WEDNESDAY MAY 27, 2026 9:30–11:00 AM			
Poster Board Number	**Abstract Number**	**Presenter**	**Title**
Track 1: Engineering the Next Generation of MPS Theme 1.1 Stem Cell, Synthetic Biology and Biomaterial Innovations for MPS			
100	61	Mani Diba	BioGrid: A high-throughput microphysiological platform for versatile 3D tissue modeling
102	97	Asuka Maekawa	Effects of oxygen-permeable culture plates on the mechanical properties of hepg2 cells
104	127	Takeshi Hori	Stem cell-derived human placental models for assessing placental toxicity and transplacental transfer
106	131	Rahul Patil	Development of a 3D bioprinted bone-on-a-chip platform using a pectin-based bioink
108	208	Juhyeok Kim	Micro- and nanoplastic translocation across an intestinal barrier enabled by a nanofiber-reinforced ecm membrane and its application to a gut–liver co-culture model
110	229	Silke Schwengberg	A translational in-vitro screening platform using Non-Human Primate iPSC-derived ventricular cardiomyocytes
112	252	Mitsumasa Taguchi	ECM-mimicking protein scaffolds for advancing multi organ MPS technologies
114	259	Lipeng Tian	Functional and physiologically relevant human pluripotent stem cell derived liver spheroids for toxicity prediction
116	294	Ana Mora-Boza	Evaluating the regenerative potential of human intestinal organoid–derived mesenchymal stromal cells using synthetic, cell-instructive microcarriers
118	298	John Lamb	Building manufacturing processes for reproducible, multi-year iPSC-based drug screening
120	324	Chloe Smitha	A scalable micromolding approach for aligned monolayer cell culture
122	368	Piyumi Wijesekara	Unpowered multi-week organoid life support system (U-MOLSS) for biological payloads in deep space
124	380	David Nagy	Standardized high-throughput screening of contractile tissues for drug discovery using Ethica M
126	402	Young Eun Moon	A biodegradable nanofiber membrane-based microphysiological carrier for brain organoid transplantation
128	421	Arun Kumar Teotia	Cell microenvironment engineered microphysiological systems for dynamic 3D spatiotemporal control of physical and biochemical cues: A mechanomedicine approach
130	423	Yosuke Ochi	Development of programmable DNA-peptide/protein hybrid systems for artificial extracellular matrices
132	474	Mihane Kawada	Development of aptamer-functionalized DNA hydrogels towards applications for artificial extracellular matrix
134	476	Guillaume Mottet	High-throughput tumoroids production based on hydrogel microbeads for 3D *in vitro* model
136	481	My Hedhammar	Functionalized silk as structural proteins mimicking the ECM for the construction of physiologically relevant tissue models
138	482	Alicia Henn	Primary cell isolation under constant physiologic oxygen enhances cell growth
140	486	Shashi Tiwari	Advancing drug metabolism and toxicology research with scalable human small intestinal organoids

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142	489	Wei-Rong Yin	Development of a small hepatocyte-based, DLM-coated liver-on-a-chip with uniform shear stress for mimicking the liver microenvironment
144	506	Catriona Hamilton	Validation of a high-throughput MPS for 3D culturing of primary hepatocytes
146	538	Nihan Atak	A sensor-integrated glomerulus-on-a-chip platform for real-time monitoring of kidney disease
148	566	Erin E. Sanchez	Improving the consistency of human iPSC-derived microvasculature in the vascularized micro-organ platform
150	583	Anthony Berger	Incorporating iPSC-derived non-parenchymal cells improves function and workflow in liver MPS models
152	614	Larry Millet	Brain-on-a-chip platforms with CLAMPS-mediated neuroendocrine integration
154	743	Harry Akligoh	Droplet microfluidic platform for uniform 3D ECM-guided culture of human iPSC-derived cardiomyocytes
