



**CIHR International Infectious Disease &  
Global Health Training Program**  
Canada • Colombia • India • Kenya



**UNIVERSITY  
OF MANITOBA**

**Canadian Institutes of  
Health Research**

**International  
Infectious Disease  
& Global Health  
Training Program**

**ANNUAL REPORT •  
2014**



# 2014 At a Glance

- ABOUT US ..... 1
- OBJECTIVES ..... 1
- TRAINEE SPOTLIGHT..... 2
- LIST OF TRAINEES AND PROJECTS ..... 4
- 2014 TRAINING PROGRAM GRADUATES ..... 7
- ACADEMIC PROGRAM ..... 8
- INFECTIOUS MINDS SCIENTIFIC DISCUSSIONS ..... 9
- PRACTICA: 2014 REPORT..... 11
- PROGRAM ADVISORY COMMITTEE ..... 11
- PLANS FOR 2015..... 11
- FUNDING & ACADEMIC PARTNERS..... 12



The IID&GH Training Program in Bangalore, India for the Major Course, “Application of the Principles and Approaches of Program Science in a Developing Country Setting” September 1-12, 2014

## ABOUT US

The International Infectious Disease and Global Health (IID&GH) Training Program is hosted by the University of Manitoba under the direction of Dr. Keith Fowke, Professor and Head of the Department of Medical Microbiology.

The IID&GH Training Program seeks to enhance existing PhD and Post-Doctoral Fellow research training programs by linking trainees from four international research sites (Canada, India, Kenya and Colombia). This linkage provides an opportunity for the trainees to explore international infectious disease and global health issues from a multidisciplinary approach.



Dr. Keith Fowke, Director of the International Infectious Disease and Global Health Training Program

## OBJECTIVES

1. To equip trainees with the research, scientific knowledge and skills to become **outstanding researchers** in infectious diseases and global health.
2. To create a novel and stimulating **multidisciplinary** and **truly international** research training environment that fosters creativity, opportunity, and innovation, and one that demands excellence.
3. To harness the unique opportunity offered by the **critical mass** of infectious diseases and global health infrastructure, research opportunities and outstanding scientists in the training of the next generation of infectious disease researchers.
4. To make available **collaborative international research sites** for the trainee's primary research projects, sites for research practica and major course offerings.
5. To offer a **shared learning environment**, where trainees and mentors from all four of CIHR's research pillars and the four international training sites work cooperatively to explore issues of international infectious diseases and global health.

## TRAINEE SPOTLIGHT

**Dione Benjumea** is a PhD trainee in the IID&GH Training Program who was born and raised in Medellin, Colombia. Dione is working towards a PhD in Public Health at the Universidad de Antioquia where she completed Medical School. She chose to do her PhD in Public Health because she wanted to expand her knowledge about health in populations. Dione joined the Training Program in 2013 when she heard about the amazing experiences a former trainee had while being in the Training Program.

“The IID&GH Training Program is amazing and it complements my Doctorate very well. Although I have only been in the program for a year, I have learned many things, not just academic, but also about culture from other countries where I have made great friends. With a multidisciplinary approach, this program has taught me to better integrate all the skills I have acquired as a clinician (some basic science, epidemiology and public health). The IID&GH Training Program has been a dream come true to me.” Dione has received a scholarship from Colciencias, the government agency for research in Colombia. Way to go Dione!



Dione Benjumea



Emily Nyariki

**Emily Nyariki** is a social science PhD student at the University of Nairobi. Her research project focuses on “Volunteers Perceptions and Experiences of Clinical Research Participation: case study of KAVI-ICR Volunteers, Kenya” and has received an award from IDRC, Global Health Research Initiative through KAVI-ICR, University of Nairobi. Emily enjoys all aspects of the Training Program, but what she particularly likes are the international courses. She said “the training approach, course content, modes of instruction, session leader’s level of expertise, and the platform that the courses offer are excellent. Coming from an institution, where PhD studies are by research, joining the IID&GH Training Program has given me an opportunity to gain knowledge and various approaches to understanding and

tackling global health issues which I could not have achieved on my own.”

