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## Message from the Scientific Director

### III Strategic Plan

2007-2012

The process to renew the Institute of Infection and Immunity Strategic Plan has now been completed and the Plan was approved by the Institute Advisory Board in May. The Plan builds on the existing research strengths within the infection and immunity mandate and addresses areas identified in the mid-term evaluation of the Institute. It endeavours to anticipate future health, social and economic opportunities to enhance scientific excellence and to fill the gaps where needed. It takes into account changes that have occurred within the domestic and global infection and immunity health research environment since the inception of the Institute.

The Plan provides an important 'roadmap' to help respond to current and future infection and immunity research challenges and opportunities in Canada. I look forward to working with the research community and our stakeholders and partners to help turn this Plan into action and would like to thank all those who contributed to its creation for their participation and input.

### *HIV/AIDS – Working Together to Make a Difference*

Over the past year, a parallel strategic planning process has been underway to establish research priority areas for the CIHR HIV/AIDS Research Initiative, priorities which are reflected as a significant component of the

Institute Strategic Plan. The CIHR HIV/AIDS Research Advisory Committee (CHARAC) has played a major role in this effort. Having developed the priorities, the Institute established expert working groups to provide recommendations on the content and implementation strategies for the priorities. This fall, under the leadership of CHARAC, the Institute will be integrating the identified HIV priority areas into the first comprehensive strategic plan for the CIHR HIV/AIDS Research Initiative.

As one of the four major partners in the Federal Government's Federal Initiative to Address HIV/AIDS in Canada, HIV/AIDS is an important research priority for CIHR and the Institute of Infection and Immunity. On behalf of CIHR, the Institute has led the CIHR HIV/AIDS Research Initiative since 2003, working with stakeholders to identify HIV/AIDS research priorities, managing HIV/AIDS funding programs, building partnerships to expand the reach and impact of the Initiative and developing strategic funding programs to advance the Canadian HIV/AIDS research agenda.

The Initiative has an ongoing commitment to support HIV-specific operating grants and personnel awards in the open competition. It has launched a number of strategic funding opportunities and includes a unique Community-Based Research program. The Institute is also looking forward to managing the discovery and social research components of the Federal Government's Canadian HIV Vaccine

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Initiative (CHVI) which was created in partnership with the Bill & Melinda Gates Foundation.

This newsletter focuses on HIV and profiles selected research projects relating to the priority areas. The Institute is proud to lead the CIHR HIV/AIDS Research Initiative and to support the Federal Initiative to Address HIV/AIDS in Canada. I believe the work of

dedicated researchers funded by CIHR will continue to play a key role in helping people living with HIV, prevent its spread and ultimately help to eradicate it.

**Bhagirath Singh, PhD**  
**Scientific Director**  
**CIHR Institute of Infection and Immunity**

### **CIHR HIV/AIDS RESEARCH PRIORITIES**

- Health systems, services and policy
- Resilience, vulnerability and determinants of health
- Prevention technologies and interventions
- Drug development, toxicities and resistance
- Pathogenesis
- Issues of co-infection

## III NEWS

### *Canadian HIV Vaccine Initiative*

Early this spring, the Government of Canada and the Bill & Melinda Gates Foundation announced a funding commitment to support the Canadian HIV Vaccine Initiative (CHVI). The CHVI involves several federal departments and agencies — CIHR, the Canadian International Development Agency, the Public Health Agency of Canada, Health Canada and Industry Canada. It represents a collaborative and coordinated approach to accelerating the development of HIV vaccines and to contributing to the global effort of providing safe, effective and affordable solutions for the millions of HIV/AIDS sufferers around the world.

The Government of Canada is committing up to \$111 million to the CHVI, while the Bill & Melinda Gates Foundation is contributing \$28 million. The goal of CHVI is to coordinate domestic and international efforts in support of the Global HIV Vaccine Enterprise, an alliance of independent organizations around the world dedicated to accelerating the development of a preventive HIV vaccine. The Institute will be working closely with other government departments/agencies, the Bill & Melinda Gates Foundation and stakeholders to develop programs to support CHVI.



## New and Updated CIHR Resources

### 1. **New – Meetings, Planning and Dissemination Grants in Infection and Immunity**

In July 2007, CIHR launched a pilot competition of the new Meetings, Planning and Dissemination Grant Program. The Institute of Infection and Immunity is one of the divisions of CIHR participating in the pilot.

