

Message from the Scientific Director

Welcome to the New Year! In our first update of 2007, we are happy to alert you to a broad range of opportunities for funding, feedback and access to new resources.

In December we launched requests for applications for two new programs. In collaboration with our partners, we are happy to offer new or extended support to multidisciplinary teams working in the areas of chronic disease, or obesity and related diseases.

Another exciting opportunity is available for researchers seeking to undertake intervention research on programs, events, and/or policy changes that have the

potential to impact healthy living and chronic disease prevention. For students and new investigators, we are making travel awards



Dr. Diane T. Finegood

available to enable participation and networking at conferences, workshops or symposia.

This issue also highlights an opportunity for all parties interested in childhood obesity to participate in developing a societal plan for reversing this pandemic. This call to action to go beyond "business as usual" was sent out at the conclusion of a think tank on childhood obesity held in Montreal in October. The plan, being developed by the Global Health Alliance, involves assembling a portfolio of detailed actions that can be used as a blueprint to create new patterns of behaviour. Internet submissions will be considered alongside discussions and suggestions from the workshop.

The Public Health Agency of Canada has also launched a

new website, designed to allow decision-makers and researchers access to a range of best practice interventions. This portal provides information and links, and is searchable by various criteria.

Of course, we are always happy to profile researchers and research results that fall under our mandate, and we know you will find the work being undertaken by Dr. Bill Colmers and the Neurobiology of Obesity NET group quite intriguing.

As usual, we bring news of changes at CIHR and our usual list of conferences and workshops. And as ever, we welcome your feedback.



PHAC opens Best Practices website portal

The Public Health Agency of Canada has launched an online resource that will allow decision-makers in practice, policy and research to review evidence-based best practices interventions, systematic reviews, and resources for health promotion and chronic disease prevention. The organizing

framework is a population health approach.

The Canadian Best Practices Portal for Health Promotion and Chronic Disease Prevention was announced at a national Chronic Disease Prevention Alliance of Canada conference in November.

The website will allow users to review interventions by topic, population, setting, risk factor, determinant of health, language, population characteristic, and gender. The website also contains links to manuals and reports. To access the website, visit www.phac.gc.ca/cbpp.

Funds available for intervention research

INMD, in partnership with the Institute of Population and Public Health, Institute of Aboriginal Health, the Heart and Stroke Foundation of Canada, and others, launched in December 2006 a Request for Applications to support prompt initiation of intervention research on programs, events, and/or policy changes that have been initiated by others and have the potential to impact healthy living and chronic disease prevention among Canadians at the population level. Researchers are encouraged to collaborate with community, non-profit, private, and/or public partners, where appropriate, to maximize knowledge exchange and learning for all parties. The maximum amount awarded for a single grant is \$100,000 per year for one year. For more information visit the INMD current funding opportunities website at <http://www.cihr-irsc.gc.ca/e/26887.html>.

For additional information, contact Senior Program Officer Nina Jetha, 613-952-7608 or nina_i_jetha@phac-aspc.gc.ca.

*Good, better, best:
Apply good evidence,
make better decisions,
use best practices.*

Seeking answers for obesity in the brain

Neurobiologist Dr. Bill Colmers will agree that a healthy diet and regular exercise is a good way to achieve a healthy body weight, but he believes that understanding how the brain processes information will be crucial to reversing the steady rise in diet-induced obesity.

“Eating more than you need is a behaviour,” he explains. “I would make the argument that anything that is a behaviour by definition involves the brain.”

Colmers, lead scientist of a new emerging team investigating “The Neurobiology of Obesity” says the question behind the four-year study was very simple, “What changes occur in the brain during diet-induced obesity?”

