McGILL UNIVERSITY

DEPARTMENT OF MICROBIOLOGY AND IMMUNOLOGY

2013 ANNUAL REPORT

Submitted by

J. Madrenas, MD, PhD, FCAHS
Canada Research Chair in Human Immunology
Professor and Chairman

On behalf of the

Primary members of the
Department of Microbiology and Immunology
Section I
Introduction
A. Executive Summary

2013 was another great year for the Department of Microbiology and Immunology at McGill.

The department welcomed Dr. Selena Sagan, a virologist from Stanford University (and former graduate of our department!), who started as a tenure track assistant professor on August 1, 2013. Her arrival completes the 2nd recruitment in the context of departmental faculty renewal.

In Research, we completed the establishment of the Microbiome and Disease Tolerance Centre at McGill, a multi-disciplinary and trans-departmental Centre that involves 26 members from 3 universities. This centre was approved by the Board of Governors and started its operation on May 2013. A 2-day Retreat to outline research and strategy took place later.

Our members, including our new recruits, were very successful in obtaining external, peer-reviewed grants for over $10M from the most stringent sources (CIHR, NSERC, CFI, Grand Challenges Canada, etc.), including 3 multi-centre large funding awards. This is particularly exciting when considering the current highly competitive funding environment. In addition, our members continue to be competitive in external salary award programs (CRCs, CIHR, FRQS). Of special note are the induction of Dr. Greg Matlashewski to the Canadian Academy of Health Sciences and the awarding of the CIHR-CMAJ Top Canadian Achievements in Health Research Award to Dr. Mark Wainberg. Research successes included 78 publications in high profile journals and invited lectureships around the world.

In terms of Education, the department continued the process of undergraduate and graduate program redevelopment. This broad range initiative has already translated into an increase in MIMM course enrolment by 16% in the last 2 years. Program redevelopment is proceeding with the accommodation not only of new course but also with the implementation of novel educational strategies that aim at providing the best learning experience to our trainees. This effort would not be possible without the work of the academic and non-academic members of the department.

Our students and trainees continue to excel in national and international venues. Among the many examples provided below, let me single out the awarding of the GG Silver Medal to Daisy Ji. Furthermore, with the departmental success in fundraising (over $400K), we were able to establish the Steinman Summer Undergraduate Research Awards, and the Wares Family Post-doctoral Fellowship awards to support under-graduate and post-doctoral training in our department.

Finally, in terms of Service and Administration, the department embarked in the optimization of financial and human resources support through establishment of an Administrative Excellence Centre involving our department and the departments of Anatomy&Cell Biology and Biomedical Engineering.

The department has strengthened its national and international profile. Our members are present in panels and committees of federal and provincial institutions, and advise public agencies on issues related to public health and policy. We take a leading role and participate into the CIHR-funded Human Immunology Network, and are also committed to community outreach. We achieved a web-based departmental penetrance to top 5 departments of Microbiology and Immunology in the World. And we continue to proactively engage our community, local elementary schools and public at large.
It is a true privilege and honor for me to submit the 2013 Departmental Annual Report documenting the excellence of the members of the Department of Microbiology and Immunology at McGill University. My sincere thanks to each and everyone of them for their help in putting together this report.

B. Faculty Listing

1. List of Faculty members with primary appointments in the Department

Professors
Dr. Joaquin Madrenas (Chairman, 2011-present)

Dr. Albert Berghuis    Dr. Robert Murgita
Dr. James Coulton      Dr. Martin Olivier
Dr. Matthias Götte     Dr. Mark Wainberg
Dr. Greg Matlashewski

Associate Professors
Dr. Dalius Briedis      Dr. Greg Marczynski
Dr. Benoit Cousineau    Dr. Ciriac Puccirillo
Dr. Sylvie Fournier     Dr. Donald Sheppard
Dr. Herve Le Moual      Dr. Samantha Gruenheid

Assistant Professors
Dr. Jörg Fritz
Dr. Connie Krawczyk
Dr. Irah King
Dr. Selena Sagan

2. List of Faculty with secondary appointments

Associate Members
Dr. Jack Antel          (Department of Neurology, Montreal Neurological Institute)
Dr. Amit Bar-Or         (Department of Neurology, Montreal Neurological Institute)
Dr. Marcel Behr         (Division of Infectious Diseases and Medical Microbiology, Montreal General Hospital)
Dr. Miguel Burnier      (Chair, Department of Ophthalmology, McGill University)
Dr. Nicolas Cermakian   (Department of Psychiatry, McGill University)
Dr. Ines Colmigna       (Department of Medicine, Royal Victoria Hospital)
Dr. Andre Dascal        (Senior Physician, Jewish General Hospital)
Dr. Maziar Divangahi    (Meakins-Christie Laboratories, McGill University)
Dr. Philippe Gros       (Rosalind and Morris Goodman Cancer Research Centre)
Dr. Sabah Hussain       (Critical Care Division, Royal Victoria Hospital)
Dr. Armando Jardim      (Institute of Parasitology, MacDonald Campus)
Dr. Antonis Koromilas   (Department of Oncology, Lady Davis Institute for Medical Research)
Dr. Arnold Kristof  (Critical Care Division, Royal Victoria Hospital)
Dr. Richard Lalonde  (McGill AIDS Centre)
Dr. Chen Liang  (Lady Davis Institute for Medical Research)
Dr. Rongtuan Lin  (Lady Davis Institute for Medical Research)
Dr. Vivian Loo  (Department of Medicine, Division of Infectious Diseases, Montreal General Hospital)
Dr. Andrew Mouland  (HIV-1 RNA Trafficking Laboratory, Lady Davis Institute for Medical Research)
Dr. Momar Ndao  (Department of Medicine, Division of Infectious Disease)
Dr. Marianna Newkirk  (Division of Rheumatology, Montreal General Hospital)
Dr. Dao Nguyen  (Department of Medicine, Montreal General Hospital Research Institute)
Dr. Costas Pantopoulos  (Lady Davis Institute, Jewish General Hospital)
Dr. Joyce Rauch  (Department of Rheumatology, Montreal General Hospital)
Dr. Michael Reed  (Medicine, Infectious Diseases, Montreal General Hospital)
Dr. Petra Rohrbach  (Institute of Parasitology, MacDonald Campus)
Dr. Maya Saleh  (Department of Medicine, McGill Life Science Complex)
Dr. Jose Teodoro  (Rosalind and Morris Goodman Cancer Research Centre)
Dr. Michel Tremblay  (Rosalind and Morris Goodman Cancer Research Centre)
Dr. Christos Tsoukas  (Immune Deficiency Treatment Centre – IDTC, Montreal General Hospital)
Dr. Bernard Turcotte  (Hormones & Cancer Research Unit, Department of Medicine)
Dr. Brian Ward  (Montreal General Hospital)
Dr. Ji Zhang  (Biomedical Sciences, Faculty of Dentistry)