Since its inception, the Institute of Infection and Immunity has supported Canadian research-related workshops, symposia and conferences within the Institute mandate. Applications for Institute funding have been accepted on an *ad hoc* basis (i.e. no posted deadline) using an application form available from the Institute's website.

The Institute's new Meetings, Planning and Dissemination Grant Program will continue to provide funding for workshops, symposia and conferences in the area of infection and immunity and may also extend funding to dissemination activities in the future. There will be **3 competitions annually** (application deadlines planned for October, February and June) **and applications will be submitted electronically through ResearchNet**. The first competition deadline was October 1, 2007 and access to the application interface is obtained by searching the CIHR Funding Opportunities Database at: <http://www.cihr-irsc.gc.ca/e/780.html>.

Members of the infection and immunity community planning events occurring before December, 2007 should continue to use the application form available at <http://www.cihr-irsc.gc.ca/e/26638.html>. All others must apply for support through the ResearchNet process.

### 2. **New Funding Opportunities Database**

Over the last two years, CIHR has undertaken a number of actions to standardize and improve the functionality around presenting CIHR's funding opportunities to the research community. In response to requests to offer more searching and browsing capabilities, the CIHR Funding Opportunities Database is now available at <http://www.cihr-irsc.gc.ca/e/34178.html>.

### 3. **ResearchNet Update - Upcoming Changes for Applicants to Operating Grants, New Investigators, and Doctoral Research Awards Programs**

Applicants to the CIHR Operating Grants, New Investigators and Doctoral Research Awards programs will be required to use ResearchNet to electronically submit their applications for the Fall 2007 competitions, unless otherwise indicated in the "How to Apply" section of the funding opportunity. For more information and to access ResearchNet visit <http://www.irsc.gc.ca/e/28832.html>.

## Upcoming Meetings of Interest to III

- *III Advisory Board Meeting – September 25-26, 2007 in Vancouver, BC*
- *Canadian Conference on International Health – November 4-7, 2007 in Ottawa, ON*
- *Congrès Armand Frappier 2007 – November 8-10, 2007, Laval, QC*
- *The Purpose, Scope and Vision of an Ontario Evaluation Centre – November 19, 2007 in Toronto, ON*
- *III Advisory Board Meeting – January 23-24, 2008 in Montreal, QC*
- *Café Scientifique sponsored by III – January 25, 2008 in Montreal, QC*
- *Canadian Society for Immunology Annual Meeting – April 11-13, 2008 in Mont Tremblant, QC*
- *Association of Medical Microbiology and Infectious Disease Canada Annual Conference – February 27-March 2, 2008 in Vancouver, BC*

## HIV/AIDS PROGRAMS AND INITIATIVES

### *CIHR Clinical Trials Network in HIV/AIDS*

The Canadian HIV Trials Network (CTN) has been a feature of the Government of Canada's national strategy on HIV/AIDS since its inception in 1990. The Network is a key component of a comprehensive and strong research response to the HIV/AIDS epidemic. It is an innovative partnership of clinical investigators, physicians, nurses, people living with HIV/AIDS, pharmaceutical manufacturers and others who work together to facilitate HIV/AIDS clinical trials of the highest scientific and ethical standards.

This spring, CIHR hosted a consultation session with members of the CTN and national and international HIV/AIDS researchers, clinical trial network experts, representatives of the HIV/AIDS community and relevant federal government agencies. Attendees at the consultation were asked to provide input into developing a Request for a Proposal (RFP) that would form the basis for the next iteration of the CTN at <http://www.cihr-irsc.gc.ca/e/34513.html>.



The primary CIHR objectives for the CTN are to position Canada as a global leader in HIV/AIDS clinical research and to support the strong research infrastructure necessary to catalyze a collaborative environment for researchers conducting excellent, ethically sound HIV/AIDS clinical trials across Canada. The issues discussed at the consultation

included the expectations for a network in the next funding period, factors for success in operating national clinical trial networks and criteria for evaluation. A total of \$22.73 million (\$4.546 million per annum) has been designated by CIHR to support an HIV/AIDS clinical trials network infrastructure over the next five years. Building on the

input from this consultation, the CTN Request for a Proposal was released in July 2007 (<http://www.cihr.gc.ca/e/34513.html>). An external peer-review committee will meet to review the CTN application in January 2008, and a funding decision will be made in February 2008. If the application is successful, funding will flow to CTN beginning in April 2008.

