Keynote Speaker:
Leigh R. Hochberg, MD, PhD

Professor of Engineering, School of Engineering and Carney Institute for Brain Science, Brown University; Director, VA RR&D Center for Neurorestoration and Neurotechnology (CfNN), Providence VAMC; Neurologist at Massachusetts General Hospital

Dr. Hochberg is a Neurologist at Massachusetts General Hospital where he attends in the NeuroICU and on the Acute Stroke service; and Senior Lecturer on Neurology at Harvard Medical School. He also directs the Center for Neurotechnology and Neurorecovery at MGH, and is the IDE Sponsor-Investigator and Principal Investigator of the BrainGate clinical trials, conducted by a close collaboration of scientists and clinicians at Brown, Case Western Reserve, MGH, Providence VAMC, and Stanford. Dr. Hochberg’s research focuses on the development and testing of novel neurotechnologies to help people with paralysis and other neurologic disorders. Dr. Hochberg and his research with the collaborative BrainGate team have been honored with the Joseph Martin Prize in Basic Research, the Herbert Pardes Prize for Excellence in Clinical Research, the first Israel Brain Technologies international B.R.A.I.N. Prize, presented by President Shimon Peres, and the Derek Denny-Brown Young Neurological Scholar Award. Dr. Hochberg’s BrainGate research, which has been published in Nature, Lancet, Science Translational Medicine, eLife, Nature Medicine, Nature Neuroscience, the Journal of Neuroscience, the Journal of Neural Engineering, and others, is supported by the Rehabilitation R&D Service of the U.S. Department of Veterans Affairs, the NIH BRAIN Initiative/NINDS, NIDCD, and philanthropies including the ALS Association, the Movement Disorder Foundation and the Cerebral Palsy Alliance Research Foundation.
Event Speakers

**Dr. Nuria Daviu**

Nuria is a postdoctoral fellow in Dr. Bains’ lab. She has a Psychology degree and received her Ph.D. in Neuroscience from the Autonomous University of Barcelona under the supervision of Dr. Nadal and Dr. Armario, where she studied animal models of PTSD. Nuria has a strong background in behavioral models of stress and is investigating the role of corticopeptin hormone (CRH) neurons on stress controllability and stress coping.

**Dr. Charlotte Zerna**

Charlotte Zerna completed medical school and started her neurology training at Technische Universität Dresden, Germany, before moving to Calgary for a clinical stroke fellowship in 2015. While in Calgary, she completed her PhD in Epidemiology under the supervision of Dr. Michael Hill. Her work was supported by the Denyse Lajoie-Lake Fellowship in Brain Research and an Alberta Innovates Health Solutions Clinician Fellowship award. Dr. Zerna is interested in knowledge translation and population-based effectiveness of stroke therapies that have proven successful in clinical trials as well as studying risk factors and consequences of diseases of the cerebral microcirculation.

**Dr. Wilten Nicola**

Dr. Wilten Nicola is an assistant professor and Tier II Canada Research Chair in Computational Neuroscience in the Department of Cell Biology and Anatomy, in the Cumming School of Medicine at the University of Calgary. His research focus in computational neuroscience is to investigate how the dynamics of single neurons or neuron models interact with and alter their connectivity via synaptic plasticity to create emergent behaviours at the network and organism level. His PhD was awarded in 2015 in Applied Mathematics at the University of Waterloo, after which he spent 3 years as a postdoctoral researcher at Imperial College London. He has published numerous well-regarded papers in journals such as Nature Neuroscience, Nature Communications, PLoS Comp. Bio, Journal of Computational Neuroscience, etc.

**Dr. Emma Towlson**

Dr. Emma Towlson is an Assistant Professor at the University of Calgary, with appointments in the Computer Science Department, the Complexity Science Group in the Department of Physics and Astronomy, and the Hotchkiss Brain Institute. She is a network (neuro) scientist who believes complex systems science is at the heart of understanding our interconnected world, and the organisms that share it.
Agenda

The HBI’s 17th Annual Research Day | May 27, 2021 | Online
Registration is required | Poster session abstract deadline May 5, 2021

Welcome and Introduction: Dr. David Park, PhD

9:00 - 9:10

Session #1 Trainees of the Year – Chair: Dr. Sarah McFarlane, PhD

9:10 - 9:30
PDF of the year - Dr. Nuria Daviu (Dr Jaideep Bains) “CRH-PVN Neurons Decode Stress Controllability and Regulate Defensive Escape”

9:30 - 9:50
PhD of the year - Dr. Charlotte Zerna (Dr Michael Hill) “Expanding the Evidence of Endovascular Treatment for Acute Ischemic Stroke”

9:50 - 10:15

10:15 - 11:15

Session #2 Data Blitz – Trainees to advertise posters 1 min/1 slide

9:50 - 10:15
Co-Chairs: Kelsey Harkness & Shefali Rai

10:15 - 11:15  Break/Poster Session

Session #3 Computational Neuroscience – Chair: Dr. Claudia Gomes da Rocha, PhD

11:15 - 11:35
Dr. Wilten Nicola, PhD “Linking Behaviour to Neural Dynamics in Top-down Spiking Neural Networks”

11:35 - 11:55
Dr. Emma Towlson, PhD “Maximizing subnetwork engagement in the human brain via individualized target search and network control theory”

11:55 - 1:30  Lunch/Poster Session

Session #4 Keynote Lecture: Dr. Leigh Hochberg, MD, PhD - Chair: Dr. Adam Kirton, PhD

1:30 - 1:35
Introduction

1:35 - 2:30
Dr. Leigh Hochberg “BrainGate: Brain-Computer Interfaces Toward the Restoration of Communication and Mobility”

2:30 - 2:45
Announcement of poster winners & Closing remarks - Dr. Richard Frayne, PhD
Thank you to our Sponsors

HOTCHKISS BRAIN INSTITUTE

SANOFI GENZYME

EMD SERONOR

Roche