156	774	Jungwoo Lee	Additive biomanufacturing of mature lamellar bone organoids
158	776	Chia-Hsien Hsu	Fabrication of curved PDMS membranes for biomimetic microphysiological systems
160	790	Dana Hellmold	Automated 3D liver spheroid culture and acetaminophen dose-response on mo:bot improve assay robustness and precision
162	806	J. Patrick Kampf	A scaffold-free 3D culture platform enabling uniform and high-throughput spheroid formation
Track 1: Engineering the Next Generation of MPS Theme 1.2 Incorporating Complexity: Vascularization, Immune Competence, and Multi-Organ Connectivity			
164	30	Cheick Sissoko	Microfluidic-based sensor-enabled neurovascular unit for modeling alzheimer's disease impact on the brain vasculature
166	46	Corin Williams	A high throughput multi-organ system comprised of an interacting placental barrier and developing heart to assess drug safety during pregnancy
168	100	Satomi Matsumoto	Rocking culture enhances hepatic function in a liver MPS with perfusable vascular network
170	109	Priscilla Lee	Utilizing a multi-organ chip platform to evaluate the efficacy of antibiotic candidates against bacteria
172	137	Colin Paul	Reconstructing the tumor microenvironment with the OncoPro™ Tumoroid Culture Medium System
174	139	Vidhya Vijayakumar	High throughput immune competent MPS tissue models to study human responses to external threats
176	158	Shinji Sugiura	Interconnected multi-well device with three-dimensional shaker–driven culture medium circulation for use as a simple multi-organ microphysiological system
178	174	Bahram Mirani	Development of multi component 3D tumor microenvironment models for preclinical therapeutic evaluation
180	195	Isabelle Linares	Synovial fibroblast-immune crosstalk drives inflammation and fibrotic adhesions in a human tendon-on-a-chip
182	222	Yu-Hsiang Hsu	Assessment efficacy of the CAR-T Cell Therapy by monitoring the interstitial fluid pH value inside a vascularized liver tumor model
184	226	Xingrui Mou	Navigating monocyte-derived Kupffer cells for immune-competent liver microphysiological systems
186	236	Alec Salminen	Toxicokinetic assessment of oral drug formulations using a human-based microphysiological system

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188	246	Elizabeth Wiellette	Circulating leukocytes in MPS models to study immune cell:vascular interactions during damage and infection
190	249	Zhengpeng (Jason) Wan	A perfusable vascularized liver organoid MPS for advancing liver disease studies
192	265	Parastoo Sakinejad	Optimizing a tubing-free magnetic impeller pump for high viability, stable cell suspension, and predictable flow direction in 3D-printed multi-organ-on-chip platforms
194	286	Matthias Ryma	A ready-to-use organ-on-chip platform for the one-step generation of fully suspended, barrier-free, and perfusable blood vessels in 3D matrices
196	289	Priyanka Fernandes	An in-vitro Microphysiological platform for preclinical assessment of intra-tumorally injected therapies
198	313	Sarah Moss	Complex vascular dynamics within intra- and peri-spheroid microenvironments
200	316	Jeffrey Borenstein	Advances in high throughput instrumented MPS for applications in disease modeling and safety and efficacy testing
202	323	Elisa Raboni	A human relevant multi-organ & multi-fluidic gut-BBB-on-chip to model gut-brain axis *in vitro*
204	335	Eun-Jin Lee	A high-throughput, gravity-driven liver-heart microphysiological system for predicting secondary drug and metabolite toxicity
206	337	David Bartolomé-Català	Integrating colon organoids, stromal cells, and endothelium to create a pathophysiologically relevant colorectal cancer model to study T cell migration
208	358	Ashley Gard	A scalable and modular multi-organ microphysiological system (ETHOS) for rapid pathogen/toxin characterization and drug development for end-to-end evaluation