Emily said that by being in the Training Program she is now able to greatly appreciate the synergy that social science and other fields of science bring on board in understanding and addressing global health issues; and that she can easily find her niche in career progression. “A career in health research requires knowledge and skills in grant writing and communicating research through publications; for this knowledge I am indebted to the Training Program” said Emily.

**Elnaz Shadabi**, a PhD student at the University of Manitoba, always had an interest in science and in scientific learning. She joined the Training Program in 2012 and to date has attended three major courses. Elnaz said the courses were “truly an excellent opportunity to learn about the cultural and social factors affecting the health of populations. They are extremely valuable in preparing future scientists, policy decision makers, medical professionals and teachers to learn about the aspects of global health.”



Elnaz Shadabi

Besides the major courses, Elnaz said that “the monthly Infectious Minds sessions really help the trainees develop a kind of versatility in learning about infectious diseases that is difficult to gain from simply and only completing their graduate studies courses. In addition to scientific discovery, knowledge in other fields such as epidemiology, public health, clinical research and social sciences are crucial for implementing new strategies that affect the health of individuals and communities around the world. “I am so grateful for the opportunity to be able to have a network of eager and enthusiastic colleagues from other training sites; the Training Program is excellent in helping trainees form research collaborations with others! I believe that the IID&GH Training Program will prepare me as a trainee to become acquainted with each of these fields. This will prepare me for my future goals to work as a biomedical researcher/medical professional.”

# LIST OF TRAINEES AND PROJECTS

## PhD Trainees (\* newly enrolled trainees)



Trainees Md Niaz Rahim, Elnaz Shadabi and Genevieve Boily-Larouche in India for the 2014 IID&GH Training Program's major course

**Wbeimar Aguilar** Association of variants in vitamin D pathway and innate immune response genes with natural resistance to HIV-1 infection

\* **Dione Benjumea** Assessment of the effectiveness and adherence to treatment for latent tuberculosis infection in children under 5 years of age, household contacts of pulmonary tuberculosis patients in Medellín

**Nadia Musimbi Chanzu** Secretor status, FUT2 polymorphisms and the risk of infectious by HIV and HPV in female sex workers in Kenya

\* **Claudyne Chevrier** Sexual and reproductive health of female sex workers in Winnipeg: an ethnographic exploration of their needs and choices

**Dhanunjaya Chintada** Interrelation between stigma, discrimination and impact on utilization of care and support services - A study among HIV seropositive Men having Sex with Men and Transgender (MSM-T) in Karnataka

**Suresh S. Chitrapu** A study on violence among women living with HIV/AIDS in Karnataka

\* **Vanessa Cienfuegos** Molecular epidemiology, clinical and economic outcomes of carbapenem-resistant *Klebsiella pneumoniae*, *Enterobacter cloacae*, *Pseudomonas aeruginosa* and *Acinetobacter baumannii* infections in five tertiary care hospitals in Medellín, Colombia

**Elizabeth J. Cooper** Culturally relevant HIV/AIDS prevention programming within Canadian Aboriginal context



Vanessa Cienfuegos, Dione Benjumea, Wbeimar Aguilar and Juan Carlos Quintero in New Delhi, India



Wbeimar Aguilar, Md Niaz Rahim, Emily Nyariki, and Elnaz Shadabi during the India major course

# TRAINEES AND PROJECTS, continued

## PhD Trainees

**Kallesh Danappa Jayappa** The molecular mechanism of HIV-1 nuclear import: the role of HIV-1 integrase in targeting host nuclear import machinery and delivering viral cDNA into nucleus

**Elsabe du Plessis** HIV vaccine acceptability among vulnerable populations in Kenya

**Sumit Dutta** Following the divine in a time of AIDS: Jogappas confront the HIV epidemic in Karnataka

**Jesse Gitaka** Surveillance for artemether-lumefantrine clinical response, lumefantrine in vitro sensitivity and molecular markers of tolerance in currently circulating Plasmodium falciparum isolates in Kenya

**Deepesh Gupta** Unintended pregnancies and risk of unsafe abortion: Men's perspective & involve ment – A study among married males of Uttar Pradesh

