



# ISID NEWS

An Official Publication of the International Society for Infectious Diseases

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## ISID NEWS

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## 15th International Congress on Infectious Diseases BANGKOK, THAILAND • JUNE 13~16, 2012



**15th ICID Abstract Deadline  
Extended to February 24th.**

**Link to online submission:  
[https://esociety.netkey.at/isid/  
isid/abstractsubmission/](https://esociety.netkey.at/isid/isid/abstractsubmission/)**

### Letter from the Chair of the Local Organizing Committee of the 15th ICID, Bangkok

On behalf of members of the Local Organizing Committee (LOC) of the 15th International Congress on Infectious Diseases to be held in June 2012 in Bangkok, Thailand, I look forward to welcoming you to Thailand. The Congress will bring together clinicians, scientists, epidemiologist, public health workers, and other health-care personnel from all over the world to get to know one another and share their expertise. The International Program Committee together with the LOC has put together an outstanding scientific program with participation by an international faculty of world leaders in their specific area of infectious diseases.

Thailand is a beautiful country with its culture dating back more than a thousand years. Bangkok, an interesting metropolis is a travel hub to all countries in the Far East. Congress participants will have an opportunity to visit historical and natural sites, appreciate the art and culture, and taste various exotic food of Asia. They will return to their hospital, laboratory, or office ready for another year of curing patients, contributing to sciences, preventing infectious diseases outbreaks, etc.

See you in Bangkok.  
Professor Thira Sirisanthana



## Confirmed Speakers

Updated February 15, 2012

AKIRA Shizuo (JAPAN)  
 ALLEGRANZI Benedetta (SWITZERLAND)  
 ALUMBASI TIMONA Lubomira (KENYA)  
 ANANWORANICH Jintanat (THAILAND)  
 APISARNTHANARAK Anucha (THAILAND)  
 AVIHINGSANON Anchalee (THAILAND)  
 BAKER Stepen (VIETNAM)  
 BARNABAS Ruanne (USA)  
 BELDJEBEL Irad (LEBANON)  
 BENCA Juraj (CAMBODIA)  
 BHATTACHARYA Sujit Kumar (INDIA)  
 BRITO Maximo (USA)  
 CHAIWARITH Romanee (THAILAND)  
 CHARİYALERTSAK Suwat (THAILAND)  
 CHENG Jun (CHINA)  
 CHOTPITAYASUNONNDH Tawee (THAILAND)  
 CHUNG Doo Ryeon (SOUTH KOREA)  
 CLEMENS John (REPUBLIC OF KOREA)  
 COKER Richard (UK)  
 COOPER Ben (THAILAND)  
 CORNAGLIA Giuseppe (ITALY)  
 CROWE Suzanne (AUSTRALIA)  
 DAGAN Ron (ISRAEL)  
 DASH A.P. (INDIA)  
 DONDORP Arjen (THAILAND)  
 FARRAR Jeremy (VIETNAM)  
 GOLENBOCK Douglas (USA)  
 GOTTLIEB Thomas (AUSTRALIA)  
 GOULD Ian (UK)  
 GROSSMAN Ronald (CANADA)  
 GUBLER Duane (SINGAPORE)  
 HAYDEN Frederick (USA)  
 HEMACHUDHA Thiravat (THAILAND)  
 HIEN Tran Tinh (VIETNAM)  
 HSU Li Yang (SINGAPORE)  
 HAFIZ Israt (BANGLADESH)  
 HIRSCHSEL Bernard (SWITZERLAND)  
 HSUEH Po-Ren (TAIWAN)  
 JENNINGS Lance (NEW ZEALAND)  
 JOHN Jacob (INDIA)  
 KAISER Laurent (SWITZERLAND)  
 KATO Masaya (VIETNAM)  
 KLUGMAN Keith (USA/SOUTH AFRICA)  
 KOIRALA Janak (USA)  
 KOMOLMIT Piyawat (THAILAND)  
 KRČMERY Vladimír (SLOVAKIA)  
 LAI Ching Lung (CHINA)  
 LAOTHAMATAS Jiraporn (THAILAND)

## 15th ICID Scientific Program Updated February 15, 2012

### PLENARY SESSIONS

#### Plenary I

#### Treating Hepatitis B in 2012

C.L. Lai (China)

#### Plenary II

#### Finding a Cure for HIV: The Need for Science, Collaboration and Advocacy

S. Lewin (Australia)

#### Plenary III

#### Infection Control

D. Pittet (Switzerland)

#### Plenary IV

#### The Future of Dengue

D. Gubler (Singapore)

#### Plenary V

#### Vaccines for Cholera, Shigellosis and Typhoid

J. Clemens (Republic of Korea)

#### Plenary VI

#### Confronting TB in the Era of HIV

S. Lawn (South Africa)

### SYMPOSIA

#### Acute Febrile Illness in the Tropics

- **Acute Febrile Illness in Africa**  
O. Mediannikov (Senegal)
- **Acute Febrile Illness: Epidemiology vs Clinical Judgment**  
R. Premaratna (Sri Lanka)
- **Laboratory Diagnosis of Acute Febrile Illness: Where are We Now?**  
C.C. Chao (USA)
- **Strategies for Diagnosis and Treatment of Acute Febrile Illness in Asia**  
Y. Suputtamongkol (Thailand)

