



Faculty Position in Optogenetics / Neuroscience

The Departments of Cell Biology & Anatomy (<http://www.ucalgary.ca/cba/>) and Biochemistry & Molecular Biology (<http://www.ucalgary.ca/bmb>) have joined forces with the Hotchkiss Brain Institute (HBI; <http://www.hbi.ucalgary.ca/>) to invite applications for a full-time academic position (tenure track), at the Assistant Professor level.

This position fits within the University priority in Brain and Mental Health. The ideal candidate will be a biochemist/cell biologist/chemist who develops and applies cutting-edge optogenetics tools to cellular and broader questions; we are particularly interested in candidates who develop light-based tools that can be exploited to manipulate and report cellular activity, alter gene expression or be combined with advanced imaging techniques to track single molecules. The successful candidate will have the opportunity to be part of a prolific and diverse research environment in the HBI and Cumming School of Medicine, with access to state of the art core infrastructure.

The **University of Calgary** is a young and ambitious comprehensive research institution. Established in 1966, it is approaching its 50th anniversary with a clear strategic direction – *Eyes High* – to become one of Canada’s top five research universities by 2016. This plan aims to establish the University of Calgary as a global intellectual hub in Canada’s most enterprising city. University President, Dr. Elizabeth Cannon, and her leadership team have established a roadmap through the University’s Academic and Research Plans to achieve this goal. They are leading almost 4,700 faculty members across 14 faculties and 53 teaching departments. The student body includes 25,000 undergraduate and 6,000 graduate students enrolled across 100 different undergraduate, graduate or professional degree programs.

Six priority research initiatives have been named representing the university’s greatest research strengths, bringing together scholars from across a number of Faculties. The University of Calgary’s six strategic research initiatives are:

- **Brain and mental health**
- Engineering solutions for health: biomedical engineering
- Infections, inflammation and chronic diseases in the changing environment
- Energy innovations for today and tomorrow
- Human dynamics in a changing world: Smart and secure cities, societies, and cultures
- New earth-space technologies

The University of Calgary has already created a rich environment for research in brain and mental health, and has developed strong partnerships with the external community to translate and integrate the knowledge generated into meaningful outcomes for society.

This exciting research strategy is being led by the HBI and is bringing together more than 150 faculty members from the Faculties of Arts, Education, Engineering, Kinesiology, Medicine, Nursing, Science, Social Work, and Veterinary Medicine. Building on their respective expertise, these researchers are collaborating to identify new ways to accelerate research and translate this knowledge into meaningful outcomes in the areas of brain and mental health. As leaders of the Brain and Mental Health Strategic Research Theme, the Hotchkiss Brain Institute (HBI) seeks to i) focus and coordinate brain and mental health activities university-wide; ii) promote interdisciplinary research excellence; iii), enhance research funding competitiveness; iv) increase and accelerate the impact of research through knowledge generation and translation; v) increase collaboration and awareness internally between faculties, departments and groups in brain and mental health to achieve meaningful outcomes; and vi) present a unified voice in communication and fund development for brain and mental health research activities directed to the community.

About the Cumming School of Medicine: Departments and Institutes

The Cumming School of Medicine has recently been named in honour of Geoffrey Cumming whose donation of \$100 million to further research and innovation is being matched by the Government of Alberta. The donation is meant to build on the School’s internationally recognized strengths, particularly in the two priority areas of brain and mental health, and infections, inflammation and chronic diseases.

Led by Dr. Jon Meddings, the School is comprised of 19 departments, with responsibility for the academic, clinical, and educational missions of the Faculty. The School also has seven research institutes which emphasize its research priorities:

- Alberta Children's Hospital Research Institute for Child and Maternal Health
- Snyder Institute for Chronic Diseases
- Hotchkiss Brain Institute
- O'Brien Institute for Public Health
- Libin Cardiovascular Institute of Alberta
- McCaig Institute for Bone and Joint Health
- Arnie Charbonneau Cancer Institute

Institute members are drawn from across the School's 19 departments. This matrix-style organization ensures that high quality research programs that span the continuum from laboratory bench to health care delivery are developed. The institutes are joint ventures and partnerships between the Cumming School of Medicine and Alberta Health Services - Calgary Zone.

