

How are local innovators TRANSFORMING health care?

Presentations and speakers



Dr. Paul Winston
UBC, Island Medical Program, Victoria General Hospital

Cryoneurolysis for spasticity: Treating neurological disability by flash freezing nerves with gas at -88C

Spasticity is a disabling condition that affects hundreds of thousands of Canadians with neurological disorders from stroke to cerebral palsy to multiple sclerosis and neurologic injury. Spasticity robs the patient of limb usage and can be deforming and painful. We have developed a novel treatment to deep freeze nerves at -88°C with a tiny probe through the skin with nitrogen gas. The result is muscle relaxation and restored function.

Dr. Paul Winston is a clinical associate professor with the University of British Columbia and the Island Medical Program. He is the past president of the Canadian Association of Physical Medicine and Rehabilitation, medical director of Rehabilitation and Transitions for Island Health, and medical lead of Rehabilitation Medicine at Victoria General Hospital. Paul completed his residency in physical medicine and rehabilitation at the University of Toronto and has received many academic and teaching awards.



Dr. Bruce Wallace
Canadian Institute for Substance Use Research

Engaging drug checking with drug user knowledge in response to illicit drug overdose

The rate of overdose deaths in BC has more than doubled since 2016, when illicit drug overdose was declared a public health emergency. The concentration of fentanyl in street opioids varies greatly, and benzodiazepines or tranquilizers are often included. In this context, people who use drugs develop survival strategies and ways to share knowledge about the drug supply. By engaging peers and harm reduction workers, the Substance drug checking project will create and assess new ways to link drug user knowledge and drug checking data within Island Health's harm reduction and overdose response strategies.

Dr. Bruce Wallace is a professor with the Victoria School of Social Work and a scientist with the Canadian Institute for Substance Use Research (CISUR). He co-leads the Vancouver Island Drug Checking Project (aka Substance) with Dennis Hore in chemistry and computer science. Working with Island Health's Griffin Russell, they are seeking new ways to link drug checking evidence with harm reduction and peer worker's experiential knowledge to create and evaluate new knowledge tools and overdose prevention strategies grounded in the synthesis of experiential knowledge with drug checking technologies.



Dr. Mike Berger
Victoria General Hospital & UBC

Understanding "breakthrough" neuropathic pain: A community-based study of patient and health care impacts

People with neuropathic pain experience burning, stabbing, and aching in their hands and feet, making it difficult to walk, sleep or sit comfortably. Even with medications to reduce symptoms, patients are likely to experience "breakthroughs", leading to frequent healthcare visits. Our knowledge of breakthrough pain is limited and there are no evidence-based tools to manage breakthroughs for individuals living with breakthrough neuropathic pain. The objective of our project is to determine the characteristics of breakthroughs and the subsequent effect of these episodes on quality of life and healthcare resource use.

Dr. Mike Berger completed the MD/PhD program at Western University in 2013. He went on to complete residency training in physical medicine and rehabilitation (PM&R) at the University of British Columbia (UBC). This included additional sub-specialty training in electrodiagnostics and neuromuscular diseases at the Neuromuscular Disease Unit at Vancouver General Hospital. He is a consultant physiatrist on the inpatient Neuro-rehabilitation Program at Victoria General Hospital and provides tertiary outpatient neuromuscular and electrodiagnostic services for patients on Vancouver Island. He is a principal investigator at ICORD and clinical assistant professor in PM&R at UBC. His research examines structure and function of the peripheral nervous system in inflammatory and traumatic neurological conditions.



Dr. Sean Spina, Royal Jubilee Hospital
Tasha McKelvey, Mental Health & Substance Use

Mental health and substance use learning health system development through stakeholder engagement

In response to identified challenges in delivering high quality care in Psychiatry Emergency Services and other Acute Mental Health and Substance Use services at Royal Jubilee Hospital, Island Health undertook a comprehensive stakeholder engagement initiative. This process was committed to listening and learning from patients, families, staff and clinicians to strengthen and improve our services. We will share the process and key findings of this stakeholder engagement, as well as the actions we have taken to date to address some of the identified challenges.

Dr. Sean Spina is the director of Special Projects at Royal Jubilee Hospital in Victoria, BC, Canada. He is also a clinical associate professor with the University of British Columbia, Faculty of Pharmaceutical Sciences and an assistant professor with the University of Victoria Health Information Sciences Faculty. Sean is the principal investigator of Alternatives to Traditional Hospital Care Offered in Monitored Environments (AT-HOME). Since the beginning of his career, Sean has been interested in incorporating technology into clinical practice, and is committed to engaging patients, families, clinicians, and decision makers in the research process and has received numerous local, provincial, and national awards for his work.

Tasha McKelvey is the clinical director of Acute and Crisis Mental Health and Substance Use (MHSU) in Southern Vancouver Island. Tasha has led successful implementation of two government grant funded initiatives focusing on young adult and complex youth mental health in Edmonton, Alberta. As part of the Ministry of Health COVID-19 Pandemic Response plan, Tasha co-led the implementation of Hospital at Home, an internationally proven program that brings acute level hospital care to patients in their homes. Tasha is committed to ongoing patient and family engagement within MHSU programs to inform quality improvements and the delivery of safe, high quality care within acute and crisis services.



