More than $5 million for stem cell research

The Atlantic Innovation Fund has awarded $2.1 million to a BRC research and development project investigating stem cell use in the repair and treatment of brain disorders and spinal cord injury. In addition to the AIF contribution, partner institutions will provide matching funds toward the total project cost of $5.5 million.

The research project will develop stem cell lines with a special focus on adult sources with specific characteristics for research protocols involving the MRI system, and eventually there will be a website where researchers can go to learn more about the facility.

The founding partners of the Brain Repair Centre are pleased to announce that an advanced neuroimaging facility will soon be available to researchers in Atlantic Canada. The facility will contain a 4.0 Tesla MRI system that is fully equipped for anatomical, functional, and spectroscopic imaging.

The new centre under construction on land adjacent to the Halifax Infirmary, Robie Street entrance, features over 5,100 sq. ft. of space for neuroimaging research. The building will house the MRI system and additional neuroimaging equipment.

The 4T MRI will be installed this spring by the National Research Council's (NRC) Institute for Biodiagnostics (Atlantic), in partnership with Capital Health and Dalhousie University. “The MRI project is designed for access. The goal is to promote collaborative neuroscience research,” says NRC's Dr. Ryan D'Arcy, Program Leader with the Institute for Biodiagnostics (Atlantic).

The new facility will also have additional neuroimaging equipment, such as a high-resolution electroniccephalography system and off-line computing and data analysis workstations, notes Dr. D'Arcy. “We want to build a state-of-the-art brain imaging centre and provide researchers with leading edge collaborative opportunities in Atlantic Canada.”

Dr. D'Arcy notes that planning has begun for research protocols involving the MRI system, and eventually there will be a website where researchers can go to learn more about the facility.

Excavation and construction began in December 2002. The project is on schedule and the building will be completed in the summer. The new facility also includes 8 offices, a conference room and open space for the exchange of ideas and discussion. The space will accommodate NRC researchers and technologists, and imaging scientists from across Dalhousie University and Capital Health.
Researching neuroprotective signal transduction

George S. Robertson

After an absence of 13 years, Dr. George Robertson has made his way back to Nova Scotia and Dalhousie University as the holder of a CIHR-Rx&D Research Chair. He will also be an active member of the Brain Repair Centre team. Dr. Robertson is joining our Scientific Advisory Committee and will contribute to the development of our CFI applications now and down the road. As well, Dr. Robertson’s significant industry experience will go a long way to helping us achieve our commercialization goals.

Dr. Robertson was chosen for this prestigious Chair, funded jointly by the Canadian Institutes of Health Research and Merck Frosst Canada, because of his innovative work on neuroprotective signal transduction.

Dr. Robertson, who has a joint appointment in the Departments of Psychiatry and Pharmacology at Dalhousie, was previously at the University of Ottawa where his research focused on the mechanism of action of anti-parkinsonian and anti-psychotic drugs as well as the therapeutic potential of a novel family of anti-aptopotic genes, IAPs, in several neurodegenerative disorders.

Dr. Robertson’s research in Ottawa also attracted the attention of Merck Frosst resulting in his appointment as Director of Pharmacology at the Merck Frosst Centre for Therapeutic Research. During his time with Merck Frosst, Dr. Robertson was responsible for the in vivo pharmacology components of drug discovery programs in diabetes, asthma and stroke. “The identification of mutations responsible for human illnesses ranging from Alzheimer’s disease to diabetes has ushered in an exciting new era of pharmacology whereby drug discovery can now be performed using genetically relevant in vivo models,” notes Dr. Robertson.

BRC well supported

The Dalhousie Medical Research Foundation will make a major contribution this year to the Brain Repair Centre to enable it to find the last $500,000 of required matching funds to put together its $5.5 million project funding.

“In response to a request from Dr. Mendez,” says Frank Sobey, chairman of the Board of Directors of the Dalhousie Medical Research Foundation, “we will use funds raised through the 2002 Molly Appeal to support the Brain Repair Centre and excellence in neuroscience research at Dalhousie.”

Another significant Brain Repair Centre supporter is the Queen Elizabeth II Health Sciences Centre Foundation. This year Nova Scotia’s largest health complex has included the Brain Repair Centre in its $42.5 million Working Miracles capital campaign. The QEII Foundation has earmarked $3 million for the BRC.

BRC IS HAVING A GLOBAL IMPACT. In the past few months, we have accepted invitations to speak to a number of key organizations, among them the World Presidents’ Organization, which includes more than 3300 leaders, and his research colleagues also have submitted provisional patents for Innovative Methods of Assessment Program (IMAP) and NHR Head Restraint.

Steven Barnes and his colleagues in the Retina and Optic Nerve Research Lab were awarded a CIHR Group Program Grant, 2003-2007. The award is based on the accomplishments of each investigator and the ability of the researchers to work as a team. Steven is currently pursuing projects on regulation of calcium channel genes in retinal precursor cells, characterizing the physiological responses of retinal cells in transgenic, night-blind mice, and defining the biophysics of coupling between calcium channels and calcium activated channels in photoreceptors in another animal model.

