

# CHI CHRONICLES

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Centre for  
HUMAN IMMUNOLOGY

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## CHI Opening

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The opening of the Centre for Human Immunology at Western was announced on June 2, 2010 at a press conference attended by over 50 people. Dr. Amit Chakma made the announcement followed by comments from the Dean of the Schulich School of Medicine & Dentistry, Dr. Carol Herbert, Director of CHI, Dr. Bhagirath Singh and one of the members of the Centre, Dr. Anthony Jevnikar. The event was emceed by Associate Director of the Centre, Dr. Joaquin Madrenas.

The centre is a city-wide, multi-disciplinary initiative led by

the Schulich School of Medicine & Dentistry and the Lawson Health Research Institute, and based at the Siebens-Drake Medical Research Institute.



From left to right: J. Madrenas, A. Jevnikar, C. Herbert, A. Chakma, B. Singh

“The establishment of this Centre at Western is based upon a long history of scientific and clinical excellence in immunology in London,” says Western President Amit Chakma. “We can look to the many firsts in the organ transplant program for examples including the introduction of the anti-rejection drug cyclosporine back in the 1980s, right up to the current work being done at Western on a vaccine for HIV/AIDS. This new centre holds tremendous promise to improve human health, and public health policies.”

## On the International Scene

### International Human Microbiome Initiative

International Human  
Microbiome Congress  
Vancouver, BC.

9th - 11th March 2011

Organizer: International Human  
Microbiome Consortium

Increased global interest in the human microbiome has created an opportunity to bring together a diverse community of international researchers from the medical, microbial and computational fields to discuss the complex relationships of the microbiome with human health and disease. The conference will

be held Wednesday, March 9, 2011 7:00 AM - Friday, March 11, 2011 5:00 PM at the Hyatt Regency Hotel in Vancouver, BC. More information for registration and to submit abstracts can be found on the Congress Website at: <http://guest.cvent.com/d/vdq56d>

### Conference Topics

- Human microbiome in human health and disease
- Animal microbiomes
- Environmental metagenomics
- Complexity of the human microbiome

- Quantitative metagenomics
- Ethical, legal and social implications of human microbiome studies
- New technologies and computational tools for the study of the human microbiome
- Other metagenomic research areas

### Trainee Travel Support:

There are a limited number of travel awards available for graduate students and postdoctoral fellows. Additional information and the application can be found on the website.



# CHI Partnerships



*“CHIN will provide the Canadian research community with a “single stop” contact point ...”*

## National Human Immunology Network

The CHI is the lead applicant in a CIHR Network Catalyst grant application for the formation of a CIHR Human Immunology Network (CHIN). This network will act as a coordinating resource to help individual researchers to optimize resources and to accelerate the pace of their discoveries and its translation into humans. Such a network will include forefront leaders in

the field of human immunology with internationally renowned programs in specific areas of human immunology (allergy, autoimmunity, cancer, infections, transplantation, vaccine development) and with links to Canadian and International disease-based research networks. In this way, CHIN will provide the Canadian research community with a “single stop” contact point to access National and International research groups with shared interests, to

engage key organizations that will then facilitate the ethical and safety process of human sample utilization, and to enhance knowledge dissemination through an annual human immunology conference. Initially the Centre at UWO will be the coordinating node, with 7 participant nodes from Dalhousie, Manitoba, McGill, McMaster, Toronto, UBC and UWO.

## Rotman Institute of Science and Values

One of the exciting partnerships that we have established is with the Rotman Institute of Science and Values at the University of Western Ontario, a world leader in the interface between Philosophy of Science and Ethics. They hosted an interdisciplinary conference from October

7-10, at the University of Western Ontario in London, Ontario, Canada, on “Integrating Complexity: Environment and History”. One area that was explored was the interaction between Organisms and the Environment and the role that history (evolutionary and individual) may have played in experimental approaches. A workshop was organized by

CHI and the Rotman Institute in which 3 panelists (an immunologist, a philosopher, and an editor) introduced the topic for discussion from their field: immunological issues driving the need for Human Immunology, philosophical aspects raised by Human Immunology case, and the role played by the vehicles of knowledge dissemination in shaping up the trend.

## Federation of Clinical Immunology Societies (FOCIS)

On June 24, 2010, in Boston MA, Drs. Madrenas and Singh were invited to present at the Annual Meeting of Directors of the FOCIS International Network of Centres of Excellence. This is a meeting that provides a forum for directors of centres in the FOCIS Network to discuss novel opportunities to promote and enhance research and education in

Human and Clinical Immunology. At this meeting, Drs. Madrenas and Singh presented the evolution of the London Centre that evolved from being a virtual centre involving scientists and clinicians at UWO, Robarts and LHRI to the current University-approved Centre, with infrastructure and logistical support. The evolution of our centre was highly praised by the audience and was used as a model to follow in the evolution toward consolidated

Centres for Human Immunology. In addition, the presentation provided many opportunities to project the research done at our centre and to foster networking with other North American centres.



# CHI- In the Community



## Café Scientifique:

The Lawson Health Research Institute in partnership with CHI has been awarded a CIHR Café Scientifique grant to host a community event in winter 2010. The event entitled "BUG WARS: Defending you Against Invaders"! is an event that is open to the public to educate about the values of investment in health research and science in a relaxed setting. Keep checking our website as details unfold at <http://www.schulich.uwo.ca/chi>.

## High School presentation:

On Nov. 22, 2010 Dr. Singh was invited by grade twelve high school students at Saunders Secondary School, London, Ontario as a guest speaker for their University Politics class. He was asked to do a seminar on a current issue and the topic selected was "Biological and Chemical terrorism" and to present an unbiased view of the topic so that the class could form their own opinions for a debate that followed at the school the following day. Two students from the school Allison Taylor and Kimberly Bialik provided an excellent overview of the topic and this was followed by talk and questions and answer period by Dr. Singh.

