



The Brain Brief

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Canadian Institutes of Health Research –
Institute of Neurosciences, Mental Health and Addiction (CIHR-INMHA)

Message from the Scientific Director



Several major initiatives have shaped events within INMHA over the past several months and it is my pleasure to provide you with an update on some of the exciting initiatives that have emerged from this activity.

In keeping with its legislated responsibility, the Governing Council commissioned the second International Review of the CIHR, which began in February 2011 and will formally conclude in late June 2011 (www.cihr-irsc.gc.ca/e/31680.html). To that end, INMHA staff spent a tremendous amount of time researching and developing a fairly comprehensive 25-page report focused primarily on the Institute's activities over the past five years. Each of the 13 Institutes was given a standardized template within which to produce this report, and each Institute was evaluated separately by members of the International Review Team. All 13 reports will become public documents and will be posted this summer on the CIHR website along with a corporate report. I hope you will enjoy reading this strong testimonial to INMHA's investments over the past 5 years to support Canada's world class research achievements in neurosciences, mental health, addiction and the senses.

As part of the implementation of CIHR's Strategic Plan *Roadmap*, in 2010, all the Institutes began a process to identify bold new initiatives that would capitalize on uniquely Canadian strengths and focus on major health and health care challenges. The objective was to create pan-Institute, CIHR-wide endeavours that encourage multidisciplinary collaboration. In January 2011, after

a rigorous internal strategic planning process, CIHR identified seven CIHR Roadmap Signature Initiatives, which are now at various stages of development. One of these initiatives grew out of several consultation workshops led by INMHA with the epigenetics community in Canada in 2009 and 2010: the Canadian Epigenetics, Environment and Health Research Consortium (CEEHRC). Epigenetics is the study of changes in the regulation of gene activity and expression that are not dependent on alterations in gene sequence, and there is a rapidly growing realization that the majority of complex diseases, including mental ill health and addiction, may involve interplay between specific environmental factors related to epigenetic regulation of the genetic blueprint. Canada has internationally competitive research and technical expertise in epigenetics, within specific nodes of excellence across the country, and this pan-CIHR initiative has been established to link that research capacity together, to ensure that Canada plays a leading role in an area of research referred to as the "second revolution in genetics." In the arena of neurosciences, epigenetics provides a compelling model for how early, adverse and socio-economic environmental influences throughout development can have life-long (and potentially multi-generational) effects on mental health and addiction. In keeping with this growing momentum, in October 2010, Cheryl Arrowsmith and I chaired a Gairdner Foundation Symposium on Epigenetics in Toronto. The field got a huge boost in February when Adrian Bird, Howard Cedar and Aharon Razin were among the five 2011 Gairdner Foundation Awards recipients. These three scientists were recognized for their pioneering work in the field of epigenetics, specifically for their discoveries in DNA methylation and its role in gene expression.



Thanks to the hard work and dedicated efforts of the INMHA team over the past nine months, CEEHRC has moved from concept to reality, and now has three CIHR Institute co-leads: INMHA, the Institute of Genetics (led by Paul Lasko), and the Institute of Cancer (led by Morag Park), along with five additional Institutes supporting this strategic program. The first funding opportunities will be launched this Fiscal Year (please read further in this newsletter for a description of the program and upcoming RFAs). I am also very pleased to report that CIHR has now become an Executive Member on the Steering Committee of the International Human Epigenome Consortium (IHEC), thereby firmly positioning Canada and Canadian scientists in the international epigenetics arena. On a final note, INMHA was proud to co-sponsor the first, very successful Canadian “Epigenetics, Eh?” conference held in London, Ontario May 4-7, 2011.

On behalf of the three Institute co-leads, we look forward to building with you this important and timely national epigenetics resource, and to benefitting from this major CIHR investment in the years to come in better health and health care for all Canadians.