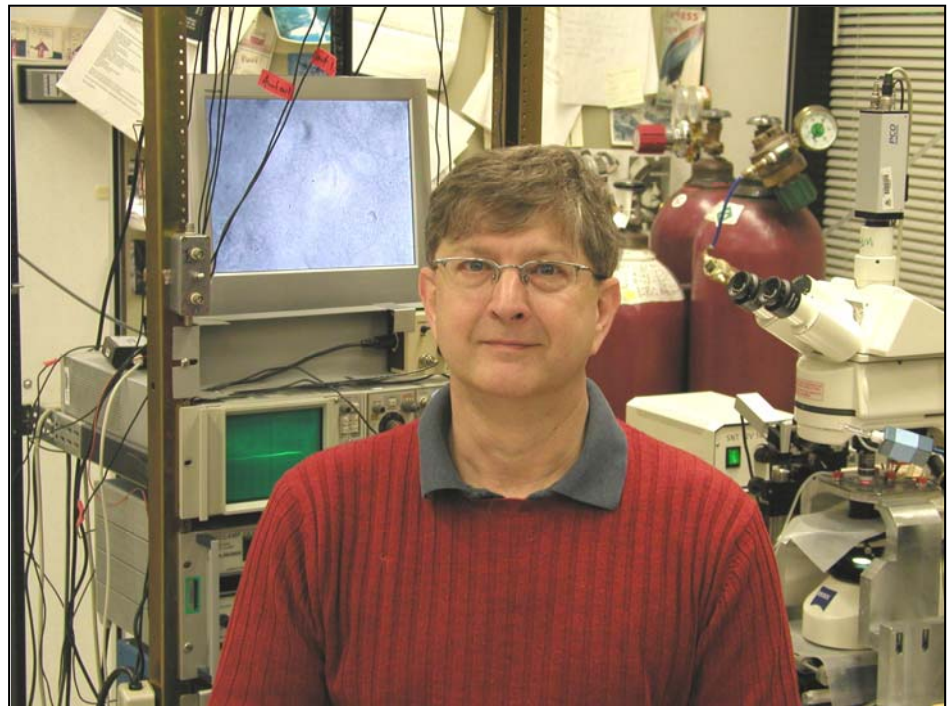
“The idea was to pursue one simple question using a variety of different approaches, and I wanted to find the best people in Canada with whom to collaborate, and that made it pretty clear that there was a relatively small short-list of appropriate people,” he says about initiating the study three years ago.

Colmers invited Merck Frosst/CIHR Research Chair in Obesity Denis Richard, who is working in this area at both a clinical and a biomedical level at Hôpital Laval and Laval University, to join him. But he also invited neurobiologists Keith Sharkey at the University of Calgary and Alistair Ferguson at Queen’s University, even though neither had worked in the area of obesity research. The reason, he says, is that their knowledge complemented his own. Sharkey had been studying hormones released by the gut that had effects in the digestive tract and the peripheral nervous system. Ferguson had been studying hormonal action in special regions at the edge of the brain – the circumventricular organs – where the blood brain barrier is fenestrated to allow communication between the body and the brain. At the University of Alberta, Colmers was immersed in studying the actions of hormones deep within the brain itself in the major site of appetite regulation, the

hypothalamus, including how central messages were conducted back to the body. Overall, this mix of expertise created a comprehensive research program that Colmers thought could allow them to effectively address this “simple question without a simple answer”.

By studying normal rats and mice as well as rats and mice that are driven to obesity through high-fat diets, their

hormone known to be involved in energy homeostasis can be activated in one of the circumventricular organs – the area postrema – which is directly connected by nerve fibres to the hypothalamus. Adiponectin normally sensitizes body tissues to insulin, but it is downregulated in obesity-related diseases such as insulin resistance and metabolic syndrome. Richard has published data suggesting that one way heightened levels of insulin inhibit



Dr. Bill Colmers in his neurobiology lab at the University of Alberta

goal is to explore changes in peripheral and central nervous system messaging during the development of obesity. After only three years, they have already learned more about the neurochemistry behind weight regulation.

Sharkey’s group discovered the presence of a receptor that binds endocannabinoids, a group of compounds known to increase appetite, in the central nervous system. Previously, this receptor had been thought to be active only in the peripheral nervous system. Ferguson’s group found that an adipocyte-derived

feeding is through a pathway in the brain that activates particular receptors for corticotropin-releasing hormone in the ventromedial hypothalamic nucleus. Corticotropin is a stress hormone released from the pituitary glands to activate the adrenal glands.

Of his own work, Colmers says his group had a lot of preliminary data to compile.

“We’ve had to take a relatively slow approach. We knew there were neurons in the paraventricular nucleus (an area of the hypothalamus) that are

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strongly affected by many factors that cause or suppress food intake, factors like neuropeptide Y (NPY), melanocortin agonists like alpha-MSH, ghrelin, cocaine and amphetamine-related transcripts, and cannabinoids, for example.