#### Typhoid Fever

- **Typhoid Epidemiology**  
L. Ochiai (South Korea)
- **Typhoid Diagnostics**  
S. Baker (Vietnam)
- **Typhoid Treatment and MDR Typhoid – TBD**
- **Typhoid Vaccine Landscape**  
A. Pollard (United Kingdom)

#### Hepatitis C: State of the Art

- **Hepatitis C: Asia-Pacific Perspective**  
T. Piratvisuth (Thailand)
- **Treatment of Hepatitis C in 2012**  
J. Koirala (USA)
- **Management of Hepatitis C in HIV-Coinfected Patients**  
J. Rockstroh (Germany)
- **Epidemiology of Hepatitis C Virus—Genotypes 1 Through 6 in Asia and the World**  
Y. Poovorawan (Thailand)

#### Delivering HIV Treatment and Care in Limited Resource Settings

- **Delivering HIV Treatment and Care in Resource Limited Settings—Therapeutic Mobile Units**  
F.X. Mbopi Keou (Cameroon)
- **New Diagnostic Tools for Monitoring Antiretroviral Therapy in Resource Limited Settings**  
S. Crowe (Australia)

#### Delivering HIV Treatment and Care in Limited Resource Settings *continued*

- **Management of Antiretroviral-Therapy Failure in Resource Limited Settings**  
K. Ruxrungtham (Thailand)
- **HIV Drug Resistance Testing in Asia—Is it Time?**  
S. Sungkanuparph (Thailand)

#### Getting to Zero: Antiretrovirals as a Tool for Prevention

- **State of the Science: Antiretroviral Treatment for Prevention**  
B. Hirschel (Switzerland)
- **Treatment 2.0**  
M. Kato (Vietnam)
- **State of the Science: HIV Pre Exposure Prophylaxis (PrEP)**  
S. Charialertsak (Thailand)
- **Implementing PrEP—Are we Ready?**  
J. Ananworanich (Thailand)

#### Update on Hepatitis B

- **Epidemiology and Natural Course of Chronic Viral Hepatitis B in Asia**  
S. Thongsawat (Thailand)
- **Updates on Pathogenesis of Hepatitis B**  
J. Cheng (China)
- **Occult Hepatitis B and Its Clinical Relevance – TBD**
- **Updates on Early Diagnosis and Management of Hepatocellular Carcinoma in HBV**  
P. Komolmit (Thailand)

#### The Challenge of Pediatric Tuberculosis in Low and Middle Income Countries

- **Epidemiology, Clinical Manifestations, and Diagnostic Challenges of Pediatric TB**  
C. Sreeramareddy (Malaysia)

*continued on next page*



## Confirmed Speakers

Updated February 15, 2012

LAU JT (CHINA)  
 LAWN Stephen (SOUTH AFRICA)  
 LEWIN Sharon (AUSTRALIA)  
 LYE David (SINGAPORE)  
 MADOFF Larry (USA)  
 MAZZEI Teresita (ITALY)  
 McCULLERS Jon (USA)  
 MEDIANNIKOV Oleg (SENEGAL)  
 MEHTA Geeta (INDIA)  
 MEMISH Ziad  
 (KINGDOM OF SAUDI ARABIA)  
 MBOPI-KEOU François-Xavier  
 (CAMEROON)  
 MISHRA Saroj (INDIA)  
 MUKHOPADHYAY Chiranjay (INDIA)  
 NORDMANN Patrice (FRANCE)  
 PHANUPHAK Nittaya (THAILAND)  
 PHE Thong (CAMBODIA)  
 PIRATVISUTH Teerha (THAILAND)  
 PITTET Didier (SWITZERLAND)  
 POLLARD Andrew (UK)  
 POOVORAWAN Yong (THAILAND)  
 POWELL Keith (USA)  
 PREMARATNA Ranjan (SRI LANKA)  
 RAHMAN Mahbubur (BANGLADESH)  
 RAHMAN Mahmud (BANGLADESH)  
 REID Gail (USA)  
 RIJAL Suman (NEPAL)  
 ROCK Kenneth (USA)  
 SETO Wing Hong (CHINA)  
 ROCKSTROTH Jürgen (GERMANY)  
 RUXRUNGTHAM Kiat (THAILAND)  
 SANDERS Elisabeth (THE NETHERLANDS)  
 SATAPATHAYAVONGS Boonmee  
 (THAILAND)  
 SMITASIN Nares (SINGAPORE)  
 SREERAMAREDDY Chandrashekar  
 (MALAYSIA)  
 STENDAHL Olle (SWEDEN)  
 SUNGKANUPARPH Somnuek (THAILAND)  
 SUPPARATPINYO Khuanchai (THAILAND)  
 SUPUTTAMONGKOLI Yupin (THAILAND)  
 THISYAKOM Usa (THAILAND)  
 THONGSAWAT Satawat (THAILAND)  
 WENZEL Richard (USA)  
 YANAGIHARA Katsunori (JAPAN)  
 ZHOU Xianong (CHINA)