ABOUT THE DEPARTMENT OF CELL BIOLOGY & ANATOMY

Led by Department Head, Dr. Benedikt Hallgrímsson, the Department of Cell Biology and Anatomy in the Cumming School of Medicine has a mission to advance the study of structure from cells to organisms and its relation to function, in both health and disease, in both research and education. The vision of the department is to lead the Cumming School and the University of Calgary in research and education related to imaging and quantification of morphology from cells to organisms, and to build a strong international reputation for leadership in cell biology and anatomy. There are 18 full time faculty members in the department, along with 22 associate members. This department manages the Microscopy and Imaging Facility (MIF), which serves as a primary imaging source for all departments at the University of Calgary. The MIF is a world-class facility housing transmission electron microscopy (TEM), scanning electron microscopy (SEM), advanced light microscopy, atomic force microscopy (AFM), including single cell force spectroscopy (SCFS), and advanced image processing for three-dimensional electron and light microscopy. The facility offers users service, training, and expertise in a number of techniques. Further information about the department, education/training opportunities, as well as details on faculty members' research programs can be found at: <http://wcm.ucalgary.ca/cba/>

ABOUT THE DEPARTMENT OF BIOCHEMISTRY & MOLECULAR BIOLOGY

Under the direction of Department Head, Dr. Jonathan Lytton, the Department of Biochemistry & Molecular Biology in the Faculty of Medicine has a strong tradition of excellence in research, undergraduate and graduate student education, and service delivery. There are 30 full time faculty members in the department, with programs ranging across the following research streams: Cell Signaling and Structure; Genomics, Proteomics, and Bioinformatics; Molecular and Developmental Genetics; Molecular Biology of Disease. Members of the Department are strongly supported through extramural funding, and, while diverse in areas of research focus, these individuals are conducting

cutting-edge research with a common focus on the molecular understanding of complex biological processes guided by techniques of biochemistry and cell and molecular biology.

Department of Biochemistry & Molecular Biology members are leaders in numerous core platforms supporting research activities serving the Faculty of Medicine and southern Alberta. These core services include the Bio-NMR Centre, the Clara Christie Centre for Mouse Genomics, the Peptide Synthesis Lab, SACRI Antibody Services, Southern Alberta Mass Spectrometry Facility (SAMS), Southern Alberta Microarray Facility (SAMF), the Visual Genomics Centre, and University Core DNA and RNA Services. Further information about the department and these core services can be found at: <http://www.ucalgary.ca/bmb/>

ABOUT THE HOTCHKISS BRAIN INSTITUTE

Inspired by the vision “healthy brains for better lives”, the mission of the HBI, under the leadership of Dr. Samuel Weiss, is to achieve internationally recognized key discoveries and transformative clinical research in the neurosciences and mental health. To achieve this goal, the HBI has created a “NeuroDiscovery Framework”, which aligns research within three broad themes of Brain & Behaviour, Neural Injury & Repair, and Healthy Brain Aging (<http://www.hbi.ucalgary.ca/strategic-plan>).

Over 125 clinician-scientists, researchers, and physicians from across the University who are full members of the HBI are dedicated to advancing neurological and mental health research and education. While HBI members have numerous and varied interests within the field of neurological and mental health, many of their interests converge in HBI’s identified priority NeuroTeam programs. By integrating the research of foundational scientists, clinicians who work with patients, technical experts and population health researchers, the HBI is going beyond scientific discoveries to improving lives.

Each theme is composed of a number of “NeuroTeams” organized in a translational continuum, which includes basic, clinical, population and public health researchers. NeuroTeams take a multidisciplinary approach to brain and mental health research questions, and align the HBI’s primary areas of research strength (<http://www.hbi.ucalgary.ca/our-research>).

There are currently nine NeuroTeams in: Stress, Epilepsy, Mental Health, Multiple Sclerosis, Spinal Cord/ Nerve Injury and Pain, Traumatic Brain Injury, Stroke, Dementia and Cognitive Disorders, and Movement Disorders. The teams build on a springboard environment of Technologies, Core Facilities and support programs that will allow them to pursue their research goals. The successful candidate’s research program will be based in one of the nine “NeuroTeams” of the HBI (<http://www.hbi.ucalgary.ca/our-research>).

