

UBC School of Biomedical Engineering



SBME RESEARCH DAY

OCTOBER 31, 2024

Trainee Poster List



	POSTER TITLE	PRESENTER	SUPERVISOR
1	Detecting and avoiding homology-based data leakage in genome-trained sequence models	Abdul Muntakim Rafi	Dr. Carl de Boer
2	Electrogenic Dynamics of Biofilm Formation: Correlation Between Genetic Expression and Electrochemical Activity in <i>Bacillus subtilis</i>	Adel Yavarinasab	Dr. Carolina Tropini
3	Microbial intestinal dysbiosis drives long-term allergic susceptibility by sculpting an ILC2-B1 cell-innate IgE axis.	Ahmed Kabil	Dr. Kelly McNagny
4	Integrated Metabolic and Macromolecular Profiling to Enhance Quality Control in Human Pluripotent Stem Cell Expansion	Ali Shahdoost	Dr. Nika Shakiba
5	Row to Grow: Pilot Community-Based Rowing Program for Youth with Cerebral Palsy	Ali Hawkins	Dr. Tim Bhatnagar
6	3D Bioprinting of Engineered Heart Tissue for Drug and Disease Modelling	Ardin Sacayanan	Dr. Zachary Laksman
7	Single-particle CLiC size-and-payload analysis of mRNA-lipid-nanoparticles with applications to vaccines and genetic medicines	Ariadne T. Bido	Dr. Sabrina Leslie
8	Cuffed CRISPR guide RNA for microRNA activity- dependent genome editing	Arman Adel	Dr. Nozomu Yachie
9	Investigating the Feasibility of Using Near-Infrared Imaging for Donor Kidney Quality Assessment	Arshdeep Khurana	Dr. Babak Shadgan
10	Spatial Parametric Mapping for Motion Capture Analysis: A Comparison Between Marker-Based and Markerless Motion Capture	Beatrice Gonzales	Dr. Tim Bhatnagar
11	Studies of supercoiling-induced denaturation within DNA plasmids using single-molecule Convex Lens-induced Confinement microscopy	Bianca Caminada	Dr. Sabrina Leslie
12	A scalable computing framework for whole-body mouse cell lineage reconstruction	Brett Kiyota	Dr. Nozomu Yachie
13	Bowel preparation facilitates pathogen colonization in an intestine-on-a-chip model	Brian Deng	Dr. Carolina Tropini
14	Hydrogen Peroxide as a Sustainable and Effective Solution for Reusable Intermittent Urinary Catheterization	Brianna Tsuyuki	Dr. Dena Shahriari
15	ROR γ t-dependent Production of IL-17A as Regulator of Myelopoiesis	Chengxi Xu	Dr. Kelly McNagny



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16	A rapid retrospective cell clone isolation method	Chengyu Ye	Dr. Nozomu Yachie
17	An optogenetic virus circuit to map neuronal pathways in the brain	Dustin Ameis	Dr. Nozomu Yachie
18	Development of a soft, implantable, and user-controlled assistive device for bladder management	Elham Mohseni	Dr. Dena Shahriari
19	A fate-mapped human pluripotent stem cell library for designer organoids	Enzo Giacomino	Dr. Nika Shakiba
20	Intracellular Dynamics of LNP-mediated mRNA Delivery: Quantitative Single-Cell Profiling Toward Enhanced Therapeutics and Vaccine Development	Eric Boateng	Dr. Sabrina Leslie
21	Deep-Learning-Aided Intraframe Motion Correction for Low-Count Dynamic Brain PET	Erik Reimers	Dr. Vesna Sossi
22	Multi Screen Response and Reinforcement Apparatus: An Open-Source Platform for Rodent Behavioral Training	Gelareh Modara	Dr. Manu Madhav Dr. Jason Snyder
23	Ballistic Gelatin to Replicate Soft Tissue Artifacts	Genevieve Bonnor	Dr. Calvin Kuo
24	Genetic tools to measure in situ single cell gene expression of a gut commensal	Giselle McCallum	Dr. Carolina Tropini
25	Engineering CAR-expressing innate lymphoid cells (ILCs) from human pluripotent stem cells (hPSCs) for cancer immunotherapy	Grace Kuo	Dr. Kelly McNagny
26	Real-Time Stimulus and Tracking System for Investigating Spatial Navigation in the Omniroute Maze	Grace Gao	Dr. Manu Madhav
27	An embryonic stem cell simulator that incorporates biological time	Harry Cheng	Dr. Nika Shakiba
28	Mapping Beta Cell Heterogeneity: Cellular Insights from hPSC-Derived Differentiation	Hourieh Movasat	Dr. Nika Shakiba
29	Non-invasive Prediction of Muscle Lactate Threshold During Exercise Using a Novel Multimodal Sensing Approach and AI Modeling	Iman Amani Tehrani	Dr. Babak Shadgan
30	Competition Cellular Societies: balancing individual goals with collective viability in embryonic development	Ipek Egilmez	Dr. Nika Shakiba