## 15th ICID Scientific Program *continued*

### The Challenge of Pediatric Tuberculosis in Low and Middle Income Countries *continued*

- **The Impact of Drug Resistance and HIV-infection on the Problem of Pediatric TB**  
T. Phe (Cambodia)
- **Update on Laboratory Diagnosis of Pediatric TB: New and More Rapid Methods**  
C. Mukhopadhyay (India)
- **Programmatic Barriers, Current Treatment and Control Strategies for Pediatric TB**  
M. Rahman (Bangladesh)

### Infectious Diseases in Marginalized Populations

- **Infectious Diseases Among Refugees in Beirut**  
I. Beldjebel (Lebanon)
- **Infectious Diseases in Orphanages in South-East Asia**  
J. Benca (Cambodia)
- **Infectious Diseases in Shelters for the Homeless**  
V. Krcmery (Slovakia)
- **Infectious Diseases of Street Children in Nairobi**  
L. Alumbasi Timona (Kenya)

### Infectious Issues in Transplantation

- **The Pre-Transplant Evaluation**  
N. Smitasin (Singapore)
- **Donor Derived Infections**  
G. Reid (USA)
- **State of the Art: Transplantation in HIV Infected Individuals**  
M. Brito (USA)
- **Common Respiratory Viral Infections**  
L. Kaiser (Switzerland)

### Initiatives for the Control of Infectious Diseases

- **Novel Resources to Fund Health Enterprises and Develop New Drugs**  
F. Waldvogel (Switzerland)
- **Facilitating Clinical Research for Global Health Needs**  
J. Farrar (Vietnam)
- **Infectious Diseases Surveillance and Alert Systems**  
L. Madoff (USA)

### Innate Immunity and Infectious Diseases

- **Innate Immune Recognition and Response to Pathogens**  
S. Akira (Japan)
- **Malaria and Innate Immunity**  
D. Golenbock (USA)
- **Stimulation of Macrophage Innate Immunity to Prevent Human Mycobacterial Disease**  
O. Stendahl (Sweden)
- **Relationship Between the Innate Immune System and the Acquired Immune System: Implications for Vaccine Development**  
K. Rock (USA)

### International Perspectives on Infection Control

- **Global Infection Control: A U.S. Perspective on Health Care Associated Infections**  
R. Wenzel (USA)
- **Infection Control to Curb Resistance in Asia**  
W.H. Seto (China)
- **Implementing Infection Control in Resource Limited Settings**  
G. Mehta (India)
- **Regional Differences Impacting Infection Control Practices**  
B. Allegranzi (Switzerland)

### Update on Influenza

- **Human and Animal Epidemiology of Influenza in Southeast Asia**  
T. Chotpitayasunondh (Thailand)
- **Clinical Features and Pathogenesis of H5N1 Influenza in Humans**  
T.T. Hien (Vietnam)
- **New Developments in Influenza Antivirals and Drug Resistance**  
F. Hayden (USA)
- **Seasonal, Pandemic, and Inter-pandemic Vaccines**  
L. Jennings (New Zealand)

### MRSA: Keeping Up With the Evolving Pathogen

- **Transmission Dynamics of MRSA in Asia**  
B. Cooper (Thailand)
- **Developing Resistance to Drugs against MRSA**  
I. Gould (UK)
- **Resistance to Agents for MRSA Decolonization and its Clinical Implications**  
A. Apisarnthanarak (Thailand)
- **PK/PD Considerations when Treating MRSA**  
T. Mazzei (Italy)

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## 15th ICID Deadlines:

### ABSTRACT DEADLINE EXTENDED!

FEBRUARY 24, 2012

Notification of  
abstract acceptance –  
March 30, 2012

Early Registration  
Deadline – April 16, 2012

For more information on  
15th ICID deadlines visit  
[http://www.isid.org/icid/  
time\\_schedule.shtml](http://www.isid.org/icid/time_schedule.shtml)

## 15th ICID Scientific Program *continued*

### Major Drivers of Change in Global Infectious Diseases Epidemiology

- **Urbanization**  
L. Loutan (Switzerland)
- **Pilgrimages and Mass Migrations**  
Z. Memish (Kingdom of Saudi Arabia)
- **Changing Interfaces with Animals: Emerging Zoonoses**  
R. Coker (UK)

