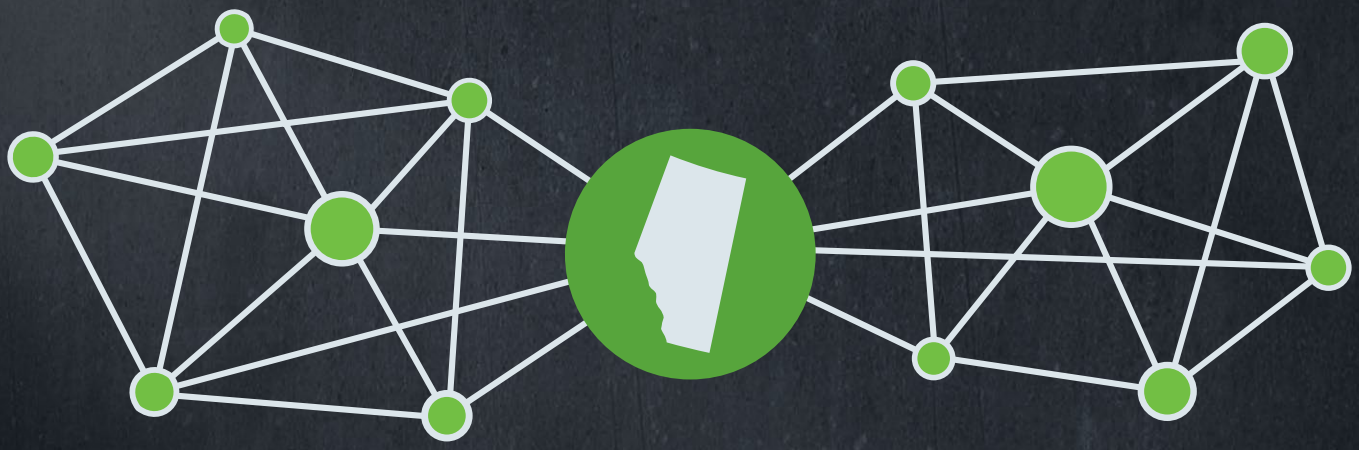
SYMPOSIUM2015

Neuroscience • Depression • Innovation



October 28-30, 2015 | MacEwan Hall, University of Calgary

PROGRAM

Campus Alberta Neuroscience

albertaneuro.ca

Campus Alberta Neuroscience

Campus Alberta Neuroscience (CAN) is a province-wide network of ~250 research professionals working in neuroscience and mental health: from early brain development to Alzheimer's and from foundational biological research to clinical, therapeutic and system application of new knowledge.

CAN is designed to deliver significant, positive, measureable and lasting impact through the generation and translation of knowledge. CAN's aim is to establish the province of Alberta as a centre of neuroscience excellence, impact and innovation on the international stage. CAN is led by a steering committee from the Universities of Alberta, Calgary, and Lethbridge.

Campus Alberta Neuroscience's goals are to:

FACILITATE NEW COLLABORATIONS, enhance existing collaborations and integrate neuroscience and mental health research and education activities across Alberta

ENHANCE OUR ABILITY TO ATTRACT THE BEST AND BRIGHTEST neuroscience and mental health researchers and trainees to Alberta

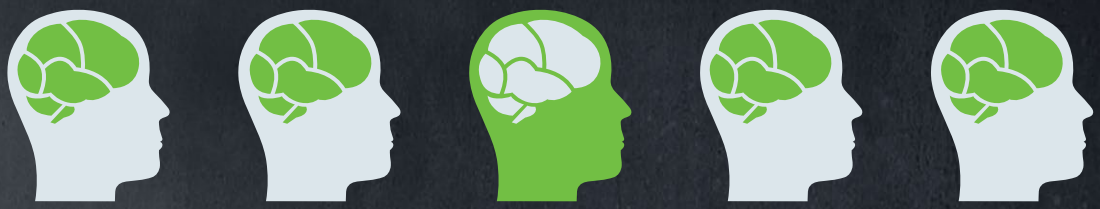
NETWORK THE NEUROSCIENCE COMMUNITY AND STAKEHOLDERS to accelerate the development of new biomedical technologies and effectively translate research discoveries into new neurological and mental health solutions

Canadian Depression Research and Intervention Network

The Canadian Depression Research & Intervention Network (CDRIN) is a collaborative Canada-wide network with the mission to create and share knowledge that leads to more effective prevention, early diagnosis, and treatment of depression and depression-linked illnesses, ultimately leading to a reduction in stigma. It is a partnership between Mood Disorders Society of Canada (MDSC), the Mental Health Commission of Canada (MHCC), The Royal's Research Institute, and the University of Ottawa Institute of Mental Health Research (IMHR). CDRIN participation covers a broad range of individuals including researchers, clinicians (of many professions), people with lived experience of depression, families and caregivers, educators, and interested members of the general public.

The aim of CDRIN is to serve as a catalyst for innovation through mobilization of Canada's mental health community, including people with lived experience, to address important issues associated with mood disorders and post-traumatic stress disorder (PTSD) through research network development, capacity building and knowledge translation in order to improve the lives of people with mood disorders and their families. Initiatives currently underway include a Post Traumatic Stress Disorder (PTSD) Continuing Medical Education (CME) training program; a lived experience training program that prepares participants to be actively involved in a research team; and a next generation researcher training program that provides young researchers with knowledge regarding engaging in collaborative research with people with lived experience of depression and caregivers.

The CDRIN National Meeting is being held in conjunction with the Innovation in Depression Research and Intervention Symposium on October 28th.



Innovation in Depression Research and Intervention Symposium

In partnership with the Canadian Depression Research and Intervention Network

SCIENTIFIC PROGRAM COMMITTEE

Glen Baker, University of Alberta
Andrew Bulloch, University of Calgary
Andrew Greenshaw, University of Alberta
Kaj Korvela, The Organization for Bipolar Affective Disorders
Scott Patten, University of Calgary
Isabelle Vallerand, University of Calgary

Wednesday, October 28, 2015

10:30AM — **Registration** — *MacEwan Hall Foyer*

10:45AM - 11:00AM — **Welcome** — *MacEwan Hall*

Grant McIntyre, Executive Director, Campus Alberta Neuroscience

Paul Arnold, Executive Director, Mathison Centre for Mental Health Research & Education

Andrew Greenshaw, University of Alberta, Canadian Depression Research and Intervention Network

11:00 - 12:00PM — **Session 1: Workshop** — *MacEwan Hall*

SESSION CO-CHAIRS:

Andrew Greenshaw, University of Alberta

Kaj Korvela, Executive Director, Organization for Bipolar Affective Disorders

Lived Experience & Research

Phil Upshall, Executive Director, Mood Disorders Society of Canada

12:00 - 1:00PM — **Lunch & Poster Viewing** — *MacEwan Hall and Foyer*

Wednesday, October 28, 2015

1:00 - 2:20PM

Session 2: Big Data

MacEwan Hall

SESSION CO-CHAIRS:

Andrew Bulloch, University of Calgary

Elizabeth Anderson, Lieutenant Governor True Grit 2013 Recipient

1:00 - 1:20PM — **Data Synthesis Strategies for Major Depression Epidemiology**
Scott Patten, University of Calgary

1:20 - 1:40PM — **The Risk of Mortality Associated with Depression: a Cohort Study Using The Health Improvement Network (THIN) Database**
Isabelle Vallerand, University of Calgary

1:40 - 2:00PM — **Learning to Diagnose Patients from fMRI and Other Data**
Russ Greiner, University of Alberta

2:00 - 2:20PM — **The Economics of Mental Health**
Egon Jonsson, Institute of Health Economics

2:20 - 2:40PM

Refreshment Break

2:40 - 4:00PM

Session 3: Chemistry (Biomarkers)

MacEwan Hall

SESSION CO-CHAIRS:

Glen Baker, University of Alberta

Sophia Van Norden, CDRIN BC Hub, Lived Experience Lead

2:40 - 3:00PM — **The Endocannabinoid System as a Potential Target for the Treatment of Depression**
Matthew Hill, University of Calgary