The HBI has an impressive track record of philanthropic support, having raised over \$140 million in support of brain and mental health research and education in the past ten years. These funds are used to support priority research areas in foundational and translational research, to provide leverage and matching support for the acquisition of research infrastructure, to establish and outfit new research space, to provide funding for faculty and trainees and to support an enhanced research and education

environment. The HBI has established a number of support programs for its members, including an international scholar exchange program, competitive funding programs for students and fellows, and subsidized core resources, including The Regeneration Unit in Neurobiology (RUN), which houses advanced microscopy and behavioural testing facilities, The HBI Molecular Core Facility, The NeuroImaging Research Unit, and The HBI Advanced Light and Optogenetics (HALO) facility (<http://www.hbi.ucalgary.ca/our-research/core-facilities>).

Further information about the HBI and these support programs are described within the pages of the HBI website: www.hbi.ucalgary.ca.

The HBI, and the Departments of Cell Biology & Anatomy and Biochemistry & Molecular Biology have joined collaboratively in support of this position. Leading researchers include:



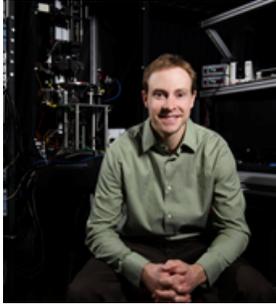
Jaideep Bains, PhD: Dr. Bains is co-lead of the HBI Stress Neuroteam and a Professor at the Hotchkiss Brain Institute and the Department of Physiology & Pharmacology. The primary focus of his research is in how physiological and behavioural challenges, like stress, lead to long-term changes in neural circuitry in the hypothalamus.



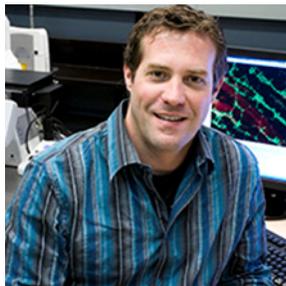
Gerald Zamponi, PhD: Dr. Zamponi is a Professor, Senior Associate Dean for Research, and a Canada Research Chair with the Cumming School of Medicine. Dr. Zamponi studies various aspects of neuronal voltage-dependent calcium channels, including the regulation of presynaptic calcium channels by G proteins and their potential as targets for control of chronic pain.



Patrick Whelan, PhD: Dr. Whelan is a Professor in the Cumming School of Medicine, and the Faculties of Veterinary Medicine and Kinesiology and a member of the HBI. Dr. Whelan utilizes electrophysiology to study spinal circuit organization in animal models and experimental preparations. His lab studies how monoamines influence the excitability of neurons, with a focus on understanding plasticity following spinal cord injury.



Grant Gordon, PhD: Dr. Gordon is an Assistant Professor in the Department of Physiology and Pharmacology and member of the HBI. Dr. Gordon's laboratory uses new fluorescence microscope technologies to image within the brain at the cellular level to study how brain cells communicate with blood vessels. More specifically, his primary goals are to use acute brain slice preparations to 1) determine how neurons and astrocytes participate in cerebral blood flow (CBF) control separately and how they interact with each other, and 2) identify novel cellular pathways in neurons and astrocytes that play an important role in changing the diameter of cerebral blood vessels.



Roger Thompson, PhD: Dr. Thompson is co-lead of the HBI Stroke NeuroTeam and an Associate Professor in the Department of Cell Biology and Anatomy. The primary focus of his research is in mechanisms of neuronal death during stroke and other neurodegenerative disorders. Currently, the focus is on a large ion channel called Pannexin-1, the main goals being to understand how pannexin-1 is activated during stroke, to determine what the consequences of its activation are, and to investigate its normal physiological roles. To do this, state-of-the-art techniques including molecular biology, patch-clamp electrophysiology and in vivo multi-photon microscopy are used.

THE POSITION AND OPPORTUNITIES IN PLACE FOR THE FACULTY POSITION IN OPTOGENETICS/NEUROSCIENCE

The successful candidate for this position will be a biochemist / cell biologist /chemist who develops and applies cutting-edge optogenetic tools to cellular and broader neuroscience questions. We are particularly interested in candidates who develop light-based tools that can be exploited to manipulate and report cellular activity, alter gene expression or be combined with advanced imaging techniques to track single molecules. The successful candidate will join one of the 9 NeuroTeams described above.