**Melissa Herman** Heterogeneity in progression to AIDS: The role of antigen specific CD8<sup>+</sup>T cells

**Sajid Mahmood** Examining NK – DC crosstalk in NK differentiation and functional properties of NK cells

\* **Leigh McClarty** Understanding healthcare priorities of young women involved in sex work in Zaporizhzhya, Ukraine: Implications for preventive HIV programming

**Frank Ndakala** Molecular genetic analysis of antiretroviral therapy related adverse drug events (ADEs) in Kenya

\* **Emily Nyariki** Volunteers' perceptions and experiences of clinical research participation in Kenya: Case study of KAVI volunteers



Trainees at the Agra Fort, Agra, Uttar Pradesh, India



Trainees relaxing after a long day



Wbeimar Aguilar, Md Niaz Rahim, Elnaz Shadabi, and Emily Nyariki waiting to board the train to one of the field visit sites



The trainees enjoying some down time during the 2014 India Course



## TRAINEES AND PROJECTS, continued

### PhD Trainees

\* **Missiani Ochwoto** Molecular characterization of acute and chronic Hepatitis B Virus among patients attending selected hospitals in Kenya

**Ifeoma Okwor** Regulation of secondary anti-Leishmania immunity

\* **Juan Carlos Quintero** Study of the social determinants that influence infection by Rickettsia in the Uraba region, Colombia

\* **Md Niaz Rahim** Identification of host cellular factors and mechanisms that interact with Influenza A NS1 protein for replication

**Satyanarayana** Migration, mobility and HIV/AIDS: a comparative study of urban and rural female sex workers in Northern, Karnataka, India

**Elnaz Shadabi** Identification and characterization of immunologically relevant T cell epitopes of HIV-1 Nef

**Natalia Taborda** Evaluation of genetic and immunological mechanisms involved in resistance to HIV-1 exhibited by chronically infected individuals who control viral replication without antiretrovirals

**Laura Thompson** HIV epidemic diversity among high risk populations in Pakistan

### Post-Doctoral Fellow Trainees

**Genevieve Boily-Larouche** Longitudinal analysis of immune quiescence and the impact of sex work in HIV Exposed Seronegative (HESN) sex workers from Nairobi, Kenya

**Jayanna Krishnamurthy** Integrating HIV into general health systems; opportunities and challenges in an Indian context



Trainees attending the 2013 Ecology of Infectious Disease Course in Winnipeg, Canada



Trainees in Hampi during the India Course



Trainees in Bangalore, India during the 2014 major course

# 2014 TRAINING PROGRAM GRADUATES

This year there were 9 trainees who graduated from the IID&GH Training Program. We will miss them all very much and thoroughly enjoyed having them in the Training Program. All the best graduates!

## List of graduating trainees:

### PhD Trainees

Nadia Musimbi Chanzu  
Dhanunjaya Rao Chintada  
Suresha Sanveea Chitrapu  
Kallesh Danappa Jayappa  
Melissa Herman  
Sajid Mahmood  
Ifeoma Okwor  
Natalia Taborda



Melissa Herman,  
PhD trainee from  
Canada



Dhanunjaya Rao Chintada, PhD  
trainee from India

### PDF Trainee

Jayanna Krishnamurthy



Natalia Taborda, PhD trainee from  
Colombia



Nadia Chanzu (Kenya site) and  
Ifeoma Okwor (MB-site), PhD  
trainees



Jayanna Krishnamurthy,  
PDF trainee from India



Suresha Sanveeva Chitrapu, PhD  
trainee from India



Kallesh Danappa Jayappa and Sajid  
Mahmood, PhD trainees from Canada

## ACADEMIC PROGRAM

INDIA COURSE 2014

### Application of Program Science Approach in a Developing Country Setting

By Dione Benjumea



Trainees at the Virupaksha Temple in Hampi, Karnataka

As part of the core activities of the International Infectious Diseases and Global Health Training Program we participated in the major course Application of Program Science Approach in a Developing Country Setting. This course was held at the Karnataka Health Promotion Trust (KHPT) in Bangalore, India from September 1-12, 2014.

On the first day, the trainees had the opportunity to share their research projects during the Scientific Symposium where they received valuable feedback from the audience.