3:00 - 3:20PM — **The Canadian Biomarker Integration Network in Depression**
Glenda MacQueen, University of Calgary

3:20 - 3:40PM — **Depression-related Brain Monoaminergic Dysfunction Correlates with the Expression of Alzheimer Disease-related Proteins**
Darrell Mousseau, University of Saskatchewan

3:40 - 4:00PM — **Hippocampal Neuroplasticity in Major Depression: Insights from High-Field Magnetic Resonance Imaging**
Nikolai Malykhin, University of Alberta

4:00 - 5:00PM

Refreshment Break & Poster Viewing

MacEwan Hall Foyer

Wednesday, October 28, 2015

5:00 - 6:00PM **Session 4: Non-Pharmacological Interventions for Depression** *MacEwan Hall*

SESSION CO-CHAIRS:

Scott Patten, University of Calgary

Tom Shand, Executive Director, Alberta Alliance on Mental Illness and Mental Health

5:00 - 5:20PM **Neurostimulation for Depression in Youth**
Frank MacMaster, University of Calgary

5:20 - 5:40PM **No Health without Perinatal Mental Health**
Dawn Kingston, University of Alberta

5:40 - 6:00PM **Strategies to Make Cognitive Behavior Treatment the First Line Treatment for Mood Disorders**
Keith Dobson, University of Calgary

6:00 - 7:30PM **Symposium2015 Reception and Keynote Address** *MacEwan Hall*

6:45 - 7:30PM **Contributions of Advances in Neuroscience to the Treatment of Depression** *MacEwan Hall*
Pierre Blier, University of Ottawa

Neuroscience Research and Innovation Symposium

Hosted by Campus Alberta Neuroscience

SCIENTIFIC PROGRAM COMMITTEE

Clayton Dickson, University of Alberta
Artur Luczak, University of Lethbridge
Shalina Ousman, University of Calgary

Thursday, October 29, 2015

8:00 - 9:00AM **Breakfast & Registration** *MacEwan Hall*

9:00 - 9:15AM **Opening Remarks** *MacEwan Hall*

9:15 - 9:30AM **3-Minute Thesis Presentations** *MacEwan Hall*

Functional Magnetic Resonance Imaging (fMRI): A Vehicle to Understanding Multiple Sclerosis

Jaimie Bird, University of Calgary
Principal Investigator: Bruce Pike, University of Calgary

Perineuronal Nets in an Animal Model of Schizophrenia

John Wesley Paylor, University of Alberta
Principal Investigator: Ian Winship, University of Alberta

Hippocampal-Driven Cortical Spine Dynamics

Megan Torry, University of Lethbridge
Principal Investigator: Bruce McNaughton, University of Lethbridge

9:30 - 10:15AM **Keynote Address** *MacEwan Hall*

Magnetic Resonance Imaging of the Brain Beyond the Norm

Christian Beaulieu, University of Alberta

Thursday, October 29, 2015

10:20 – 11:35AM

Concurrent Symposium Session 1

MacEwan Hall

1A. Prions as Pathfinders for Neurodegenerative Diseases

SESSION CHAIR:

David Westaway, University of Alberta

Human Prion Disease: From Transmission to Treatment
Valerie Sim, University of Alberta

BSE and Neuroscientists: A Match Made in Heaven?
Stefanie Czub, CFIA Lethbridge and University of Calgary

Chronic Wasting Disease: An Emerging Prion Disease in Alberta Cervids
Debbie McKenzie, University of Alberta

Active Vaccination as Anti-Prion Strategy
Hermann Schaetzl, University of Calgary

The Structure of the Infectious Mammalian Prion Protein: A Prototype of Misfolding
Holger Wille, University of Alberta

1B. Substance and Behavioral Addictions: Bench to Treatment

Cassio Room

SESSION CHAIR:

David Hodgins, University of Calgary

Role of Orexin in Gatekeeping Drug-Induced Plasticity
Stephanie Borgland, University of Calgary

Individual Differences in Pavlovian Incentive Learning
Vedran Lovic, University of Calgary

Naltrexone as a Treatment for Disordered Gambling
Darren Christensen, University of Lethbridge

11:35AM - 12:30PM

Lunch & Poster Viewing

MacEwan Hall and Foyer

12:30 - 1:45PM

Concurrent Symposium Session 2

MacEwan Hall

2A. Big Data in Neuroscience

SESSION CHAIR:

Artur Luczak, University of Lethbridge

The Use of Big Data to Drive Clinical Research
Jordan Engbers, University of Calgary

Affordable Big Data Analysis with Applications in Health Informatives and Bioinformatics
Reda Alhajj, University of Calgary

Big Electrophysiological Data Analyses
Artur Luczak, University of Lethbridge

Thursday, October 29, 2015

12:30 - 1:45PM

Concurrent Symposium Session 2

Cassio Room

2B. The Neuroimmunology of Chronic Pain

SESSION CHAIR:

Bradley Kerr, University of Alberta

Neuroimmune Mechanisms of Pain in MS
Bradley Kerr, University of Alberta

The Effects of IL-1beta on Primary Afferent and Dorsal Horn Excitability
Peter Smith, University of Alberta

Opioid Tolerance: Novel Roles for Microglia
Tuan Trang, University of Calgary

1:50 - 3:05PM

Concurrent Symposium Session 3

MacEwan Hall

3A. Blood Flow Imaging and Modulation During Stroke

SESSION CHAIR:

Ian Winship, University of Alberta

Determinants of Collateral Blood Flow in Patients with Acute Ischemic Stroke
Bijoy Menon, University of Calgary

Evaluating Collateral Therapeutics in Animal Models of Ischemic Stroke
Ian Winship, University of Alberta

Measuring and Modulating Cerebral Blood Flow in Patients with Ischemic and Hemorrhagic Stroke
Ken Butcher, University of Alberta

3B. Music, Brain and Parkinsonism: New Frontiers in Neural Rehabilitation Science

Cassio Room

SESSION CHAIR:

Bin Hu, University of Calgary

Ambulosono Brisk Walking Program: Scientific Design, Technological Platform and Primary Data from Phase-1 Trial
Bin Hu, University of Calgary

Cognitive-Motor Deficits in Parkinson's Disease: Neurobiological Underpinnings and Design of New Assessment Instruments
Taylor Chomiak, University of Calgary

Cognitive Impairment and Gait Abnormalities in Neurodegenative Diseases: Clinical Features, Diagnosis and Non-Pharmacological Therapies
Richard Camicioli, University of Alberta

Patient Advocacy and End-user Engagement in Translational Medical Research
Laurine Fillo, Pedal for Parkinson's Research

Thursday, October 29, 2015

3:10 - 4:10PM **Poster Viewing & Refreshments** *MacEwan Hall Foyer*

4:10 - 4:30PM **3-Minute Thesis Presentations** *MacEwan Hall*

The Effects of Early Life Immune Programming on Outcomes in a Rodent Mild Traumatic Brain Injury Model
Sydney Candy, University of Calgary
Principal Investigator: Michael Esser, Alberta Children's Hospital Research Institute, University of Calgary

Sex Difference in Spatial Navigation
Mashal Fida, University of Lethbridge
Principal Investigator: Robert Sutherland, University of Lethbridge

Targeting Inflammasomes in the Brain to Control Neuroinflammation in HIV Infection
Manmeet Mamik, University of Alberta
Principal Investigator: Christopher Power, University of Alberta

AlphaB-crystallin mediates peripheral nerve regeneration
Erin-Mai Lim, University of Calgary
Principal Investigator: Shalina Ousman, University of Calgary

4:30 - 5:15PM **Keynote Address** *MacEwan Hall*

CRH Neurons Link Stress, Anxiety and Stereotyped Behaviour
Jaideep Bains, University of Calgary

