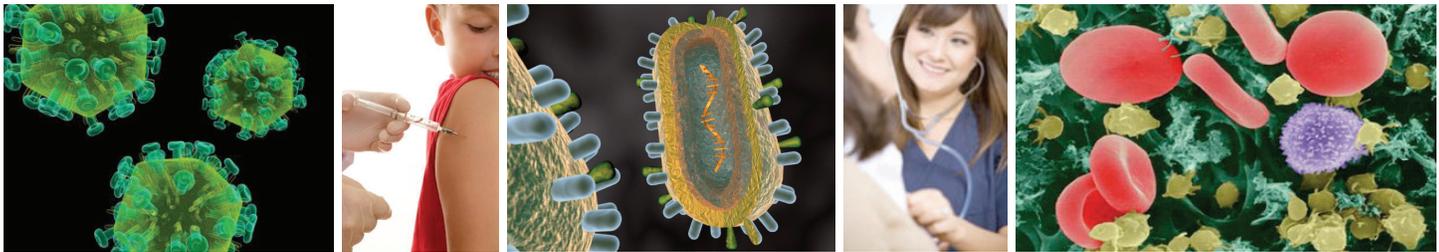


# Newsletter

## CIHR Institute of Infection and Immunity



Volume 13, number 3, October 2014

The Institute of Infection and Immunity provides national leadership and creates programs that promote innovative research aimed at reducing the global burden of infectious diseases and disorders of the immune system.

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## Message from the Scientific Director



It is a pleasure to reach you at the beginning of this new academic year. As usual the Institute has been busy on a number of fronts and I would like to describe some of the newer aspects.

I would first like to welcome two new members to our Institute Advisory Board, Dr. David Burt and Dr. Christian Jobin, who will help IIR in moving forward (see page 2 for more details). Governing Council has completed their Institute Model Review (see p. 6) and one recommendation was for the clustering of Institute Advisory Boards. In the coming months we will operationalize the proposed changes and see

how we can build a stronger IIR community.

The Institute is committed to providing many kinds of support to the research teams it funds, and a report is now available on a mid-term meeting we recently held on microbiome research; an initiative launched in 2009 (see p. 5). One of our priorities in our new [strategic plan](#) is to facilitate the application and impact of research and on page 5 we provide an excellent example of how we're pursuing this in the field of antibiotics. In the same vein, we recently funded a national team in transplantation research and this group has already had an impact on the health of Canadians (see p. 6).

Preparing and responding to threats to health is another priority for the Institute. The current Ebola crisis is a sad reminder that more work is needed worldwide in order to be truly prepared. Recently we

convened a meeting in Montreal with international funders, to better coordinate research efforts focused on preparedness research (see p. 4). Several Institutes are also developing the Signature Initiative on Environments and Health, and a meeting with more than 15 federal departments took place on September 18<sup>th</sup>, to refine the key research questions that will be addressed through this initiative.

Lastly, I would like to congratulate the recipients of grants provided by the Institute and by CIHR (some funding results are presented on p. 2-3) and would like to encourage the ones that were less successful to persevere.

I wish you great success in your research and please do not hesitate in contacting us.

Marc Ouellette

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Canadian Institutes  
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## News from the Institute Advisory Board

### New members



*Dr. David Burt*



*Dr. Christian Jobin*

The Institute is very excited to have two new IAB members, Dr. David Burt from GlaxoSmithKline (GSK) and Dr. Christian Jobin from the University of Florida. They are respectively our Industry and International representatives and are replacing Dr. Patrice Allibert and Dr. Peter Ernst. Dr. Burt is currently managing the GSK Laval R&D team in the areas of prophylactic vaccines and representing North American vaccine R&D activities on the global Vaccine Discovery and Development Leadership Team (VDD-LT). Dr. Jobin is interested in the bacteria/host interaction, especially in the intestine. A major clinical consequence of deregulated bacteria/host interactions in the intestine is the development of Inflammatory Bowel Disease (IBD) and colorectal cancer. Dr. Jobin studies the differential contribution of bacteria in protecting or exacerbating development of colitis and colorectal cancer.

### Fall Institute Advisory Board Meeting in Saskatoon

The Institute had its Fall IAB meeting in Saskatoon, SK, on October 9<sup>th</sup> and 10<sup>th</sup>. The board and staff had the opportunity to meet the research community at Vaccine and Infectious Disease Organization International Vaccine Centre (VIDO-InterVAC) at the University of Saskatchewan. VIDO-InterVac is a research organization whose mission is to conduct and develop vaccines and related products, with key national and international partners, for the prevention and control of human and animal diseases. During the visit, Dr. Andrew Potter, CEO, welcomed the board and presented VIDO-InterVAC, then Dr. Sylvia van den Hurk, Dr. Joyce Wilson, and Dr. John Gordon presented their research programs to the board members and CIHR staff.