“Because there are such a wide variety of things that affect the cells we had to be very careful to ensure that we were actually looking at the same neurons when we compared animals that were on a regular diet, and the littermates of these animals that had been made obese by diet.

“So we needed to do a developmental study, and that involved recording from about 400 nerve cells, from animals at seven days of age to 80 days of age. That was a long study and we’re just about done with that.”

Fortunately, Colmers says they already have some very interesting results.

“We found that we can identify the same kinds of nerve cells at different ages. That’s important. We also found that during development, from a time when the animals are quite young to about the time they’re starting to be weaned, there are profound changes in these animals, involving the responses to NPY and melanocortin peptides.”

Because it is the balance between the NPY and the melanocortin signals that create feeding homeostasis, this data leads directly to an important question that Colmers and his team can now ask about the obese animals. Do these diet-induced obese animals become overly sensitive to NPY, or not sensitive enough to melanocortin signals?

The science is exciting, and Colmers says the chance to broaden his interactions with people of varied backgrounds and interests, which being part of this team has allowed, is also stimulating.

In 2005, he was part of the organizing committee for the first Alberta Obesity Summit, and will be the leader of the organizing committee for the Canadian Obesity Network’s Western Conference this year.

“It’s been a real eye opener for me in terms of meeting people who do very different things from what I do,” he explains. “It’s given us all an opportunity to talk from rather different standpoints about how you do science, what kind of questions you can ask with the tools you have, and what the strengths and limitations are. This has been very educational.”

New resources highlight gaps in nutrient intake knowledge

A comprehensive publication describing knowledge gaps and research needs, and an online searchable database, are the concrete results of several years of research and discussion on dietary reference intakes (DRIs) led by the Food and Nutrition Board of the Institute of Medicine (IOM) of the National Academies in the U.S. DRIs are quantitative reference values for recommended intakes, as well as tolerable upper intake levels, for a range of nutrients such as calcium, folate, vitamin E, arsenic, copper, protein and water.

The publication is a summary of a workshop held last summer in Washington, D.C. to discuss important knowledge gaps and research needs that impact continued development and refinement of DRIs. The workshop was attended by expert research scientists and nutrition practitioners from U.S. and Canadian government, academia and industry, as well as representatives from other interested groups (such as INMD).

The purpose was to discuss research recommendations contained within eight reports prepared by the IOM between 1997-2005, which detailed current knowledge on 45 nutrients, energy and

other food components. Information on obtaining the Dietary Reference Intakes Research Synthesis Workshop Summary can be obtained by visiting the IOM website at: <http://www.iom.edu/>.

The database allows access to the research recommendations from the IOM reports, in the form of a Microsoft Access file and a Microsoft Excel file. Users can tailor their searches using the list of keywords used to categorize the recommendations, and in future will also be able to search using Medical Subject Headings (MeSH) terms. A glossary lists definitions of acronyms, words and terms. The recommendations are categorized as general, specific, and methodological. The database is located on the IOM website at: <http://www.iom.edu/CMS/3788/33354.aspx>.

This synthesis and dissemination project was supported by the U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion; the Division of Nutrition Research Coordination and the Office of Dietary Supplements, National Institutes of Health; the U.S. Department of Agriculture, Agricultural Research Service; Health Canada; and CIHR.

Support for obesity and chronic disease teams

INMD, in partnership with the Heart and Stroke Foundation of Canada, and others, launched in December 2006 a Request for Applications to support new or continuing multidisciplinary team-based research relevant to the measures, prevention, and/or treatment of obesity and healthy body weight.

This request is also open to teams funded under previous Chronic Disease or Obesity New Emerging Team programs.

Proposals addressing obesity-related diseases and conditions of interest to one or more of the program's partners are also welcome. The maximum amount awarded for a single grant is \$500,000 per year for five years.

For more information visit the INMD current funding opportunities website at <http://www.cihr.ca/e/26887.html>.



Submissions requested for childhood obesity plan

An invitation to contribute to developing a societal plan for preventing childhood obesity was issued to experts from around the world at the conclusion of the annual McGill Integrative Health Challenge Think Tank in October. The theme of the meeting was "To Accelerate the Prevention of Childhood Obesity: Forging a Societal Plan that Works". Contributions will be accepted online until March 28, 2007.