### *HIV/AIDS Community-Based Research Program*

In April 2004, the HIV/AIDS Community-Based Research (CBR) Program was transferred from Health Canada to the Canadian Institutes of Health Research. Led by the CIHR Institute of Infection and Immunity and supported by the CIHR Institute of Aboriginal Peoples' Health, the CBR Program supports research and capacity-building initiatives of relevance to aboriginal and vulnerable communities engaged in the fight against HIV/AIDS. "Community-Based Research" refers to research processes which are, to various degrees, driven by, or responsive to, the needs and interests of a specific community. Core principles of Community-Based Research

include principles of community involvement and collaboration which are applied using scientifically accepted research methods. Since its move to CIHR, the CBR program has funded a total of 62 projects demonstrating direct community involvement, community relevance, equity in partnerships and methodological rigour.

Over the coming year the Institute will be evaluating the CBR program to determine needs of stakeholders and strengths of the program as well as its challenges and limitations. The evaluation will be instrumental in guiding the future development of the program.

## Community-Based Research Facilitators

A unique component of the HIV/AIDS Community-Based Research program is the Community-Based Research Facilitator (CBRF) Grants (formerly called Research Technical Assistant (RTA) grants) – created to support capacity building, particularly within community organizations, and to enhance the quality and utility of HIV/AIDS CBR programs across the country. The grants allocate funds to community organizations to support a CBRF and their capacity-building activities throughout a particular region.

The Facilitators work with organizations within their region to identify, plan and deliver HIV/AIDS CBR training and assistance. CBRFs are supported from both the general and the Aboriginal CIHR funding streams.

For more information on the HIV/AIDS CBR Program and contact information for the CBRF in your region visit: <http://www.cihr.ca/e/25835.html>.

## HIV/AIDS – FOCUS ON RESEARCH

### *Turning research results into action*

A randomized controlled trial, partially funded by CIHR and conducted in Kenya by Dr. Stephen Moses from the University of Manitoba, along with Drs. J.O. Ndinya-Achola from the University of Nairobi in Kenya and Robert C. Bailey from the University of Illinois at Chicago, found that male circumcision is an effective measure for reducing HIV incidence in young men in Africa. Since the release of their results, Dr. Moses has reported that several countries in Africa, especially in Southern Africa, are giving serious consideration to expanding the delivery of safe circumcision services. Dr. Moses explains that in some countries, like Swaziland, they have already begun this process, and others are in

the planning stages. “There are many issues that need to be considered when implementing results of this kind — training, equipment, supplies, monitoring, funding, etc. Approaches to training, certification and accreditation will likely vary from country to country, but each jurisdiction will be addressing these issues” says Moses.

The study’s findings are currently being reviewed and discussed by the World Health Organization and UNAIDS and have generated recent policy recommendations. For more information visit <http://www.who.int/hiv/topics/malecircumcision/en/index.html>.

### *Fine tuning clinical therapies to circumvent resistance to antiretroviral drugs*

Results of a study funded by CIHR, published by Dr. Michel J. Tremblay, C. Barat, C. Zhao, and M. Ouellette from Université Laval, show that a better understanding of the impact of co-infecting agents on HIV-1 biology is crucial, especially in countries

where there is a high incidence of opportunistic and endemic infectious diseases and access to antiretroviral drugs is limited.

“Resistance to antiretroviral drugs continues to be

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a problem among people living with HIV infection,” says Dr. Tremblay. “Our data demonstrates that one of the most commonly used compounds for the treatment of leishmaniasis can enhance HIV-1. This means that the current common therapy in how infected patients with leishmania and HIV-1 are treated should be envisaged with caution.”

Visceral leishmaniasis, mainly caused by *L. infantum* and *L. donovani*, is of increasing prevalence in individuals also infected with HIV-1. *L. infantum* is now the third most frequent parasitic disease in HIV-1-infected persons. For more information visit: <http://www.journals.uchicago.edu/JID/journal/issues/v195n2/37286/brief/37286.abstract.html>.

### *Translating research into meaningful programs*

In Canada, HIV/AIDS is having a disproportionate impact on street youth. Preliminary results of a CIHR-III Community-Based Research funded project conducted by AIDS Calgary and Dr. Catherine Worthington and Professor Bruce MacLaurin from the University of Calgary has shown that working closely with service agencies from the onset of a research project helps to ensure that your research results have an impact in the ‘real world’.

The CBR study entitled, ‘Calgary Youth, Health and the Street’ was conducted in partnership with more than 15 youth-serving agencies in Calgary. The core priority areas identified by a community roundtable held to discuss results of the study include the need for more emergency drop-in spaces and beds for youth, sexual health education for staff working with

street involved youth, contact with the full range (spectrum) of street youth, and increased public education about the issues of street youth. Taken together, implementation of these recommendations will help advocate for HIV/AIDS social policies that will be supportive of street involved youth, and prevent them from falling “between the cracks” in services.