5:30 - 7:00PM **Neuron Night** *MacEwan Hall*
Branch Out Neurological Foundation Reception
(capacity is limited to the first 50 attendees)

Friday, October 30, 2015

8:00 - 9:00AM **Breakfast & Registration** *MacEwan Hall*

9:00 - 9:15AM **Opening Remarks** *MacEwan Hall*

9:15 - 9:30AM **3-Minute Thesis Presentations** *MacEwan Hall*

There is no Panacea for Pain – Gender Differences in Pain Mechanisms
Churmy Y. Fan, University of Calgary
Principal Investigator: Tuan Trang, University of Calgary

The Effects of Haptic Railing and Haptic Anchors on Walking Balance
Isabel Hedayat, University of Saskatchewan
Principal Investigator: Alison Oates, University of Saskatchewan

Don't stay UP, go back to sleep!
LeAnna Kalvi, University of Lethbridge
Principal Investigator: Masami Tatsuno, University of Lethbridge

9:30 - 10:15AM **Keynote Address** *MacEwan Hall*

The Role of Touch in the Evolution of Reaching
Ian Whishaw, University of Lethbridge

10:20 – 11:35AM **Concurrent Symposium Session 4** *MacEwan Hall*

4A. Micro and Macro Asssessment of Brain Dynamics

SESSION CHAIR:
Majid Mohajerani, University of Lethbridge

Imaging the Dynamics of Sensorimotor Integration During Development
Majid Mohajerani, University of Lethbridge

Probing high frequency hippocampal rhythms to understand the coordination of input and output pathways during slow wave sleep like states
Tara Whitten, University of Alberta

Alpha Oscillations in Human Spatial and Temporal Attention
Kyle Mathewson, University of Alberta

Tuning to Talking: Theta-Band EEG Reveals Phase-Tracking of Speech Dynamics
Matthew Tata, University of Lethbridge

Friday, October 30, 2015

10:20 – 11:35AM

Concurrent Symposium Session 4

MacEwan Hall

4B. Neuroimaging Technologies to Assess Human Brain Connectivity

SESSION CHAIR:
Cheryl McCreary, University of Calgary

Structural Connectivity
Catherine Lebel, University of Calgary

Functional Connectivity
Fil Cortese, University of Calgary

Electroencephalography (EEG)
Andrea Protzner, University of Calgary

Transcranial Magnetic Stimulation (TMS)
Adam Kirton, University of Calgary

Near Infrared Optical Spectroscopy (NIRS)
Jeff Dunn, University of Calgary

Linking Structural and Functional Connectivity
Signe Bray, University of Calgary

11:35AM - 12:30PM

Lunch & Poster Viewing

MacEwan Hall and Foyer

12:30 - 12:45PM

3-Minute Thesis Presentations

MacEwan Hall

Optogenetic Approaches Toward Deciphering Brain Circuits Involved in Pain Processing
Shuo Huang, University of Calgary
Principal Investigator: Gerald Zamponi, University of Calgary

Unsettled Foundations: the inflammatory cornerstone between autism and epilepsy
Megan L. Lewis, University of Calgary
Principal Investigator: Quentin J. Pittman, Hotchkiss Brain Institute, University of Calgary

The Functional Role of Hippocampal Subfields: A high-resolution fMRI study of memory
Melanie MacGillivray, University of Alberta
Principal Investigator: Nikolai Malykhin, University of Alberta

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12:45 - 1:30PM

Keynote Address

MacEwan Hall

Sleep Slow Oscillation, Plasticity and Memory
Igor Timofeev, Université Laval

1:30 - 1:45PM

3-Minute Thesis Awards and Closing Remarks

MacEwan Hall

2:00PM

Buses Depart for Edmonton & Lethbridge

Keynote Speaker Biographies

Pierre Blier

Dr. Blier is a Full Professor of the Departments of Psychiatry and Cellular & Molecular Medicine, Faculty of Medicine, at the University of Ottawa, Ottawa, Ontario, Canada, and also Director of the Mood Disorders Research Program at the University of Ottawa Institute of Mental Health Research, Royal Ottawa Mental Health Care Center.

Dr. Blier is on the editorial boards of ten journals, the field editor for Translational Medicine for *International Journal of Neuropsychopharmacology* (the official journal of the CINP), and the Editor for the Americas of the *Journal of Psychopharmacology* (the official journal of the British Association of Psychopharmacology). In addition to his extensive list of publications (comprising several hundred abstracts and over 250 peer-reviewed articles) and lectures presented worldwide, Dr. Blier has contributed to several international consensus groups, such as three World Psychiatric Association Section on Pharmacopsychiatry consensus statements: one on SSRIs and suicide published in 2008, one the treatment of depression published in 2011, and one on the treatment of bipolar disorder. He has also produced a series of 3-D animations depicting the mechanism of action of psychotropic agents. Dr Blier has a basic research laboratory investigating mechanisms of action of psychotropic medications, carries out investigator-initiated clinical studies, and treats patients with mood and anxiety disorders on a daily basis.

In recognition of his research activities supported by grants from national peer-reviewed organizations and the pharmaceutical industry, Dr. Blier has received several awards for outstanding contributions to psychopharmacology including the Canada Research Chair in Psychopharmacology (2004-2018) from the Government of Canada and the biennial CINP Basic Research Award in 2010. He serves on several committees of the Canadian, American, and International Colleges of Neuropsychopharmacology, including the vice-presidency of the CINP.

Igor Timofeev

Igor Timofeev was born in 1961 in Odessa, USSR. He received his diploma as Teacher of Biology and Chemistry in 1983 from the Odessa State University where he was recruited in 1985 as a Lecturer for the Department of Human and Animals Physiology. In 1993 he was awarded a Ph.D. in physiology at the Bogomolets Institute of Physiology (Kiev, Ukraine) and moved to Canada in 1994 for postdoctoral training in the laboratory of Professor Mircea Steriade. Dr. Timofeev is currently Full Professor at Université Laval (Québec, Canada).

Dr. Timofeev investigates cellular mechanisms of sleep oscillations, neuronal plasticity and epilepsy in thalamocortical networks. Dr. Timofeev was the first to perform reliable intracellular recordings in non-anesthetized and non-paralyzed behaving cats, and his lab is known worldwide for multisite simultaneous intracellular recordings in vivo. He published over 100 per-reviewed original papers, 30 review articles, and made close to 100 platform presentations.

Jaideep Bains

Jaideep Bains is a Professor of Physiology and Pharmacology in the Hotchkiss Brain Institute at the University of Calgary. Dr. Bains received his Ph.D. in Physiology from Queen's University in Kingston, ON Canada in 1997 and was a Postdoctoral Fellow at the University of Colorado Health Sciences Centre until 2001. The goal of Dr. Bains' research is to understand how physiological and behavioural challenges lead to long-term changes in neural circuitry. His lab focuses on neurons that coordinate an organism's response to stress, with a particular interest in clarifying how the molecules released at the onset of a stressful stimulus leave a lasting imprint on how 'stress-relevant' circuitry functions. Within this context, his lab conducts experiments aimed at understanding the fundamental rules that govern cell to cell communication within the hypothalamus and elucidate the molecular machinery that contributes to changes in synaptic function which, in turn, may be critical for changing network output.

Keynote Speaker Biographies

Christian Beaulieu

Dr. Christian Beaulieu is a Professor of Biomedical Engineering, Scientific Director of the Peter S Allen MRI Research Centre at the University of Alberta, and an Alberta Innovates – Health Solutions Scientist. His research expertise lies in the development of new magnetic resonance imaging (MRI) methods and their application to better detect quantitative differences of the human brain with typical development and in individuals with neurological disorders. His research uses a world-class human imaging facility with advanced technical abilities, such as the unique high-field 4.7T human MRI (2nd strongest in Canada and one of two in the world) and very recently (this month) a new multi-nuclear 3T MRI. His lab is best known primarily for novel studies involving the development of diffusion MRI which is used to interrogate white matter tracts. The primary clinical MRI applications have been stroke, epilepsy, healthy development/aging, and neurodevelopmental disorders. His lab also develops MRI methods for imaging sodium in human brain (rather than imaging water like in regular MRI), which is challenging and requires the use of higher strength magnetic field MRI scanners.