INMHA continues to seek meaningful multi-disciplinary partnerships in the international arena that provide opportunities for Canadian researchers to form part of innovative research projects within its mandate areas. Last year, we joined the ERA-Net NEURON Joint Transnational Funding Program (<http://www.neuron-eranet.org/index.php>) with 9 EU countries plus Israel and Canada (CIHR and FRSQ; total of 13 funding agencies). To date, two joint ERA-Net NEURON RFAs have been launched in partnership with the FRSQ: on Mental Disorders in 2010 and on Cerebrovascular Diseases in 2011. Of the 11 successful teams on Mental Disorders, 5 had Canadian members, 3 of which were supported by INMHA and two by FRSQ. INMHA’s modest investment of approximately \$600,000 allows Canadian researchers to participate in a program with a funding envelope of approximately \$15M CAD. The CIHR-FRSQ-France program was launched last year, with the objective of generating knowledge leading to a better understanding of the aetiology of Alzheimer’s disease and related disorders and to improved diagnosis, treatment and care for people suffering from these diseases and for their families.

(www.era-can.ca/en/Strategic_International_Workshops_23/items/EuropeCanada_Workshop_on_Alzheimer’s_Research_19.html)

Five teams were funded in a total funding envelope of \$5.1M over 3 years; INMHA contributed \$460,000 to this initiative.

Following the recent earthquake and tsunami in Japan, the INMHA Board sent a message of deep sympathy to the Japan Neuroscience Society, expressing our concern for the series of disasters that followed the earthquake and the devastating effects on the Japanese population. INMHA continues to explore ways to partner with Japanese neuroscientists, and has established the Canada-Japan Joint Symposium which is now a regular feature at the annual Japan Neuroscience Society Meeting. In 2010, INMHA supported two Canadian speakers, Terry Snutch and Sam Weiss. This year Pierre Drapeau and Derek Van Der Kooy are the featured speakers.

Institute/Initiative Activities **Canadian Epigenetics, Environment and Health** **Research Consortium (CEEHRC)**

On January 19 2011 CEEHRC was one of the 7 “Signature Initiatives” given formal approval to proceed. Co-led by INMHA, the Institute of Genetics and the Institute of Cancer Research, CEEHRC is supported by another 5 Institutes: Institute of Aging, Institute of Aboriginal Peoples’ Health, Institute of Human Development, Child and Youth Health, Institute of Gender and Health, Institute of Nutrition, Metabolism and Diabetes, plus the International Collaborative Research Strategy for Alzheimer’s Disease (ICRSAD).

The initial phase of CEEHRC is planned over the next five years and the first series of RFAs will be launched in July 2011 in order to support the establishment of a national epigenetics platform (composed of one epigenomic data coordination centre plus several epigenomic mapping centres across Canada), plus Catalyst Grants, and PDF training awards. External partners to date on these RFAs include Genome BC, Genome Quebec and NeuroDevNet. The second series of RFAs will be launched in 2012 and will include large Team Grants. CEEHRC will incorporate a strong ethical perspective along the lines of the GE3LS genome initiative, as well as establish a consortium network with administrative and governance bodies.



CIHR has now formally joined the International Human Epigenome Consortium (www.ihec-epigenomes.org) as a full executive member. This ensures that Canadian scientists will be appointed to the International Scientific Steering Committee (ISSC) and the External Scientific Advisory Committee (ESAC). CIHR membership on the IHEC executive and scientific committees will provide a unique opportunity for Canadians to work with the leading epigenetics research teams in the world, to learn from and contribute to this 'next revolution in science' including the development of state-of-the-art bioinformatics and sequencing technology. It will also facilitate the rapid exchange of ideas from the international to the Canadian setting.

Barbara Turnbull Award in Spinal Cord Research

It was with honour and great pleasure that INMHA, in partnership with the Barbara Turnbull Foundation for Spinal Cord Research and NeuroScience Canada, announced the 2010 Barbara Turnbull Award in Spinal Cord Research. This successful partnership was established in 2001 and has now presented 9 awards to 7 outstanding Canadian researchers. This year, for the first time, we had a tie for the highest ranked spinal cord research grant in the 2009-2010 CIHR Open Operating Grant Program competition. The award was thus presented jointly to Drs. Robert Brownstone and James Fawcett from Dalhousie University for their research in spinal cord injury protection, repair and functional recovery. We are honoured to recognize and support Drs. Fawcett and Brownstone for their excellent and innovative work in spinal cord research. An award ceremony was hosted on November 12, 2010 in Toronto.