“Through this collaborative process, we paid close attention to the needs and priorities of the service providers, policy makers and advocates,” says Worthington. “It helped us to ensure our results and recommendations were effective and relevant and incorporated into meaningful youth programs.”

For more information visit: [www.aidscalgary.org](http://www.aidscalgary.org).

## Transitions and Achievements

### *President of CIHR Resigns*



**Dr. Alan Bernstein** announced his resignation as President of CIHR effective October 31, 2007. Dr. Bernstein’s leadership over the past 7 years has been invaluable in shaping health research in Canada and the Institute Scientific Director and staff are proud to have had the opportunity to work with him during his tenure at CIHR. The Institute thanks him for his support of all health research including infection and immunity research and wishes him success in his future endeavors.

### *Institute Advisory Board Chair appointed at the University of Alberta*



Congratulations to **Dr. Lorne Babiuk**, Chair of the III Institute Advisory Board, on his appointment as Vice-President, Research at the University of Alberta. Dr. Babiuk has been a member of the III Institute Advisory Board since the inception of the Institute in 2001. He was the Director of the Veterinary Infectious Disease Organization (VIDO) from 1993 to 2007 and the Canada Research Chair in Vaccinology at the University of Saskatchewan. Under his leadership, VIDO became internationally recognized for its role in the use of biotechnology to develop veterinary vaccines. The world’s first genetically engineered vaccine for animal species was developed at VIDO.

### Paper of the Year Award



Congratulations to **Dr. François Jean** and his research team for receiving "The Paper of the Year Award" 2006 from the journal *Biological Chemistry* for their research on SARS biology. The Award is selected by the editors of *Biological Chemistry* and the German Society for Biochemistry and Molecular Biology Board. Dr. Jean was the principal investigator of a CIHR/GlaxoSmithKline SARS Small Molecule Pilot Project Grant, which supported research in the area of SARS biology and identification of small molecule targets as antiviral agents.

Dr. Jean is an Associate Professor at the University of British Columbia and Acting Scientific Director, UBC/Centre for Disease Modeling BCL-3 Facility. The title of his team's work is 'Development of a red-shifted fluorescence based assay for SARS-corona-virus 3CL protease: identification of a novel class of anti-SARS agents from the tropical marine sponge *Axinella corrugata*' (Hamill, P., Hudson, D., Kao, R., Chow, P., Raj, M., Xu, H., Richer, M., and Jean, F. (2006) *Biological Chemistry*. 387: 1063-74). For more information visit: <http://www.microbiology.ubc.ca/312.0.html>.

### Infection and Immunity Researchers – Fellows of the Royal Society of Canada

III congratulates the following infection and immunity researchers on their election to the Royal Society of Canada:



Dr. Philip Halloran – *University of Alberta*

Dr. Diane Taylor – *University of Alberta*

Dr. Marco Marra – *University of British Columbia*

Dr. Chris Whitfield – *University of Guelph*

Dr. Ronald McElhaney – *University of Alberta*

### New and Retiring Institute Advisory Board Members

**III would like to welcome the following new members to the Advisory Board:**



**Dr. Josée Guimond**,  
Director,  
Research  
Programs and  
Partnerships,  
Canadian  
Diabetes  
Association

**Dr. Josée Guimond** obtained her Ph.D. in Biomedical Sciences from the University of Guelph (Advisor: Dr. Anne Croy) in 1997. She studied the immunobiology of natural killer lymphocytes in the pregnant mouse uterus as a model for female infertility. Subsequently, she did post-doctoral work with Dr. P. K. Lala at The University of Western Ontario, where she studied control mechanisms of tumour progression, at the cellular level, using human extravillous placental trophoblast cells as a model. In April 2000, Dr. Guimond joined the Canadian Cystic Fibrosis Foundation (CCFF) as Director, Medical/Scientific and Community Programs (national). Her responsibilities included overseeing the management of the Foundation's grants and awards program, monitoring issues of importance to the CCFF constituency, managing the Foundation's research/clinical/transplant budget, developing partnerships/sponsorships with government and industry for funding health research in the area of cystic fibrosis and supporting clinical/transplant care for patients with cystic fibrosis, and developing strategic priorities for the Foundation. In August 2007, Dr. Guimond moved to the Canadian Diabetes Association as Director, Research Programs and Partnerships. Her scientific background and her knowledge of voluntary sector organizations provides a solid base for her participation as a member of the Institute Advisory Board.