Ian Whishaw

Ian Whishaw received his PhD from Western University and is a Professor of Neuroscience at the University of Lethbridge. He has had visiting appointments at the University of Texas, University of Michigan, Cambridge University, and the University of Strasbourg. He is a fellow of Clare Hall Cambridge, The Canadian Psychological Association, The American Psychological Association, and the Royal Society of Canada. He is a recipient of the Canadian Humane Society Metal for bravery, the Speaker Medal for Research, The Alberta Science and Technology Leadership Award, the Donald O Hebb Prize from the Canadian Society for Brain Behavior and Cognitive Science, and the distinguished teaching medal from the University of Lethbridge. He has received the keys to the City of Lethbridge and honorary degrees from Thompson Rivers University and the University of Lethbridge. His research addresses the neural basis of skilled movement and the neural basis of brain disease. The Institute of Scientific Information includes him in its list of most cited neuroscientists.

Speaker Biographies

Reda Alhajj

Reda Alhajj is a professor in the Department of Computer Science at the University of Calgary. He published over 450 papers in refereed international journals and conferences. He served on the program committee of several international conferences. He is founding editor in chief of the Springer premier journal “Social Networks Analysis and Mining”, founding editor-in-chief of Springer Series “Lecture Notes on Social Networks”, founding editor-in-chief of Springer journal “Network Modeling Analysis in Health Informatics and Bioinformatics”, founding co-editor-in-chief of Springer “Encyclopedia on Social Networks Analysis and Mining”, founding steering chair of the flagship conference “IEEE/ACM International Conference on Advances in Social Network Analysis and Mining”, and three accompanying symposiums FAB, FOSINT-SI and HI-BI-BI. He is member of the editorial board of the Journal of Information Assurance and Security, Journal of Data Mining and Bioinformatics, Journal of Data Mining, Modeling and Management; he has been guest editor of a number of special issues and edited a number of conference proceedings. Dr. Alhajj’s primary work and research interests are in the areas of: (1) data management and mining, (2) social network analysis with applications in computational biology and bioinformatics, homeland security, etc., (3) sequence analysis with emphasis on domains like financial, weather, traffic, energy, etc., (4) XML, schema integration and re-engineering.

He currently leads a large research group of PhD and MSc candidates. He received best graduate supervision award at the University of Calgary. He recently mentored a number of successful teams, including SANO who ranked first in the Microsoft Imagine Cup Competition in Canada and received KFC Innovation Award in the World Finals held in Russia in July 2013, TRAK who ranked in the top 15 teams in the 2014 open data analysis competition in Canada, Go2There who ranked first in the Imagine Camp competition organized by Microsoft Canada in March 2014, Funiverse who ranked first in Microsoft Imagine Cup Competition in Canada in May 2014.

Speaker Biographies

Stephanie Borgland

Dr. Borgland is an Assistant (Associate as of July 1) Professor in the Hotchkiss Brain Institute at the University of Calgary. From 2008-2013 she was an Assistant Professor in the department of Anesthesiology, Pharmacology & Therapeutics at the University of British Columbia. She received her PhD in Pharmacology/Neuroscience from the University of Sydney, Australia in 2002 and completed her post-doctoral training at the University of California, San Francisco ending in 2007. Her research focuses on understanding the neurobiological mechanisms of aberrant motivation related to addiction and obesity.

The Borgland lab uses a combination of techniques to explore how areas of the brain involved in reward valuation and motivated behaviour are rewired by consumption of palatable foods, obesegenic diets or drugs of abuse. The laboratory has made exciting discoveries on how plasticity within the mesolimbic dopamine circuit is modulated by satiety-promoting peptides, including insulin and leptin. Understanding drug or diet-induced plasticity in neural circuits involved in reinforcement or motivated behaviour is of key importance to determining the neurobiological factors underlying disordered eating or addiction.

Signe Bray

Dr. Bray is an Assistant Professor in the Departments of Radiology and Pediatrics at the University of Calgary and is a member of the Alberta Children's Hospital Research Institute for Child and Maternal Health (ACHRI). Dr. Bray uses functional and structural magnetic resonance imaging (MRI) to study learning and cognition, with a focus on understanding typical and atypical cognitive development, and the effects of neurodevelopmental disorders on the brain.

Ken Butcher

Dr. Butcher is an Associate Professor in Neurology, at the University of Alberta. His major clinical and research interests are in acute stroke care. He completed his PhD concurrently with his MD, at the University of Western Ontario. His thesis was based on the autonomic effects of stroke. Following his Neurology residency at the University of Alberta, Dr. Butcher traveled to Australia, where he completed a post-doctoral Fellowship in MRI and advanced CT imaging of acute stroke. In 2006 he returned to Alberta, and took up his current faculty position. His active research projects include a randomized controlled trial of blood pressure reduction in intracerebral hemorrhage and MRI as well as CT perfusion studies aimed at extending the time window for stroke thrombolysis. He has personnel awards and grant-in-aid funding from the Alberta Heritage Innovates Health Solutions, Canadian Institutes of Health Research and the Heart and Stroke Foundation of Canada. He holds a Canada Research Chair in Cerebrovascular Disease and the Heart and Stroke Foundation of Alberta, NWT and Nunavut Professorship in Stroke Medicine.

Richard Camicioli

Richard Camicioli is a Geriatric Neurologist. He trained in Medicine and Neurology at McGill University and then completed training in Geriatric Neurology at the Portland VA Medical Center. He is currently a Professor of Medicine (Neurology) at the University of Alberta. He directs the Geriatric and Cognitive Neurology Clinic at the University of Alberta and is interim director of the Movement Disorders Program. The focus of his research is the interface between aging and neurological disorders and impairments. His work has examined the relationship between mobility and age-related cognitive decline and dementia and conversely the impact of Parkinson's disease and vascular disease on cognitive risk. He has collaborated with Roger Dixon applying procedures pioneered in the Victoria Longitudinal Aging study to examined reaction time variability as a biomarker for cognitive decline in Parkinson's disease. He has also developed dual cognitive-motor tasks as a probe of cognitive motor interaction and predictor of risk in aging, mild cognitive impairment and in Parkinson's disease. His imaging studies using Magnetic Resonance methods have shown that brain structural changes (atrophy and diffusion tensor imaging change) as well as metabolic changes (spectroscopy) are part of the Lewy-body spectrum extending to Parkinson's disease. Current projects include recruiting a Lewy-body cohort as part of the Canadian Consortium for Neurodegeneration in Aging (CCNA) in order to develop and validate novel biomarkers and use of exercise to improve both mobility and cognition in people with Parkinson's disease (in collaboration with Dr. Bin Hu, University of Calgary).

Speaker Biographies

Taylor Chomiak

Dr. Chomiak is currently a Staff Scientist in the Regeneration Unit in Neurobiology at the Cumming School of Medicine, University of Calgary & Hotchkiss Brain Institute. His previous research focused on investigating mechanisms of neural function through the study of structure-function relationships via electrophysiological analysis and modeling. Dr. Chomiak has more recently been involved in the development of mobile technology and sensorimotor cueing platforms to enable clinical assessment and advanced rehabilitative therapy for Parkinson's disease, as well as the application of this technology to autism.

Darren Christensen

Darren R. Christensen received his PhD in experimental psychology from the University of Canterbury, New Zealand. He has previously worked at the University of Arkansas for Medical Sciences and the University of Melbourne examining the efficacy of contingency management as a treatment for substance dependence and problem gambling. He has designed and evaluated pre-commitment systems for federal and provincial governments, and provides training on pharmacological treatments for disordered gambling to the Victorian Responsible Gambling Foundation. He is currently the chair in gambling sponsored by the Alberta Gambling Research Institute in the Faculty of Health Sciences at the University of Lethbridge. His research includes investigating brain function change in disordered gamblers from regular opioid antagonist dosing.

