

UBC School of Biomedical Engineering



# SBME RESEARCH DAY

OCTOBER 31, 2023

## Trainee Poster List





	<b>POSTER TITLE</b>	<b>PRESENTER</b>	<b>SUPERVISOR</b>
1	Through the electron transfer mechanism between the gut microbial biofilm and electrode	Adel Yavarinasab	Carolina Tropini
2	The gut microbiome sculpts lung ILC2 effector functions and restrains innate IgE production by B1 cells	Ahmed Kabil	Kelly McNagny
3	A Combined Synthetic Biology and Mathematical Modeling Approach for the Large-Scale Supply of Human Pluripotent Stem Cells	Ali Shahdoost	Nika Shakiba
4	Low pH and High Ammonium Reduce T-Cell Growth but Increase Cytokine Release Rates	Ali Chamkalani	Jamie Piret
5	A MicroRNA-Dependent Genome Editing System to Record Cellular Histories	Arman Adel	Nozomu Yachie
6	Identifying mechanistic differences between regenerative and degenerative infarcted hearts	Bruce Lin	Fabio Rossi
7	Dynamic RNA programming methods for look-back-in-time biology	Chengyu Ye	Nozomu Yachie
8	Characterization of DPP4+ mesenchymal stromal cells in skeletal muscle	Chun Wai Cheung	Fabio Rossi
9	Expanding the repertoire of highly efficient self-amplifying ribonucleic acid vectors for next-generation RNA therapeutics.	Credo Casmil	Anna Blakney
10	Multiplexable production of monoclonal pseudoviruses for high-throughput viral variant screening	David Mackay	Nozomu Yachie
11	Aggregate size determines lineage competence in iPSC-derived blood differentiation	Elizabeth Castle	Peter Zandstra
12	Universal Antithrombotic Surfaces by Controlling Factor XII-biointerface Binding to Prevent Contact Activation of Coagulation	Haifeng Ji	Jayachandran N Kizhakkedathu
13	An embryonic stem cell simulator that incorporates biological time	Harry Cheng	Nika Shakiba
14	Modelling of a universal human gene regulatory network	Herbert Yao	Nozomu Yachie
15	Unraveling Beta Cell Heterogeneity in hPSC-Derived Differentiation	Hourieh Movasat	Nika Shakiba



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16	Microfluidic Radiolabeling for Targeted Cancer Therapy	Jack Plant	Govind Kaigala
17	A personalized medicine platform for heart disease	Jeremy Parker	Zachary Laksman
18	Evaluation of ivacaftor and antibiotic therapies on breath biomarkers for Pseudomonas aeruginosa and Staphylococcus aureus in Cystic Fibrosis	Josephine Ackah Cudjoe	Jane Hill
19	Tri-Component Polyplexes for Enhanced Delivery of Self-Amplifying RNA	Josh Friesen	Anna Blakney
20	Sex-biased thymus architecture guides T cell development through spatially defined niches	Laura Stankiewicz	Peter Zandstra and Fabio Rossi
21	Massive parallel screening to increase genome editing outcomes in human stem cells	Madina Kagieva	Nozomu Yachie
22	Fibro-adipogenic progenitors and TGF $\beta$ signaling pathway, an imperfect duo.	Marine Theret	Fabio Rossi
23	A coordinated therapeutic approach to promote regeneration in traumatic skeletal muscle injury	Mark Hamer	Fabio Rossi
24	Engineering cellular interfaces to study B cell - macrophage interaction upon localized manipulation	Megha Srinivas	Govind Kaigala
25	A Carry-On Device for the On-Site Production of Enzymatically-Converted Universal O-Type Blood	Michael Kulka	Jayachandran Kizhakkedathu
26	Identification of Gene Regulatory Network Essential for Hematopoietic Progenitor Cell and T Cell Emergence from Human Pluripotent Stem Cell Via Crispr Screens	Mona Siu	Peter Zandstra
27	High-content cell lineage tracing of mouse embryogenesis	Nanami Masuyama	Nozomu Yachie
28	A new highly sensitive retrospective cell clone isolation technology	Ren Takimoto	Nozomu Yachie
29	Hierarchical TALE repeats assembly technology for TALEN genome editing	Rina Yogo	Nozomu Yachie
30	Yeast genetic technology to assess CRISPR base-editing activities	Riya Alluri	Nozomu Yachie