210	375	Jenna Rosano	Pulmonary antigen exposure is associated with neuroimmune signaling in a vascularly linked human lung–BBB multi-organ-on-chip model
212	394	Marcos Negrete	Engineering microenvironment for prostate cancer organoids to advance cancer therapeutic modalities
214	507	Priyatanu Roy	Microphysiological vascularization of perfused liver tissue via microfluidic-hydrogel integration on the physiomimix platform
216	508	Emily Reitz	Functional comparison and characterization of iPSC-derived and peripheral blood-derived monocytes and macrophages for use in microphysiological models of inflammation
218	528	Simon Sayer	A modular 3D printed platform for the assembly and perfusion of breast tumor cell clusters
220	555	Matthew Johnson	Biomechanical influences on microvascular cell network formation in an integrated microfluidic platform and synthetic hydrogel matrix
222	569	Victor Zhang	Vascularized tendon fibrotic spheroid in µSiM microfluidic device
224	572	Nicholas A Geisse	Dystrophin deficiency attenuates fibroadipogenic progenitor-mediated contractile maturation in 3D engineered muscle tissues
226	573	Thomas Leahy	Innervation induces a distinct force–frequency phenotype in 3D human neuromuscular junction tissues
228	576	Oscar Abilez	Acute and chronic perfusion of human cardiac vascularized organoids
230	581	Minkyeong Jeong	Engineering a 3D-printed compartmentalized voxel platform with dynamic reconfigurability for spatiotemporal microenvironment control
232	589	Melika Mehrabi Dehdezi	Modeling lymphovascular invasion: Macrophage-mediated vascular disruption and matrix remodeling in inflammatory breast cancer subtypes in a 3D vascularized microfluidic platform

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234	590	Leanne De Silva	A 3D microvascular model for high-resolution assessment of endothelial barrier disruption and recovery
236	626	Blake Anson	Uncovering tissue-specific inflammatory responses with human-iPSC-based NAMs
238	627	Jihoon Ko	Patient-derived tumor spheroid induced angiogenesis as a microphysiological platform for therapeutic vulnerability assessment
240	656	Kairav Maniar	A compartmentalized microphysiological system modeling crosstalk between ovarian tissue and proximal microvasculature
242	659	Italo R. Calori	A novel tunable gradient temperature control platform for multi-chamber organ-on-a-chip systems: Applications for studying heat-induced adverse pregnancy outcomes
244	666	Thomas Shupe	Microengineered human organ tissue equivalents for the *in vitro* study of drugs, toxins, and infectious diseases
246	701	Dylan Hakken	Development of a vascularized microphysiological system compatible with complex three-dimensional cultures
248	703	Sean E. Dunn	Tubing matters: Material-driven PBMC loss in dynamic organ-on-chip systems
250	705	Samanta Paul	Decoupling blood-mediated and glial contributions to COVID-19-mediated neurovascular dysfunction using organ-on-chip platform
252	706	Ying Wang	Enabling perfusable blood vessel organoids with a flow-driven microfluidic co-culture system
254	715	Jose Jimenez-Torres	High-throughput compatible multi-organ culture platforms for drug screening and chemical testing
256	728	Nazanin Rohani Larijani	*In vitro* reconstruction of tumor acidosis and hypoxia: advancing predictive drug discovery platforms for solid tumors
258	769	Yoshikazu Hirai	A reconfigurable multi-organ-on-a-chip for stepwise analysis of intestine–liver and liver–brain interactions in NAFLD-associated Alzheimer's disease
260	800	Vimbainashe Chado	Generating thermal gradients for quantitative and functional induction of flow in microfluidic devices
262	817	Katarzyna Rojek	Vascularized tissue microarrays: a genuine high-throughput appraoch to drug screening in advanced tumor microenvironment models.