### Major Vaccine Issues

- **Eradicating Polio**  
J. John (India)
- **Is Hepatitis A Vaccination Underutilized?**  
R. Dagan (Israel)
- **Vaccination Programs in Southeast Asia**  
U. Thisyakom (Thailand)
- **Facing Antivaccine Movements: Myths and Facts about Adverse Events**  
K. Powell (USA)

### Carbapenem Resistance

- **Overview of Carbapenemase Mediated Resistance**  
G. Cornaglia (Italy)
- **Detection of Carbapenemase Resistance**  
P. Nordmann (France)
- **The Role of Antimicrobial Stewardship in Curbing Carbapenem**  
D. Lye (Singapore)
- **The Role of Infection Control in Curbing Carbapenem Resistance**  
A. Apisarnthanarak (Thailand)

### NTDs in Asia and Pacific: Progress Towards Elimination and Control

- **Neglected Tropical Diseases Targeted for Elimination in South-East Asia—Progress So Far**  
A.P. Dash (India)
- **Elimination of Lymphatic Filariasis in Bangladesh—Critical Issues**  
I. Hafiz (Bangladesh)
- **NTD Programmes in the Western Pacific Region—Challenges and Opportunities – TBD**
- **Schistosomiasis Control Programme in China: Towards Elimination**  
X. Zhou (China)

### Coinfections in HIV

- **The Role of Coinfections in HIV Epidemic Trajectory and Positive Prevention**  
R. Barnabas (USA)
- **Hepatitis B Coinfection: Implications for Management**  
A. Avihingsanon (Thailand)
- **HPV and HIV Coinfection**  
N. Phanuphak (Thailand)
- **Syphilis and HIV: Problem and Prevention**  
JT. Lau (China)

### Antibiotic Stewardship: Different Challenges in Different Countries

- **Singapore** – L.Y. Hsu (Singapore)
- **Taiwan** – P. Hsueh (Taiwan)
- **Japan** – K. Yanagihara (Japan)
- **South Korea** – D.Y. Chung (South Korea)
- **Thailand** – R. Chaiwarith (Thailand)

### Pneumococcal Mucosal Infections, Interaction with other Organisms and Pneumococcal Vaccines

- **Carriage of *S. pneumoniae* and Related Respiratory Pathogens Post PCV Implementation**  
E. Sanders (The Netherlands)
- **Density of Carriage—Can it Predict Pneumonia?**  
K. Klugman (USA/South Africa)
- **How do PCVs Affect the Multi-Bacterial Nature of Otitis Media?**  
R. Dagan (Israel)
- ***Streptococcus pneumoniae* and Viruses: Do We Know Everything?**  
J. McCullers (USA)

### Facing the Challenges in Malaria

- **Emerging Drug Resistance**  
A. Dondorp (Thailand)
- **Progress Towards Effective Malaria Vaccination – TBD**
- **Update on Management of Severe Malaria?**  
S. Mishra (India)

### Fluoroquinolones: CAP, TB and the Importance of Differential Diagnosis

- **Diagnostic Challenges and Interactive Case Histories**  
PR Hsueh (Taiwan)
- **Fluoroquinolones: A Role in CAP and TB**  
R. Grossman (Canada)
- **Fluoroquinolones in TB: The Future – TBD**

*continued on next page*



## 15th ICID Scientific Program *continued*

### **Eliminating Visceral Leishmaniasis from the South-East Asia Region: Prospects and Opportunities**

- **Elimination of Kala-azar: Where Do We Stand in 2011?**  
S.K. Bhattacharya (India)
- **Progress in Treatment of Kala-azar**  
S. Rijal (Nepal)
- **Kala-azar Elimination—Monitoring and Evaluation**  
M. Rahman (Bangladesh)

### **Fungal Infections, Near and Far**

- **Pythium Insidiosum Infections**  
B. Satapathayavongs (Thailand)
- **Penicillium Marneffei Infections**  
K. Supparatpinyo (Thailand)
- **Changing Epidemiology and Treatment Options in Invasive Candida Infections**  
T. Gottlieb (Australia)

### **Encephalitis: Panel Discussion and Interactive Case Studies**

- **Encephalitis: Panel Discussion and Interactive Case Studies – TBD**
- **Encephalitis: Panel Discussion and Interactive Case Studies**  
J. Laothamatas (Thailand)
- **Encephalitis: Panel Discussion and Interactive Case Studies**  
T. Hemachudha (Thailand)

