of gut microbiota on a cocultured intestinal model using a double-layered microfluidic chip (Fluid3D-X®)