John Connelly has been named to the Editorial Board of Clinical Neurophysiology and has received an Affiliate Scientist designation at the NRC’s Institute for Biodiagnostics. A recent research study – Linking neurophysiological and neuropsychological measures for aphasia assessment by Yannick Marchand, Ryan C.A. D’Arcy, and John F. Connelly - has been published in Clinical Neurophysiology. It was accompanied by an editorial commission by the editor-in-chief of the journal. John has also received a grant from the Networks of Centres of Excellence.

Ryan D’Arcy has had abstracts printed in the Proceedings of the International Society for Magnetic Resonance in Medicine 10, the Proceedings of the International Society for Magnetic Resonance in Medicine 11, the International Journal of Psychophysiology, and the Society for Neuroscience. He and his research colleagues also have a proven commitment to multi-disciplinary research.

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Dr. Robertson’s significant industry experience will go a long way to helping us achieve our commercialization goals.

Search for Tier 1 Research Chair ramps up

The Brain Repair Centre and Dalhousie University are seeking a world-class researcher and teacher to hold a Tier 1 Canada Research Chair. A Tier 2 chair will be advertised after this position is filled.

An appointment at the rank of Professor, the Tier 1 Chair will foster world-class research in brain repair in partnership with a range of disciplines including neurosurgery, neurology, pharmacology, ophthalmology, psychiatry, neuroimaging, and cognitive neuroscience. The successful candidate will have a Ph.D. or M.D./Ph.D. and an outstanding record of scholarship, both teaching and research, in fields related to disorders of the nervous system. Candidates must be acknowledged leaders in their fields with a proven commitment to multi-disciplinary research.

If you have any suggestions for candidates, please forward their names to Dr. Harold Robertson, Chair, Brain Repair Centre Search Committee, Department of Pharmacology, Sir Charles Tupper Building, Dalhousie University, Halifax, NS B3H 4H7 or to harold.robertson@dal.ca.

For more information about the Canada Research Chairs Program, please see www.chairs.gc.ca/english/About/index.html.
Exploring how CNS inflammation affects MS and other diseases

Ronald Leslie

Dr. Ronald Leslie is returning to university after half a dozen years – specifically to Dalhousie University and the position of Head of the Department of Anatomy & Neurobiology. In addition to his work with the Faculty of Medicine, Dr. Leslie is joining our Scientific Advisory Committee and will play a key role in the development of our CFI grant with respect to neuroimaging infrastructure. As well, he is joining the Brain Repair Centre’s Executive Committee and through his significant industry experience will enhance our commercialization goals.

Prior to accepting his appointment at Dal, Dr. Leslie was with GlaxoSmithKline Pharmaceuticals and SmithKline Beecham Pharmaceuticals in the United Kingdom. His many research interests include how inflammation of the central nervous system affects multiple sclerosis and Alzheimer disease.

Dr. Leslie previously headed the CNS Laboratory of Experimental Medicine Europe/International for GlaxoSmithKline Pharmaceuticals in Cambridge, UK. The laboratory is attached to the Addenbrooke Hospital and supports neurological, GI and psychiatric drug discovery and development.

In the course of setting up the Addenbrooke laboratory, Dr. Leslie established novel CNS biomarker assays using clinical samples and cell lines to investigate anti-inflammatory compounds in CNS disease, and investigated the potential role of novel PPAR agonist compounds for CNS indications.

Before opening the Addenbrooke laboratory, Dr. Leslie was SmithKline Beecham’s Director in the Neurosciences Research Division at Harlow, UK, where he initiated and managed CNS in vitro and in vivo imaging teams. “I managed in-house and CRO studies providing histopathological analysis of novel targets in CNS. As a result, we identified novel hypothalamic targets,” says Dr. Leslie.

While in the UK, Dr. Leslie received two honorary degrees from Oxford University and an honorary University Research Lectureship at Oxford.

Dr. Leslie graduated from Brock University and received his Ph.D. from the University of Cambridge before doing a postdoctoral fellowship at McMaster University’s Faculty of Medicine. From 1976 to 1989, he was a professor in the Department of Anatomy at Dalhousie University.

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The project research will develop stem cell lines with a special focus on adult sources with specific characteristics for treating Huntington’s Disease, ALS, Parkinson’s Disease, and spinal cord injury. The objective of the research is: To understand the neurobiology of stem cells in animal models; to monitor the integration of the stem cells into the host (animal model) using histological, electrophysiological and imaging techniques; to determine the functional effects of stem cell derived grafts; and to provide the scientific basis for translating stem cell research into successful treatments.

The principal researchers (Dr. I. Mendez, Dr. H. Robertson, Dr. S. Barnes, Dr. R. Brownstone) will establish the new lab-capacity on a temporary basis within the Tupper Medical Building. The ultimate goal is to locate this state-of-the-art, multi-user facility within the Research Village, a proposal for new research buildings under development by the Life Sciences Development Association. “Stem Cells for Brain Repair” also has specific commercial goals, including the protection of intellectual property and promotion of academic-industry partnerships. Patentable products include novel trophic factors, cell lines, protocols and instruments.

Research highlights and news from BRC researchers

Dr. D’Arcy notes that planning has begun for research protocols involving the MRI system, and eventually there will be a website where researchers can go to learn more about the facility.

As a partnership encompassing academic institutions, hospitals, governments, research institutes and members of the broader life sciences community, it is imperative that we stay informed and keep abreast about the work we are doing collectively.

World class neuroimaging facility for brain repair research

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