**Updated February 15, 2012**

*Program is subject to change.*

**Please visit the Congress web site  
<http://www.isid.org/icid/index.shtml>  
for more detailed information**

## 15th ICID Plenary Speakers Previously Highlighted in the ISID NEWS



**DR. CHING-LUNG LAI**  
*Treating Hepatitis B in 2012*



**DR. SHARON LEWIN**  
*Finding a Cure for HIV:  
The Need for Science,  
Collaboration and Advocacy*



**DR. DIDIER PITTET**  
*Infection Control*



**DR. DUANE J. GUBLER**  
*The Future of Dengue*



**DR. JOHN DAVID CLEMENS**  
*Vaccines for Cholera,  
Shigellosis and Typhoid*



**DR. STEPHEN D. LAWN**  
*Confronting TB  
in the Era of HIV*

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**15th ICID  
Participating Organizations**

**Collaborating Organization**

Infectious Disease Association of Thailand (IDAT)

**Cooperating Organizations**

American Society for Microbiology

Asia Pacific Foundation for Infectious Diseases (APFID)

Australasian Society for Infectious Diseases (ASID)

Chinese Society of Tropical Medicine and Parasitology,  
Chinese Medical Association

European Society of Clinical Microbiology and  
Infectious Diseases (ESCMID)

The Global Chinese Association of Clinical Microbiology  
and Infectious Diseases (GCACMID)

The Infectious Diseases Society of Taiwan (IDST)

International Society of Chemotherapy (ISC)

The Japanese Association for Infectious Diseases

Malaysian Society of Infectious Diseases & Chemotherapy

Philippine Society for Microbiology and Infectious Diseases

Pediatric Infectious Disease Society of Thailand (PIDST)

Regional Office for South-East Asia (WHO)

The Society of Infectious Diseases (Singapore)

Taiwan Society of Microbiology (TSM)

Thai AIDS Society

Thailand Convention & Exhibition Bureau



**Nominations Open for ISID Council**

On the occasion of the 15th ICID in Bangkok, more than one-quarter of the ISID Council members will conclude their terms of service and the Society will have openings for Council members from all regions.

The ISID Council assists the Executive Committee in managing ISID's activities through participation on committees and working groups. The Council is distributed according to World Health Organization regions to ensure that all regions of the world are represented in the governing structure of the Society. Council members serve a six-year term.

The Nominating Committee is actively seeking your recommendations for individuals who are interested in the activities of ISID and who would become involved with the Society in its various programs. Self recommendations are welcome.

Suggestions for consideration should be sent to the attention of Norman Stein, ISID Executive Director, at [info@isid.org](mailto:info@isid.org).



## ProMED Moderator Chosen as 2012 ICEID Leader

Dr. Joseph Wamala, ProMED moderator for the Anglophone Africa list (ProMED-EAFR), has been selected as an ICEID 2012 Leader to attend the International Conference on Emerging Infectious Diseases (ICEID) March 11-14, 2012 in Atlanta, Georgia, USA. He was selected from a large field of extremely qualified candidates in a highly competitive selection process. Dr. Wamala hails from Kampala, Uganda.

The ICEID Leaders Program, made possible by the Centers for Disease Control and Prevention and the U.S. Department of Defense Armed Forces Health Surveillance Center, is designed to ensure the participation in ICEID of infectious disease leaders from ministries of health and non-governmental organizations in resource-limited countries. The ICEID Leaders Program supports representatives of ministries of health (MOH), non-governmental organizations (NGOs), and community-based organizations (CBOs) involved in infectious disease prevention efforts, with the aim of enhancing infectious disease prevention globally.


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## ProMED-mail 2011 Archives Available for Your Local System

ProMED has received multiple requests from research and academic institutions for faster, more efficient, more flexible searching of the archives. In response to these appeals, we are for the first time offering the complete 2011 database of ProMED-mail postings on a memory stick for access on your local system.

The Primary Archive, including the entire 2011 global English language library of ProMED posts, can be purchased for \$500 (includes up to five users at the same institution.)

The Complete Archive, which comprises the entire 2011 global library of ProMED posts in English, Portuguese (ProMED-PORT), Spanish (ProMED-ESP), Russian (ProMED-RUS), and French (ProMED-FRA), is available for \$1,000 (includes up to five users at the same institution.) The user base for either Archive can be enlarged at a fee of \$50 per additional user.

Your purchase of the archives will support the maintenance of operations, including our regional networks and activities in underserved areas, and the expansion of ProMED services. This new program presents an excellent opportunity for state-funded departments of health and research and academic institutions that are restricted from making charitable contributions to non-profits to support ProMED while acquiring a valuable information resource for their libraries and labs.

Please order online (credit card or PayPal) at <http://www.promedmail.org> or contact [archives@promedmail.org](mailto:archives@promedmail.org) to request an invoice.

## ProMED 2011 Year End Internet-a-thon

ProMED wishes to acknowledge the over 1,000 individuals and the following institutions who have supported the 2011 Internet-a-thon:

Animal Division

Department of Agriculture, Fisheries and Forestry  
Australia

Animal Health Diagnostic Center  
College of Veterinary Medicine  
Cornell University

Auckland Regional Public Health Service

Canadian Cooperative Wildlife Health Centre

Cargill Incorporated

Chevron Corporation

Food Safety and Stability Stream  
Division of Food and Nutritional Sciences  
Commonwealth Scientific and Industrial Research Organisation (CSIRO)  
Australia

EMS Solutions Inc.