Track 1: Engineering the Next Generation of MPS Theme 1.3 In Silico and Digital Twin Approaches for Predictive MPS			
264	107	Hasibul Hasan Hredoy	Computational analysis of flow dynamics and mass transport in a microbubble array microphysiological system
266	133	Nathan Tatum	MPS data pipeline for computational, digital human capability development
268	163	Isaac Western	In-silico causal dynamical modeling of neural organoids from recorded spiking activity
270	175	Ashlee Liao	Open- and closed-loop electrophysiology assessments for organoid intelligence
272	419	Morné Van Wyk	Maximizing data value in MPS ADME experiments using in silico modeling
274	516	Ali Raza	A materials science approach: WS_2/organic heterostructure transducers for real-time organ-on-chip monitoring under flow
276	644	Behnam Amiri	Digilocs 3.0: Mechanistic chip-to-human PK translation enhanced by a 3D spheroid digital twin to improve prediction and reduce uncertainty

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278	648	Kazuya Fujimoto	Simulation-driven design and evaluation of self-organized 3D vascular MPS
280	721	Mark Miedel	Integrated patient digital and biomimetic twins for precision medicine
Track 1: Engineering the Next Generation of MPS Theme 1.4 AI-Enhanced MPS			
282	157	Ron Weiss	Agentic generative AI for perfusable scaffold design
284	211	Shachar Gal	A high-throughput, physiologically relevant and Bio-AI compatible human kidney-on-chip platform
286	293	Alberto Mantegazza	Ai-adaptive mechanical stimulation accelerates hiPSC-CM maturation in heart-on-chip for precision pharmacology
288	396	Christian Gainer	An automated pipeline for assessing 3D morphology and permeability in microfluidic models of human microvasculature
290	439	Krzysztof Wrzesinski	Clinostat based continuous laminar fall organoid cultures for simulation of gravitational forces on different planets
292	624	Ming-Yang Kao	Modeling alcohol-related fatty liver disease on a 3D-printed microfluidic liver-on-a-chip for high-content phenotypic drug screening
294	650	Zilin Zhang	AI-driven high-throughput and intelligent evaluation of organs-on-chips
296	655	Xiaohua Qian	E.P.I.C.: A microphysiological platform for translational and regulatory applications
298	809	Arpit Tandon	Sciome Image Analysis Studio: a modular AI framework for automated 3D spheroid and MPS image analysis
300	813	Ayse Oktay	Evaluating chemical safety using AI-based quantification of 3D spheroids with cell painting assays and high throughput transcriptomics
Track 1: Engineering the Next Generation of MPS Theme 1.5 Real-Time Monitoring Approaches for MPS			
302	102	Fatima Tufail	A biosensor-integrated 3D cardiac tissue platform for real-time electromechanical analysis of myocardial infarction (MI)
304	105	In-Seong Koo	High-throughput screening of brain tumor therapeutics by automated construction of blood-brain barrier on a chip models
306	129	Chia-Yun Lu	A decision-grade sensing MPS platform converting real-time tissue responses into standardized NAMs-aligned decision outputs
308	140	Hesham Azizgolshani	High-throughput integrated sensors for real-time monitoring of dynamic microphysiological systems
310	160	Stephan Krieg	Harnessing bioconvergence to advance organ-on-a-chip technology and help transform drug discovery & development
312	209	Ruitong Zhu	Quantitative analysis of glucose, lactic acid, and chloride ions in *in vitro* intestinal models for drug evaluation
314	214	Tom Berkers	Advancing tissue-engineered muscle models: High-throughput automation of the Cuore platform
316	218	Hilal Nasir	Enhanced ELISA-on-a-chip for ultrasensitive cancer biomarker detection
318	237	Sami Farajollahi	Modular integration of impedance sensing for real-time assessment of barrier integrity
320	253	Thomas Depalma	Developing and scaling an organ-on-a-chip platform for high throughput screening of antiangiogenic therapeutics
322	299	Claudia Gärtner	Live barrier integrity monitoring of epithelial cells in a microfluidic chip
324	339	Daniel Vera	Modular sensor-integrated 16-chip microphysiological system platform for single and multi-organ *in vitro* modeling