Dr. Olav Krigolson
UVic

Rapid detection of mild cognitive impairment using mobile neurotechnology

The Neil and Susan Manning Cognitive Health Initiative (CHI) uses a learning health system approach to integrate leading-edge research and care for patients living with cognitive health issues on Vancouver Island. This presentation will explore one innovative example: using mobile neurotechnology to support rapid detection of mild cognitive impairment (MCI). MCI is increasingly prevalent and comes with a greater risk of developing dementia, but diagnosing it is slow and inefficient. CHI researchers have developed software and algorithms that analyze electroencephalographic data to detect MCI with an assessment that takes six minutes and can be conducted without extensive medical training.

Dr. Olav Krigolson is a neuroscientist at the University of Victoria with research interests spanning decision-making, learning, statistics, game theory, and neuroimaging. He is acknowledged as one of the top researchers in the world in mobile electroencephalography. His research program has led to over 80 peer reviewed scientific publications, 250 conference presentations, and \$27 million in grant funding for his Theoretical and Applied Neuroscience Laboratory. One of his key papers, "Using Muse" has been viewed over 50,000 times. For his research expertise, Olav was awarded a prestigious Benjamin Meaker Fellowship at Bristol University in 2017.



Dr. Christopher Franco
Royal Jubilee Hospital

An ounce of prevention: Building the vascular risk and prevention clinic on Vancouver Island

Atherosclerotic cardiovascular disease (ASCVD) is a leading cause of death of Canadians. Contemporary evidence has demonstrated that individuals with early onset ASCVD and inherited high cholesterol have a very high lifetime risk of recurrent heart attacks and strokes. The Vascular Risk and Prevention Clinic (VRPC) mission is to reduce cardiovascular events on Vancouver Island through expert use of novel and evidence-based preventative strategies for patients at the highest levels of risk. In this session, we will provide an overview of the VRPC progress to date and look ahead to furthering our goals of reducing cardiovascular events on Vancouver Island.

Dr. Christopher Franco is a general cardiologist and medical lead for the Cardiac ICU at the Royal Jubilee Hospital in Victoria, BC. He is a graduate of the University of Toronto's MD/PhD program and completed his doctorate focusing on the cell biology of atherosclerosis. He went on to complete his internal medicine training and adult cardiology fellowship at the University of British Columbia. Christopher has a special interest in cardiovascular prevention, genetic dyslipidemias, and premature coronary artery disease. In addition to his full-service general cardiology practice at Westheart Cardiology, he attends in CCU, Cardiology Consult Service, Atrial Fibrillation Clinic, Chest Pain Clinic and is medical director of the Vascular Risk and Prevention Clinic. Christopher is an assistant clinical professor in the Division of Cardiology at UBC and an adjunct associate professor in the Division of Medical Sciences at the University of Victoria. He is also a clinical investigator in the Victoria Heart Institute and is involved in resident medical education through the Island Medical Program. He is involved in clinical/translational research initiatives focusing on the mechanisms and prevention of premature atherosclerotic vascular disease in high-risk populations.



Dr. Shannon Dames
Vancouver Island University

Psychedelic-assisted therapy research in a rapidly moving field: The pearls and pitfalls

Since 2020, a collaborative team spear headed through Vancouver Island University has been leading the way in psychedelic-assisted therapy programming, real world research of service delivery initiatives, and knowledge translation. At the tip of the spear, there has been much to learn about systemic facilitators and barriers in the ongoing development of a national learning system that collectively incubates culturally inclusive, safe and accessible programming.

Dr. Shannon Dames serves at Vancouver Island University as the chair for the Psychedelic-assisted Therapy Graduate Certificate Program (Education), as a nursing professor, and a Health Professional-Investigator (supported by Michael Smith Health Research BC/Lotte and John Hecht Memorial Foundation partnered award). She collaboratively spearheaded the development of the theoretical framework for Roots to Thrive, and is now overseeing the ongoing development and research components of Roots to Thrive (Service Delivery), as a container for medicine-assisted therapy.



Dr. Markus Sikkell, Island Health
Dr. Josh Giles, UVic

Giving patients end of life choice through less technology: Defibrillators vs pacemakers

On Vancouver Island we serve ~1,500 patients with ICDs (implantable cardioverter defibrillators), which function as pacemaker and deliver a high energy, potentially painful shock as needed. Such shocks are lifesaving but as patients age, they may no longer wish to have painful shocks to prevent sudden death. However, there is currently no safe way to downgrade a defibrillator to a simple, painless pacemaker. Our work is designing and deploying an inexpensive new device that allows patients previously treated with an ICD to be transitioned to a pacemaker that will prevent inappropriate treatments in frail patients and render savings to healthcare systems worldwide.

Dr. Josh Giles is the director of the Orthopaedic Technologies and Biomechanics Lab at the University of Victoria and is a Michael Smith Health Research BC Scholar. His lab primarily focuses on developing technologies to improve care of musculoskeletal and orthopaedic conditions while also pursuing medical device development projects in other fields through collaborations with clinician scientists. The technologies the lab focuses on are: improving patient diagnosis and assessment, aiding surgeons while planning surgical interventions, and increasing the efficacy of implantable devices to improve patient outcomes and quality of life.

Dr. Markus Sikkell is a cardiac electrophysiologist in Victoria. His clinical practice focuses on treatment of cardiac arrhythmias through implantation of cardiac devices and ablation techniques. His PhD was in spontaneous sarcoplasmic reticulum calcium release and how this can lead to cardiac arrhythmias. His current research interests include gaining a deeper understanding of the biology and physiology of acquired cardiac disease, using this understanding to design novel therapeutic methods to treat acquired cardiac disease more effectively than the standard current of care, and in understanding when expensive and invasive therapies are likely to be futile in cardiology.