Adjunct Professors
Dr. Jacques Archambault
Dr. Cheolho Cheong
Dr. Albert Descoteaux
Dr. Andres Finzi
Dr. Peter C. K. Lau
Dr. Sylvie Lesage
Dr. Shan-lu Liu
Dr. Ancuta Petronela
Dr. Woong-Kyung Suh
Section II
Research
A. Research Grants Awarded in 2013
(listed only those in which primary members involved. TOTAL APPROXIMATE FUNDING FOR 2013 = $10,906,521)

<table>
<thead>
<tr>
<th>Agency</th>
<th>Grant Title</th>
<th>Amount</th>
<th>Researcher</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIHR</td>
<td>GET-FACTS: Genetics Environment and Therapies: Food allergy clinical tolerance studies</td>
<td>$1,960,606</td>
<td>Fritz, Jorg Piccirillo, Ciro</td>
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<tr>
<td>CIHR</td>
<td>Molecular mechanisms involved in resistance to different classes of RT inhibitors</td>
<td>$665,000</td>
<td>Goette, Matthias</td>
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<tr>
<td>CIHR</td>
<td>Interactions between components of the HCV replication complex</td>
<td>$684,000</td>
<td>Goette, Matthias</td>
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<td>CIHR</td>
<td>Genetic dissection of the host response to intestinal infections</td>
<td>$584,870</td>
<td>Gruenheid, Samantha</td>
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<tr>
<td>CIHR</td>
<td>Resistance of C. rodentium and related pathogens to antimicrobial peptides</td>
<td>$15,000</td>
<td>Gruenheid, Samantha</td>
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<tr>
<td>CIHR</td>
<td>T follicular helper cell differentiation and function in immunity and infection</td>
<td>$750,000</td>
<td>King, Irah</td>
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<td>CIHR</td>
<td>Molecular regulation of dendritic cell function</td>
<td>$790,890</td>
<td>Krawczyk, Connie</td>
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<tr>
<td>CIHR</td>
<td>Regulation of T cell Activation by Stomatin-Like Protein 2</td>
<td>$741,865</td>
<td>Madrenas, Joaquin</td>
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<tr>
<td>CIHR</td>
<td>Mortality risks in later life from exposure to pandemic influenza in early life: the 1890 and 1918 influenza pandemics in Canada</td>
<td>$272,567</td>
<td>Madrenas, Joaquin</td>
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<tr>
<td>CIHR</td>
<td>Canadian National Transplant Research Program</td>
<td>$13.8x10^6</td>
<td>Madrenas, Joaquin</td>
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<td>CIHR</td>
<td>Control of Leishmania pathogenesis</td>
<td>$748,000</td>
<td>Matlashewski, Greg</td>
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<tr>
<td>CFI</td>
<td>Establishment of a laboratory for the study of TH2-driven humoral immunity to infection</td>
<td>$200,000</td>
<td>King, Irah</td>
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<tr>
<td>CFI</td>
<td>Molecular regulation of dendritic cell function</td>
<td>$250,000</td>
<td>Krawczyk, Connie</td>
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<tr>
<td>FPQIS</td>
<td>Exploiting plant made vaccines to protect the elderly against respiratory viruses</td>
<td>$300,000</td>
<td>Krawczyk, Connie</td>
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<tr>
<td>FQRNT</td>
<td>Creation d’une nouvelle plateforme pour la caracterization de l’ARN polymerase du virus de l’hepatite C (NS5V) et de ces d’inhibiteurs a l’échelle de la molecule individuelle</td>
<td>$18,020</td>
<td>Goette, Matthias</td>
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<tr>
<td>FQRNT</td>
<td>Les systemes de regulation a deux composantes comme cibles therapeutiques pour le traitement des infections causes par les E. coli enteropathogenes</td>
<td>$15,000</td>
<td>Gruenheid, Samantha</td>
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<tr>
<td>Organization</td>
<td>Project Description</td>
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<tr>
<td>FQRNT</td>
<td>Les systèmes de regulation a deux composantes comme cibles therapeutiques pour le traitement des infections causes par les Escherichia coli enteropathogens</td>
<td>$180,000</td>
<td>Le Moual, Herve</td>
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<tr>
<td>FRQS</td>
<td>Inhibition of viral polymerases and evolution of drug resistance</td>
<td>$20,000</td>
<td>Goette, Matthias</td>
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<tr>
<td>Grand Challenge Canada – Bill and Melinda Gates</td>
<td>Point of care diagnosis of visceral Leishmaniasis in India</td>
<td>$887,000</td>
<td>Matlashewski, Greg</td>
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<tr>
<td>Grand Challenge Canada – Stars in Global Health</td>
<td>Development of a diagnostic test to detect Leishmania in the blood</td>
<td>$113,000</td>
<td>Matlashewski, Greg</td>
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<tr>
<td>McGill University Collaborative Research Development Fund</td>
<td>Chronic bacterial prostatitis, prostate hyperplasia and prostate cancer</td>
<td>$20,000</td>
<td>Gruenheid, Samantha</td>
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<td>MELS</td>
<td>Supporting active learning and technological innovation in the teaching of science</td>
<td>$10,750</td>
<td>Coulton, James</td>
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<td>NSERC</td>
<td>Evolution of mobile group II introns</td>
<td>$250,000</td>
<td>Cousineau, Benoit</td>
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<td>NSERC</td>
<td>Bacterial effector proteins as tools to study cell biology</td>
<td>$36,000</td>
<td>Gruenheid, Samantha</td>
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<td>NSERC</td>
<td>miRNA regulation of dendritic cell function</td>
<td>$130,000</td>
<td>Krawczyk, Connie</td>
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<td>NSERC</td>
<td>Signal Transduction by bacterial Ser/Thr kinases</td>
<td>$125,000</td>
<td>Le Moual, Herve</td>
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<td>NSERC</td>
<td>Role of Iron in the Regulation of PTPs: Impact of Cell signaling and Function</td>
<td>$240,000</td>
<td>Olivier, Martin</td>
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<tr>
<td>PSR-MIEIE</td>
<td></td>
<td>$35,000</td>
<td>Sheppard, Don</td>
</tr>
</tbody>
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### B. Awards

**Briedis, Albert**

- MIMM Best Anecdote Award

**Cousineau, Benoit**

- William Dawson Award

**Fritz, Jorg**
• CIHR New Investigator Award
• FRQS Junior 1 Award

Götte, Matthias
• Career Award: FRSQ ‘Chercheur National’

Gruenheid, Samantha
• Tier II Canada Research Chair in Bacterial Pathogenesis

King, Irah
• Tier II Canada Research Chair

Madrenas, Joaquin
• Tier I Canada Research Chair in Human Immunology

Matlashewski, Greg
• Elected Fellow of the Canadian Academy of Health Sciences

Piccirillo, Ciriaco
• MUHC-RI award
• Tier II Canada Research Chair
• Research Excellence Fellows hip MUHC- MGH Foundation
• Phil Gold Award for Research Excellence

