



EVENT PROGRAM

2019 MEDICINE RESEARCH EXPO

OCTOBER 30, 2019 | PAETZOLD HEALTH EDUCATION CENTRE | VGH



WELCOME

from the UBC Department of Medicine and Experimental Medicine Program

On behalf of the UBC Department of Medicine, Research Office, Experimental Medicine Graduate Program, and Research Expo Organizing Committee, it gives us great pleasure to welcome you to the UBC Department of Medicine's 2019 Research Expo.

We are proud of this annual tradition, which consistently engages clinicians and researchers both within our Department, other departments and schools within UBC, and from our community of local health research partners. We are delighted to once again to be hosting this event collaboratively with the Experimental Medicine Graduate Program, and we hope you will join us in celebrating the many contributions of our students by engaging with the work they share today.

The Department of Medicine is the largest department within the Faculty of Medicine, and a major research force at UBC. The Research Expo is an important venue for sharing our collective knowledge and experience. The Research Expo is a wonderful opportunity to bring together our large and diverse Department to explore crosscutting themes and collaborative opportunities.

We would also like to celebrate the success of our faculty members, highlighting the work of Department of Medicine researchers who have been recognized as leaders in their respective fields at the local, national, and international level. We recognize the central role played by trainees in moving our science forward, and are excited for this opportunity to highlight the work of our exceptional young researchers as they blaze the trail ahead.

This year's program has an impressive roster of speakers representing many of our divisions and student presenters, coming together to highlight our latest discoveries, celebrate our successes, and reflect on the challenges facing our communities.

Thank you all for your leadership in creating a culture of scholarship, innovation, and research here at the Department of Medicine. Together, we can shape the future of our health care system and, more importantly, have a positive global impact on the health and well-being of individuals. We hope that you enjoy all this year's Research Expo has to offer and take this opportunity to connect with your colleagues.

Warmest regards,

Anita Palepu, MD, MPH, FRCPC, MACP

Professor and Eric W. Hamber Chair
Head, Department of Medicine
University of British Columbia

Teresa S.M. Tsang, MD, FRCPC, FACC, FASE

Professor, Division of Cardiology
Associate Head Research, Department of
Medicine University of British Columbia

Tricia S. Tang, PhD, RPsych

Associate Professor, Division of Endocrinology and Metabolism
Director, Experimental Medicine Graduate Program, Department of Medicine
University of British Columbia



AGENDA

Lunch Session

11:30 - 14:30

11:30 - 12:30 **Registration, Lunch, and Poster Session**

12:30 - 12:40 **Welcome and Introductory Remarks**

Dr. Anita Palepu
Professor and Eric W. Hamber Chair
Head, Department of Medicine
University of British Columbia

12:40 - 13:00 **The halo of double hit lymphoma: defining high-risk patients using gene expression**

Dr. David Scott
Associate Professor (Partner)
Division of Medical Oncology, Department of Medicine
University of British Columbia

13:00 - 13:10 **The impact of cotrimoxazole prophylaxis in HIV-infected children on antimicrobial resistance gene carriage in the fecal microbiome**

Freddy Francis (PhD Program)
Supervisor: Dr. Ameer Manges, School of Population and Public Health, UBC

13:10 - 13:30 **Individualized cerebral resuscitation after cardiac arrest: A shift towards personalized critical care**

Dr. Myp Sekhon
Clinical Assistant Professor
Division of Critical Care, Department of Medicine
University of British Columbia

13:30 - 13:40 **STAT3 transfection restores lack of Th17 differentiation in neonatal CD4 T cells**

Zohreh Sharafianardakani (PhD Program)
Supervisor: Dr. Pascal Lavoie, Department of Paediatrics, UBC

13:40 - 14:00 **Stem cell derived human cardiomyocytes for drug testing**

Dr. Zachary Laksman
Clinical Assistant Professor
Division of Cardiology, Department of Medicine
University of British Columbia

14:00 - 14:30 **Experimental Medicine Lightning Poster Presentations**

Ventilatory threshold changes with two different exercise modalities in individuals with cervical and upper-thoracic SCI: a randomized trial
Abdullah Alrashidi (PhD program)
Supervisor: Dr. Andrei Krassioukov

What matters to children and adolescents with lower limb deformities: An international qualitative study informing the development of the LIMB-Q Kids
Harpreet Chhina (PhD program)
Supervisor: Dr. Anthony Cooper