**Dr. Michael Grant,**  
Professor,

Department of  
Immunology  
at Memorial  
University of  
Newfoundland

**Dr. Michael Grant** was born and raised in Langley, British Columbia (B.C.), graduated from the University of B.C. with a BSc in biochemistry, then worked as a research technician in the UBC Faculty of Medicine, Division of Rheumatology. He later completed an MSc in Microbiology at UBC and a PhD in Molecular Virology and Immunology at McMaster University. His postdoctoral work was with the Department of Microbiology and Immunology at UBC and with Immune Network Research Limited, a Vancouver based biotechnology company. He was appointed assistant professor of Immunology in the Division of Basic Medical Sciences, Faculty of Medicine, Memorial University of Newfoundland and was recently promoted to full professor.

Throughout his career, he has studied the immunology of chronic viral infections, especially human immunodeficiency virus (HIV) infection. He has been successful in earning personnel awards and research operating funds throughout his career. His perspective on research has been broadened by election to the Council of the Canadian Association of HIV Research, which represents all streams of HIV research, and by membership on the Ministerial Council for HIV and AIDS, which advises the Federal Minister of Health on all aspects of the federal initiative addressing HIV. These memberships, combined with his experience as a researcher, scientific reviewer, exposure to the biotechnology industry and residency on and between Canada's two coastlines, will allow him to make a valuable contribution to the Institute Advisory Board.

The Institute would like to thank retiring board member **Ms. Mary-Catharine McDonnell** for her dedication and contributions.

## Events in I & I

### *Canadian-German Collaboration on Infectious Disease Research*

The Canadian-German Collaboration on Infectious Disease consists of researchers and infectious disease experts from Canada and Germany who are committed to harnessing expertise and resources in both countries to establish innovative and collaborative research programs with the potential to have major impact on human and animal health.

The Collaboration was established at a meeting of infectious disease researchers and experts from both countries held in Montreal, Canada in November 2006. Respiratory infectious diseases, particularly influenza, arose as an overall area for collaboration because there is scientific and public concern about a possible influenza pandemic that could have a major worldwide impact. Five strategic priority areas related to this theme were identified:

- i) Genetic determinants of vaccine/immunization response
- ii) New strategies to vaccinate against respiratory pathogens
- iii) Genetics of susceptibility to respiratory infections
- iv) Microbial virulence and antibiotic resistance
- v) Microevolution of bacteria in cystic fibrotic lungs



Participants discussed and reached agreement on research projects within the five strategic priority areas. Mechanisms to protect the intellectual property (IP) arising from the collaborative research were also discussed, and it was decided that an IP agreement for the Collaboration will be developed. In addition, participants agreed that the Collaboration would be strengthened by the establishment of a more formalized network.

A second meeting was held in Braunschweig, Germany March 22-23, 2007. The goal of this meeting was to formulate detailed research proposals in the five strategic priority areas and to move the projects to the point where researchers could begin the research phase of the program. Other objectives were to discuss funding opportunities and mechanisms to support and nurture the Collaboration.

Projects that were developed at the meeting in Braunschweig are innovative, ambitious and collaborative in nature, and will require the joint expertise and resources of researchers in both countries. The results of the research developed through the Collaboration aim to have a major impact on the prevention and treatment of acute and chronic respiratory diseases, including pandemic influenza.

The meeting reports are available at <http://www.cihr.gc.ca/e/34251.html>.

### *III New Investigator Forum, April 13-15, 2007 in King City, Ontario*



The second III New Investigator Forum brought together 73 new investigators in the first five years of their research appointment to provide them with tools and insights on writing successful grants, managing research teams, career development, multidisciplinary research and the role of industry and academia. The format of the Forum included plenary sessions, panel discussions and workshops which proved to be excellent opportunities for new investigators to exchange ideas and discuss common issues that they face in the early stage of their careers. The III New Investigator Forum report is available at <http://www.cihr.gc.ca/e/34369.html>.



## What's New?

### *III Strategic Funding Decisions*

- ***China-Canada Joint Health Research Initiative - Grants Program***
- ***Clinical Autoimmunity – Team Grants***
- ***Novel Alternatives to Antibiotics – Seed Grants, Fellowships, Proof of Principle, Collaborative Health Research Projects (CIHR/NSERC partnership)***

For more details on these funding decisions visit <http://www.cihr.gc.ca/e/26644.html>.

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