Institute for Environmental Science and Research (ESR)  
New Zealand

Food and Agriculture Organization of the United Nations

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National Pork Board

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National Veterinary Institute  
Sweden

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*ProMED-mail welcomes corporate and institutional support.*

*To add your organization's name to this list visit*

**[http://isid.org/downloads/ProMED\\_InstSubscr2011.pdf](http://isid.org/downloads/ProMED_InstSubscr2011.pdf)**



It is a pleasure to announce the fourth International Meeting on Emerging Diseases and Surveillance, IMED 2013 to be held in Vienna, Austria from 13–16 February 2013. Now established as a fixture for those whose work involves threats from infectious agents, IMED 2013 will once again bring leading scientists, clinicians and policy makers to Vienna to present new knowledge and breakthroughs and discuss how to discover, detect, understand, prevent and respond to outbreaks of emerging pathogens.

Since the last IMED, newly emerged diseases and outbreaks of familiar ones have continued to challenge us and keep us vigilant. While the influenza pandemic that began in 2009 has quieted, eruptions of H5N1 highly pathogenic avian influenza in poultry, wild birds and humans continue to occur. A novel H3N2 has transmitted from pigs to humans and, at least occasionally, from person to person. A newly discovered orthobunyavirus, the Schmallenberg virus, has emerged in livestock in Northern Europe. A foodborne outbreak of highly virulent Shiga toxin producing *E. coli* caused devastating disease that spread across the European continent. Diseases at the human–wildlife interface ranging from rabies to plague to Nipah continue to draw our attention. Growing resistance by pathogens to all types of therapeutic agents raises fundamental obstacles to our ability to respond to outbreaks and pandemics. The threat of intentional use of biological agents for nefarious purposes remains as real as ever.

Since its inception, IMED has been a summit that unifies our approach to pathogens in the broadest ecological context. Drawing together human and veterinary health specialists, IMED serves as a true One Health forum where those working in diverse specialties and diverse regions can meet, discuss, present and challenge one another with findings and new ideas.

While pathogens emerge and mutate, our methodology for detection, surveillance, prevention, control, and treatment also continue to evolve. New approaches to the uses of social media and data mining, novel laboratory methods, rapid point-of-care diagnostics, public health, risk communication, political and societal responses to outbreaks have all seen innovation and change that will be explored at IMED 2013.

ProMED and the International Society for Infectious Diseases, along with all of our co-sponsors and participating organizations, look forward to welcoming you to Vienna.

Larry Madoff, MD, *ProMED-mail Editor*



**International Meeting on Emerging Diseases and Surveillance**

**Vienna, Austria • February 15–18, 2013**

**Email: [info@isid.org](mailto:info@isid.org) • Web site: <http://imed.isid.org>**



**Fernanda Ludolf Ribeiro**

Fernanda Ludolf Ribeiro has been developing her scientific career at the Research Institute René Rachou—Fiocruz/Brazil, working on the molecular biology of the *Schistosoma mansoni* parasite. She started at the Institute as an undergraduate student, got her master's degree and presently is in the last year of her doctorate. Prior to starting her doctorate she had the chance to expand her knowledge on proteomics by spending one year at the Center for Tropical and Emerging Global Diseases, at the University of Georgia. Now she has had the opportunity to improve her skills by going to the University of Nottingham to work with *in vitro* expression and protein microarray.

**This research was supported with a grant from the International Society for Infectious Diseases (ISID) and the European Society of Clinical Microbiology and Infectious Diseases (ESCMID).**

## ISID/ESCMID Fellowship Report

### Profiling the Humoral Immune Response to *Schistosoma mansoni* using a New Immunoproteomic Approach—protein microarray.

Fernanda Ludolf Ribeiro

PI Dr. Guilherme Oliveira, Instituto René Rachou • FIOCRUZ, Brazil

PI Dr. Franco H. Falcone, School of Pharmacy • University of Nottingham, UK

Training Program at the University of Nottingham

### PhD Current Research Project

Schistosomiasis is an important parasitic disease, which affects more than 200 million people in 74 countries around the world. The schistosomiasis control strategy has been mainly based on the treatment of infected individuals by chemotherapy with the drug Praziquantel. While the use of this drug has an effect on morbidity, it does not prevent the re-infection, especially for those people who live in endemic areas. Therefore, the development of long term protection based on vaccination would be a significant benefit for disease control. Although many *Schistosoma mansoni* potential vaccine antigens have been identified until now, none was fully protective. Strategies used for vaccine development have changed as the genomic data for schistosomes have become increasingly available and post-genomic technologies have matured, proposing a more rational discovery of new vaccine candidates. The combination of conventional proteomic analysis and serologic analysis has been employed as a novel experimental approach in the discovery of serological markers for different diseases. The identification of individuals living in endemic areas that are naturally resistant to infection suggests the existence of protective immunity. So it was proposed by us to use endemic area individuals sera associated to proteomics approaches in order to characterize an antigenic protein profile of the parasite and to relate it to a protective profile. The association of two-dimensional electrophoresis (2-DE) and western-blot, had enabled a pre-screening of immuno-antigenic proteins of the parasite. The list of proteins screened by the bi-dimensional western-blot of *S. mansoni* protein against sera of residents of endemic areas would then be synthesized *in vitro*, and scanned against a panel of sera (pooled and individually / infected and naturally resistant) using the protein microarray approach.