*Dr. Andrew Potter, Dr. Joyce Wilson, Dr. Marc Ouellette, III Scientific Director, Dr. Anthony Jevnikar, Chair of IIR's IAB, Dr. Sylvia van den Hurk, Dr. John Gordon.*

## Congratulations to Funding Recipients

### [Canadian Immunization Research Network](#)

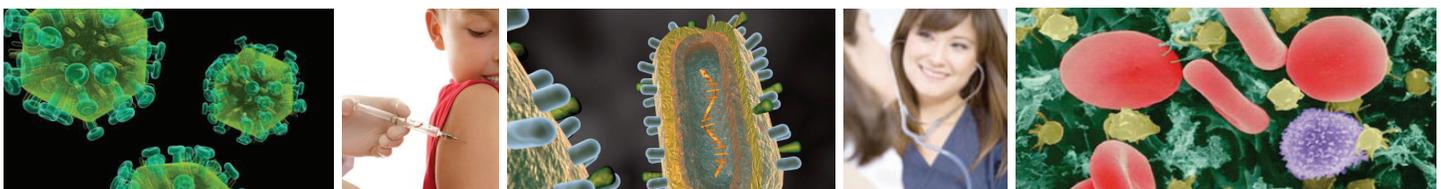
Scott A. Halperin, and 119 principal investigators and co-investigators, funding start date June 2014.

### [Planning and Dissemination – Winter 2014](#)

**Sylvia T. Cardona**, University of Manitoba, International Burkholderia Cepacia Working Group (IBCWG) 19th Meeting

**Felix J. Breden**, Simon Fraser University, Workshop on Analysis, Storage and Sharing of Next-Generation Sequence Data from B-cell Receptor/Antibody and T-cell Receptor Repertoires

**Serene Joseph**, The Research Institute of the McGill University Health Centre, Informing policy and practice on deworming in early preschool-age children: from local to global audiences.



**Helen Dimaras**, University of Toronto, Canadian Conference on Neglected Tropical Diseases.

**Dimitrios J. Dikeakos**, Western University, The 34th Annual Meeting of the American Society for Virology in London Ontario

**Seyed M. Moghadas**, York University, Improving Population Health Through Communities of Practice.

#### [Bridge Funding Winter 2014](#)

**Anita L. Kozyrskyj**, University of Alberta, Cesarean section: impact on infant gut microbiota, childhood obesity and allergic disease.

**Christopher R. McMaster**, Dalhousie University, A Novel Antibiotic Class to Treat Diabetic Ulcer Infections.

**John Parkinson**, Hospital for Sick Children, Comparative systems biology of the Apicomplexa.

**Yukata Yasui**, University of Alberta, Spatio-temporal modelling and prediction of influenza-like illness

## Funding Opportunities

### [Catalyst Grant : HIV/AIDS Community-Based Research \(2014-2015\)](#)

Application deadline: 2014-10-27

Anticipated Notice of Decision: 2015-03-13

Funding Start Date: 2015-03-01

### [Operating Grant : HIV/AIDS Community-Based Research \(2014-2015\)](#)

Application deadline: 2014-10-27

Anticipated Notice of Decision: 2015-03-13

Funding Start Date: 2015-04-01

### [Transitional Operating Grant: 2014-2015](#)

Launch: 2013-11-22

Registration deadline: 2015-01-09

Application deadline: 2015-03-02

Anticipated Notice of Decision: 2015-07-15

Funding Start Date: 2015-07-01

### [Team Grant - Pathways Implementation Research Team – Component 2](#)

Application: 2014-11-26

Application Notice of Decision: 2015-02-16

Funding begins: 2015-02-01

### ***Pre-announcement: launch of Programmatic grants in Environment, Gene and Chronic Diseases (EGCD)***

CIHR is pleased to announce the upcoming launch of the *Programmatic Grants in Environments, Genes and Chronic Disease (EGCD)* funding opportunity. This funding opportunity, which builds on the [Catalyst Grants in EGCD](#), will provide funding for research addressing the role of environment, microbiome and gene interactions in chronic diseases. The Programmatic Grants in EGCD are part of the [Environments and Health Signature Initiative](#), which will focus on investigating how the physical, social, cultural and built environments in which we live, work, and play are critical to our health, development and well-being over the lifespan.

#### **EXTERNAL**

### ***The Longitude Prize 2014 on Antibiotics***

[Longitude Prize 2014](#) is a challenge with a £10 million prize fund to help solve one of the greatest issues of our time. It is being run and developed by Nesta, with the Technology Strategy Board as launch funding partner. The development of antibiotics has added an average of 20 years to our life, yet the rise of antimicrobial resistance is threatening to make them ineffective. This poses a significant future risk as common infections become untreatable. The challenge is to create a cost-effective, accurate, rapid, and easy-to use diagnostic test for bacterial infections that will allow health professionals worldwide to administer the right antibiotics at the right time. Register now and find out more [here](#).