Robert Brownstone, Barbara Turnbull, James Fawcett

Schizophrenia Society Prize

The Schizophrenia Society of Canada, in partnership with INMHA, is pleased to announce that the 2010 winner of the Schizophrenia Prize is Dr. Catherine Briand from Hôpital Louis H. Lafontaine (Montreal).

2010 Brain Star Award Winners

Congratulations to the winners of the 2010 Brain Star Award competition:

Katya J Park
Eric Trudel
Bechara Saab
Tracie Affifi
Brent Kuzmiski
Jing Wang
Simon Chen
Kim Christie
Fraincois Gros-Louis
Tabrez J. Siddiqui
Vilte Barakauskas
Yi-Mei Yang
Aristotle Voineskos
Vaneeta Verma
Michael Vesia
Marion Von Horn
Jeffrey Dason
Renée El-Gabalawy
Noufissa Kabli
Ping Situ
Muhammad Qasim Khan
Joel Ramirez

The 2010 Marlene Reimer Brain Star of the Year award will be given to **Katya Park** for her project entitled: "*p75NTR-dependent, myelin-mediated axonal degeneration regulates neural connectivity in the adult brain*"

For more information on the Brain Star Award program please visit the INMHA website at: www.cihr.ca/e/9600.html

Congratulations to all the winners!



Institute Advisory Board (IAB)

INMHA [Institute Advisory Board \(IAB\)](#) meetings were held August 24-25, 2010 in Montreal, Quebec, and by phone on November 22nd, 2010. These meetings were devoted to preparation for the CIHR International Review which began in February 2011. The IAB also met April 18-19, 2011 in Vancouver, BC and focused on developing INMHA's new strategic plan 2012-2017.

INMHA is pleased to welcome two new members to the IAB:

Dr. Gustavo Turecki, Vice-Chair, Research and Academic Affairs, Department of Psychiatry, McGill University, Director, McGill Group for Suicide Studies Head, Depressive Disorders Program, Douglas Institute

Dr. Sherry Stewart, Professor Departments of Psychiatry and Psychology, Dalhousie University

Regenerative Medicine and Nanomedicine Initiative (RMNI)

RMNI was developed and is co-led by INMHA in collaboration with other CIHR Institutes and external funding partners. Since its inception in 2003, RMNI has committed over \$66M of funding toward new and innovative research approaches in regenerative medicine (including stem cell-based approaches) and nanomedicine (nanotechnology applied to health).

RMNI Team Grant Competition (2010) - Funding Results

On March 16, 2011, it was announced that 7 new research projects on regenerative medicine and nanomedicine will be receiving \$16 million in funding. The research projects are co-funded by CIHR and the Canadian Space Agency.

INMHA-relevant research projects include:

1. Identify microlesions in multiple sclerosis, using a new tool for quantifying the cause of the disease and how well a treatment is working, Dr. Daniel Côté, Université Laval;
2. Develop innovative sensorimotor rehabilitation approaches for patients with spinal cord injuries or stroke, Dr. Serge Rossignol, Université de Montréal.

CIHR Café Scientifique



CIHR Café Scientifiques provide informal discussions around health-related issues of popular interest to the general public, and in turn provoke questions and provide answers. The Regenerative Medicine and Nanomedicine Initiative (RMNI) and INMHA hosted a successful Café Scientifique entitled "Adult Stem Cells and Regenerative Medicine - Separating Hope from Hype" on November 3rd, 2010 in Toronto at the College Street Bar.

This informative Café enjoyed a wide-ranging discussion of the potential use of adult stem cells to treat a variety of conditions. The overall message was that while we should all remain hopeful and engaged in trying to find the best approaches, a critical and thorough examination of the different strategies is required. RMNI would like to thank all who participated in making this Café a success.