Premature Termination Codon Readthrough Upregulates Progranulin Expression and Improves Lysosomal Function in Preclinical Models of GRN Deficiency
Jonathan Frew (PhD program)
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Investigating oxythiamine levels in children undergoing kidney transplantation and the risk of immediate post-operative metabolic and hemodynamic decompensation
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Heterogeneous expression of interleukin-1 receptor in mouse and human pancreatic islets - implications in type 2 diabetes
Queenie Hui (PhD program)
Supervisors: Dr. Tim Kieffer and Dr. Lucy Marzban

Spectrum of Use and Access to 3D Printing for Children with Congenital Heart Disease: An international physician survey study
Caroline Illmann (Msc program)
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Pathogenesis of Proteus Mirabilis in Urinary Infection Stones
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Seasonal variation of physical activity in congenital heart disease: Implications for clinical care and research
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The effects of non-fasting and non-HDL on cellular cholesterol uptake and foam cell formation
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Emotional lability as a symptom of extra-axial posterior fossa tumours: a case-control review of neuroanatomy and patient-reported quality of life
Swetha Prakash (MSc program)
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Enteroids derived from inflammatory bowel disease patients display dysregulated endoplasmic reticulum stress pathways, leading to differential inflammatory responses and dendritic cell maturation
William Rees (PhD program)
Supervisor: Dr. Ted Steiner

Predictive biomarkers for sub-phenotyping allergic rhinitis patients
Simran Samra (MSc program)
Supervisor: Dr. Scott J. Tebbutt

A novel non glucose-based osmotic agent for Peritoneal Dialysis Solutions
Meenakshi Swaminathan (Msc program)
Supervisor: Dr. Caigan Du

Premature Atherosclerotic Cardiovascular Disease: Cardiovascular Risk and Primary Prevention Eligibility
Diana Vikulova (PhD program)
Supervisor: Dr. Liam Brunham

Developing the Live 5-2-1-0 mobile app using human-centered design and co-creation to promote healthy behaviours in children
Kiana Yau (MSc program)
Supervisors: Dr. Shazhan Amed and Dr. Tricia Tang

AGENDA

Afternoon Session

14:30 - 17:30

- 14:30 - 15:00** **Coffee Break and Poster Viewing**
- 15:00 - 15:30** **Artificial Intelligence and Big Data in Echo Imaging In British Columbia: Where are we in 2019?**
Dr. Teresa S.M. Tsang
Professor, Division of Cardiology
Associate Head Research, Department of Medicine
University of British Columbia
- 15:30 - 15:40** **Skin exposure to Narrow Band Ultraviolet (UV) B light modulates the human intestinal microbiome**
Else Bosman (PhD Program)
Supervisor: Dr. Bruce Vallance, Department of Paediatrics, UBC
- 15:40 - 16:00** **Technology for Brain Health: Ethics and Engagement**
Dr. Julie Robillard
Assistant Professor (Partner)
Division of Neurology, Department of Medicine
University of British Columbia
- 16:00 - 16:10** **Age of symptom-onset is a predictor of disease course in the youngest symptomatic catecholaminergic polymorphic ventricular tachycardia patients**
Dania Kallas (MSc Program)
Supervisor: Dr. Shubhayan Sanatani, Department of Paediatrics, UBC
- 16:10- 16:30** **Protecting the kidney with paracetamol in severe falciparum malaria**
Dr. Katherine Plewes
Clinical Assistant Professor
Division of Infectious Diseases, Department of Medicine
University of British Columbia
- 16:30 - 16:40** **Neurometabolite activity in the anterior cingulate cortex during pain perception**
Jessica Archibald (PhD Program)
Supervisor: Dr. John Kramer, School of Kinesiology, UBC
- 16:40 - 17:00** **Closing Remarks**
Dr. Tricia S. Tang
Associate Professor, Division of Endocrinology and Metabolism
Director, Experimental Medicine Graduate Program, Department of Medicine
University of British Columbia
- 17:00 - 17:30** **Reception and Networking**

SPEAKER BIOGRAPHIES

in alphabetical order



Jessica Archibald

PhD Student

Jessica Archibald is a first year PhD student in the Experimental Medicine Graduate Program in Dr. John Kramer's laboratory. Her research is focused on investigating objective techniques to evaluate pain. She completed her BSc. in Biological Sciences at the University of Guelph, and her Master's degree at UBC with Dr. Kramer. During her master's she worked on developing the technique functional magnetic resonance spectroscopy (MRS). Jessica spent time training in Switzerland at the Balgrist University hospital gaining experience working with patients with neurological disorders (i.e., neuropathic pain), and advanced her analytical skills regarding functional MRS.