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31	Engineered, clinically-relevant production of helper (CD4+) T cells from pluripotent stem cells using an artificial thymic niche	Ross Jones	Peter Zandstra
32	Spatiotemporal microRNA activity profiling during mouse embryogenesis	Sanchit Chopra	Nozomu Yachie
33	Deciphering the phosphocode of cell differentiation and development	Sean Okawa	Nozomu Yachie
34	Modeling functional evolutionary trajectories of proteins by a high-dimensional genotype-fitness landscape	Sofia Romero	Nozomu Yachie
35	Microscale Molecular Gradients on Open Biological Surfaces	Sofia Graham	Govind Kaigala
36	A multi-kingdom genetic barcoding system for precise target clone isolation	Soh Ishiguro	Nozomu Yachie
37	Fabricating an Arterial Niche to Study Blood Cell Emergence	Taia Yuen Joaquin	Peter Zandstra
38	Development of Microfluidic Human Airway-On-A-Chip with Cell-Laden Hydrogel for Studying Aerosol Inhalation Exposure	Tanya Bennet	Karen Cheung
39	Producing blood cell progenitors with T cell competence from pluripotent stem cells in scalable dynamic suspension culture	Thristan Taberna	Peter Zandstra
40	Development of a High-Throughput Platform for Transcription Factor Characterization	William Cheney	Carl de Boer
41	The effect of suspension culture parameters on the growth and pluripotency of human pluripotent stem cells	Yeganeh Dorri Nokoarani	Nika Shakiba
42	Development of very precise CRISPR base editors	Yin Liu	Nozomu Yachie
43	Where a Surgeon Looks: Eye Gaze Tracking in Robot-Assisted Surgery	Alexandre Banks Gadbois	Tim Salcudean
44	Development and Manufacturing of a Microelectrode Stimulator for Spinal Cord Injury Regeneration.	Paul Juralowicz	Karen Cheung



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45	Investigating hippocampal-prefrontal neural activity that represent and modulate contextual action	Afsoon Gharib Mombeini	Manu Madhav
46	Layer 6b: A Distinct and Heterogenous Layer	Ali Tarik	Mark Cembrowski
47	A scalable computing framework for whole-body mouse cell lineage reconstruction	Brett Kiyota	Nozomu Yachie
48	TMTV-Net: Automated Total Metabolic Tumor Volume Segmentation in FDG PET/CT Images	Fereshteh Yousefirizi	Arman Rahmim
49	Enhancing Post-ECT EEG Data Cleaning Using Hybrid Signal Processing Methods	Forough Najafi	Fidel Vila Rodriguez
50	Image Based Mathematical Oncology	Hamid Abdollahi	Arman Rahmim
51	PUPpy: a fully automated primer design pipeline for substrain-level microbial detection and absolute quantification	Hans Ghezzi	Carolina Tropini
52	Enhancing Quantitative Brain Morphometry Assessment in Low-Field MRI (LF-MRI)	Hengameh Marzbani	Fidel Vila Rodriguez
53	FiberSight: A Fiji-Integrated Muscle Fiber Imaging and Analysis Platform	Ian Coccimiglio	Fabio Rossi
54	Regulatory activity is the default DNA state in eukaryotes	Ishika Luthra	Carl de Boer
55	Identifying neocortex L6b neuronal subpopulations in the mouse and human brain	Margarita Kapustina	Mark Cembrowski
56	Employing whole-brain approaches to understand the pathophysiology of murine Traumatic Brain Injury	Mehwish Anwer	Cheryl Wellington
57	Abnormal Structures in Prostate Cancer Metastatic Bone Lesions as a Fracture Risk Factor	Naomi Jung	Rizhi Wang
58	Optimizing Radiopharmaceutical Therapies: Integrating Machine Learning with PBPK Modeling for Precision Dosimetry	Niloufar Zakariaei	Arman Rahmim



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59	Quantitative analysis of an MRI-based model of low-intensity transcranial focused ultrasound neuromodulation for dorsolateral prefrontal cortex	Parsa Tadayon	Fidel Vila Rodriguez
60	Implicit Neural Representations for Fetal Ultrasound Analysis	Pooria Ashrafian	Ilker Hacihaliloglu
61	Imaging of hyalocyte density and distribution under ocular pathological conditions using Optical Coherence Tomography	Yudan Chen	Myeong Jin Ju
62	A universal sequencing read interpreter	Yusuke Kijima	Nozomu Yachie