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326	351	Derrick Butler	3D protruding microcantilever arrays with integrated sensors for electrophysiological and mechanical recording of heart-forming organoids
328	437	Alexis Applequist	A non-invasive, electromechanically active heart-on-chip for continuous monitoring of cardiomyocyte contractility and arrhythmia-relevant dynamics
330	459	Robert Hinshaw	Developing an autonomous platform for long-duration biological experiments in space
332	473	Frøydis Sved Skottvoll	PharmaChip: Enabling automated and standardized drug metabolism analysis for microphysiological systems
334	478	Thomas Wareham Mathiassen	ChipNMR: Real-time metabolic flux analysis in microfluidic chips
336	546	Japhette Esther Kembou-Ringert	A non-invasive plug-and-play TEER system for real-time monitoring of cellular barrier dynamics in a 3D intestine-on-chip model
338	571	Darwin Reyes	Real-time impedance based quantification of cell migration for next generation microphysiological systems
340	635	Christopher Long	Human cardiac stress-test-on-a-chip
342	654	Alessandro Marchesini	A user-friendly dual-perfusion intestinal microphysiological system with continuous teer monitoring for dynamic barrier dysfunction studies
344	662	Ngun Par	A user-centered approach to automating heart-on-chip data acquisition
346	690	Aditya Rane	Real-time evaluation of cardiotoxicity and barrier integrity in a heart-on-a-chip using electrodes on both sides of a porous membrane
348	694	Anthony Heng	Development & assessment of a scalable, high-throughput organ-chip platform for liver predictive toxicology
350	709	Gurkan Yesiloz	A novel microfluidics immunotherapy-on-chip to decipher paracrine communication between colorectal cancer spheroids and tumor-associated macrophages
352	710	Kevin Roehm	High-throughput MPS for organoid-based screening and development
354	722	Seyoum Ayehunie	Integration of Incucyte workflow and multi-organ toxplate (kidney, Small intestine, and Liver) for NAMS-based hazard and risk assessment of compounds
356	791	Queeny Dasgupta	Advanced cell models and live-cell analysis for preclinical toxicity profiling
Track 1: Engineering the Next Generation of MPS Theme 1.6 Dynamic MPS: Muscle, Actuators and Biobots			
358	190	Stéphanie Boder-Pasche	Upscaled mechanical stimulation platform for production of 3D bone organoid models for bone cancer diagnosis
360	427	Hongyan Yuan	A multi-modal muscle-on-a-chip platform for engineering functional skeletal/cardiac muscle tissues
362	472	Yuh-Shiuan Chien	Microfluidic device for lab-scale high-throughput drug screenings
364	579	Seonghun Mun	Fixed-tension–driven skeletal muscle maturation and contractility quantification on a monolithic 3D-printed FORCE platform
366	676	Samira Radjabova	Incubator-compatible compact electrical stimulation system for a muscle-on-chip platform
Track 1: Engineering the Next Generation of MPS Theme 1.7 Engineering Complex Multi-Cellular Systems			
368	103	Juyoung Han	A microphysiological system mimicking hypoxia-enhanced trophoblast invasion at the maternal–fetal interface
370	104	Jinwoo Jung	Engineering the outer blood-retinal barrier on a chip for physiological study depending on the mechanical stress

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372	108	Austin Passaro	Functional analysis of ipsc-derived three dimensional models on traditional and novel microelectrode arrays
374	130	Helena Rannikmae	Patient-derived intestinal organoids to build complexity of the gut for drug discovery and development
376	132	Henry Ordutowski	Real-time monitoring of 3D cultures in microfluidic chips
378	134	Saweetha Kiridena	Predicting responses to seasonal influenza vaccines on a lymph node micro physiological system
380	135	Madeleine Ludlow	Placental stem cell-derived tri-culture barrier model for recapitulating in vivo drug transfer
382	169	Lorna Santos	Immunogenicity and toxicity assessment using HypoSkin® and advanced multi-omics profiling
384	172	Nicholas Chartrain	A human bone-marrow-on-a-chip model to study ionizing radiation exposure sequelae
386	193	Morgan Halman	Blocking complement as a preventative measure for kidney ischemia reperfusion injury: Insights from a human kidney-on-a-chip study
388	203	Ronit Mohapatra	Building *in vitro* hippocampal-cortical circuitry in brain MPS