## Exeter Hospital presentation:

On September 29/2010, Dr. J. Madrenas was an invited lecturer at the InterHospital Educational Program held in the South Huron Hospital and Medical Centre in Exeter ON. This is an educational program for technical staff in Laboratory Medicine in regional hospitals including those in St. Mary's and Exeter. Dr. Madrenas delivered his lecture on "Infectious Music: how microbes have shaped our music". His presentation was followed by a lively discussion of music, disease and creativity as well as novel learning tools in the area of Science and Medicine, with specific emphasis on Human Immunology and Infectious Diseases.

## CHI News & Activities

### Bhagirath Singh Young Investigator Award in Infection & Immunity

The CIHR Institute of Infection and Immunity and its Institute Advisory Board has established the Bhagirath Singh New Investigator Award in Infection and Immunity to honour the outstanding work of IIR's inaugural Scientific Director. This prize will be awarded annually to a new investigator (under five years as PI) in the field of Infection and Immunity with the highest ranking

(by %) in the Fall and Spring operating grant competition.

### CHI Director appointed Co-Chair of Canadian HIV Vaccine Initiative

Health Minister Leona Aglukkaq marked World AIDS Day on December 1, 2010 by announcing that Dr. Bhagirath Singh and Dr. Jose Esparza will Co-Chair the Advisory Board that will oversee the renewed Canadian HIV Vaccine Initiative (CHVI) and its Research and Development Alliance. The

CHVI Advisory Board will oversee the renewed CHVI and its Research and Development Alliance, which was announced at the XVIII International AIDS Conference in Vienna, Austria, in July 2010. It will provide advice on implementation and make recommendations on funding for projects to the Ministers responsible for the CHVI (Ministers of Health, Industry and International Cooperation) and to the Bill & Melinda Gates Foundation.

*"will oversee the renewed Canadian HIV Vaccine Initiative (CHVI) and its Research and Development Alliance."*

## Upcoming Meetings

### International Human Microbiome Congress

March 9-11, 2011

<http://www.cvent.com/EVENTS/Info/Summary.aspx?e=c4aa192c-e47c-44fb-b1dc-15dd34e5b2c2>

### Canadian Society of Immunology Annual Conference

April 8-11, 2011

Lake Louise, AB

<http://www.csi-sci.ca/>

### FOCIS 2011

June 23-26, 2011

Washington, D.C.

<http://www.focisnet.org>



# Researcher Profiles

The Centre is pleased to have two recent recruits to Western as members. Drs. Gunaratnam and Sener bring exciting promise to the field of Human Immunology and below we profile their current research programs.



**Lakshman Gunaratnam**

Kidney transplantation remains the treatment of choice for patients with kidney failure. Unfortunately, the lifespan of transplanted kidneys has not changed over the years despite the advent of modern immunosuppressive therapies. Significant barriers to long-term survival of kidney transplants are chronic immunologic rejection and long-term kidney toxicity from medications, both of which are limitations of current immunosuppressive therapies. The ability to reduce the incidence of acute and chronic rejection, and at the same time limit the use of toxic medications, is the ultimate goal of transplantation. A major contributor to rejection and poor long-term

outcome is ischemia reperfusion injury, an inevitable form of early tissue injury that occurs during organ harvesting and transplant surgery. New evidence suggests that “danger” signals released by injured or dying kidney epithelial cells (from the transplant) enhance the immunogenicity of the transplanted kidney by triggering a potent innate immune response. The laboratory of Dr. Gunaratnam is studying the potential role of kidney injury molecule-1, a protein that is expressed by the kidney tubular epithelial cells soon after injury, in regulating the innate immune response and in preventing rejection. By uncovering the detailed mechanisms that enable kidney epithelial cells to control early inflammation following transplant surgery, Dr. Gunaratnam hopes to identify specific therapeutic strategies to increase the lifespan of transplanted kidneys.



**Alp Sener**

Dr. Alp Sener was recruited to the Departments of Surgery and

Microbiology & Immunology as a Schulich Clinician-Scientist in 2009 and has since joined the Center for Human Immunology. His research program is aimed at the circumstances surrounding solid organ transplantation which lead to tissue injury as organs are damaged by the loss of blood supply and ischemia associated with the procurement procedure. The potential benefit of donor tissue storage modification to protect organs has not been intensively investigated as mainstream approaches to improving transplant survival continue to remain focused on pharmacological inhibition of immune cell activation. Other the past 15 years, Dr. Sener has worked with a class of small, endogenously produced molecules which have been implicated in maintaining tissue perfusion and free-radical scavenging including nitric oxide, carbon monoxide and more recently hydrogen sulphide. Rooted in these previous findings, Dr. Sener’s research program focuses on the development of novel cold renal perfusate/preservation solutions as well as in determining the mechanisms by which hydrogen sulphide and other small molecules may confer cellular protection during organ transplantation so as to minimize both cold- and warm-ischemia-induced tissue injury so as to ultimately improve both early and late transplant allograft survival.

## Centre for HUMAN IMMUNOLOGY

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**The CHI is an inclusive city-wide initiative to coordinate basic and clinical research, policy research and educational activities in Human and Translational Immunology at two different institutions in London, Ontario: The University of Western Ontario and Lawson Health Research Institute. CHI is the first Human and Translational Immunology centre in Canada that integrates basic research, clinical research, public health research and related policy formulation to promote and preserve a healthy immune system to deal with infections, inflammation and immune-mediated diseases.**