The position provides protected time for research, and will include expectations to contribute to undergraduate and graduate level teaching. This is an excellent opportunity to develop an independent externally-funded research program within a highly collaborative environment.

Appointment: Qualifications of the applicants include a PhD and at least 2 years of postdoctoral experience. An appointment will be made at the Assistant Professor level in the Departments of Cell Biology & Anatomy and Biochemistry & Molecular Biology with a competitive salary, as well as a start-up funding and laboratory space provided by the HBI. Candidates must show evidence of ability to develop an independent research program that will integrate with and complement one or more of the nine HBI NeuroTeams.

Focus on Research: This position offers an excellent opportunity to develop a strong and independent research program within a dynamic, collaborative, and multidisciplinary environment. With up to 75% of

time protected for research, the successful candidate will be able to commit most of his or her time to focus on the development of a vibrant program.

Space: Laboratory and office space for the successful candidate will be provided by the HBI. This is located in the Health Sciences Centre at the Foothills Campus of the University of Calgary, which is adjacent to the Foothills Medical Centre.

Infrastructure: The successful candidate will have access to a number of excellent core research facilities within the HBI and the Cumming School of Medicine; please see <http://www.hbi.ucalgary.ca/research/core> and <http://cat.ucalgary.ca/> for a full list of available resources and facilities.

Access to a Diverse Set of Trainees: There are numerous training and education initiatives from across the Department, Institute, and Cumming School of Medicine. The HBI is committed to supporting their members and trainees in a number of ways: through competitive funding streams for graduate students and fellows; through an innovative program that personalizes the graduate program experience with the goal of maximizing professional development alongside their research training; and through international exchange opportunities via the Rebecca Hotchkiss International Scholar Exchange program.

Provincial partners in research: Campus Alberta Neuroscience is a provincial network which links research professionals from all areas of neuroscience across the Universities of Alberta, Calgary and Lethbridge. CAN's aim is to establish the province of Alberta as a centre of neuroscience excellence, impact and innovation on the international stage. The successful candidate will have an immediate community and point of collaboration with fellow researchers across the province.

Living in the Calgary Area: Calgary is a multicultural and vibrant city of more than 1 million people. Situated near the Rocky Mountains, Banff National Park and Lake Louise, Calgary offers great quality of life and outstanding recreational activities. Further information can be found on Calgary attractions, sports and recreation, and arts and culture on the official website of Tourism Calgary at: <http://www.visitcalgary.com/>

Please also follow the link below to watch a YouTube video highlighting some of the fantastic views and activities that can be enjoyed across the province of Alberta.

<http://www.youtube.com/user/TravelAlbertaCanada>

JOIN THE UNIVERSITY OF CALGARY TO ACHIEVE ITS GOALS IN NEUROSCIENCE RESEARCH AND EDUCATION

Taken together, the opportunities in place for the Faculty position in Optogenetics at the University of Calgary are significant and tangible. This document summarizes key relationships and provides an overview of points of interest to a prospective candidate for this position, but this is no substitute for visiting the Hotchkiss Brain Institute and the Departments of Cell Biology & Anatomy and Biochemistry &

Molecular Biology to truly appreciate the collegial, collaborative, and innovative environment in place at the University of Calgary.

Review of applications for this position will begin after the position closes on August 1st, 2016 and will continue until the position is filled. We encourage you to consider this opportunity and forward by email a cover letter, academic curriculum vitae, a statement of research interests (maximum 2 pages), and the names of three (3) referees by August 1st, 2016 directly to:

Dr. Jaideep Bains,
Professor, Chair of Search and Selection Committee
Hotchkiss Brain Institute
Cumming School of Medicine
University of Calgary
Hospital Drive NW
Calgary, AB, Canada T2N 4N1

Email: sjotwani@ucalgary.ca

The University of Calgary believes that a respectful workplace, equal opportunity and building a diverse workforce contribute to the richness of the environment for teaching, learning and research, and provide faculty, staff, students and the public with a university that reflects the society it serves. All qualified candidates are encouraged to apply; however, Canadians and permanent residents will be given priority.

In this connection, at the time of your application, please answer the following question in your cover letter: Are you a Canadian citizen or a permanent resident of Canada? (Yes/No)