Sagan, Selena

Sheppard, Donald
• FRSQ Chercheur Boursier Senior

Wainberg, Mark
• Premio Venizia Award for Scientific Research, Italy-Canada Chamber of Commerce
• CIHR-CMAJ Top Canadian Achievements in Health Research Award

C. Publications

Coulton, James

**Cousineau, Benoit**


**Fritz, Jörg**


**Götte, Matthias**


Gruenheid, Samantha


King, Irah

Le Moual, Hervé


Madrenas, Joaquin


**Matlashewski, Greg**


**Olivier, Martin**


Piccirillo, Ciriaco


Sagan, Selena


Sheppard, Donald

• Lee MJ, Gravelat FN, Cerone RP, Baptista SD, Campoli PV, Choe SI, Kravtsov I, Vinogradov E, Creuzenet C, Liu H, Berghuis AM, Latgé JP, Filler SG, Fontaine T,


## Wainberg, Mark


• Donahue DA, Bastarache SM, Sloan RD, Wainberg MA. Latent HIV-1 can be reactivated by cellular superinfection in a Tat-dependent manner, which can lead to the emergence of multidrug-resistant recombinant viruses. J Virol. 2013. 87(17):9620-9632.


D. Presentations and Lectures

**Briedis, Dalius**

- Treatment of community acquired pneumonia, Invited Speaker, McGill Universities Continuing Medical Education 44th Annual Course in Drug Therapy, Delta Hotel, Montreal, May 2-3rd, 2013.


**Cousineau, Benoit**


**Fournier, Sylvie**


• Neuropathy in an animal model of CD8+ T cell-mediated CNS demyelination. Anthony Rainone and Sylvie Fournier, 8th Annual Symposium CIHR Training Program in Neuroinflammation, Montreal, June 2013. Poster presentation

Fritz, Jörg

• “Regulation of innate B cells by Nod1”. 15th International Congress of Immunologists, Milan, Italy 2013.

• “Regulation of intestinal homeostasis by IgA+ Plasma cells”. 10th Symposium of the physiology of diseases of the digestive tract. (PDGI 2013). Orford, Quebec.

Götte, Matthias

• Invited Presentation: University of Saskatchewan, Saskatoon, Saskatchewan, Canada, March 6, 2013

• Invited Presentation: University of Utrecht, The Netherlands, April 24, 2013

Gruenheid, Samantha

• 10th Symposium on the Physiology and Diseases of the Digestive Tract, Oct.2-4th 2013. Refereed presentation (abstract selected for talk)

• University of Sherbrooke Department of Microbiology and Infectious Disease
  Intestinal R-spondin 2 signaling and susceptibility to Citrobacter rodentium infection
  Invited speaker, May 30th

• Institute Armand Frappier
  Rspondin 2, Wnt, and susceptibility to C. rodentium infection
  Invited speaker, March 26th

King, Irah

• Invited Speaker: RIKEN-McGill joint conference, June 21, 2013

• Invited Speaker : Gordon Conference on T follicular helper cells, July 21-26, 2013

• 2013 University of Montreal, Montreal, Quebec: “Mechanisms of T follicular helper cell localization in the germinal center during infection”

• 2013 McMaster University, Hamilton, Ontario: “Mechanisms of T follicular helper cell localization in the germinal center during infection”
• 2013 INRS-Institut Armand-Frappier, Laval, Quebec: “Mechanisms of T follicular helper cell localization in the germinal center during infection”

Krawczyk, Connie

• 4th Canadian Cytometry and Microscopy Symposium, Montreal, QC, Canada (Invited) - Detecting antigen-specific T cells

• Hospital Maisonneuve-Rosemont, University of Montreal, Novel Mechanisms Regulating Dendritic Cell Function

Le Moual, Hervé

• Le Moual, H. Bacterial resistance to host antimicrobial peptides. Invited speaker, Microbiology & Infectious Diseases Asia Congress, Singapore. June 2014.

• Thomassin, J., Brannon, J.R., Gruenheid, S. and Le Moual, H. Enteropathogenic and enterohemorrhagic Escherichia coli use different mechanisms to resist human antimicrobial peptides. The 63rd Annual Conference of the Canadian Society of Microbiologists, Carleton University, Ottawa, Ontario, June 2013.


• Viau, C. and Le Moual, H. Phosphoethanolamine modifications promote LPS transfer to the outer membrane. The 63rd Annual Conference of the Canadian Society of Microbiologists, Carleton University, Ottawa, Ontario, June 2013.


### Madrenas, Joaquin

- The Do’s and Do Not’s of Grant Writing. McGill University Office of Sponsored Research Workshop, Montreal, QC, January 8, 2013.

- Infectious Music: how microbes have shaped our music. Division of Nephrology Rounds, Université de Montréal, Montreal, QC. Jan 15, 2013.


- Infectious Music: how microbes have shaped our music. McGill Society of Montréal Public Lecture Series, Montreal, QC. March 26, 2013.

- **Keynote Speaker**: La doble cara del *S. aureus*: desde commensal a microbio letal. IX Congreso Colombiano de Alergia, Asma e Inmunologia, Bogota, Colombia, May 2-4, 2013.

- Nuevos mecanismos reguladores de la activacion de los linfocitos T. IX Congreso Colombiano de Alergia, Asma e Inmunologia, Bogota, Colombia, May 2-4, 2013.

- Musica infecciosa: nuestra música a través de las enfermedades infecciosas. IX Congreso Colombiano de Alergia, Asma e Inmunologia, Bogota, Colombia, May 2-4, 2013.

- **Plenary Seminar** System Immunobiology of *S. aureus* commensalism and infection. Annual 3IQ Retreat, Department of Biomedical and Molecular Sciences, Queen’s University, Kingston, ON, May 22, 2013.

- The Do’s and Do Not’s of Grant Writing. CIHR Institute of Infection and Immunity New Investigator Forum, Manoir du Lac Delage, Lac Delage QC, June 1, 2013.
• Chair: Mock CIHR IT Review Panel Session. CIHR Institute of Infection and Immunity New Investigator Forum, Manoir du Lac Delage, Lac Delage QC, June 1, 2013.


• The Do’s and Do Not’s of Grant Writing. McGill University Office of Sponsored Research Workshop, Montreal, QC, June 12, 2013.

• Novel Mechanisms of Regulation of T Cell Activation. Université de Montréal Séminaire de Recherche, Axe Infection, Immunité et Inflammation. CHUM – Hôpital Notre-Dame, Montréal, QC, June 14, 2013.


• The two sides of S. aureus: from commensalism to dialysis nightmares. CHUM – MUHC Nephrology Research Conference, Montreal, QC, September 17, 2013.