Md Niaz Rahim, Missiani Ochwoto and Emily Nyariki during one of the site visits for the India course

The following day the major course began and the first 3 days we learned about the theoretical principles of Program Science Approach. These principles were taught by excellent lectures who showed us how to bring research closer to and incorporate it into public health actions. Upon completion of the theory section we visited different rural areas of India (Bagalkot, Davangere and Koppal) in order to gain hands on experience in the field. The trainees were divided into groups and each group was assigned a topic. The topic you were assigned determined which site you visited. The topics included: HIV; Tuberculosis; and Maternal, Neonatal and Child Health (MNCH).



Front: Dione Benjumea, Md Niaz Rahim, Back: Genevieve Boily-Larouche and Elnaz Shadabi during one of the site visits for the India

The final assessment for the course was a group presentation by each of the trainee groups on a proposal they designed for the implementation of Program Science Approach in regard to their assigned topic during the field visit. Overall, the field work was very intense, but it yielded a lot of interesting results about everything we had learned during the course. Besides the academic concepts learned during the course, there were other important things gained from the experience. The cultural interchange between the participants from different parts of the world was also very exciting. As well, being able to learn about the traditional and ancestral culture of India with its endless great wonders to share and discover, made this course overall an amazing experience!

# INFECTIOUS MINDS SCIENTIFIC DISCUSSIONS

The purchase of video conference equipment for each international site has enabled important scientific discussions to take place in real time and has allowed the smaller sites the benefit of “critical mass.” These sessions are called Infectious Minds and over the years numerous sessions have taken place allowing trainees and mentors from all four of CIHR’s research pillars and the four international training sites to work cooperatively to explore issues of international infectious diseases and global health.

Each month, a topic is selected and hosted by a team of trainees from different pillars and training sites. The trainees invite a guest speaker who is an expert in the field to present on the chosen topic and to participate in the group discussion. The Infectious Minds meetings are coordinated by Dr. Javier Mignone, a mentor of the training program and former trainee. Below is a list of topics covered in 2014.

## 2014 Infectious Minds Meetings

### January 16

Guest Speaker: Ms. Margaret Ormond  
Presenters: Ifeoma Okwor, Elizabeth Cooper,  
Elsabe du Plessis  
Topic: Illegal Drugs and Legal Highs

### February 13

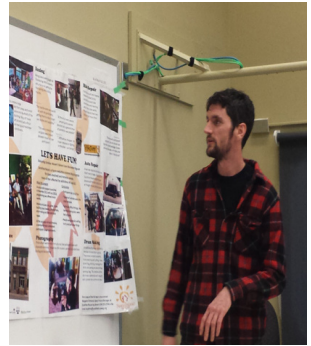
Presenters: Melissa Herman, Julie Ambia,  
Dhanunjaya Rao Chintada  
Topic: Current Strategies for HIV Prevention and Cure

### March 13

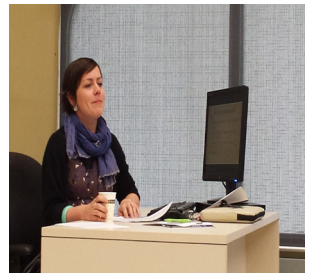
Guest Speaker: Dr. Pamela Orr  
Presenters: Kallesh Danappa Jayappa, Wbeimar Aguilar,  
Emily Nyariki  
Topic: Drug Resistant TB



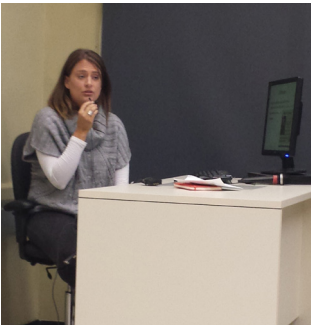
Margaret Ormond, guest speaker for the January Infectious Minds Session: Illegal Drugs and Legal Highs



JD Ormond; Program Coordinator of the Sunshine House Solvent Users' Recreation Program, presenting during the January 2014 session



Trainee Claudyne Chevrier presenting during the April 2014 Infectious Minds session



Trainee Elsabe du Plessis hosting the January Infectious Minds Session from the Winnipeg site