Submissions will be reviewed alongside the proceedings of the two-day Montreal meeting, to aid in developing a plan being prepared by the Global Health Alliance, a consortium of five non-governmental organizations, including the World Heart Federation, the International Diabetes Federation, the International Union of Nutritional Sciences, the International Pediatric Association, and the International Association for the Study of Obesity. A draft plan prepared by the organization, based on the World Health Organization's global strategy on diet, physical activity and health, served as the basis for discussion at the Think Tank.

The Think Tank brought together leading academics, professionals and decision-makers from diverse fields

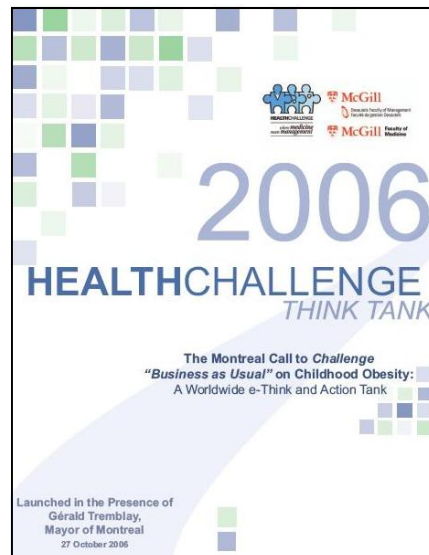
Deadlines for built environment RFA approaching

Deadlines are approaching for application for funding to study Obesity and the Built Environment. This Request for Applications was reviewed in our previous newsletter.

A letter of intent is due March 1, 2007, and full applications will be due June 29, 2007. This RFA is led by the Heart and Stroke Foundation of Canada, in partnership with INMD and the Institute of Aging.

For more information, please visit <http://www.hsf.ca/research>.

such as health, education, agriculture and food, leisure and sports, urban planning, media, finance, management, law, politics and economics. It was organized by McGill University, in partnership with the Global Prevention Alliance, the American Heart Association, CIHR,



and various other health, philanthropic, agriculture and economic organizations. Founding Chair and Scientific Director of this annual event is Dr. Laurette Dubé, Professor and James McGill Chair in Consumer and Lifestyle Psychology and Marketing, Desautels Faculty of Management.

The completed plan, and associated briefing papers, will be used to challenge individuals, communities, companies, and non-governmental and governmental organizations to participate as catalysts for curtailing the childhood obesity pandemic.

"This meeting was an exciting beginning to building bridges between sectors that really need to work together if we are ever going to be able to turn around the critical problem of childhood obesity," said INMD's Scientific Director Dr. Diane Finegood, who attended as one of six Scientific Leaders. "This is an essential dialogue that requires the participation of all," she stressed.

Input is being requested in three general areas: to address key issues to forge societal plans that work; to revisit the premises on which we operate to get critical mass of action; and to conceive and move into actions that go beyond "business as usual" for all.

In the area of forging societal plans that work, there are several key issues outlined in the invitation for greater participation. Two issues identified as most relevant for industrialized nations include a need for schools, communities, media, business and government to develop plans for obesity prevention and reduction of socio-economic inequalities. On a global level, a need is identified to broaden political, economic and humanitarian dimensions to enable development and help to reach those who are most disadvantaged, while avoiding adverse impacts. Generally, there is a universal need to involve all people in this struggle, from those who make policy to children themselves.

Revisiting the premises upon which we operate requires rethinking aspects of the way we live, consume, nurture, produce, promote, trade and invest. At the simplest, individual level, this requires acknowledgment that we are driven by both rational and non-rational processes that challenge our abilities to achieve long-term, balanced perspectives. Our individual perspectives are influenced by families and communities, including school systems, health systems, and business organizations. These in turn are impacted by trade and investment markets, and government policies.

The call to action to go beyond "business as usual" involves assembling a portfolio of detailed actions at every level that can be used as a blueprint to create new patterns of behaviour.

The beginnings of this emerging portfolio, as well as further details on the 2006 Think Tank can be viewed at http://www.mcgill.ca/healthchallenge/2006/the_montreal_call/.

Awards designed to benefit new researchers

In 2006, INMD funded 14 new researchers to enable them to travel to conferences, workshops and symposia to share research results, and make broader connections within the research community.

This year, Travel Awards of up to \$1500 will be offered to medical students, doctoral students, post-doctoral fellows, and new investigators (those with less than five years experience

as independent investigators since their first academic appointment, including experience outside Canada, who have never held a CIHR grant as Principal Investigator).

