

The Hotchkiss Brain Institute:

Premier Neuroscience Research in Majestic Calgary, Canada

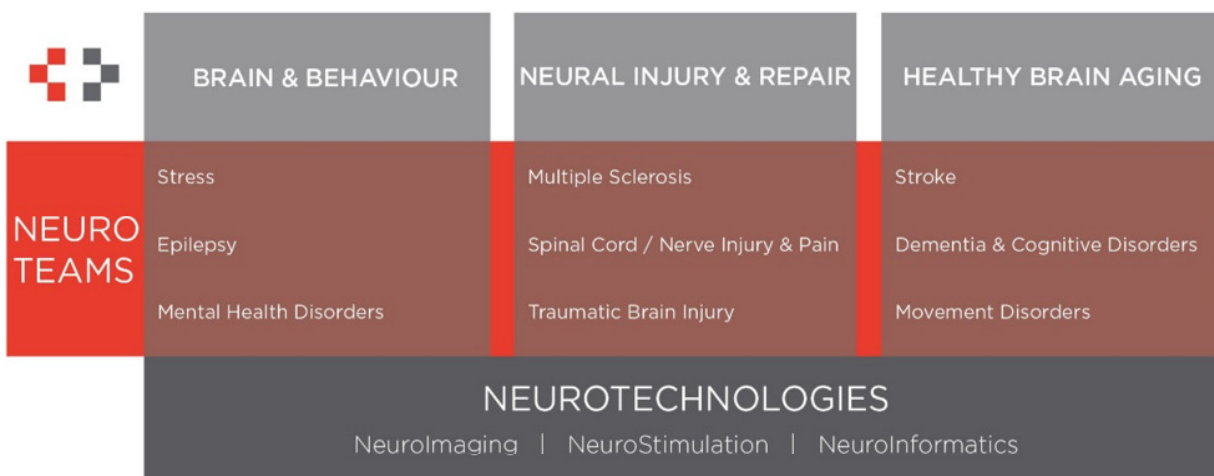
The [Hotchkiss Brain Institute](#) (HBI) is a centre of excellence in neurological and mental health research and education. Located in Calgary, Canada’s most enterprising city, the HBI is leading the [University of Calgary’s](#) Brain and Mental Health research strategy by engaging with the community and translating discoveries into innovative healthcare solutions.

The HBI is uniquely intertwined with health care systems, local not-for-profit and private organizations, providing ample opportunity to engage the community with our research. We have committed ourselves to putting the University of Calgary’s [Eyes High](#) strategic direction into action, forming a dynamic research environment driven by current societal needs and creating opportunities for international prominence.

Calgary was named the world’s fifth most liveable city by the Economic Intelligence Unit in 2015, and consistently ranks among the world’s cleanest. Situated in the foothills of the majestic Rocky Mountains, there are plenty of opportunities to enjoy nature and outdoor sports. Calgary is a young, cosmopolitan city with half the population between the ages of 25 and 54 and 35% born outside of Canada.

Leading Research that Matters

By integrating the research of foundational scientists, clinicians, technical experts and population health researchers, the HBI is going beyond scientific discoveries to improving lives. The vehicle for our innovation is the NeuroDiscovery framework, structured around impact-based NeuroTeams. These teams are interdisciplinary clusters of scholars tackling problems in an integrated, collaborative manner.



HBI VISION: Healthy brains for better lives

A World-Class Training Environment

The HBI enhances the neuroscience training environment by providing incentives and opportunities to its members and trainees, including:

- top calibre principal investigators in a spectrum of basic and clinical neuroscience specialties
- free professional development through the REALISE program, which includes specialist workshops, community mentorship and project-based internships
- research and education initiatives aimed at translating knowledge into practice
- the HBI Trainee Organization, which coordinates social and academic experiences for trainees
- shared facilities and cutting edge technology to support innovative research

To ensure our researchers have the most advanced technical skills and resources to be at the forefront of brain and mental health discovery, we place strategic importance on neurotechnologies. From optogenetics tools to advanced microscopy and more, the HBI's state of the art Core Facilities provide cutting edge infrastructure and expertise for the shared benefits of its members and trainees.

The HBI collaborates with international centres of neuroscience research, exchanging ideas, expertise and trainees in complementary research areas. We currently have partnerships with the universities of Oxford and Melbourne, the Florey Institute of Neuroscience and Mental Health, the Karolinska Institutet, the Technion and the Hebrew University of Jerusalem.

Spotlight on Our People

Connecting more than 700 researchers, doctors, clinician scientists, trainees and staff, the HBI is working to train tomorrow's leaders in neurological and mental health research and care. The HBI enriches the learning environment for over 300 undergraduate and graduate students, post-doctoral and clinical fellows.