Fil Cortese

Prior to becoming a Research Associate at the University of Calgary, Fil was a Research Project Manager at the Rotman Research Institute, as well as a Research Fellow at Sick Kids Hospital, both in Toronto. His research interests focus on understanding the translation of neurophysiology to perception and cognition using brain imaging methods such as electroencephalography (EEG), magnetoencephalography (MEG) and functional magnetic resonance imaging (fMRI). He is interested in the interplay of spatial and temporal activity throughout the brain using dipole source analysis, multivariate analytic tools, and network modeling methods to gain insight in how brain regions interact with one another while people perform various visual and cognitive tasks.

Stefanie Czub

Dr. Stefanie Czub is a DVM and has PhD in neuropathology from the Veterinary School of the Free University in Berlin/Germany. She was a postdoctoral fellow at the Rocky Mountain Laboratory/ (NIH), Hamilton/ Montana/USA and senior research scientist at the Pathology Institute of the Julius-Maximilians University in Wuerzburg/Germany.

At the Canadian Food Inspection Agency' Lethbridge Laboratory, she currently manages the pathology, virology, and wildlife disease sections. The Pathology Section also has the Canadian National Reference Laboratory status and the World Organization for Animal Health Reference Laboratory (OIE) status for Bovine Spongiform Encephalopathy (BSE). All Canadian BSE cases have been confirmed by Stefanie Czub.

She is also member of the TSE Expert Advisory Group; an APRI (Alberta Prion Research Institute) Scholar and adjunct professor at the Veterinary School of the University of Calgary/Alberta (UCVM/UofC).

Dr. Czub's research is focused on neurodegenerative diseases; in the last years predominantly on prion diseases including BSE, CWD and Scrapie.

Speaker Biographies

Keith Dobson

Dr. Dobson is a Professor of Clinical Psychology at the University of Calgary, where he has also served in other roles, including Head of Psychology and Director of the Clinical Psychology program. His research has focused on both cognitive models and mechanisms in depression, and clinical trials for the treatment of depression, particularly using cognitive-behavioural therapies. A current focus of his work is on the prediction and prevention of relapse in depression. Dr. Dobson's research has resulted in over 210 published articles and chapters, 11 books, and numerous conference and workshop presentations in many countries. He has three recent DVD series, and a 2012 book on *Cognitive Therapy* with the American Psychological Association. In addition to his research in depression, Dr. Dobson has written extensively about developments in professional psychology and ethics, and has been actively involved in organized psychology in Canada, including a term as President of the Canadian Psychological Association. He is a Past-President of both the Academy of Cognitive Therapy, and the International Association for Cognitive Psychotherapy. He is also a principal investigator for the *Opening Minds* program of the Mental Health Commission of Canada, with a focus on stigma reduction related to mental disorders. Among other awards, he has been given both the Canadian Psychological Association's Award for Distinguished Contributions to the Profession of Psychology and for Distinguished Contributions to the Science of Psychology.

Jeff Dunn

Dr. Jeff Dunn is a specialist in applying MRI and near-infrared spectroscopy to biomedical applications—particularly in pre-clinical models. His career began as a comparative biochemist and evolved into an imaging scientist. Much of his work is on brain: the ability of the brain to adapt to hypoxia, as well as regulation of oxygen delivery, blood flow and energy metabolism. He has been studying the link between MS disease load, hypoxia and metabolic rate MS patients and animal models. He is developing optical methods to monitor concussion and applying NIRS to stroke and Multiple Sclerosis. He is the Director of the Experimental Imaging Centre at the University of Calgary, with a 9.4T MRI and near-infrared imaging equipment. He can be found on twitter @ JeffreyFDunn and following ski cross and volleyball.

Jordan Engbers

Jordan Engbers is a Postdoctoral Fellow under Dr. Samuel WIebe in the Department of Clinical Neurosciences, studying how administrative health data can be used to generate predictive models and clinical decision rules in epilepsy. After completing his graduate studies in neuroscience, he worked with the Clinical Research Unit as a Data Scientist exploring the application of predictive analytics to health data. He has extensive experience in big data analytics and machine learning applications and is excited to be launching his own data analytics company, Desid Labs.

Laurine Fillo

Laurine has worked in the banking industry, is a professional photographer and has become an advocate for those living with Parkinson's Disease. She is the co-founder of Pedal for Parkinson's Research, which hosts an annual fundraising event and research symposium. Laurine was diagnosed with Young-onset Parkinson's in 2003 and has participated in research studies with a view to helping researchers move one step closer to unravelling the mystery of this neurological condition. She and her husband, Dave, have three sons. Laurine enjoys travel, hiking, yoga and dance.

Speaker Biographies

Russ Greiner

After earning a PhD from Stanford, Russ Greiner worked in both academic and industrial research before settling at the University of Alberta, where he is now a Professor in Computing Science and the founding Scientific Director of the Alberta Innovates Centre for Machine Learning, which won the ASTech Award for "Outstanding Leadership in Technology" in 2006. He has been Program Chair for the 2004 "Int'l Conf. on Machine Learning", Conference Chair for 2006 "Int'l Conf. on Machine Learning", Editor-in-Chief for "Computational Intelligence", and is serving on the editorial boards of a number of other journals. He was elected a Fellow of the AAAI (Association for the Advancement of Artificial Intelligence) in 2007, and was awarded a McCalla Professorship in 2005-06 and a Killam Annual Professorship in 2007. He has published over 200 refereed papers and patents, most in the areas of machine learning and knowledge representation, including 4 that have been awarded Best Paper prizes. The main foci of his current work are (1) bioinformatics and medical informatics; (2) learning and using effective probabilistic models and (3) formal foundations of learnability.

Matthew Hill

Dr. Matthew Hill, from the University of Calgary, began his research career as an undergraduate at the University of British Columbia (UBC) in Biological Psychology by volunteering in the laboratory of Dr. Boris Gorzalka examining the impact of chronic stress on sexual motivation and behaviour. From here, he discovered his interest in studying the effects chronic stress has on brain and body and pursued graduate research examining the biological effects of chronic stress on the brain. His graduate work examined how exposure to chronic stress impaired the neurochemical systems normally involved in stress recovery and adaptation, providing a putative mechanism by which chronic stress may result in the breakdown of compensatory "anti-stress" systems and produce wear and tear on the brain and body. Following the completion of his graduate work at UBC, he left for a post doctoral fellowship in the laboratory of Dr. Bruce McEwen at the Rockefeller University in New York City. Matthew is examining structural and functional changes within the brain which occur following chronic stress that relate to the development of anxiety and fear, and how targeting these changes may help to treat stress-related mental illnesses, such as generalized anxiety or post-traumatic stress disorder.

Bin Hu

Dr. Hu obtained his medical degree from Shanghai, China and PhD in Neuroscience from Université Laval. He was a fellow of Fonds de Recherches en Sciences du Quebec, and Medical Research Council of Canada at McGill University, and subsequently a Medical Research Council Scholar with the Division of Neurology, University of Ottawa and Ottawa Hospital. He currently holds Suter Professorship for Parkinson's disease at the Department of Clinical Neurosciences and Hotchkiss Brain Institute, University of Calgary, and was the founding head of Division of Translational Neuroscience.

The research focus of Dr. Hu's lab is on various aspects of brain motivation and sensorimotor cueing networks in animals and humans. He is the founder of Ambulosono International Development Project, a global research network that develops new therapeutic platform and wearable technology for rehabilitation medicine.

Egon Jonsson

Egon Jonsson is CEO of the Institute of Health Economics in Edmonton, Alberta, Canada, and Adjunct Professor of Health Economics at the University of Alberta and the University of Calgary.