## III Co-organizes an International Meeting for Preparedness to Threats to Health

On September 30<sup>th</sup> and October 1<sup>st</sup>, III and the European Commission organized an international meeting in Montreal where a global research collaboration, designed to facilitate an effective research response within 48 hours of a significant outbreak of a new or re-emerging infectious disease with pandemic potential, in order to save lives and preserve worldwide

economies, was discussed. To achieve this goal the collaboration, called GloPID-R (Global Research Collaboration for Infectious Disease Preparedness), brings together funding bodies involved in research related to new or re-emerging infectious diseases to ensure that research capacity and capabilities are in place to support the conduct of scientific research.



*Representatives of several countries were present at the GloPID-R meeting in Montreal: Denmark, The Netherlands, Sweden, France, European Commission, Belgium, USA, Brazil, Spain, South Africa, Thailand, South Korea, Australia, Canada, and the European commission.*

## Dr. Meghan B. Azad at the 64<sup>th</sup> Lindau Nobel Laureate Meeting



Dr. Meghan Azad was among 600 aspiring young researchers from almost 80 countries who spent a week with 38 Nobel Laureates at the [64<sup>th</sup> Lindau Nobel Laureate Meeting](#) June 29 to July 4, 2014 in Lindau, Germany.

The CIHR Institute of Infection and Immunity congratulates Dr. Azad for being selected to attend this prestigious meeting focused on exchange-

ing ideas, discussing projects and building international networks.

Dr. Azad was truly moved by this experience, and said: "The Lindau Nobel Laureate Meeting was incredible. Truly an unforgettable, once-in-a-lifetime experience! I am profoundly grateful to the CIHR for sponsoring my attendance".

Dr. Azad did her postdoctoral training with Dr. Anita Kozyrskij (SyMBIOTA (Synergy in Microbiota), one of the 7 team grants awarded by III's Canadian Microbiome Initiative), She is now an Assistant Professor (Pediatrics & Child Health) at the University of Manitoba.

## Knowledge Translation in Action!

### **The innovative aspect of phage therapy and its safety**

As bacterial resistance to antibiotics is on the rise worldwide, alternative strategies to treat resistant bacterial infections are urgently needed. To tackle this public health problem the Institute supported an initiative on Alternatives to Antimicrobials that was recently completed. Outcomes are starting to emerge, and here is an example in phage therapy, an area of research that was supported in our strategic investments. Co-discovered by the French-Canadian scientist Félix d'Hérelle in 1917, phages have been shown to be specific, and effective as therapeutic agents against bacteria. Phages target only specific species, thereby preventing the killing of our normal flora.

Dr. Jonathan Dennis from University of Alberta has published in the journal *Antimicrobial Agents and Chemotherapy* (July 2014, Vol. 58, No. 7) a study of phage therapy against *Burkholderia cenocepacia*, a species which is part of an important group of highly antibiotic-resistant bacteria that infect and cause major health problems for persons suffering from cystic fibrosis. Phages were isolated, purified and characterized from environments where *B. cenocepacia* could be found. A lethal dose of bacteria was aerosolized into the lungs of mice and the following day, mice were similarly given aerosolized phages or a negative control. The results showed that phages could be highly effective in eliminating the bacterial pathogen. Phage therapy can be developed into a therapeutic alternative to traditional chemical anti-

biotic treatments, especially against highly resistant bacterial pathogens. This project was partially supported by CIHR.

### **Nova Scotia soil fungus could help fight antibiotic resistant superbugs**

A team of researchers led by Gerry Wright, Director of the Michael G. DeGroot Institute for Infectious Disease Research at McMaster University in Hamilton, Ont., has discovered that a molecule derived from a fungus isolated in Nova Scotia is able to disarm a gene found in many antibiotic-resistant superbugs. The enzyme it targets is called NDM-1 or New Delhi Metallobeta-Lactamase-1, which is a real threat to the public. NDM-1 is an enzyme inducing resistance to carbapenems, a class of potent antibiotics used around the

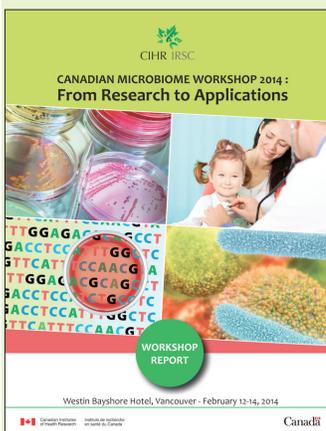
world to treat bacterial infections.

The molecule is known as Aspergillomarasmine A (AMA). The scientists found that the AMA fungal molecule was able to remove the zinc from NDM-1, thus inactivating the enzyme.