### Introduction

Protein microarray is another methodology that has also been used to identify biomarkers, allowing the analysis of hundreds or thousands of proteins at once being also able to quantify simultaneously the levels of different antibody classes/subclasses to any individual antigen represented on the array. This project aims to refine the list of potential candidates for subsequent testing as protective or diagnosis antigens. Understanding which immune responses are associated with protection would represent a huge step forward towards designing a functioning vaccine against schistosomiasis, looking not only as a single vaccine candidate but as a complex of vaccine candidates.

Cell-free protein synthesis has emerged as a powerful alternative to cell-based protein expression systems for functional and structural proteomics. *In vitro* expression systems offer significant time savings over *in vivo* systems, which is important when performing high-throughput screening. *In vitro* systems have also the ability to express toxic, proteolytically sensitive, or unstable gene products, increasing the chances of a successful expression of a high number of proteins.

### Training Methods

Cell-Free (CF) expression optimization was conducted by testing and comparing different available systems and strategies. The best performing CF expression system were selected based on protein yields and recognition of antigens by immune sera. The wheat-germ system (Promega's TnT SP6 High yield wheat germ protein expression system) was the system selected because of the expected higher yield comparing with the others systems from the same brand. For optimization of the CF expression system it was chosen two, of the proteins previously identified at the 2D-WE, called here as SmM and SmH. Primers were designed as suggested by the manufacturer and the option of adding a histidine c-terminal tag was implemented by us for subsequent purification.

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## ISID/ESCMID Report of Fernanda Ludolf Ribeiro

Profiling the Humoral  
Immune Response to  
*Schistosoma mansoni* using  
a New Immunoproteomic  
Approach—protein  
microarray.

*This research was supported with a grant from the International Society for Infectious Diseases (ISID) and the European Society of Clinical Microbiology and Infectious Diseases (ESCMID).*

## ISID/ESCMID Fellowship Report *continued*

The amplification annealing temperature was determined empirically by a temperature gradient PCR. Cloning and expression were conducted as suggested by manufacturer. After the successful optimization of the CF expression system using the two model proteins, the same protocol was used for the expression of the 43 proteins selected as antigenic by the 2D-WE pre-screening. 50 other proteins, selected by another PhD student from Brazil, in a bioinformatic pre-screening of potential epitopes, were also included to be expressed and analyzed in the microarray.

### Results and Discussion

*In vitro* coupled transcription-translation, using a TNT expression system, is a suitable means for producing Schistosome proteins as proved by the positive expression of the SmM and SmH. A Western blot, using pooled human sera, suggested that the two translated proteins are still fully antigenic. Those sera were obtained from individuals from a schistosomiasis endemic area and who had, therefore, raised antibodies to the natural protein. Consequently, results presented here suggest that *in vitro* synthesized proteins are as antigenic as its natural counterpart, confirming the 2D-WE result. After the efficacious optimization, the same procedure was conducted for all the other proteins identified by the 2D-WE and by the bioinformatics approaches.

PCR amplification of the genes corresponding to the proteins selected by 2D-WE was highly effective (95%), however, the ones selected by bioinformatics showed a low efficacy of amplification (40%). Transformation, in particular, was very inefficient and consumed much of the time spent in the laboratory specially when doing it for around 65 proteins amplified before. The issues with transformation were solved after many different attempts concluding that inactivation of the T4 ligase at 65 degrees for 5 min would increase the number of clones (not as specified in the manufacturer's protocol). In the end, the wheat-germ protein expression system (Promega's TnT SP6 High yield) showed to be a good system, expressing almost all the proteins.

Issues arose, however, when the system (TNT-wheat germ) is combined with the multiple protein extract microarray technology employed. Proteins of the wheat-germ produced high levels of background fluorescence that rendered microarray data inadequate. This would suggest that incubation of serum with the wheat germ protein extract was insufficient to prevent non-specific binding. The presence of endogenous biotinylated proteins in the wheat germ lysate also proved to be an issue when imaging IgE (IgE detection uses streptavidin in our system). So to design the primers including polyhistidine-tags (His-tags) and to integrate a His-tag purification step into the protocol would be an essential step. This additional step should remove all wheat germ proteins, preventing non-specific binding and background fluorescence.