• On the role of SLP-2: Mitochondrial Membrane Compartmentalization and Optimal Respiratory Chain Assembly. Institut fuer Genetik, Universitaet zu Koeln, Cologne, Germany, October 14, 2013.

• Stomatin-Like Protein-2 Modulates Cell Function by Regulating Mitochondrial Membrane Compartmentalization and Respiration. 4th World Congress on Targeting Mitochondria, Berlin, Germany, October 17, 2013.

• On the Search for Mechanisms of S. aureus Pathobiosis. 19e « 5 à 7 » d’Immunologie Montréal, Université de Montréal, October 30, 2013.


• Taming a Superbug: Systems Immunobiology of *S. aureus* Commensalism. University of Toronto, Department of Immunology Special Seminar, Toronto, ON, December 13, 2013.

**Marczynski, Greg**

• “A Genetic and Biochemical Approach Identifies a New Regulator of Bacterial Chromosome Replication”, Canadian Society of Microbiology meeting, Ottawa, ON, 20 June 2013.

• “The Impact of *duf299* operon regulation on initiation of chromosome replication in *Caulocabcter crescentus*”, Canadian Society of Microbiology meeting, Ottawa, ON, 20 June 2013.

**Matlashewski, Greg**

• The use of Village ASHAs for active case detection of visceral leishmaniasis cases. WHO meeting to set research priorities for elimination of visceral leishmaniasis. Freiburg, Germany. Sept. 24, 2013


• Elimination of visceral leishmaniasis through implementation research. Institute of Parasitology. McGill University. March 1, 2013

• Elimination of visceral leishmaniasis through implementation research. University of Calgary. Calgary, August 22, 2013

• Elimination of visceral leishmaniasis through implementation research. Department of Microbiology and Immunology, McGill University. October 3, 2013

**Olivier, Martin**

• Role of *Leishmania* Metalloprotease GP63 in Evasion of Macrophage Innate Immune Response. Symposium on *Leishmania*-Macrophage Interaction. World Leish 5 Meeting, Recife, Brazil. May 2013

• Role of Innate Immunity in the Development of Malaria Related Pathologies. Symposium: Immunology of Parasitic Infection. 88th Annual American Society for Parasitology and 13th Annual Québec Molecular Parasitology Meeting, Québec, Qc, Canada. June 2013

• *Leishmania* GP63 Metalloprotease: A New Tool to Control Bacterial Mediated Inflammation. Workshop on Immunology to Bacterial infection, 15th International Congress of Immunology, Milano, Italy, August 2013.
• Phosphatases, Métalloprotéases et Leishmaniose : Un Trio Dangereux…INRS/Institut Armand-Frappier. Laval-des-Rapides, Qc, Canada. February 2013
• Pathogen-Macrophage Interaction: A signaling story. MUHC and the McGill International TB Centre, Montréal, Qc, Canada. April 2013
• From Hemozoin to Cerebral Malaria: Adventure Into Innate Immunity. Meakins-Christie Laboratories, Montréal, Qc, Canada. November 2013

Piccirillo, Ciriaco
• CCMA Invited Speaker
• RIKEN Workshop Invited Speaker
• International Congress in Immunology Invited Oral Presentation
• Microbiology and Immunology Infection and Immunity Seminar Series
• Immune Tolerance in Allergic Disease Symposium
• Complex Traits Group
• Lady Davis Research Institute

Sagan, Selena


• Sagan SM, Sarnow P. “miR-122 and Hepatitis C virus: investigating the requirements of an unusual microRNA- target RNA interaction” Poster presentation. National CIHR research training program in Hepatitis C (NCRTP-HepC) Annual PAC meeting, Victoria, Canada. March 2-3, 2013

• Sagan SM, Cox EM, Wilson JA and Sarnow P. “One microRNA to rule them all: Human miR-122 mediates viral RNA accumulation in hepaciviruses”. Invited oral presentation, Virology Interest group –NIH, Methesda, MD, USA, October 17th, 2013.

• Sagan, SM, Sarnow P and Wilson JA. “Modulation of GB virus B (GBV-B) RNA abundance by microRNA-122: Dependence on and escape from miR-122 restriction”. Oral presentation, Departmental Seminar Series, Department of Microbiology and Immunology, Stanford University, Stanford, California, USA. April 24, 2014.

Sheppard, Donald
• Hematology Grand Rounds, Cross Cancer Institute, Edmonton Alberta. Combining prophylaxis and diagnostics to manage fungal infections. February 6 2013

• Invited Speaker, Philippines Infectious Disease Society Annual Meeting, Manila, Philippines. Uncertainty in diagnostics for fungal infections. November 28 2013

• Invited Speaker, Infectious Diseases Seminar Series, University Hospital Zurich, Switzerland. Effects of hydrophobicity on activity and pharmacokinetics of antifungals. November 15 2013.

• Invited Speaker, Annual Meeting of the German, Swiss and Austrian Society of Hematology and Oncology, Vienna, Austria. Mechanisms of action of hydrophobic antifungals. October 20 2013

• Invited Speaker, Cold Spring Harbor Meeting on Molecular Pathogenesis and Host Response. Cold Spring Harbor Laboratory, NY, USA. Identification and characterization of an exopolysaccharide that confers virulence on the mold Aspergillus fumigatus. Sept 18 2013

• Invited Speaker, Hematology Grand Rounds, Prince of Wales Hospital, Sydney, Australia. Effects of hydrophobicity on activity and pharmacokinetics of antifungals. Aug 15 2013


• Master Class in Management of Fungal Diseases. Tokyo, Japan. Integrating diagnostics into the management of fungal infections. July 3 2013

• Invited Speaker, Hematology Grand Rounds, Royal Melbourne Hospital. Melbourne, Australia. Effects of hydrophobicity on activity and pharmacokinetics of antifungals. June 18th 2013


• Invited Seminar: Singapore General Hospital Hematology Seminar Series. Effects of hydrophobicity on activity and pharmacokinetics of antifungals. March 15 2013

• Invited Speaker 9th International Symposium on Antimicrobial Agents and Resistance (ISAAR 2013), Kuala Lumpur, Malaysia Early Antifungal Treatment Strategies – rationalizing antifungal use through Pk/Pd. March 14 2013

• Invited Seminar: Valencia University Hospital, Valencia Spain. Effects of hydrophobicity on pharmacokinetics and pharmacodynamics of antifungals. Feb 21 2013

**Wainberg, Mark**


• February 2013. Department of Molecular Medicine, Colorado State University, Fort Collins, Colorado. “Is Dolutegravir a Qualitative Different Drug for the Treatment of HIV”.

• February 12, 2013. Killam Award Lecture I, Faculty of Medicine, University of British Columbia, Vancouver, BC. Drug Resistance in HIV: What Can We Do about It

• February 13, 2013. St. Paul’s Hospital, Vancouver, B.C. “Will Integrase Inhibitors Represent a paradigm Shift in the Management of HIV Disease?”