Else Bosman

PhD Student

Else Bosman has finished her Bachelors and Master's degrees at the Utrecht University in the Netherlands. She moved to Vancouver to be closer to the mountains and to pursue her PhD degree in the Experimental Medicine Graduate Program in the lab of Dr. Bruce Vallance in BC Children's hospital. Else is studying the effect of UVB light exposure and vitamin D on the intestinal environment in both mice and humans.



Freddy Francis

PhD Student

Freddy Francis is a second year PhD student in the Experimental Graduate Program working with Dr. Ameer Manges on combating anti-microbial resistance. His undergraduate training was in Microbiology and Immunology at the University of British Columbia and his doctoral research investigates the role of fecal microbiota transplantation in decolonization of extended spectrum beta-lactamase producing Enterobacteriaceae and carbapenemase-producing Enterobacteriaceae from the intestinal reservoirs of renal transplant patients in British Columbia. The work presented is the analysis of data from the ARROW trial evaluating the impact of cotrimoxazole prophylaxis for HIV infected children on anti-microbial resistance.



Dania Kallas

MSc Student

Dania Kallas is a second year Master's student in the Experimental Medicine Graduate Program, supervised by Dr. Shubhayan Sanatani. She obtained her BSc in Biology at UBC. Her academic interests lie in pediatric cardiology and her research focuses on a rare and lethal arrhythmia called Catecholaminergic Polymorphic Ventricular Tachycardia (CPVT) in children. She aspires to understand why children are affected differently by CPVT by focusing on both clinical and genetics aspects of this condition.

SPEAKER BIOGRAPHIES

in alphabetical order



Dr. Zachary Laksman, MSc, MD, FRCPC

Clinical Assistant Professor
Division of Cardiology, Department of Medicine
University of British Columbia

Dr. Zachary Laksman is a Cardiac Electrophysiologist at St. Paul's and Vancouver General Hospital and a Clinical Assistant Professor in the Division of Cardiology within the Department of Medicine at the University of British Columbia. Dr. Laksman holds the Charles Kerr Distinguished Scholar in Cardiovascular Genetics. Dr. Laksman holds a Professional-Investigator award from the Michael Smith Foundation for Health Research and is an Early Career Investigator at the Center for Heart Lung Innovation. Dr. Laksman holds grant support from the Canadian Institutes of Health Research, the Canadian Cardiovascular Society, and the Stem Cell Network for his work on the genetics of heart rhythm and heart muscle disturbances. Dr. Laksman has a clinical focus on arrhythmias, atrial fibrillation, sudden cardiac death, sports cardiology, implantable and wearable monitoring technology, and cardiac ablation and device procedures. Dr. Laksman was named one Canada's Top 40 under 40 in 2019.



Katherine Plewes, MSc, MD, DTMH, FRCPC, DPhil

Clinical Assistant Professor
Division of Infectious Diseases, Department of Medicine
University of British Columbia

Dr. Katherine Plewes is a Clinical Assistant Professor in the Division of Infectious Diseases within the Department of Medicine at the University of British Columbia, an Adult Infectious Diseases specialist, and a Clinician-Scientist with research interests in malaria and tropical diseases. She works with an international and multidisciplinary team focused on the pathophysiology and treatment of severe malaria, and the causes of fever and antimicrobial susceptibility of bacterial pathogens causing fever in low-, middle-, and high-income settings. She has extensive field experience, currently working on active projects in Bangladesh and the Democratic Republic of the Congo. She is also Vancouver Site Lead for the GeoSentinel Surveillance Network, a global network of 70 sites in 31 countries that conducts surveillance of emerging infectious diseases using returning travelers, immigrants, and refugees as sentinels of infection.

SPEAKER BIOGRAPHIES

in alphabetical order



Julie Robillard, PhD

Assistant Professor (Partner)
Division of Neurology, Department of Medicine
University of British Columbia

Dr. Julie Robillard is an Assistant Professor (Partner) in the Division of Neurology within the Department of Medicine at the University of British Columbia (UBC), Scientist in Patient Experience at BC Children's and Women's Hospital (C&W). She is Associate Director of Neuroethics Canada and an affiliated researcher with the BC Children's Hospital Research Institute, the Women's Health Research Institute, the Djavad Mowafaghian Centre for Brain Health, and Vancouver Coastal Research Institute.

Dr. Robillard leads the Neuroscience, Engagement and Smart Tech (NEST) lab and oversees a range of initiatives related to patient experience research at C&W. Dr. Robillard brings her background in neuroscience and biomedical ethics to the evaluation and development of novel technologies to support brain health across the lifespan. A particular interest of her research is the integration of emotion modeling in a wide range of technologies, from eHealth resources to mobile apps. More recently, she has secured an inaugural New Frontiers in Research grants to implement emotional alignment algorithms into social robotics. Together with her team and through international interdisciplinary collaborations, she is exploring co-creation processes, development and applications of social robots in both older adult and youth populations.