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31	Scaling up massive parallel reporter assays with bulk quantitative density-based cell sorting	JJ Hum	Dr. Carl de Boer
32	Investigating the Role of Intercellular Mitochondrial Transfer in Cell Competition of Human Pluripotent Stem Cells	Joshua De Guzman	Dr. Nika Shakiba
33	Investigation of Local Effects of Transposable Elements in Preimplantation Embryos	Kai-Wei Chang	Dr. Nika Shakiba
34	Development and Evaluation of a Synthetic Model for the Simulation and Assessment of Sternum Closure	Katie Chen	Dr. Steve Kim
35	Developing a High Throughput Assay for Characterizing Bacteriophages	Kriti Verma	Dr. Carolina Tropini
36	Generating functional CD4+ T cells from human pluripotent stem cells	Lauren Durland	Dr. Peter Zandstra
37	Salmonella mediated delivery of immunogenic proteins to E0771 mammary cancer cells as a novel approach for immunotherapy	Meilin An	Dr. Josef Penninger
38	Identification Of Gene Regulatory Networks (GRNs) Essential For Hematopoietic progenitor cell And T cell Emergence From Human Pluripotent Stem Cell Via CRISPR Screens	Mona Siu	Dr. Peter Zandstra
39	Watch Your Knees! Effects of Coaching and Video Feedback on Childrens Quality of Motion Using Motion Capture	Mona Behrouzian	Dr. Calvin Kuo
40	High-content cell lineage tracing of mouse embryogenesis	Nanami Masuyama	Dr. Nozomu Yachie
41	Generation, Characterization, and Functional Assessment of Human Lymphatic Vessel Organoids from Pluripotent Stem Cells	Nico Werschler	Dr. Josef Penninger
42	Characterizing Distinct Populations in iPSC-Derived HSPC Differentiation to Engineer Targeted Blood Cell Lineages	Nora Kotkas	Dr. Peter Zandstra
43	A Synthetic Device to Monitor the Interplay between Human Embryonic Stem Cells	Omar Bashth	Dr. Nika Shakiba
44	Implantation and Assessment of a Ventral Microelectrode Stimulator for Spinal Cord Injury Treatment	Paul Juralowicz	Dr. Karen Cheung



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45	A new highly sensitive retrospective cell clone isolation technology	Ren Takimoto	Dr. Nozomu Yachie
47	Returning Research Results: Exploring Misconceptions, Challenges, and Self-Censorship in Canadian Research Practices	Rosalyn Carr	Dr. Matthias Görges
48	Remote Abdominal Tele-Ultrasound Using Mixed Reality - A Clinical Study	Ryan Yeung	Dr. Tim Salcudean
49	Single-particle CLiC quantification of mRNA-lipid nanoparticle size and RNA copy number without the use of labelled mRNA in formulation	Sadie Graves	Dr. Sabrina Leslie
50	Towards the Reconstruction of a Large-Scale Simulatable Gene Regulatory Network Model for Human Cell Simulation	Sam Khalilitousi	Dr. Nozomu Yachie
51	Spatiotemporal microRNA activity profiling during mouse embryogenesis	Sanchit Chopra	Dr. Nozomu Yachie
52	Deciphering the phosphocode of cell differentiation and development	Sean Okawa	Dr. Nozomu Yachie
53	Implantable, autonomous and wirelessly-rechargeable device for neural stimulation after spinal cord injury	Shahriar Shalileh	Dr. Dena Shahriari
54	Contextualizing Sleep Movements	Shealie Lock	Dr. Calvin Kuo
55	Modeling functional evolutionary trajectories of protein-coding sequences by high-dimensional genotype-fitness landscapes	Sofia Romero	Dr. Nozomu Yachie
56	Integrating Environmental Sustainability into Biomedical Engineering Design: Transforming BMEG 357 Curriculum at UBC	Sogand Golshahian	Dr. Jenna Usprech, Dr. Calvin Kuo, Dr. Negar Harandi, Dr. Robyn Newell
57	A multi-kingdom genetic barcoding system for precise clone isolation	Soh Ishiguro	Dr. Nozomu Yachie
58	Development of an Omnidirectional Biofidelic Surrogate Neck for Transportation and Sports Safety	Sophia Katramadakis	Dr. Peter Crompton



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59	MiniStem: A Miniaturized Stem Cell Culture System for Efficient Hematopoietic Stem and Progenitor Cell Production	Sze Lok Ng	Dr. Peter Zandstra
60	Hic1 in the maintenance of lung resident CD4 TRM	Taehyun Kim	Dr. Kelly McNagny
61	Multiparametric Transrectal Ultrasound To Improve Prostate Cancer Diagnosis	Vedanth Desaigoudar	Dr. Septimiu Salcudean
62	Developing Iron Oxide and Gold Loaded Lipid Nanoparticles for Triggered Release	Yao Zhang	Dr. Pieter Cullis Dr. Sabrina Leslie
63	The effect of suspension culture parameters on the growth and pluripotency of human pluripotent stem cells	Yeganeh Dorri Nokoorani	Dr. Nika Shakiba
64	Screening new CRISPR base editors	Yin Liu	Dr. Nozomu Yachie
65	Design and development of a multimodal wearable wireless EMG-NIRS sensor system to monitor muscle activity and metabolic function	Zahra Askari	Dr. Babak Shadgan