• April 2013. Infectious Disease Rounds, University of Pennsylvania, Philadelphia, PA. “Will Integrase Inhibitors Help to Cure HIV?”


• May 8, 2013. Conference ACFAS, l’Université Laval, Québec, QC. <<Est-ce que les inhibiteurs d’intégrase seront utiles pour guérir le SIDA?>>

• May 17, 2013. Université de Tours, Tours, France. <<L’utilisation des inhibiteurs d’intégrase dans le traitement du VIH>>

• June 1, 2013. Canadian Institutes for Health Research. New investigators forum. “When will we cure HIV?”


• Sept. 2013. National conference on HIV/AIDS. Quereteiro, Mexico. Can We Overcome HIV Drug Resistance?


• October 2013. Toronto Hospital. HIV Rounds. Is Dolutegravir a Qualitative Different ARV?

• October 2013. St. Michael’s Hospital. Toronto. HIV Rounds. When will we see resistance against Dolutegravir in first-line therapy?

• November 2013. Saturn conference on HIV drug resistance. Bloemfontein, South Africa. Are We Reaching the Moment of Truth: Can We Cure HIV?


• December 2013. Ndola, Zambia. TanZamBo Collaboration on HIV. How Can We Prevent HIV Transmission through Use of ARVs?

• December 2013. Mumbai, India. AIDS Society of India. Is It Possible to Prevent HIV Drug Resistance?

E. Patents

Sheppard, Donald


F. Contracts

Gotte, Matthias

• Quebec Consortium for Drug Discovery (CQDM)- Operating Grant (PI, Co-I Dr. Guy Boivin, Laval University)
  Title: Phage-based screening platform for the discovery of antivirals
Term: (01/10/2010 – 31/09/2013)
Amount/year: $239,868 (my share)

- Gilead Sciences Inc. - Operating Grant
  Term: (5/2013 – 10/2014)

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**Piccirillo, Ciriaco**

- GSK Service Contract – Validation of therapeutic adjuvants for breast cancer vaccination
- Ebiosciences – Monoclonal development towards novel T cell proteins (human and mouse)
- BD Biosciences – Monoclonal development towards novel T cell proteins (human and mouse)
Initiatives and Innovations related to Teaching Programs

A. Graduate Program

In 2013, the revised MSc and PhD programs have been implemented with great success. To improve efficiency, the graduate program committee streamlined the operation of the program by designating a member of the committee as coordinator for each program requirements. In addition, to ensure that students have all the information they need to have a successful graduate experience in the department, the Graduate Program Committee produced detailed handbooks for the new programs, which include recommended program timelines to promote on time graduation.

The departmental website for graduate studies has been completely redesigned throughout 2013. The main highlights of the new graduate studies website include:

- A new section dedicated to prospective students
• A more comprehensive section on financial support policy and possibilities
• A new section dedicated to supervisors that provides useful information on program requirements, guidelines for members of various committees and links to help improving supervisory practices.
• A Useful Links section including links to the new GPS website and to Skillsets

The Graduate Program joined a pilot project sponsored by Graduate and Post-Doctoral Studies and the Faculty of Medicine to implement an electronic tracking system for graduate students.

B. Undergraduate Program

Undergraduate teaching is one of the primary missions of our Department. Over the past few years, we have engaged in a process of examining and improving our undergraduate curriculum. This process started with teaching retreats in 2010 and 2013, and continued with renewed intensity in the past year by focusing on the courses that make up the immunology ribbon of our undergraduate curriculum.

Leadership

The former (Dr. James Coulton) and current (Dr. Ciro Piccirillo) Chairs of the Undergraduate Committee, as well as members of the committee, have overseen this process. The Department, in conjunction with Teaching and Learning Services (TLS), hired Dr. Claire Trottier as an Education Specialist to facilitate changes to the undergraduate curriculum. Dr. Mariela Tovar (TLS) has also played a key role in facilitating this work. Graduate student Patricia Minor (TLS) provided logistical support.

Our Department’s immunology courses underwent major changes during the 2013-2014 academic year. The course coordinators and lecturers for these classes provided exemplary leadership and contributed tremendous time and effort to achieve these changes, described below in more detail.

MIMM386: Less “cookbook” and more thinking in new immunology laboratory in Winter semester

Dr. Sylvie Fournier, aided by Dr. Trottier, lead a complete redesign of the immunology component of the U2 level laboratory course. This course has traditionally been given over a full year, and will be officially split into a Fall course (MIMM384) and a Winter course (MIMM385) in the 2014-2015 academic year due to the approval we obtained from the Academic Committee in the Faculty of Science. However, MIMM386 was already delivered as two separate sections this past year.

The redesign was targeted to the immunology component given in the Winter semester. The former version of this course featured outdated experiments and used traditional instructional strategies: didactic lectures and guided “cookbook” labs. This course was redesigned to reflect modern scientific methodologies and evidence-based educational approaches to align our learning outcomes with our teaching strategies and assessments. Students performed cell culture, flow cytometry, ELISA and QPCR. We used a problem-based learning approach to allow students to formulate their own hypothesis, and design and carry out their own experiment using...
the reagents at their disposal. Novel assessments included a lab book assessment, a performance-based assessment, an experimental plan, and a poster presentation.

**MIMM314: Renewed focus on immune mechanisms and trial use of in-class small group activities**

Dr. Ciro Piccirillo coordinates this required U2 course and began a process of renewal of this intermediate immunology course. This intermediate immunology course acts as a bridge between MIMM214 and MIMM314, and now has a renewed focus on key mechanisms in immunology through the exploration of five distinct themes. This includes a theme on human immunology which was absent in the former version of this course, and which fills a growing need for students to learn about human immunology in health and disease. Dr. Piccirillo streamlined the course by reducing the number of lecturers (himself and Drs. Irah King, Sylvie Fournier and Ines Colmegna), each with a specialized focus that build logically on MIMM214 and on one another. This year they began implementing small group activities in the classroom and posting some material for students to review on their own time. This course will continue to undergo changes in the next few years.

**MIMM414: Students develop ability to critically read peer-reviewed articles through use of Active Learning Classroom and novel assessments**

Dr. Jorg Fritz coordinates this U3 course and led a major redesign guided by the overall learning outcomes for the course, which include that students will be able to critically read and analyze peer-reviewed papers in immunology. He and his three co-lecturers (Drs. Connie Krawczyk, Maziar Divangahi and Sylvie Lesage) used the Active Learning Classroom to break students into small groups and engage them in a series of in-class activities designed to build the skills required to read, understand and critically appraise scientific data and published papers. They used novel assessment methods to assess student learning of the specific course learning outcomes.

**MIMM509: Implementation of new assessment rubrics**

Dr. Joyce Rauch coordinates this upper-level seminar course in immunology. This year, she implemented the use of new grading rubrics to streamline the assessment process and provide more regular feedback to the students regarding their performance in the course.