Dr. Robillard is passionate about patient engagement and in her role as a Scientist in Patient Experience she is working with a number of groups at C&W and UBC to advance the capture, analysis and improvement of patient experience in both research and care. She is interested in using technology to provide novel means of engagement and patient experience evaluation strategies.

Dr. Robillard holds provincial, national and international leadership roles: she is Chair of the Ethical, Legal, Social Impacts Committee of the Canadian Consortium on Neurodegeneration in Aging, a member of the Technology and Dementia Executive Committee of the International Society to Advance Alzheimer's Research and Treatments, and a member of the Board of Directors of the Medical Device Development Centre of British Columbia, among others.

SPEAKER BIOGRAPHIES

in alphabetical order



Dr. David Scott, MBChB, PhD, FRACP, FRCPA

Associate Professor (Partner)
Division of Medical Oncology, Department of Medicine
University of British Columbia

Dr. David Scott is an Associate Professor (Partner) in the Division of Medical Oncology within the Department of Medicine at the University of British Columbia, Hematologist at BC Cancer and a Scientist in BC Cancer's Department of Lymphoid Cancer Research. He gained his MBChB/PhD from the University of Auckland, New Zealand. Following his clinical fellowships in hematology, he took up a post-doctoral fellowship at BC Cancer with Drs. Gascoyne and Connors. In 2014, he was appointed as a Clinician-Scientist at BC Cancer, receiving the inaugural BC Cancer Foundation Clinical Investigator Award. Dr. Scott's research focuses on unravelling the determinants of treatment failure in B-cell lymphoid cancers (lymphoma and CLL) and translating this knowledge into assays to guide treatment management. He has authored over 70 peer-reviewed papers, has been an invited speaker at many conferences and receives research funding from Genome Canada, the Terry Fox Research Institute, the Lymphoma Research Foundation and the National Institutes of Health. He is the Clinical Director of BC Cancer's Centre for Lymphoid Cancer, a member of the Lymphoma/Leukemia Molecular Profiling Project (LLMPP) and the Translational Sciences Co-Chair of the Lymphoma Tumor Group of ECOG.



Dr. Myp Sekhon, MD, FRCPC

Clinical Assistant Professor
Division of Critical Care, Department of Medicine
University of British Columbia

Dr. Myp Sekhon, MD, FRCPC, is an intensive care physician with sub-specialty neurocritical care training and works in the intensive care unit at Vancouver General Hospital. He is currently a Clinical Assistant Professor in the Division of Critical Care Medicine within the Department of Medicine at the University of British Columbia. He completed his medical school training, internal medicine residency and critical care medicine fellowship at the University of British Columbia prior to completing a neurocritical care fellowship at the University of Cambridge, United Kingdom under the guidance of Professors David Menon and Arun Gupta. He is currently completing his PhD under Professor Phil Ainslie at the University of British Columbia in cerebrovascular physiology and is investigating the pathophysiological mechanisms of hypoxic ischemic brain injury after cardiac arrest. He is the recipient of the Vancouver Coastal Health Research Institute's Mentored Clinician Scientist and Clinician Scientist Awards. He also recently was awarded the CIHR Banting and Best Doctoral Award. He has authored over 50 peer review manuscripts and a textbook of neurocritical care.

SPEAKER BIOGRAPHIES

in alphabetical order



Zohreh Sharafianardakani

PhD Student

Zohreh Sharafianardakani is a PhD student in the Experimental Medicine Graduate Program in Dr. Pascal Lavoie's lab at BC Children's Hospital Research Institute. She received her Master's degree in Molecular Biology and Biochemistry at Simon Fraser University in 2015 and joined Dr. Lavoie research team in 2017. Zohreh's research focuses on the development of molecular pathways regulating the differentiation of naïve CD4 T cells in neonates. Neonatal naïve T cells lack capacity to differentiate to T helper 17 cells, which make them susceptible to Candida infection. Zohreh studies differentiation of Th17 cells in neonates using cord blood samples to find how to control Candida infection at mucosal surfaces.