### **April 10**

Guest Speaker: Kelsi Krittmaa  
Presenters: Genevieve Boily-Larouche, Claudyne Chevrier, Deepesh Gupta  
Topic: Refugees and Undocumented Migrants and Sexually Transmitted Infections

### **May 15**

Guest Speaker: Gordon Otieno Odundo  
Presenters: Nadia Chanzu, Satyanarayana, Md Niaz Rahim  
Topic: Infectious Diseases in Children

### **June 19**

Guest Speaker: Dr. Joyce Slater  
Presenters: Leigh McClarty, Frank Ndakala, Natalia Tabora  
Topic: Food Security



Winnipeg trainees, mentors and guest lecturers during an Infectious Minds session

### **September 25**

Guest Speaker: Dr. Heidi Wood  
Presenters: Elnaz Shadabi, Suresh Sanjeeva, Vanessa Cienfuegos  
Topic: Ebola

### **October 16**

Guest Speaker: Victor Ofulla  
Presenters: Laura Thompson, Sumit Dutta, Missiani Ochwoto  
Topic: Ebola (Genomics/Ethics/Consequences of the epidemics and the international responses to Ebola)

### **November 20**

Guest Speaker: Dr. Michael Drebot  
Presenters: Jesse Gitaka and Dione Benjumea  
Topic: Chikungunya Virus

### **December 4**

Presenters: Jayanna Krishnamurthy and Juan Quintero  
Topic: Emerging Infectious Diseases



A split screen view of the four sites during the April Infectious Minds meeting

## PRACTICA: 2014 REPORT

The intention of the practicum portion of the Training Program, coordinated by Dr. John Wylie, is to expose trainees to a completely different type of research experience apart from their main research area and to foster interdisciplinary research. The practica are intended to last from four to twelve weeks and to be tailored to the specific goals, objectives and time lines of each trainee. The Program encourages every trainee to seek out a research practica site in order to reach their practicum goal. Following completion of the practicum, the trainee will write a report and complete an evaluation form to provide feedback to the Training Program on their completed practicum experience.

## PROGRAM ADVISORY COMMITTEE

The IID&GH Training Program's Program Advisory Committee (PAC) is composed of key stakeholders such as government, industry, community members, non-profit sector, academia, international partners and trainees. The committee was struck in March 2010 with Dr. Gary Glavin, UM Associate Vice-President (Research) serving as the PAC Chair. The responsibilities of the PAC are to advise the Principal Investigator (Dr. Fowke), the Core Committee (Drs. Wylie, Mignone, and Moses) and the Program Coordinator (Mrs. Natasha Hollett) of the program; provide recommendations; and give feedback with regard to the program goals, vision and responsibility. Since 2009, there have been four PAC meetings with most recent one held on January 13, 2014. The next PAC meeting is scheduled for October 20, 2015.

## PLANS FOR 2015

In May 2015, the IID&GH Training Program will meet in Winnipeg, Canada for its seventh major course: Ecology of Infectious Diseases, hosted by the Canadian Site leader Dr. Keith Fowke and the Kenyan site leader Dr. Julius Oyugi.



Winnipeg's NHL Hockey Team the Winnipeg Jets at the MTS Centre, Winnipeg, Canada



The Esplanade Riel Bridge over the Red River in Winnipeg, Canada



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## FUNDING & ACADEMIC PARTNERS

### Funding Partners

Canadian Institutes of Health Research (CIHR)  
Province of Manitoba – Innovation, Energy and Mines  
University of Manitoba

- Vice-President Research and International Office
- Faculty of Medicine
- Faculty of Graduate Studies

Canadian HIV Vaccine Initiative - Alliance Coordinating Office  
Manitoba Health Research Council (MHRC)  
National Microbiology Laboratory (NML)  
Natural Sciences and Engineering Research Council (NSERC)  
Kenya AIDS Vaccine Initiative (KAVI)  
Colciencias  
National Collaborating Centre for Infectious Diseases (NCCID)  
Karnataka Health Promotion Trust (KHPT)

### Academic Partners

Universidad de Antioquia  
University of Nairobi  
Centre for Aboriginal Health Research  
University of Manitoba Centre for Global Public Health  
St. John's Medical College  
University of Winnipeg Global College  
Infectious Immunology Research Interest Group



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