He was trained at the Stockholm School of Economics, Sweden, and served as a research associate at Harvard School of Public Health, US. Egon Jonsson is an elected member of the US National Academy of Sciences, Medicine and was for 25 years until recently Editor-in-Chief of the International Journal of Technology Assessment in Health Care, Cambridge University Press. For 16 years he was Director of the Swedish Agency on Health Technology Assessment (SBU), and professor of Health Economics at the Department of Medicine, the Karolinska Institute, Medical School in Stockholm, Sweden. He later worked for WHO to establish The Health Evidence Network (HEN), which is a service for the Health Ministries of WHO/Euro member states on evidence in the field of health policy and practice. Later he was a Health Policy Advisor at the Ministry of Health in Hanoi, Vietnam.

Egon Jonsson has served on many missions of the World Bank on the health services in former republics of the Soviet from the early 1990s to the early 2000s. His main field of research has been in health economics; evaluation of established and new health technologies, procedures, programs and practices in health care. His current interest is focused on the policy implications of investing in mental health and the social determinants for health, on the economics of effective maternal and child health care, prevention of fetal alcohol spectrum disorders, and the macroeconomics of enhancing early child hood development.

Speaker Biographies

Bradley Kerr

Dr. Bradley Kerr received his BSc in Psychology from McGill University. He then went on to obtain a Ph.D. in Neuroscience from the University of London-King's College in the UK. His PhD research was aimed at understanding the role of novel modulatory peptides, growth factors and pro-inflammatory cytokines in persistent pain. Dr. Kerr went on to do postdoctoral work at the California Institute of Technology and at McGill University where his work focused on studying inflammatory responses after nervous system injury. Dr. Kerr joined the Department of Anesthesiology and Pain Medicine at the University of Alberta in 2007 and is also an adjunct associate professor in the Department of Pharmacology and Pscyhiatyry. The focus of research in his lab is aimed at addressing the mechanisms of chronic pain after injury or disease with a major focus on chronic pain associated with Multiple Sclerosis.

Dawn Kingston

Dr. Dawn Kingston has been an Assistant Professor at the University of Alberta since 2012. She is a leading expert in perinatal mental health. Her research focuses on improving perinatal mental healthcare by developing and evaluating clinically- and cost-effective models of prenatal mental health screening and intervention. She engages women, clinicians and policy makers in her randomized controlled trials (RCTs) to ensure that these models of care are accessible, appropriate, and efficient. In this regard, Dawn's team is leading the field of perinatal mental health in developing novel e-technologies for screening and therapy that can be widely accessed and offer sustainable integration into present mental healthcare structures. Current CIHR-funded RCTs are evaluating the first online CBT program for pregnant women and the first online prenatal mental health screening/psychosocial assessment and clinician decision support system. This research benefits greatly from Dawn's collaborations with international experts, including Dr. MP Austin, a Perinatal Psychiatrist who led perinatal mental health reform in AUS, instigating a national system of routine mental health screening, referral, and treatment for pregnant and postpartum women.

Dawn's research also aims to understand the consequences of early adverse childhood experiences, particularly poor perinatal mental health, on child mental health and development. She leads a recently funded AI-HS CRIO grant to study resiliency in children. The largest and most comprehensive population-based study conducted to date in this field, this study will use AB's All Our Babies birth cohort of over 3000 mother-child dyads to identify the genetic profile, epigenetic signatures, stress profile, and early environmental social determinants of child resiliency. With 25 investigators from three AB universities and collaborations with Addictions & Mental Health and Maternal, Newborn, Child & Youth SCNs, findings from this study hold promise for early identification and treatment of children at risk for poor resiliency and subsequent mental health and developmental challenges.

Dawn is leading the development of Canada's first perinatal mental health screening guideline with the Society of Obstetricians and Gynecologists of Canada. She is a member of the AHS task force on perinatal mental health screening. Recently, Dawn was also invited to consult with the Health Advisor to the UK Prime Minister on national perinatal mental healthcare. She serves on the CIHR Health Services Research Committee.

Speaker Biographies

Adam Kirton

Dr. Kirton is an attending Pediatric Neurologist at the Alberta Children's Hospital and Associate Professor of Pediatrics and Clinical Neurosciences at the University of Calgary. His research focuses on perinatal stroke with two major aims. One is to understand why such strokes occur and develop means to prevent them. The other uses advanced technologies including neuroimaging and non-invasive brain stimulation to measure the response of the developing brain to early injury and generate new therapies. Dr. Kirton founded and directs the Calgary Pediatric Stroke Program, Alberta Perinatal Stroke Project, and ACH Pediatric Non-Invasive Brain Stimulation Laboratory. He started the HICCUP program in 2014 to facilitate child health clinical research in southern Alberta.

Catherine Lebel

Catherine Lebel is an Assistant Professor of Radiology at the University of Calgary, and a member of the Alberta Children's Hospital Research Institute. Dr. Lebel received her PhD in Biomedical Engineering from the University of Alberta and completed postdoctoral training in Neurology and Pediatrics at the University of California, Los Angeles. Her primary research interest is structural brain development in children, both in typically developing children, and children with developmental disorders such as dyslexia or fetal alcohol spectrum disorder. Her research uses MRI to study brain changes over time and how these changes relate to cognitive, behavioural and environmental influences. Dr. Lebel is a CIHR New Investigator and her research is currently funded by NSERC, CIHR, NeuroDevNet, and the Alberta Children's Hospital.

Vedran Lovic

Vedran earned his doctorate degree at the University of Toronto working under the mentorship of Prof. Alison Fleming and in collaboration with Dr. Paul Fletcher (CAMH). During his first postdoctoral fellowship Vedran worked with Prof. Terry Robinson and Prof. Brandon Aragona (University of Michigan), studying dopamine neurotransmission in preclinical models of addiction. His second postdoctoral fellowship (Prof. Ann Graybiel's laboratory at the Massachusetts Institute of Technology) was spent investigating functional neuroanatomy of the basal ganglia.

Artur Luczak

Artur Luczak received a M.Sc. in Biomed. Engineering from Wroclaw University of Technology, and Ph.D. from Jagiellonian University, Poland. As a postdoctoral fellow at Yale University he worked in the Applied Math group (led by R. Coifman) and concurrently, he worked on a Brain-Machine Interface project (led by M. Laubach). Next, he moved to Rutgers University to K.D. Harris lab to study neural information processing. He joined as a faculty the Canadian Centre for Behavioural Neuroscience at the University of Lethbridge, where his research involves high density neuron recordings to study brain dynamics.

Speaker Biographies

Frank MacMaster

Frank MacMaster is the inaugural holder of the Cuthbertson and Fischer Chair in Paediatric Mental Health, in the Departments of Psychiatry and Paediatrics, University of Calgary. He is also the Scientific Director for the Addictions and Mental Health Strategic Clinical Network in Alberta Health Services. He received his Bachelors in Psychology for Saint Mary's University, completed graduate work at Dalhousie University in neurobiology, and a postdoctoral fellowship in brain imaging in child psychiatry at Wayne State University. Dr. MacMaster has received a NARSAD Young Investigator Award, the New Investigator Award from the National Institutes of Health, among other honors. Dr. MacMaster uses brain-imaging methods to study the effect of neurostimulation techniques to intervene in mental health and neurodevelopmental disorders in children and adolescents. Neurostimulation methods offer the capability to modulate brain activity that in turn modulates brain function. Given the paucity of information on neurodevelopmental and mental disorders in children and adolescents, there is an urgent need to uncover the origins of these disorders and develop effective and optimally targeted interventions.

Glenda MacQueen

Dr. MacQueen earned her PhD in Psychology and her medical degree from McMaster University, where she also completed her residency in psychiatry. In 2008 she moved from McMaster to the University of Calgary where she is currently Vice Dean in the Cumming School of Medicine and a member of the Hotchkiss Brain Institute and the Mathison Centre for Mental Health Research and Education. Her research interests have focused on mood disorders. Dr. MacQueen is an associate editor of the *Canadian Journal of Psychiatry* and the *Journal of Psychiatry and Neuroscience*. She currently sits on the Board of Directors of the Palix Foundation and the Calgary Drop In and Rehab Centre. She was the 2011 recipient of the Douglas Utting award for studies in depression and is the 2014 recipient of the Heinz Lehmann award from the Canadian College of Neuropsychopharmacology.