**Looking ahead at the Undergraduate Program**

The changes made to the immunology stream have been substantial, and we will continue to examine and modify this stream over the next few years. We plan to begin a process of reflection on the microorganism stream in the upcoming year.

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**C. Success Stories for Our Trainees**

*Fikregabrial Aberra Kassa*, received the Canadian Society for Immunology (CSI) and the Centre for Host Parasite Interaction (CHPI) travel awards to present his research at the 15th
International Congress of Immunology in Milan, Italy from August 22-27. The awards total is $2,500.

*Natan Bensoussan,* won the Canadian Society of Microbiologists Undergraduate Award. He received an award for $500.

**Dr. Sophie Fougeray,** received “Le Prix pour les jeunes chercheurs” from the Bettencourt-Schueller Foundation to finance the first year of her Post-doctoral studies.

**Dr. Sophie Fougeray,** a Post-doctoral fellow received the “Laureate des prix solennels de la Chancellerie des Universités de Paris pour l’année 2013.

**Maria Gentile,** a MIMM U2 student for being awarded a “Student Summership” from the Canadian Association of Gastroenterology.

**Daisy Ji,** won the Governor General’s silver medal.

**Laura Isobel McCall,** was selected to give a presentation “3 Minutes to Change the World”.

**Panagiotis Mitsopoulos,** received the Seahorse Bioscience Travel Award to present his research at the American Association of Immunologists-Immunology 2013. The award amount is $750.

**Olivier Papapietro,** a Post Doctoral Fellow won “The Best Poster” award at the 2nd Annual Canadian Human and Statistical Genetics Meeting which was held in Esterel, Quebec April 21-24.

**Adam Peres,** received the Neuroinflammation CIHR Strategic Training Program Travel Award to present his work at the American Association of Immunologists-Immunology 2013. The award amount is $2000.

**Mohammed Rabbani** was awarded the Canadian Foundation for Infectious Diseases, CFID Award. The amount of award is $4000.

**Daegan Sit and Joseph Yang,** won 2nd prize at the 9th Annual Undergraduate Research Conference.

**Tom Ying,** won second place in the Ontario Quebec Undergraduate Immunology Conference (OQUIC).

### D. List of Students who received M. Sc. Degrees

<table>
<thead>
<tr>
<th>Student</th>
<th>Thesis Title</th>
<th>Supervisor</th>
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<tbody>
<tr>
<td>Padda, Ranjit</td>
<td>“Impairment of iron homeostasis and lipid metabolism in Hemojuvelin</td>
<td>Dr. Konstantinos Pantopoulos</td>
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knockout (Hjv⁻/⁻) mice in response to high fat diet

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<tr>
<td>Rainone, Anthony</td>
<td>“Neuropathy in a mouse model of CD8+ T cell-mediated CNS demyelination”</td>
<td>Dr. Sylvie Fournier</td>
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<td>Rickard, Jenaya</td>
<td>“Development of FRET-based assays to characterize the HCV NS5a homodimerization and its interaction with RNA”</td>
<td>Dr. Matthias Gotte</td>
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<td>Thomson, Cassandra</td>
<td>“The HIV-1 protein Nef disrupts T cell receptor signalling and thymic function”</td>
<td>Dr. Paul Jolicoeur; Dr. Ciriaco Piccirillo</td>
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<td>McCallum, Matthew</td>
<td>“Mutational bias and emergence of drug resistance in the human immunodeficiency virus type 1”</td>
<td>Dr. Mark Wainberg</td>
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<tr>
<td>Paradis, Maude</td>
<td>“Regulation of B cell responses by Nod1-mediated peptidoglycan recognition”</td>
<td>Dr. Jörg Fritz</td>
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E. List of Students who received Ph. D. Degrees

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<td>Biondi, Mia</td>
<td>“From the notorious to the novel: Identifying and characterizing mutations in HIV-1 reverse transcriptase and integrase”</td>
<td>Dr. Matthias Gotte; Dr. Michael Reed</td>
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<tr>
<td>McCall, Laura-Isobel</td>
<td>“Parasite and host determinants of visceral leishmaniasis”</td>
<td>Dr. Greg J Matlashewski</td>
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<tr>
<td>Donahue, Daniel</td>
<td>“The role of viral reservoirs in HIV-1 infection”</td>
<td>Dr. Mark Wainberg</td>
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<tr>
<td>Lorgeoux, Rene-Pierre</td>
<td>“Multiple roles of DDX17 in human immunodeficiency virus type 1 replication”</td>
<td>Dr. Chen Liang</td>
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<td>Samuel, Sara</td>
<td>“Vesicular stomatitis virus and BCL-2 inhibitor combination therapy for the treatment of chronic lymphocytic leukemia”</td>
<td>Dr. John Hiscott; Dr. Rongtuan Lin</td>
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</table>
Thanabalasuriar, Ajitha | “Functional characterization of the bacterial virulence factor NleA” | Dr. Samantha Gruenheid

Dallaire LeBlanc, Philippe | “Novel functions of the inflammatory caspases” | Dr. Maya Saleh

Daniels, Sylvanne | “TRBP as a target for HIV-1 mediated suppression of RNA interference” | Dr. Anne Gatignol

Gigoux, Mathieu | “The role of inducible costimulator-mediated phosphoinositide 3-kinase activation in the differentiation and function of follicular helper T cells” | Dr. Woong-Kyung Suh

Thomassin, Jenny-Lee | “Antimicrobial peptide resistance mechanisms used by Enteropathogenic and Enterohemorrhagic «Escherichia coli»” | Dr. Samantha Gruenheid; Dr. Herve Le-Moual