Mice infected with an NDM-1-producing bacteria, survived when receiving a combination of the AMA molecule and a carbapenem but died when receiving either the antibiotic or AMA alone.

The findings were published in the June 26<sup>th</sup> issue of the journal *Nature* (June 2014, No. 510, No. 7506), and the research was supported by CIHR.

## A New III Report on the microbiome



Last February, III, in collaboration with INMD, several other CIHR Institutes and Genome BC, held a workshop on the microbiome. More than 75 researchers from Canada, USA and Europe met in Vancouver to discuss the current state of microbiome research, and its potential applications. III is still investing a sizeable amount in microbiome research; supporting the Canadian Microbiome Initiative where 7 teams are hard at work to discover the roles of microbiome in health and disease. The report from this workshop, which is available on the [III website](#), covers several aspects of microbiome research, including the industry as well as its future in Canada and around the world.

## III Cochrane Corner – New Reviews for 2014



**THE COCHRANE  
COLLABORATION**

III has a [Cochrane Corner](#) on its web site with several recent reviews from fields of interest to the infection and immunity community. The reviews available cover the field of asthma,

HIV/AIDS and Hepatitis C, respiratory tract infections, tuberculosis, and immunization among others.

The Cochrane Collaboration is a global not-for-profit organization that produces systematic reviews. Cochrane reviews explore the research evidence about the effectiveness and appropriateness of interventions for medical conditions and the delivery of health care.

Happy reading!

## News from CNTRP



Canadian National  
**TRANSPLANT**  
Research Program

Programme national  
de recherche en  
**TRANSPLANTATION**  
du Canada

The Canadian National Transplantation Research Program was funded by a III-led funding opportunity in 2013, and this group has already begun changing the transplantation landscape in Canada. CNTRP's new guidelines calling for greater use of organs from increased risk deceased

donors are now published in [Transplantation](#) and were reported in the [Globe and Mail](#). These guidelines will lead to an increase in available organ donors. For questions about these new guidelines, please contact [David Hartell, CNTRP Program Manager](#).

## The 6<sup>th</sup> III New Investigator Forum

The Institute is starting to plan the 6<sup>th</sup> New Investigator Forum. The Forum, which is an invitation-only meeting, is scheduled to take place at Manoir du Lac Delage, Québec, on May 29<sup>th</sup>-31<sup>st</sup>, 2015.

The Forum aims to strengthen infection and immunity research by facilitating the formation of peer networks of new investigators and by providing opportunities for both formal and informal interactions with renowned

senior scientists within the mandate of the Institute. The program will feature informative workshops, presentations of cutting-edge science and information on tools and mechanisms which support research in Canada.



## Institute Model Review

Governing Council has now completed the Institutes Model Review. As mandated in the *CIHR Act* and as recommended by the 2011 International Review Panel, this review assessed the structure, role, policies, financial framework and slate of the CIHR Institutes.

The directional decisions of the Governing Council are available [here](#). Although the slate of Institutes won't change at this time, the financial framework of the Institutes, the Ottawa-based staff, as well as their IABs will change in the future.



## Scientific Meetings of Interest

### **International Symposium *The Challenges of Biological Research on Aging in the 21<sup>st</sup> century: from Cells to Clinics*** **November 2-4, 2014, Orford (Québec).**

This symposium will include sessions on inflammation, immunity, immunosenescence, infections and vaccines.

### **Health Research - The New Superhero: Facing Off Against Emerging Health Challenges**

**November 5, 2014, Ottawa (Ontario).**

Research Canada will hold its annual general meeting on November 5 at Château Laurier in Ottawa. A presentation on antimicrobial resistance will take place in the afternoon.

### **New HIV Researcher Workshop,**

**November 14, 2014, Edmonton (Alberta).**

CAHR is pleased to announce that registration is now open for the fall 2014 New HIV Researcher Workshop. This workshop will be held in partnership with Canadian HIV Vaccine Initiative Alliance Coordinating Office and the CIHR HIV/AIDS Research Initiative. Of note, this workshop will also be open to those studying HCV and other HIV co-infections.

### **Genomics: the Power and the Promise**

**November 24-26, 2014, Ottawa (Ontario).**

The theme for the conference is "Genomics and the Environment", and the meeting will explore how environmental factors impact human health and natural resources at the genomic level, and how genomics can help to leverage traditional resource sectors, while protecting and preserving the environment.

### **Canadian Immunization Conference 2014**

**December 2-4, 2014, Ottawa (Ontario).**

Public health practitioners, health care providers, vaccine providers, researchers, immunization policy-makers and program managers, vaccine manufacturers, academics, students and other stakeholders who contribute to Canada's vaccination system will gather at the 2014 Canadian Immunization Conference to demonstrate their commitment to immunization as an important public health measure.