Café speakers from left to right: Drs. William Stanford, Freda Miller, Cindi Morshead and Shane Green

Frontiers in Mental Health – May 26, 2011, Centre Mont-Royal, 2200 rue Mansfield, Montreal, Quebec.

This symposium explored frontiers in mental health research, with a focus on genomics and neural circuitry. Speakers discussed recent advances in the causes and treatments of mental health disease, and how to foster linkages between the scientific, policy and health care communities. Interactive presentations also highlighted areas of research with the most promise, from imaging to pharmacological treatment, including a discussion on the challenges of mental health research. The event concluded with a public lecture by Dr. Norman Doidge, Columbia University's Center for Psychoanalytic



Training and Research, New York; Department of Psychiatry, University of Toronto; and author of *The Brain that Changes Itself*.

www.normandoidge.com/normandoidge

Sponsoring partners included the CIHR-INMHA, Douglas Mental Health University Institute, McGill University and Université de Montréal.

International Activities

China Canada Joint Health Research Initiative

The China-Canada Joint Health Research Initiative (CCJHRI) has been jointly managed and funded by CIHR and the National Natural Science Foundation of China (NSFC) since 2005. Its aim is to promote the development of Canadian-Chinese scientific co-operation between universities, hospitals, research institutes or affiliated research organizations in Canada and China through the support of collaborative research grants. Under the first MOU, 89 joint research projects have been funded, for a CIHR investment of approximately \$10 million.

In October 2010, CIHR and NSFC renewed the bilateral MOU for another 5 years, with an increased funding envelope from both agencies: up to \$75,000 per year for 3 years for Canadian researchers, and an equivalent increase of up to 333,333 RMB per year for Chinese researchers. The renewal of the partnership will support up to 45 new research projects for an additional CIHR commitment of approximately \$10 million. To address key health research priorities in both countries, the renewed partnership has increased the number of participating CIHR Institutes to ten and has broadened the set of themes correspondingly.

Additionally, the renewal of the CCJHRI MOU was expanded to incorporate an agreement to co-fund larger Team Grant initiatives. The topic of the first single China-Canada Team Grant call is on Alzheimer's Disease and Related Disorders (ARD). Within CIHR, the joint program will be part of the International Collaborative Research Strategy for Alzheimer's Disease (ICRSAD). The scientific agenda for ICRSAD focuses on the early events in ARD including risk factor identification, early diagnosis, early intervention, and prevention. For Canadian researchers, the maximum amount per project is CAD \$250,000 per year for up to four years. For Chinese researchers, the amount

available per project is 3 million RMB for up to four years. The application deadline closed May 6, 2011.

The Annual CCJHRI Scientific Workshop will be hosted this year by NSFC in Shanghai on September 13, 2011. The Workshop topic will be focused on diabetes, and the lead institute is CIHR's Institute of Nutrition, Metabolism and Diabetes.

Upcoming Events

Canadian Association for Neuroscience Conference

Quebec City Convention Centre,
May 29th to June 1, 2011

The [Canadian Association for Neuroscience](http://www.can-acn.net/) represents the largest group of Canadian scientists interested in the brain, spinal cord and the entire nervous system. CIHR-INMHA will be partially sponsoring the Opening Reception and have an exhibitor booth so that we are able to interact with participants. We look forward to seeing you at the Conference! For more information and to view the program please visit the Canadian Association of Neuroscience website at: www.can-acn.net/

Issues of Substance 2011 Conference

Organized by the Canadian Centre of Substance Abuse Hyatt Regency, Vancouver, BC, November 6-9, 2011
For more information, please visit: www.issuesofsubstance.ca/Eng/Pages/Home.aspx

INMHA Prevention and Treatment in Substance Abuse Initiative Workshop

Hyatt Regency, Vancouver BC, November 9-10, 2011

Society for Neuroscience Annual Meeting

Washington, DC, November 12-16, 2011
For more information, please visit: <http://www.sfn.org/am2011/>