F. Data on Departmental Activities

See Appendixes: Tables 1 to 4

G. List of Seminar Guest Speakers in the Infection and Immunity Seminar Series from January to December 2013

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<tr>
<td>January 10, 2013</td>
<td>Dr. Sebastien Faucher&lt;br&gt;Department of Natural Resource Sciences, Faculty of Agricultural and Environmental Sciences, McGill University, Macdonald Campus</td>
<td>“Genetic determinants of the survival of Legionella pneumophila in water”</td>
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<tr>
<td>January 24, 2013</td>
<td>Dr. Subburaj Ilangumaran&lt;br&gt;University of Sherbrooke</td>
<td>“Priming of CD8+ T lymphocytes by inflammatory cytokines: Implications for Autoimmunity and Tumor immunotherapy”</td>
</tr>
<tr>
<td>February 7, 2013</td>
<td>Dr. Nathalie Arbour&lt;br&gt;Université de Montréal, Research Center (CHUM)</td>
<td>“Dialogue between T Cells and brain cells in the context of multiple sclerosis”</td>
</tr>
<tr>
<td>Date</td>
<td>Speaker</td>
<td>Institution</td>
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<tr>
<td>February 21, 2013</td>
<td><strong>Dr. Bana Jabri</strong></td>
<td>Department of Medicine and Pediatrics, University of Chicago</td>
</tr>
<tr>
<td>March 7, 2013</td>
<td><strong>Dr. Gauchat Jean-Francois</strong></td>
<td>Université de Montréal</td>
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<tr>
<td>March 21, 2013</td>
<td><strong>Dr. Sam Miller</strong></td>
<td>University of Washington</td>
</tr>
<tr>
<td>April 11, 2013</td>
<td><strong>Dr. Maria Ciofani</strong></td>
<td>University of New York</td>
</tr>
<tr>
<td>April 18, 2013</td>
<td><strong>Dr. Thomas Schlich</strong></td>
<td>McGill University</td>
</tr>
<tr>
<td>May 2, 2013</td>
<td><strong>Dr. Hartmut Wekerle</strong></td>
<td>Max Planck Institute of Neurobiology, Martinsried</td>
</tr>
<tr>
<td>September 5, 2013</td>
<td><strong>Dr. Samantha Gruenheid</strong></td>
<td>Department of Microbiology and Immunology, McGill University</td>
</tr>
<tr>
<td>September 19, 2013</td>
<td><strong>Dr. Marie-Laure Santiago-Raber</strong></td>
<td>Medical School of Geneva, University of Geneva</td>
</tr>
<tr>
<td>September 27, 2013</td>
<td><strong>Dr. Francois Campbell-Valois</strong></td>
<td>Institut Pasteur, Pathogénie Microbiennne Moléculaire</td>
</tr>
<tr>
<td>October 3, 2013</td>
<td><strong>Dr. Greg Matlashewski</strong></td>
<td>Department of Microbiology and Immunology, McGill University</td>
</tr>
<tr>
<td>October 17, 2013</td>
<td><strong>Dr. Tyler Reddy</strong></td>
<td>Oxford University</td>
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<tr>
<td>October 24, 2013</td>
<td><strong>Dr. Marc Ouellette</strong></td>
<td>Canadian Institutes of Health</td>
</tr>
<tr>
<td>Date</td>
<td>Speaker</td>
<td>Institution</td>
</tr>
<tr>
<td>--------------------</td>
<td>----------------------------</td>
<td>-------------------------------------------</td>
</tr>
<tr>
<td>November 7, 2013</td>
<td><strong>Dr. Albert Descoteaux</strong></td>
<td>Research Institute of Infection and Immunity</td>
</tr>
<tr>
<td>November 21, 2013</td>
<td><strong>Dr. Juliana Yeung</strong></td>
<td>Simon Fraser University</td>
</tr>
<tr>
<td>December 5, 2013</td>
<td><strong>Dr. Nicole Baumgarth</strong></td>
<td>Center for Comparative Medicine, University of California</td>
</tr>
<tr>
<td>December 19, 2013</td>
<td><strong>Dr. Ciriaco Piccirillo</strong></td>
<td>Department of Microbiology and Immunology, McGill University</td>
</tr>
</tbody>
</table>
Section IV

Academic & Community Service
Successful fundraising
Through a coordinated effort with the Faculty of Science, the Department of Microbiology and Immunology was able to outreach our alumni and friends through a broad array of activities. These resulted in the following three fundraising successes:

a) Wares Family Fellowship: a $50,000 donation over the next 5 years has been allocated to a PDF working with a MDTC member. This $10,000/year fellowship helps to reduce the supervisor’s financial load and is granted according to merit of the applicant and research project. Our first recipient will be awarded the Fellowship as of June 1, 2014;

b) The Ralph Steinman Science Undergraduate Research Award: thanks to the tireless efforts of Mr. Seymour Steinman and Dr. Joaquin Madrenas, the Ralph Steinman SURA was finalized in spring 2013 and provided an endowment of just over $170,000 to the unit. The SURA offers 2 undergraduate students a summer research studentship in the laboratory of a Departmental member;

c) Muriel Radcliffe (Lennard) bequeath: in December 2013, a generous contribution was bequeathed by Ms. Muriel Radcliffe (nee Lennard). This gift has been allocated towards various initiatives, including a plan to provide some seed funding to new projects developed by MDTC members. The money has also gone to the establishment of a new boardroom within the departmental offices to address meeting room need for academic meetings for graduates, lab meetings, etc.

Grade 3 students’ visit to MIMM
On April 19 at noon we welcomed 30 students from F.A.C.E. school. The visit started off with a historical overview tour of the building followed by an interesting talk about “Microbes and Human Health” given by Dr. J. Madrenas. The Kids had the opportunity to take part in child-oriented lab activities. This visit is part of an initiative aimed at reaching out to our community and getting young people interested and excited about science. Special thanks to all the volunteers who facilitated this visit: T. Abay, R. Arthur, M. Babiak, I. Ghobri, A. Rainone, A. Zamani & S. Zhang.

Outreach Visit to ECS School, April 29
Since 2005, part of the Annual activities of the International Day of Immunology is an “Outreach Visit to Miss Edgar’s & Miss Cramp’s School, ECS. Alborz Borjian, an M.Sc. student in Immunology and Cynthia Kanagaratham, a Ph.D. student in Human Genetics went to talk to grade 9 students at ECS about allergic reactions, and about immunology. Through a PowerPoint presentation and an open discussion, McGill graduate students were able to explain some myths about different types of allergies and the human immune system, as well as what it means to be a graduate student in the field of Immunology and Microbiology.

Selected Community Involvement

<table>
<thead>
<tr>
<th>Briedis, Dalius</th>
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<tbody>
<tr>
<td>• Reviewer for Journal of Infectious Diseases</td>
</tr>
<tr>
<td>• Reviewer for Clinical Infectious Diseases</td>
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</tbody>
</table>
Coulton, James

- International Union of Crystallography IUCr 2014 meeting, Montreal, August 2014: active member of Local Organizing Committee
- NSERC CREATE, Université de Montréal: executive member
- McGill representative to Canadian Society of Microbiologists, January-June 2013
- Biochemical Society (UK): International ambassador
- Deutscher Akademischer Austauschdienst, Canadian liaison
- Alexander von Humboldt Foundation, Bonn: executive member, Canadian Association

Cousineau, Benoit

- NSERC grant reviewer
- FRQS Salary Award Committee Member (Chercheur/Boursier Junior I, Fondamental et Clinicien)

Fournier, Sylvie

- Reviewer for NSERC; MS Society of Canada
- Member of Quebec-Ottawa Regional Research and Training Centre of the endMS Research and Training Network

Fritz, Jorg

- Reviewer of Journals: Cell Host and Microbes, Infection & Immunity, Molecular & Cell Biology, American of Respiratory and Critical Care Medicine, PLoS One, Vaccine
- Editorial Board- Academic Editor - PLoS One
- CIHR Committee Reviewer – HDK

Götte, Matthias

- Editorial board member: Journal of Biological Chemistry, Antimicrobial Agents and Chemotherapy
- NIH Study Section on AIDS Discovery and Development of Therapeutics
- FRSQ – Career Award Junior 1
- Reviewer NIH, Laboratory of Molecular Pharmacology

Gruenheid, Samantha

- Review editor, Frontiers in Cellular and Infection Microbiology, May 2010-present
- External member, hiring committee for academic position in Host-Pathogen Interactions. Institute Armand Frappier 2013-14
- Session co-chair Canadian Society of Microbiologists Annual Meeting 2013 Infection and Immunity Session

King, Irah
• Reviewer for France-Canada Research Fund (FCRF) competition
• Chair of the ACTRIMS/CHIN supported FOCIS member society symposium on neuroimmunology, June 27, 2013, FOCIS meeting, Boston, USA.