The application deadline for the next competition is January 15, 2007, and the anticipated date of notification is February 12, 2007. The awards are designed to cover travel costs, accommodation,

expenses and registration fees. Up to six awards are given per competition. Application deadlines for subsequent competitions this year are May 15 and September 15.

Successful applicants are those who demonstrate excellence in research, will clearly benefit from attending the event, and can justify financial need. Proof of submitted abstracts, oral

presentations and posters must be included with each application.

For more detailed information on eligibility and application details, visit <http://www.cihr-irsc.gc.ca/e/32917.html>. If you would like to be placed on an email list to receive reminders of competition closing dates, please contact Jennifer Bouchard at JBouchard@cihr-irsc.gc.ca.

CIHR launches program to engage youth

CIHR has launched a new program called *Synapse*. This new and innovative youth engagement program will provide opportunities for elementary, middle and high school students, whether they live in downtown Toronto, the outskirts of Flin Flon, or the Tsuu T'ina Reserve, to participate in health research programs.

Health research in Canada is entirely dependent on science, research and technology literacy and student engagement, in order to create the necessary pools of talent and interest to sustain research activities. Recognizing this dependency, CIHR is determined to interest and engage young people through its new *Synapse* program. For CIHR, this initiative symbolizes the act of creating a meeting place, a junction that brings together youth with researchers, engineers and scientists.

By engaging the private and nongovernmental

sectors, *Synapse* will allow young people to interact with real scientists in the places where health research happens, be it in a university laboratory, a teaching hospital, or a pharmaceutical company. By breaking down the barriers and the stereotypes which surround science and research, *Synapse* will foster an interest in young Canadians which will create a lifelong passion for investigation and discovery. For more information, visit <http://www.cihr-irsc.gc.ca/e/32132.html>.

In addition, CIHR is pleased to announce a new award to recognize the importance and excellence of mentors in developing Canada's new generation of scientists and engineers. The new CIHR *Synapse* Awards will honour persons who have made significant contributions to the promotion of health research among Canadian secondary-school students.

Three different awards are available. A \$10,000

award will be given to a CIHR-funded research group that has been active in youth outreach activities. The award is to be used to support future mentorship activities by the group. Two \$5,000 awards are also available, one for an individual CIHR-supported researcher involved in youth outreach efforts and

a second for an individual CIHR-supported masters, doctoral student or postdoctoral fellow likewise engaged in mentorship activities. All nominations must be received by CIHR on or before February 1, 2007. For more information, visit <http://www.cihr-irsc.gc.ca/e/32408.html>.

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February 2007

The 4th Asia-Oceania Conference on Obesity

Seoul, Korea

<http://www.obesity2007.org/>

February 9-11, 2007

Fifth Canadian Cochrane Symposium: Knowledge for Health

Ottawa, ON

<http://www.cochrane.uottawa.ca/symposia.asp>

Feb. 12-13, 2007

April 2007

Community-Campus Partnerships for Health 10th Anniversary Conference

Toronto, ON

<http://www.ccph.info/>

April 11-14, 2007

Fifteenth European Congress on Obesity

Budapest, Hungary

<http://www.eco2007.org/>

April 22-25, 2007

Second International Congress on Prediabetes and the Metabolic Syndrome, Epidemiology, Management and Prevention of Diabetes and Cardiovascular Disease

Barcelona, Spain

<http://www.kenes.com/prediabetes/>

April 25-28, 2007

June 2007

Federation of Clinical Immunological Societies

San Diego, CA

<http://www.focisnet.org/meetings/>

June 7-11, 2007

Abstract submission deadline - January 19, 2007

International Conference on Physical Activity and Obesity in Children

Toronto, ON

<http://www.phe.queensu.ca/epi/obesity/>

June 24-27, 2007

Please visit our website at <http://www.cihr-irsc.gc.ca/e/13521.html> for constantly changing information on Conferences and Meetings.

INMD FUNDING OPPORTUNITIES:

New and ongoing funding opportunities for researchers working under INMD's mandate are posted on our web site, covering a range of possibilities. New to the website is a section listing opportunities available from other funding bodies. Awards for travel continue to be available, and application is encouraged from researchers working under all areas of the mandate. Visit <http://www.cihr-irsc.gc.ca/e/30494.html> for information on travel awards, and <http://www.cihr-irsc.gc.ca/e/26887.html> for information on other grant opportunities.