Funding Opportunities – INMHA Sponsored

For CIHR funding opportunities, including those of INMHA, please visit the CIHR funding opportunities web site at:

www.researchnet.ca/rnr16/srch.do?all=1&search=true&org=CIHR&sort=program&masterList=true&view=currentOpps&fodAgency=CIHR&fodLanguage=E

MPD – Dissemination Grants

The specific objective of the Meetings, Planning and Dissemination Grant: Dissemination Events Priority Announcement (Specific Research Areas) is to offer additional sources of funding for highly rated applications that are relevant to specific CIHR research priority areas and mandates. A maximum of up to \$25,000 is available per grant. For more information please visit:

www.researchnet.ca/rnr16/vwOpprntyDtls.do?prog=1266&view=currentOpps&org=CIHR&type=AND&resultCount=25&sort=program&all=1&masterList=true

Industrial Research in Neuroinflammation

INMHA, in partnership with Lundbeck Canada (LC), will fund one application that is determined to be relevant in the area of neuroinflammation. The successful candidate is expected to contribute to the understanding of how inflammatory processes impact neurodegenerative diseases. The disease focus is at the discretion of the candidate. The candidate must provide an interesting hypothesis that can be pursued in a diverse research environment that seeks to identify common biological principles and mechanisms underlying multiple diseases. The total amount available for this funding opportunity is \$180,000 over the next 3 years. A maximum of \$60,000 is available for one year. For more information on this funding opportunity please visit the CIHR website at:

www.researchnet.ca/rnr16/srch.do?all=1&search=true&org=CIHR&sort=program&masterList=true&view=currentOpps&fodAgency=CIHR&fodLanguage=E

Funding Decisions

For a full list of all of CIHR's 2010 funding decisions please visit: <http://www.cihr-irsc.gc.ca/e/40969.html>

Team Grant: Alzheimer's Disease France-Quebec: 5 teams received funding through this initiative.

Team Grant: Mental Disorders: Three teams were funded through this transnational initiative led by ERA-Net Neuron.

Meetings Planning and Dissemination Grants

(MPDs): For the full list of MPDs sponsored by the INMHA along with other CIHR Institutes, please see link to funding decisions.

National Anti-Drug Strategy

The results of funding decisions from the last RFA will be posted in June 2011.



Congratulations

Brian MacVicar (member of our Institute Advisory Board) and Anthony Phillips were among those inducted as new Fellows at the 2010 induction ceremony of the Canadian Academy of Health Sciences. Election to Fellowship in the Academy is considered one of the highest honours for individuals in the Canadian health sciences community.

From the CAHS website:

BRIAN MACVICAR

Brian MacVicar is a Professor of Psychiatry at UBC, Senior Scientist at the Brain Research Centre. He is a superb electrophysiologist and a pioneer in the development and application of cellular imaging to models of normal and pathological brain function. His fundamental contributions have advanced knowledge about cell excitability, synaptic transmission, glial cell function, and neuronal trauma. Most importantly, his research has direct application to topics of immense clinical relevance, including stroke, epilepsy, and Alzheimer's disease. He has established local and international research partnerships, provided an exemplary training environment, and shown tremendous leadership within the neuroscience community. He is recognized internationally as one of Canada's most creative, original, and outstanding neuroscientists.

ANTHONY PHILLIPS

Anthony Phillips is a Professor of Psychiatry at UBC, Senior Scientist at the Brain Research Centre, Founding Director of the UBC Institute of Mental Health, and Scientific Director of the CIHR Institute of Neurosciences, Mental Health and Addiction. His pioneering work in neuropsychopharmacology and systems neuroscience laid the foundation for our understanding of the role of dopamine in the neural control of motivation and memory. Further, he has applied knowledge concerning normal brain-behaviour function to understanding the neural bases of mental illness and addiction. He has more than 300 peer reviewed publications and has co-founded two Canadian biotechnology companies.

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