### Conclusion

The pre-screening using the 2D-WE were conducted in Brazil while the protein microarray with the *in vitro* expression of all the proteins were conducted during the visit of the PhD student, Fernanda Ludolf Ribeiro, to the laboratory of the collaborator Dr. Franco Falcone, at the University of Nottingham, and was only possible because of the generous support by ISID/ESCMID. The PhD student not only optimized the cell-free expression protocol and produced most of the proteins in a high throughput way, but also was involved in the printing process of the slides and started the optimization of the microarray of the *Schistosoma* proteins. The PhD student met some unexpected technical problems associated with the printing and unfortunately was unable to come back from this training with the microarray final results. However, the PhD student is pleased to have met the main objective of this training, which is to promote collaboration, to take home new ideas, and to transfer technology.

The expectative was well fitted just because of all the effort of the PhD student and her supervisors. The good atmosphere in the lab and between all the lab mates helped a lot in the development of the project. The University of Nottingham supervisor was always opened to talk about results. The lab has all the facilities needed for the work and the reagents were in a short time in the lab. The PhD student could meet many new other scientists, increasing her scientific network. Therefore, proposal brings advances in the development of two theses, in the potential of the incorporation of new technology in the endemic country, strengthening of work in cooperation with institutions abroad, and great potential for high impact publications.



## Calendar of Events

### 2012

#### 11–14 March

##### **International Conference on Emerging Infectious Diseases (ICEID)**

Atlanta, GA • USA

<http://www.iceid.org/>

This conference brings together public health professionals to encourage the exchange of scientific and public health information on global emerging infectious disease issues. The program will include plenary and panel sessions with invited speakers as well as oral and poster presentations on emerging infections. Major topics to be included are current work on surveillance, epidemiology, research, communication and training, bioterrorism, and preventions and control of emerging infectious diseases, both in the United States and abroad.

#### 22–24 July

##### **International Conference on Diseases in Nature Communicable to Man (INCDNCM)**

Winnipeg, Manitoba, CANADA

<http://sites.google.com/site/incdncm/>

This conference is multidisciplinary and seeks to bring together students and professionals from human and animal disciplines to discuss emerging zoonoses in a One Health Forum. Plenary sessions will include oral and poster presentations on viral, rickettsial, bacterial, parasitic, prion-related diseases acquired from natural sources, including animals (wild or domestic), contaminated water or food supplies, arthropod vectors and other sources.

#### 14–18 November

##### **XVI Congreso Latinoamericana de Pediatría, ALAPE 2012**

Cartagena de Indias, COLOMBIA

<http://www.congresosalape.com>

This Congress is being held in participation with the Colombian Society of Pediatrics and is aimed towards pediatricians, nurses, therapists, nutritionists, psychologists and family physicians. Topics range from neonatology, infectious diseases and vaccines, adolescent and sport medicine, nutrition, interventions in primary care and more.

## ISID Grant and Fellowships Programs

### Applications open for ISID Grant and Fellowship Programs

The mission of the International Society for Infectious Diseases is to enhance research, prevention, and treatment of infectious diseases, particularly in low resource countries. The Society's programs emphasize the transfer of information and appropriate technology through training and education of health care professionals. In addition to the ISID sponsored conferences, the Society funds the following research grant and fellowship programs all of which are awarded by application:

- **ISID Small Grants** – Application deadline is April 1 and October 1.
- **ISID Scientific Exchange Fellowship** – Application deadline is March 1.
- **SSI/ISID Fellowship** – Application deadline is April 1.
- **ISID/ESCMID Fellowship** – Application deadline is March 1.

Further information and application materials are available on the ISID website at:

<http://www.isid.org/grants/grants.shtml>



### Spotlight on the SSI/ISID Fellowship

ISID and the Swiss Society for Infectious Diseases (SSI) jointly sponsor the SSI/ISID Infectious Diseases Research Fellowship Program.

The purpose of this Fellowship Program is to support young infectious disease physicians and scientists from developing and middle income countries through multidisciplinary clinical and laboratory training at select biomedical institutions in Switzerland. The objectives of the Fellowship Program are:

- to train promising young physicians and scientists from developing and middle income countries for clinical and research positions in infectious diseases
- to foster partnerships between Fellows and infectious disease leaders in Switzerland
- to increase scientific research capacity in low income/high disease burden countries

Opportunities for training and research in a variety of areas ranging from basic studies of the mechanism of disease to studies in public health, epidemiology, diagnostics, therapeutics or vaccine development, are available through this program.

The term of the Fellowship is for one year. The start date of the will be determined by arrangement between the host institution and the Fellow.

Further information and application materials are available on the ISID website at:

[http://www.isid.org/grants/grants\\_ssi\\_fellowships.shtml](http://www.isid.org/grants/grants_ssi_fellowships.shtml)