The HBI's rising stars include:

Dr. V. Wee Yong: Multiple Sclerosis [Lab: <http://www.vweeyong.com/>]

Dr. Yong's research interests lie in the area of neuroimmunology, neuroprotection and CNS regeneration, and his projects have been guided by MS, spinal cord injury and malignant gliomas. His recent translational efforts have been in repair discoveries. He is currently leading a Phase III trial of minocycline in MS that is taking place at several Canadian centres.

Dr. Yong has published 208 peer-reviewed manuscripts and his work has been cited over 12,000 times. He holds the Canada Research Chair in Neuroimmunology and is on the editorial board of seven international journals. In 2012, he was elected by an international community to be Vice President of the International Society of Neuroimmunology and was elected as a fellow to the prestigious Royal Society of Canada in 2014.

Dr. Nathalie Jetté: Epilepsy

Dr. Jetté is an epilepsy specialist involved in clinical care, education and research. She has been the recipient of over 40 research, teaching and clinical awards, including Calgary's Top 40 under 40 honour and election to the College of New Scholars, Artists and Scientists by the Royal Society of Canada in 2014. Her research areas include multi-morbidities, particularly in mental health, and their associated outcomes in persons with neurological conditions.

In addition to serving as President of the Canadian League against Epilepsy, Dr. Jetté is Associate Editor of the leading epilepsy journal *Epilepsia*. She sits on numerous national and international epilepsy research and action groups, including in collaboration with the World Health Organization. She is currently involved in the development of a national surveillance program for neurological conditions. Her research program also reviews appropriateness of care, health resources use and access to care in epilepsy.

Dr. Bruce Pike: NeuroTechnologies

Dr. Pike investigates magnetic resonance imaging (MRI) methods and applications for basic and clinical neuroscience research across the HBI's NeuroTeams. His recent research has focused on quantitative MRI techniques for measuring tissue microstructure and physiology. He has used his methods to demonstrate focal pathology in multiple sclerosis patients that antedate the development of conventional MRI visible lesions by up to two years. He has also performed pioneering studies on the relationship between cerebral blood flow and oxygen metabolism in the cortex over a broad range of activation and inhibition conditions in healthy subjects and patients.

Dr. Pike has published more than 200 scientific papers and book chapters and serves as editor of the journal *NeuroImage*. He holds the Campus Alberta Innovates Program Chair in Healthy Brain Aging, and serves as the Head of the Division of Image Science for the Department of Radiology. Dr. Pike also chairs the Canadian Institutes of Health Research Medical Physics and Imaging grants panel, and serves on the advisory board for numerous international programs.

Dr. Michael Hill: Stroke

Dr. Hill's research interests include stroke thrombolysis, stroke epidemiology, surveillance and clinical trials. Over the past year Dr. Hill co-led the prominent ESCAPE clinical trials, set to revolutionize acute ischemic stroke treatment around the world. The trials used the HBI's state-of-the-art equipment and imaging to assess the benefits of endovascular therapy for stroke patients.

Dr. Hill is the Director of the Stroke Unit for the Calgary Stroke Program. His research and clinical trials have received funding from governmental, not-for-profit and industry partners. Dr. Hill has also received a number of awards, including the Barnett, the Pessin Award, and both merit and performance recognition awards from Alberta Health Services for his role in research and outstanding publication record.

Dr. Jaideep Bains: Stress [Link to lab: <http://stressynomics.com/>]

For the past decade, Dr. Bains' lab has used an array of approaches to understand questions related to hypothalamic physiology and plasticity. He has become increasingly interested in microcircuit changes that occur following a single or multiple stress challenges. His research is currently funded by Brain Canada and the Canadian Institutes of Health Research.

The focus of Dr. Bains' lab is on understanding the intersection between neuromodulators, synaptic plasticity and the brain's response to stress. The lab aims to think about stress from a synaptic perspective first and build a set of rules governing neural stress circuitry and its adaptation. Using techniques allowing him to probe brain function from single synapses to awake, behaving animals, Dr. Bains' goal is to understand how physiological and psychological challenges lead to long-term changes in the brain and how stress is linked to other diseases.

Dr. Carolyn Emery: Traumatic Brain Injury

Dr. Emery is a physiotherapist with a clinical practice specializing in rehabilitation and sport medicine. She is involved in a variety of projects including sport injury epidemiology in children and adolescents, development of outcome measurements in injury prevention and rehabilitation in sport medicine and randomized controlled trials in sport injury.

The Sport Injury Prevention Research Centre (SIPRC), of which Dr. Emery is co-chair, is a dynamic and interdisciplinary research environment recognized by the International Olympic Committee in 2009 as one of four international research centres of excellence in Injury Prevention in Sport. In 2012, findings from her research contributed to a landmark change in national public policy for youth hockey that is predicted to prevent an estimated 3,500 concussions per year across Canada. Dr. Emery was elected to the College of New Scholars, Artists and Scientists by the prestigious Royal Society of Canada in 2014.