Krawczyk, Connie
• Organizer: MIMM Career Day, FlowRNA (Ebiosciences) October 17, 2013

Le Moual, Herve
• Saskatchewan Health Research Foundation, 1 grant application, June 2013.
• Member of the NSERC 1501 Research Tools and Instruments evaluation committee.
• Member of the FRQNT Microbiology evaluation committee # 29.
• Membre des comités d’évaluation de trois professeurs, Centre INRS-Institut Armand-Frappier, 19 Mars 2013.

Madrenas, Joaquin
• Executive Director, Canadian CIHR Human Immunology Network
• Director, Microbiome and Disease Tolerance Centre
• Member, Medical Review Panel of the Canada Gairdner Foundation Awards
• Member, Board of Directors of ImmunoMontreal
• Member, Alberta Innovates – Health Collaborative Research and Innovation Opportunities Review Panel.
• Member, External Review Committee for the Department of Microbiology and Immunology, University of British Columbia
• Co-organizer, CIHR Human Immunology Network-Canadian Society of Immunology Symposium on Lung Immunology, Whistler, BC, April 7, 2013.
• Leader and co-organizer of the National Café Scientifique Sessions on 2013 International Immunology Day (April 29, 2013) (sessions in Halifax, Montreal, Toronto, Hamilton, London ON, Winnipeg, Calgary, Edmonton, Vancouver, organized by local nodes).
• Chair, Pathogens and Host Defense Block Symposium, Annual Meeting of the American Association of Immunologists, Honolulu, HA, May 7, 2013.

Marczynski, Greg
• Tenure package reviewer for the Université de Lausanne (UNIL), Lausanne, Switzerland (external).

Matlashewski, Greg
• Advisory panel member; Research priorities for the elimination of visceral leishmaniasis. World Health Organization, Freiburg, Germany, Sept. 24, 2013
• CIHR Panel Member: Microbiology and Infectious Diseases panel.

Murgita, Robert

• Member of the editorial board of the following journals: Journal of Immunology and Clinical research, Journal of Microbiological Methods, Journal of Autoimmunity and Cell Responses, Journal of Immunology and Clinical Research

Olivier, Martin

• Conference Organization: Member of the Selection Committee for the WorldLeish 5 meeting in Brazil and symposium organization (2011-2013)
• Member of the local organizing committee (LOC), The Neutrophil in Immunity, Montréal, Canada. (September 2012 - June 2014)
• Session Chair: Chairman of Experimental Immunology Symposium, WorldLeish 5, Porto de Galinhas, Pernambuco, Brazil. (May 2013)
• Chairman of the Immunology Symposium, ASP/CHPI Annual meeting, Quebec City, Canada (June 2013)
• Chairman of Workshop on “Immunity to Bacterial Infection (excluding mycobacteria)”
• 15th International Congress of Immunology, Milan, Italia. (August 2013)
• Radio Interview: 98.5 FM Radio, Interview in regard to the new vaccine using Plasmodium sporozoite (August 2013)
• Guest Section Editor, PLoS Pathogens (2013)

Piccirillo, Ciriaco

• JDRF Center review panel
• NIAID Special Emphasis Panel: Investigator Initiated Program Project Applications (P01)
• NIAID Autoimmunity Centres of Excellence (ZAI1 PA-I (J1)
• Fondazione Cariplo (Milan, Italy)
• Broad Foundation
• Canadian Diabetes Association
• Organization of Café Scientifique (CHIN/Immuino-Mtl co-sponsored)
• Academic Editor, PLoS ONE
• Editorial Board, World Journal of Diabetes, Frontiers in Immunology, International Trends in Immunology, American Journal of Clinical and Experimental immunology
• Elected Chair (2013-2015): Community of Practice for FOCIS
• Establishment of the Teaching Research Excellence to Girls (TREG) Program at Sacred Heart High School, destined to raise awareness of high-achieving girls to the importance biomedical research in society.
• Keynote Speaker at 2013 Golf Tournament to fundraise for T1D Research.

Sheppard, Don

• Member, CIHR Microbiology and Infectious Diseases Panel (2days)
• Member, FRSQ Junior II Chercheur Boursier, Chercheur Clinicien Panel (2days)
• Guest Editor, PLoS Pathogens
• Editorial Board, Fungal Genetics and Biology
• Chair, Awards Committee, Association of Medical Microbiology and Infectious Diseases of Canada (10h)
• Scientific Committee, 6th Advances Against Aspergillosis Conference, (4h)
• ESCMID Clinical Practice Guidelines for Management of Invasive Aspergillosis Workgroup (2 days)
• ESCMID Advisory Workgroup for the management of drug resistant Aspergillus infections (2 days)

Wainberg, Mark
• Co-Editor-in-Chief Retrovirology
• Co-Editor-in-Chief Journal of the International Aids Society
• Executive committee member International Union of Microbiology Societies, Montreal, 2014
• Executive committee member International Conference on HIV/AIDS Pathogenesis Vancouver 2015
• Director, McGill Univ. AIDS Centre
Section V
Consulting Activities
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<tr>
<td>Dr. Ciriaco Piccirillo</td>
<td>ProScan, Alcimed, Deveau et associés, Cariplo Fnd, Broad Foundation</td>
<td>CIHR, NIH, Austrian Science Foundation, Agence Nationale de la Recherche de France</td>
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<tr>
<td>Dr. Joaquin Madrenas</td>
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<td>Alberta Innovates – Health Collaborative Research and Innovation Opportunities Review Pannel. Board of Directors of ImmunoMontreal</td>
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<td>Dr. Donald Sheppard</td>
<td>Merck Global, Pfizer Canada, GSK Europe, Astellas Canada</td>
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APPENDIXES
### TABLE 1. UNDERGRADUATE STUDENTS GRADUATIONS WINTER 2013, SPRING 2013, FALL 2013

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### TABLE 2.  TOTAL GRADUATE DEGREES GRANTED OVER THE PAST 4 YEARS

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<td><strong>2007-08</strong></td>
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## Table 4. Funding of Graduate Students by Source

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<th>Source</th>
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<td><strong>A. Departmental Awards</strong></td>
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