Nikolai Malykhin

Dr. Nikolai Malykhin received his M.D. and Ph.D. degrees from the Belarusian State Medical University and completed his postdoctoral fellowship in psychiatric neuroimaging in the Department of Psychiatry at the University of Alberta. He is currently an Associate Professor of Neuroscience, Psychiatry, and Biomedical Engineering at the University of Alberta. Dr. Malykhin has developed one of the most advanced magnetic resonance imaging (MRI) methods for measurement of medial temporal lobe structures and their connections and applied that technology to study changes that occur in major depression and healthy cognitive aging. His research team investigates hippocampal neuroplasticity and neurogenesis in vivo and in order to test preclinical models of stress in humans for the first time. Discoveries in this field should have major impacts on our understanding of depression and its treatment. In this presentation Dr. Malykhin will discuss how recent advances in high-field MRI allow researchers to further understand hippocampal neuroplasticity in major depression and how it is related to antidepressant treatment, memory function, and disease progression.

Kyle Mathewson

I am an Assistant Professor of Psychology in the Faculty of Science's Department of Psychology at the University of Alberta. My field of research is the cognitive neuroscience of visual awareness, attention, learning and memory. I am currently directing the MathLab in the Department of Psychology at the University of Alberta (Departmental Page). We use human behavioural studies, neuroimaging, and electrophysiological recording to gain understanding of the visual attention system. We study basic processes of the visual attention system involving oscillations in neural activity, as well as how these processes are utilized in real world tasks such as driving and video games. We are also developing and researching new technologies to non-invasively monitor physiology and brain activity. I am affiliated with the Neuroscience and Mental Health Insitute (NMHI) in the Faculty of Medicine at the University of Alberta as well.

Speaker Biographies

Debbie McKenzie

Debbie McKenzie received her BSc degree from Simon Fraser University and her PhD in Medical Biochemistry from the University of Calgary. Following post-doctoral training with James Dahlberg in Physiological Chemistry at University of Wisconsin-Madison, she joined the Veterinary Science/Animal Health and Biomedical Sciences department at UW-Madison as a research scientist. In 2008, she moved to the University of Alberta as an associate professor in the Dept of Biological Sciences and an intramural faculty member of the Centre for Prions and Protein Folding Diseases. She has been researching prion diseases since 1988 focusing primarily on the etiology of infection. Her prion research interests include the role of prion protein genetics in resistance and susceptibility of deer to infection with chronic wasting disease (CWD), inter- and intra-species transmission of CWD as well as cell tropism of prion strains.

Bijoy Menon

Dr. Menon is an Assistant Professor (Neurosciences, Radiology and Community Health Sciences) at the University of Calgary. He is a member of the Calgary Stroke Program. His primary research interest is in developing easy to use imaging tools that aid in selecting patients with acute ischemic stroke for revascularization therapies. His research also involves improving processes around hyper-acute stroke treatment, understanding clinical trials methodology and using imaging to understanding leptomeningeal collateral physiology. Dr. Menon holds the Heart and Stroke Foundation/University of Calgary Professorship in Stroke Imaging, a CIHR new investigator award, is an Avenue magazine Top 40 under 40, and has received peer reviewed grant funding from the CIHR, HSFC, AIHS, HBI and the Faculty of Medicine at the University of Calgary.

Majid Mohajerani

Dr. Mohajerani is an Assistant Professor at the University of Lethbridge, Department of Neuroscience and a member of the Canadian Centre for Behavioral Neuroscience. Prior to moving to the University of Lethbridge in 2013 as a Campus Alberta for Innovation Program Chair in Brain Health and Dementia, he was a postdoctoral researcher at the University of British Columbia. His primary research interest is on the mechanisms of brain plasticity and reorganization after stroke and other neurodegenerative diseases. The primary aim of his research is to neural activity on the subcellular, cellular, and circuit level in cortex upon sensory stimulation (tactile, visual, or auditory) and during motor behaviour, to uncover the neural correlates of sensory perception, associative learning and perceptual decisions. His lab employs in vivo optical methods (such as two-photon microscopy, voltage sensitive dye imaging and optogenetic tools), in combination with electrophysiological recording to study neural activity at the subcellular, cellular, and circuit level in real-time. He has received several awards including the Heart and Stroke Foundation of CANADA Henry J.M. Barnett Award, CAIP chair award and Young New Investigator from Alzheimer Society of Alberta and Northwest Territories.

Darrell Mousseau

Darrell D. Mousseau is a Professor with the Departments of Psychiatry and Physiology at the University of Saskatchewan (UofS). Mousseau received his Ph.D. in Neurochemistry from the University of Alberta, and did postdoctoral training in Minnesota and in Montréal. He joined the UofS in 2002 and established a research program that focuses on how depression-related changes in monoamines affect cell function and fate within the context of the Alzheimer disease brain. The goal of this research is to define a means of identifying Alzheimer disease at earlier stages, when therapeutics would still provide benefit. He has held grants from numerous funding agencies, including CIHR, the Alzheimer Society of Canada, the Canadian Breast Cancer Foundation, NSERC, and the Saskatchewan Health Research Foundation (SHRF). He holds the Saskatchewan Research Chair in Alzheimer's disease and related dementias, which was recently renewed and is funded jointly by the Alzheimer Society of Saskatchewan and SHRF.

Speaker Biographies

Scott Patten

Dr. Scott Patten is a Psychiatrist and Epidemiologist at the University of Calgary and the co-Leader of the Alberta CDRIN Hub. He is a Senior Health Scholar with Alberta Innovates, Health Solutions. He is the Editor-in-Chief of the Canadian Journal of Psychiatry and a Senior Associate Editor for Epidemiology and Psychiatric Sciences. He is the author of Epidemiology for Canadian Students, a recently released introductory textbook, as well as > 400 peer reviewed publications. His research focusses on mood disorder epidemiology and the epidemiology of medical-psychiatric comorbidity. In recent years, this work has focused on large national surveys and longitudinal studies such as the Canadian Community Health Survey, National Population Health Survey and Survey of Living with Neurological Conditions in Canada. He teaches the Fundamentals of Epidemiology and supervises MSc and PhD students through the Department of Community Health Sciences at the University of Calgary.

Andrea Protzner

Andrea Protzner is an Assistant Professor in the Department of Psychology at the University of Calgary. She completed her PhD at the Rotman Research Institute, University of Toronto, in 2007, and completed her post-doctoral work at the University Health Network, University of Toronto, in 2010. Her research goal is to build a framework that links cognitive integrity and neural dynamics to provide a coherent understanding of how cognition emerges from operations in the intact and impaired brain. Her recent work examines learning-related changes associated with language processing. Specifically, she examines the behavioural and neural consequences of long- and short-term training for semantic and lexical processes in healthy adults. She also focuses on how hippocampal damage in medial temporal lobe epilepsy affects neural networks supporting episodic memory and other cognitive functions.

Hermann Schaetzl

Dr. Schaetzl is Professor of Prion Biology and Immunology with the Faculty of Veterinary Medicine at the University of Calgary since 2013. Dr. Schaetzl obtained his M.D. at the University of Munich, Germany, where he also received a Ph.D. degree in virology/retrovirology. He was postdoctoral fellow with Stanley B. Prusiner at UCSF from 1993-1995 before establishing his own lab as Assistant Professor at the Max von Pettenkofer-Institute and the GeneCenter Munich in 1996. In 2002 he was appointed Professor of Clinical Virology (with tenure) and Head of the Clinical Virology Unit at the Technical University of Munich, where he also headed an accredited diagnostic virology lab. From 2010 to 2013 he was with the University of Wyoming as Wyoming Endowed Excellence Chair in Prion Biology and is now an adjunct professor there. The overall objective of his group is to study the cellular and molecular biology of prion infections and to use gained understanding for delineating novel targets for intervention. Dr. Schaetzl has participated in research and grant review activities worldwide and trained over 50 graduate students and over 40 researchers/technicians in his laboratory. He has published >100 research articles, 30 reviews and book chapters, and co-edited two textbooks.