Teresa S.M. Tsang, MD, FRCPC, FACC, FASE

Professor, Division of Cardiology
Associate Head Research, Department of Medicine
University of British Columbia

Dr. Teresa Tsang is a cardiologist and Professor of Medicine in the Division of Cardiology within the Department of Medicine at the University of British Columbia. Dr. Tsang completed medical school at the University of Alberta and proceeded to Internal Medicine and Cardiology Fellowships at the University of Alberta as well. During her cardiology fellowship she was awarded both Medical Research Council of Canada and Alberta Heritage Foundation for Medical Research awards, under which she studied Clinical Epidemiology at the National Institutes of Health in Bethesda, Maryland. Dr. Tsang also completed a Fellowship in Advanced Echocardiography at the Mayo Clinic, Rochester, Minnesota, and was a Mayo Foundation Scholar.

She was recruited to Division of Cardiology at Mayo Clinic Rochester, where she worked for 11 years as clinician scientist. During this period, she was appointed Assistant, then Associate, and later Professor of Medicine in 2006. Her research program at Mayo Clinic focused primarily on the physiology of cardiovascular aging and age-associated cardiovascular disorders, including atrial fibrillation, diastolic dysfunction, and atrial remodeling. Her work received major funding awards from the National Institutes of Health, the American Heart Association, and the American Society of Echocardiography.

Dr. Tsang returned to Canada in late 2009, accepting her current position as Professor of Medicine where she has continued her research and clinical activities. She is also the Associate Head Research for the Department of Medicine, and Director of the Echo Lab at VGH and UBC. Supported by CIHR and NSERC grants, she has collaborated extensively with Engineering in her work on Artificial Intelligence in Echo Imaging. Dr. Tsang enjoys rock climbing, sailing, and playing basketball.

POSTER PRESENTATIONS

in alphabetical order

Abdullah Alrashidi (PhD program)

Supervisor: Dr. Andrei Krassioukov

Ventilatory threshold changes with two different exercise modalities in individuals with cervical and upper-thoracic SCI: a randomized trial

Shane Balthazaar (PhD program)

Supervisor: Dr. Andrei Krassioukov

Cardiac Arrhythmias Six Months following Acute Traumatic Spinal Cord Injury

Harpreet Chhina (PhD program)

Supervisor: Dr. Anthony Cooper

What matters to children and adolescents with lower limb deformities: An international qualitative study informing the development of the LIMB-Q Kids

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Or Golan (MSc program)

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Investigating oxythiamine levels in children undergoing kidney transplantation and the risk of immediate post-operative metabolic and hemodynamic decompensation

Elizabeth Gregory (MSc program)

Supervisor: Dr. Fidel Vila-Rodriguez

Variability in Cognitive Function in Treatment-Resistant Depression

Queenie Hui (PhD program)

Supervisors: Dr. Tim Kieffer and Dr. Lucy Marzban

Heterogeneous expression of interleukin-1 receptor in mouse and human pancreatic islets - implications in type 2 diabetes

Caroline Illmann (Msc program)

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Pathogenesis of Proteus Mirabilis in Urinary Infection Stones

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Seasonal variation of physical activity in congenital heart disease: Implications for clinical care and research

Marj Sofie Oerum- Madsen (PhD program)

Supervisor: Dr. Mads Daugaard

A novel bifunctional fusion protein combining tumor-targeting VAR2CSA with IL-2 for enhanced anti-tumor efficacy

Carleena Ortega (MSc program)

Supervisor: Dr. Gordon Francis

The effects of non-fasting and non-HDL on cellular cholesterol uptake and foam cell formation

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Emotional lability as a symptom of extra-axial posterior fossa tumours: a case-control review of neuroanatomy and patient-reported quality of life

William Rees (PhD program)

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Enteroids derived from inflammatory bowel disease patients display dysregulated endoplasmic reticulum stress pathways, leading to differential inflammatory responses and dendritic cell maturation

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Supervisor: Dr. Scott J. Tebbutt

Predictive biomarkers for sub-phenotyping allergic rhinitis patients

Shayan Shokoohi (MSc program)

Supervisor: Dr. Sonia Yeung

Effect of topical anti-glaucoma drugs on the recurrence of herpes simplex keratitis

Meenakshi Swaminathan (Msc program)

Supervisor: Dr. Caigan Du

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Kiana Yau (MSc program)

Supervisors: Dr. Shazhan Amed and Dr. Tricia Tang

Developing the Live 5-2-1-0 mobile app using human-centered design and co-creation to promote healthy behaviours in children



THANK YOU FOR JOINING US

2019 DEPARTMENT OF MEDICINE RESEARCH EXPO ORGANIZING COMMITTEE

Yasaman Jalalkamali
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Anita Palepu, MD, MPH, FRCPC, MACP
Tricia S. Tang, PhD, RPsych
Teresa S.M. Tsang, MD, FRCPC, FACC, FASE
Kelly Xu, MSc

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Sylvia Stockler, MD, PhD, MBA



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