Valerie Sim

Dr. Valerie Sim is an assistant professor, neurologist and clinician scientist at the Centre for Prions and Protein Folding Diseases at the University of Alberta. After completing her undergraduate and medical degrees at University of Calgary and neurology residency at University of Ottawa, she pursued an AHMFR-funded post-doctoral fellowship in prion disease research at Rocky Mountain Laboratories, NIH, in Montana. Her appointment to the University of Alberta in 2009 was supported by an Alberta Prion Recruitment Grant from the Alberta Prion Research Institute (AI Bio Solutions) in addition to an AHFMR Clinical Investigator Award (AI Health Solutions).

Clinically, Dr. Sim is a consultant for rapidly progressive dementia cases locally and throughout Canada, she is the medical director of CJD Foundation Canada, a family support resource, and she edits the British Medical Journal Point of Care and Evidence Centre Best Practice on prion disease.

Dr. Sim's research interests include the effect of polymorphisms on prion conversion and aggregation, of prion oligomer size on pathology, and how prion strains target distinct brain regions. From protein biochemistry to organotypic slice cultures and animal treatment experiments, her research publications have received international media attention. She also supports science communication, presenting the science of prion disease to diverse communities across Alberta.

Speaker Biographies

Peter Smith

Peter Smith earned his PhD from Southampton University in 1974. After postdoctoral studies at the National Institute of Mental Health, Washington, DC and at McGill University, he joined the University of Alberta in 1980. He was an AHFMR junior and senior scholar. between 1981 and 1992. His primary research expertise is in electrophysiology and his research interests include autonomic neuroscience, synaptic transmission, neuropathic pain and more recently, neuroinflammation.

Matthew Tata

Dr. Matthew Tata received his undergraduate B.Sc. from Cornell University in Environmental Systems Technology. He did his M.Sc. and Ph.D. degrees in Cognitive Neuroscience at the University of British Columbia, and a post-doctoral fellowship at the University of Lethbridge. He is currently the Associate Professor and Chair of the Department of Neuroscience at the University of Lethbridge and a co-founder of DeepBrain Analytics, a tech startup. His research areas include auditory and visual perception and attention, artificial intelligence and cognitive robotics.

Tuan Trang

Dr. Tuan Trang is an Assistant Professor in the Departments of Comparative Biology and Experimental Medicine, and Physiology and Pharmacology. He is a full member of the Hotchkiss Brain Institute. His laboratory researches the cellular and molecular causes of chronic pain with the goal of translating fundamental discoveries into novel, more effective pain therapies. Dr. Trang is a CIHR New Investigator and a Rita Allen Foundation Scholar.

Phil Upshall

Phil was a successful lawyer and community leader until bipolar disorder caught up with him in the 1990s. Recovery took well over five years. He reentered the work force at the national level in the year 2000. Phil's early efforts include being the founding National Executive Director of the Mood Disorders Society of Canada (MDSC) an office which he continues to hold. He was one of the national leaders who founded the Canadian Alliance on mental illness and Mental Health (CAMIMH) and was deeply engaged in the discussions that preceded the establishment of the Canadian Institutes of Health Research and in particular the Institute of Neuroscience Mental Health and Addiction of he became a member of its first Institute Advisory Board.

Currently, Phil is the National Executive Director of the Mood Disorders Society of Canada (MDSC) a national NGO with a mandate to represent and advocate for the interests of consumers, patients, persons with lived experience, families and caregivers dealing with issues relating to depression, bipolar illness and other related mood disorders.

The Federal Government in its 2012 budget announced a 5.2 million dollar grant to MDSC to facilitate the development of the Canadian Depression Research and Intervention Network (CDRIN), in collaboration with the Mental Health Commission of Canada and the Institute of Mental Health Research in Ottawa. Phil is a Director of CDRIN and MDSC provides management services to CDRIN.

Speaker Biographies

Isabelle Vallerand

Isabelle Vallerand is a PhD Candidate studying Epidemiology in the Community Health Sciences Graduate Program at the University of Calgary. She is working under the supervision of Dr. Scott Patten and Dr. Andrew Bulloch in the Mathison Centre for Mental Health Research & Education. Isabelle's research is primarily focused on studying the risk of morbidity and mortality associated with depression and its progression over the lifespan. This research uses The Health Improvement Network (THIN) database which is a primary care electronic medical records database from the United Kingdom containing records from over 12 million people. Isabelle has also worked on developing methodologies for studying longitudinal health outcomes in ADHD and other chronic diseases. Before beginning her PhD studies, she completed a Bachelor of Science in Psychology at the University of Ottawa and worked at the Children's Hospital of Eastern Ontario conducting research on mental health screening and developing tools to improve health literacy for adolescents.

Tara Whitten

Tara Whitten is nearing completion of her PhD in Neuroscience at the University of Alberta under the supervision of Dr. Clayton Dickson. Her research focusses on hippocampal network activity during sleep-like states, with a particular interest in gamma and other high-frequency activity patterns, and in using mathematical techniques such as independent components analysis to separate the activity of individual hippocampal pathways. Tara took a 2-year break from her PhD training in order to train for and compete in the 2012 London Olympic Games in track cycling, where she won a bronze medal. Her supervisor likes to joke that she traded one type of cycling (brain rhythms/cyclic activity) for another (cycling in circles around a velodrome), but in general nobody laughs. Tara is looking forward to a career in research, and is hoping that the new Liberal government will make such a career more promising.

Holger Wille

Dr. Holger Wille graduated from the University of Hamburg, Germany. He conducted the experimental parts for both his Master's and PhD theses at the Max-Planck Unit for Structural Molecular Biology under the supervision of Dr. Eckhard Mandelkow. At the Max-Planck group he studied the structure and aggregation of the microtubule-associated proteins Tau and MAP2.

Upon being awarded his doctorate, Dr. Wille joined the laboratory of Dr. Stanley B. Prusiner at the University of California in San Francisco (UCSF) as a postdoctoral fellow. At UCSF he focused on the structure and aggregation of the infectious prion protein. At the end of his postdoctoral fellowship Dr. Wille became a faculty member of the Department of Neurology at UCSF, continuing his studies on the structure of the infectious prion protein.

In 2012, Dr. Wille joined the faculty of the Department of Biochemistry at the University of Alberta (UofA) in Edmonton. At the UofA Dr. Wille's laboratory is located in the Centre for Prions and Protein Folding Diseases and focuses on the structure of amyloids and other misfolded proteins. In particular, the structure of infectious prions and the structure-function relationship underlying their infectious nature is being investigated.

Ian Winship

Dr. Winship attained his PhD in the Department of Psychology at the University of Alberta studying visual neuroscience. Following this, Dr. Winship undertook a Focus on Stroke Postdoctoral Fellowship at the University of British Columbia with Tim Murphy. His postdoctoral work used in vivo imaging approaches including two-photon microscopy to study neuronal and astrocyte signaling in the healthy brain and the brain during recovery after focal stroke. Dr. Winship was then recruited to the Department of Psychiatry at the University of Alberta, where he is now an associate professor and Alberta Innovates Health Solutions Scholar. The Winship lab uses in vivo imaging, sensorimotor testing, neuronal tract tracers, and immunoassays in animal models to gain an understanding of the brain's endogenous neuroprotective and neuroplastic mechanisms following brain injury such as stroke. Specifically, Dr. Winship is currently funded by CIHR to investigate collateral blood flow during stroke and novel approaches to collateral blood flow augmentation; by AIHS to explore the functional significance of spinal plasticity after focal cortical stroke and develop new ways to augment this plasticity; and by NSERC to investigate the fine functional somatotopy of sensorimotor cortex and the processes regulating it's function or plasticity.

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